



Tacker NSD support

09.04.20XX

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Overview

The Network Service Descriptor is a deployment template that contain static information used in the process of on-boarding NSs. To enable dynamic composition of network services, NFV introduces Network Service Descriptors (NSDs) that specify the network service to be created. It is used by the NFV Orchestrator to instantiate a Network Service. The NSD also describes deployment flavours of Network Service.

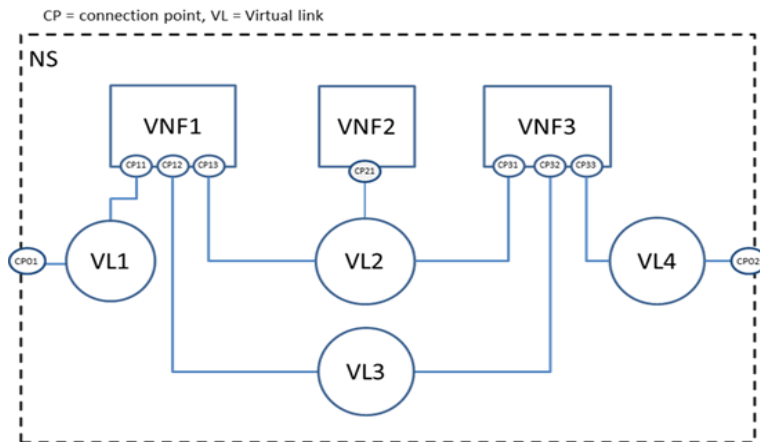
Goals

This proposal describes the plan to add Network Service Descriptor(NSD) support in Tacker. To enable dynamic composition of network services, NFV introduces Network Service Descriptors (NSDs) that specify the network service to be created.

Specifications

Network Service:

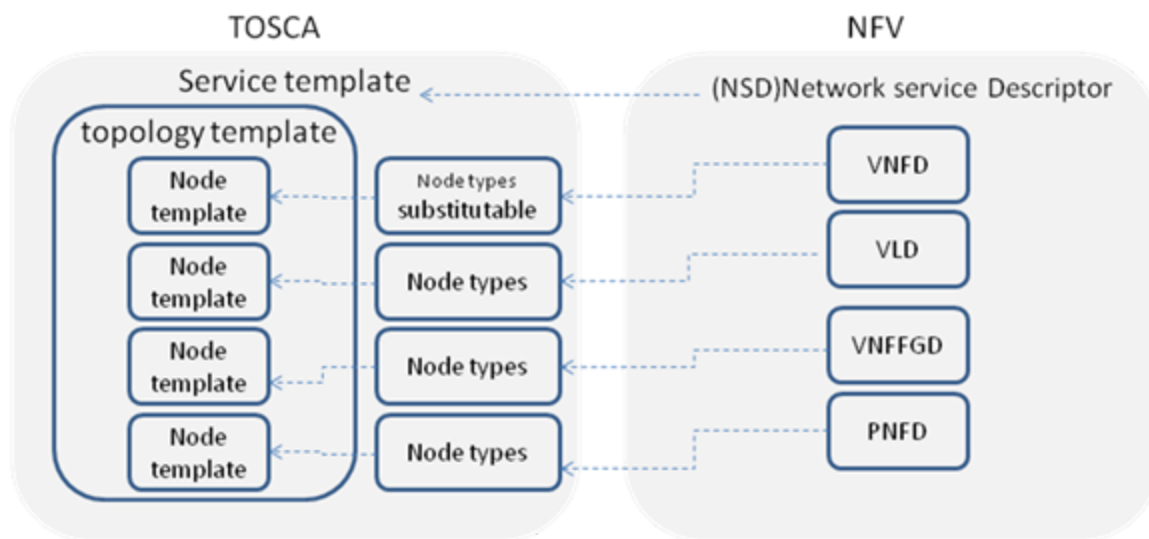
Network service is a composition of NFs/VNFs that defines an end-to-end functional and behavioral specification. It Describes the relationship between VNFs and possibly PNFs that it contains and the links needed to connect VNFs that are implemented in the NFVI network.



Elements of NSD

Param	Type	Cardinality	Description
id	string	1	Name/Id of given NSD
vender	string	1	Provider or vendor of the Network Service.
version	string	1	The version of the NSD
vnfd	list	1 - N	A list of VNF descriptors which are part of the Network Service
vld	list	0 - N	Virtual Link descriptors which are the part of Network Service
vnf_dependency	list	0 - N	Describe dependencies between VNF.
monitoring_parameter	list	0-N	Represents a monitoring parameter which can be tracked for this NS.

TOSCA and VNF deployment template mapping



As shown in above picture, NSD can includes VNFD, VNFFGD, VLD and PNFD.

VNFD --> Virtual Network Function Descriptor

VNFFGD --> VNF Forwarding Graph

VLD --> Virtual Link Descriptor

PNFD --> Physical Network Function

Sample tosca nsd template

A sample template for nsd, which contains 3 vnf(i.e. vnf1, vnf2 & vnf3),
Endpoints of NS(i.e. CP01 and CP02), and virtual links(VL1, VL2, VL3 & VL\$)

tosca_definitions_version: tosca_simple_profile_for_nfv_1_0_0

description: Nsd example

metadata:

template_name: sample-tosca-nsd

imports:

-sample-vnfd.yaml

-

topology_template:

VNF1:

type: tosca.nodes.nfv.VNF.VNF1

properties:

id: #ID of this VNF

requirements:

virtualLink1: VL1

virtualLink2: VL2

virtualLink3: VL3

VNF3:

type: tosca.nodes.nfv.VNF.VNF2

properties:

id: #ID of this VNF

requirements:

virtualLink1: VL2

VNF3:

type: tosca.nodes.nfv.VNF.VNF3

properties:

id: #ID of this VNF

requirements:

virtualLink1: VL2

virtualLink2: VL3

virtualLink3: VL4

CP01 #First endpoints of NS

type: toska.nodes.nfv.CP

properties:

type:

requirements:

virtualLink: VL1

attributes:

IP_address: #The actual virtual NIC address

CP02 #Second endpoints of NS

type: toska.nodes.nfv.CP

properties:

type:

requirements:

virtualLink: VL1

attributes:

IP_address: #The actual virtual NIC address

VL1

type: toska.nodes.nfv.VL.Eline

properties:

capabilities:

-virtual_linkable

occurrences: 2

VL2

type: toska.nodes.nfv.VL.Eline

properties:

capabilities:

-virtual_linkable

occurrences: 5

VL3

type: toska.nodes.nfv.VL.Eline

properties:



capabilities:

-virtual_linkable

occurrences: 2

VL4

type: tosca.nodes.nfv.VL.Eline

properties:

capabilities:

-virtual_linkable

occurrences: 2