**12 Examples**

**12.X vEPC APN NSD Template**



tosca\_definitions\_version: tosca\_simple\_profile\_for\_nfv\_1\_0

tosca\_default\_namespace: schema

description: network\_service\_vEPC (draft)

metadata:

ID: 001

vendor: NetCracker

version: 001-0

imports:

- tosca\_base\_type\_definition.yaml

# list of import statements for importing other definitions files

topology\_template:

inputs:

flavor ID:

VNF\_vGWU1:

type: tosca.nodes.nfv.vnf.VNF\_ vGWU1

properties:

Scaling\_methodology:

Flavour\_ID:

Threshold:

Auto-scale policy value:

Constraints:

requirements:

virtualLink1: VL1

virtualLink2: VL3

capabilities:

forwarder1 # the subsititution mappings in VNF would have

forwarder1: [CP1\_GWU1, forwarder]

VNF\_vGWU2:

type: tosca.nodes.nfv.vnf.VNF\_ vGWU2

properties:

Scaling\_methodology:

Flavour\_ID:

Threshold:

Auto-scale policy value:

Constraints:

requirements:

virtualLink1: VL2

virtualLink2: VL4

capabilities:

forwarder1 # the subsititution mappings in VNF would have

forwarder1: [CP1\_GWU2, forwarder]

VNF\_vFirewall1:

type: tosca.nodes.nfv.vnf.VNF\_ vFirewall1

properties:

Scaling\_methodology:

Flavour\_ID:

Threshold:

Auto-scale policy value:

Constraints:

requirements:

virtualLink1: VL1

virtualLink2: VL2

virtualLink2: VL6

capabilities:

forwarder1 # the subsititution mappings in VNF would have

forwarder1: [CP1\_VNF\_FW1, forwarder]

forwarder2 # the subsititution mappings in VNF would have

forwarder2: [CP2\_VNF\_FW1, forwarder]

VNF\_vFirewall2:

type: tosca.nodes.nfv.vnf.VNF\_ vFirewall2

properties:

Scaling\_methodology:

Flavour\_ID:

Threshold:

Auto-scale policy value:

Constraints:

requirements:

virtualLink1: VL3

virtualLink2: VL4

virtualLink2: VL5

capabilities:

forwarder1 # the subsititution mappings in VNF would have

forwarder1: [CP1\_VNF\_FW2, forwarder]

forwarder2 # the subsititution mappings in VNF would have

forwarder2: [CP2\_VNF\_FW2, forwarder]

VNF\_vSwitch1:

type: tosca.nodes.nfv.vnf.VNF\_ vSwitch1

properties:

Scaling\_methodology:

Flavour\_ID:

Threshold:

Auto-scale policy value:

Constraints:

requirements:

virtualLink1: VL6

virtualLink2: VL7

virtualLink2: VL8

virtualLink2: VL9

capabilities:

forwarder1 # the subsititution mappings in VNF would have

forwarder1: [CP1\_VNF\_SW1, forwarder]

forwarder2 # the subsititution mappings in VNF would have

forwarder2: [CP2\_VNF\_ SW1, forwarder]

forwarder3 # the subsititution mappings in VNF would have

forwarder3: [CP3\_VNF\_ SW1, forwarder]

forwarder4 # the subsititution mappings in VNF would have

forwarder4: [CP4\_VNF\_ SW1, forwarder]

VNF\_vSwitch2:

type: tosca.nodes.nfv.vnf.VNF\_ vSwitch2

properties:

Scaling\_methodology:

Flavour\_ID:

Threshold:

Auto-scale policy value:

Constraints:

requirements:

virtualLink1: VL5

virtualLink2: VL7

virtualLink2: VL10

virtualLink2: VL11

capabilities:

forwarder1 # the subsititution mappings in VNF would have

forwarder1: [CP1\_VNF\_SW2, forwarder]

forwarder2 # the subsititution mappings in VNF would have

forwarder2: [CP2\_VNF\_ SW2, forwarder]

forwarder3 # the subsititution mappings in VNF would have

forwarder3: [CP3\_VNF\_ SW2, forwarder]

forwarder4 # the subsititution mappings in VNF would have

forwarder3: [CP4\_VNF\_ SW2, forwarder]

VNF\_vSwitch3:

type: tosca.nodes.nfv.vnf.VNF\_ vSwitch3

properties:

Scaling\_methodology:

Flavour\_ID:

Threshold:

Auto-scale policy value:

Constraints:

requirements:

virtualLink1: VL8

virtualLink2: VL10

virtualLink2: VL12

capabilities:

forwarder1 # the subsititution mappings in VNF would have

forwarder1: [CP1\_VNF\_SW3, forwarder]

forwarder2 # the subsititution mappings in VNF would have

forwarder2: [CP2\_VNF\_ SW3, forwarder]

forwarder3 # the subsititution mappings in VNF would have

forwarder3: [CP3\_VNF\_ SW3, forwarder]

VNF\_vSwitch4:

type: tosca.nodes.nfv.vnf.VNF\_ vSwitch4

properties:

Scaling\_methodology:

Flavour\_ID:

Threshold:

Auto-scale policy value:

Constraints:

requirements:

virtualLink1: VL9

virtualLink2: VL11

virtualLink2: VL13

capabilities:

forwarder1 # the subsititution mappings in VNF would have

forwarder1: [CP1\_VNF\_SW4, forwarder]

forwarder2 # the subsititution mappings in VNF would have

forwarder2: [CP2\_VNF\_ SW4, forwarder]

forwarder3 # the subsititution mappings in VNF would have

forwarder3: [CP3\_VNF\_ SW4, forwarder]

VNF\_M2M\_vGW:

type: tosca.nodes.nfv.vnf.VNF\_ M2M\_vGW

properties:

Scaling\_methodology:

Flavour\_ID:

Threshold:

Auto-scale policy value:

Constraints:

requirements:

virtualLink1: VL12

virtualLink2: VL13

capabilities:

forwarder1 # the subsititution mappings in VNF would have

forwarder1: [CP1\_GW, forwarder]

forwarder2 # the subsititution mappings in VNF would have

forwarder2: [CP2\_GW, forwarder]

forwarder3 # the subsititution mappings in VNF would have

forwarder3: [CP3\_GW, forwarder]

CP1\_GWU #endpoints of NS

 type: tosca.nodes.nfv.CP

 properties:

 type:

 requirements:

 virtualLink:

CP3\_GW #endpoints of NS

 type: tosca.nodes.nfv.CP

 properties:

 type:

 requirements:

 virtualLink:

VL1

type: tosca.nodes.nfv.VL.ELINE

properties:

# omitted here for brevity

capabilities:

-virtual\_linkable

occurrences: 2

VL2

type: tosca.nodes.nfv.VL.ELINE

properties:

# omitted here for brevity

capabilities:

-virtual\_linkable

occurrences: 2

VL3

type: tosca.nodes.nfv.VL.ELINE

properties:

# omitted here for brevity

capabilities:

-virtual\_linkable

occurrences: 2

VL4

type: tosca.nodes.nfv.VL.ELINE

properties:

# omitted here for brevity

capabilities:

-virtual\_linkable

occurrences: 2

VL5

type: tosca.nodes.nfv.VL.ELINE

properties:

# omitted here for brevity

capabilities:

-virtual\_linkable

occurrences: 2

VL6

type: tosca.nodes.nfv.VL.ELINE

properties:

# omitted here for brevity

capabilities:

-virtual\_linkable

occurrences: 2

VL7

type: tosca.nodes.nfv.VL.ELINE

properties:

# omitted here for brevity

capabilities:

-virtual\_linkable

occurrences: 2

VL8

type: tosca.nodes.nfv.VL.ELINE

properties:

# omitted here for brevity

capabilities:

-virtual\_linkable

occurrences: 2

VL9

type: tosca.nodes.nfv.VL.ELINE

properties:

# omitted here for brevity

capabilities:

-virtual\_linkable

occurrences: 2

VL10

type: tosca.nodes.nfv.VL.ELINE

properties:

# omitted here for brevity

capabilities:

-virtual\_linkable

occurrences: 2

VL11

type: tosca.nodes.nfv.VL.ELINE

properties:

# omitted here for brevity

capabilities:

-virtual\_linkable

occurrences: 2

VL12

type: tosca.nodes.nfv.VL.ELINE

properties:

# omitted here for brevity

capabilities:

-virtual\_linkable

occurrences: 2

VL13

type: tosca.nodes.nfv.VL.ELINE

properties:

# omitted here for brevity

capabilities:

-virtual\_linkable

occurrences: 2

network\_service\_vEPC\_FP1:

type: tosca.nodes.nfv.FP

description: network\_service\_ vEPC \_FP1 draft (CP1\_GWU1 -> CP1\_VNF\_FW1 -> CP2\_VNF\_FW1-> CP1\_VNF\_SW1-> CP2\_VNF\_SW1-> CP1\_VNF\_SW3-> CP2\_VNF\_SW3->CP1\_GW -> CP3\_GW)

properties:

policy:

requirements:

-forwarder: VNF\_vGWU1

capability: forwarder2 #CP1\_GWU1

-forwarder: VNF\_vFirewall1

capability: forwarder1 #CP1\_VNF\_FW1

capability: forwarder2 #CP2\_VNF\_FW1

-forwarder: VNF\_vSwitch1

capability: forwarder1 #CP1\_VNF\_SW1

capability: forwarder2 #CP2\_VNF\_SW1

-forwarder: VNF\_vSwitch3

capability: forwarder1 #CP1\_VNF\_SW3

capability: forwarder2 #CP2\_VNF\_SW3

-forwarder: CP\_M2M\_vGW

capability: forwarder1 #CP1\_GW

capability: forwarder3 #CP3\_GW

network\_service\_vEPC\_FP2:

type: tosca.nodes.nfv.FP

description: network\_service\_ vEPC \_FP2 draft (CP1\_GWU1 -> CP1\_VNF\_FW2 -> CP2\_VNF\_FW2-> CP1\_VNF\_SW2-> CP2\_VNF\_SW2-> CP1\_VNF\_SW4-> CP2\_VNF\_SW4->CP2\_GW -> CP3\_GW)

properties:

policy:

requirements:

-forwarder: VNF\_vGWU1

capability: forwarder1 #CP1\_GWU1

-forwarder: VNF\_vFirewall2

capability: forwarder1 #CP1\_VNF\_FW2

capability: forwarder2 #CP2\_VNF\_FW2

-forwarder: VNF\_vSwitch2

capability: forwarder1 #CP1\_VNF\_SW2

capability: forwarder2 #CP2\_VNF\_SW2

-forwarder: VNF\_vSwitch4

capability: forwarder1 #CP1\_VNF\_SW4

capability: forwarder2 #CP2\_VNF\_SW4

-forwarder: CP\_M2M\_vGW

capability: forwarder2 #CP2\_GW

capability: forwarder3 #CP3\_GW

Groups:

VNFFG\_vEPC\_FG1:

type: tosca.groups.nfv.vnffg

description: VNFFG\_vEPC\_FG1 draft

properties:

vendor: NetCracker

version: 001

vl:[VL1, VL3, VL5, VL6, VL8, VL11, VL11, VL13]

vnf: [VNF\_vGWU1, VNF\_vFirewall1, VNF\_vFirewall2, VNF\_vSwitch1, VNF\_vSwitch2, VNF\_vSwitch3, VNF\_vSwitch4, CP\_M2M\_vGW]

targets: [network\_service\_RvCPE\_FP1, network\_service\_RvCPE\_FP2]