

Policy R2 Beijing CSIT Functional Test Cases

Test Case Id	Description	Pre-conditions	Test Steps	Expected Results
1	Perform healthcheck for the Policy components using Healthcheck API - Drools PDP - XACML PDP - PAP - BRMSGateway	- Policy docker image ready and policy components (Drools, XACML, PAP, BRMS Gateway) should be up and running - Server and authentication details should be configured at <i>\$POLICY_HOME/config/feature-healthcheck.properties</i>	API – healthcheck Method - GET Endpoint: http://<host>:8081/healthcheck	All the policy components should return health status as “true”
2	Import/Load Use case template for the following use cases (VoLTE, vCPE, vFW, vDNS)	Policy components should be up and running	API – policyEngineImport Method – POST Endpoint: https://<host>:8081/pdp/policyEngineImport	Policy service models should be imported for the specified use cases. We should be able to create policy from here.
3	Create config Policy for the following use cases VoLTE - vFW - vDNS - vCPE	Policy components up and running	API – CreateConfig Method – PUT Endpoint: https://<host>:8081/Pdp/createPolicy	Config Policy should be created in Policy Engine (PAP)
4	Push Config policy to the PDP Engines for the following use cases VoLTE - vFW - vDNS - vCPE	Policy components up and running	API - pushPolicy Method - PUT Endpoint: https://<host>:8081/Pdp/pushPolicy	Config Policy should be pushed to the PDP group
5	Create Operational policy for the following use cases - VoLTE - vFW - vDNS - vCPE	Policy components up and running	API - createPolicy Method – PUT Endpoint: https://<host>:8081/Pdp/createPolicy	Operational Policy should be created in Policy Engine (PAP)
6	Push operational Policy to the PDP Engines for each use case - VoLTE - vFW - vDNS - vCPE	Policy components up and running	API - pushPolicy Method - PUT Endpoint: https://<host>:8081/Pdp/pushPolicy	Operational Policy should be pushed to the PDP group
7	Retrieve the configs for the following use cases - VoLTE - vFW - vDNS - vCPE	Policy components up and running	API – getConfig Method – POST Endpoint: https://<host>:8081/Pdp/getConfig	Both Config and Operational Policies configured for each use case should be retrieved successfully

vFirewall Use Case

vFirewall - TCA Configuration Policy Payload

```
tca_policy: "{
  \"domain\": \"measurementsForVfScaling\",
  \"metricsPerEventName\": [
    {
      \"eventName\": \"vFirewallBroadcastPackets\",
      \"controlLoopSchemaType\": \"VNF\",
      \"policyScope\": \"DCAE\",
      \"policyName\": \"DCAE.Config_tca-hi-lo\",
      \"policyVersion\": \"v0.0.1\",

      \"thresholds\": [
        {
          \"closedLoopControlName\": \"ControlLoop-vFirewall-d0a1dfc6-94f5-4fd4-a5b5-4630b438850a\",
          \"version\": \"1.0.2\",
          \"fieldPath\": \"$.event.measurementsForVfScalingFields.vNicUsageArray[*].receivedTotalPacketsDelta\",
          \"thresholdValue\": 300,
          \"direction\": \"LESS_OR_EQUAL\",
          \"severity\": \"MAJOR\",
          \"closedLoopEventStatus\": \"ONSET\"
        },
        {
          \"closedLoopControlName\": \"ControlLoop-vFirewall-d0a1dfc6-94f5-4fd4-a5b5-4630b438850a\",
          \"version\": \"1.0.2\",
          \"fieldPath\": \"$.event.measurementsForVfScalingFields.vNicUsageArray[*].receivedTotalPacketsDelta\",
          \"thresholdValue\": 700,
          \"direction\": \"GREATER_OR_EQUAL\",
          \"severity\": \"CRITICAL\",
          \"closedLoopEventStatus\": \"ONSET\"
        }
      ]
    }
  ]
}"
```

vFirewall - Operational Policy

```
controlLoop:
  version: 2.0.0
  controlLoopName: ControlLoop-vFirewall-d0a1dfc6-94f5-4fd4-a5b5-4630b438850a
  trigger_policy: unique-policy-id-1-modifyConfig
  timeout: 1200
  abatement: false

policies:
- id: unique-policy-id-1-modifyConfig
  name: modify packet gen config
  description:
  actor: APPC
  recipe: ModifyConfig
  target:
    # TBD - Cannot be known until instantiation is done
    resourceID: Eace933104d443b496b8.nodes.heat.vpg
    type: VNF
  retry: 0
  timeout: 300
  success: final_success
  failure: final_failure
  failure_timeout: final_failure_timeout
  failure_retries: final_failure_retries
```

```
failure_exception: final_failure_exception
failure_guard: final_failure_guard
```

DCAE Control Loop Event (TCA) - vFirewall

```
{
  "closedLoopEventClient": "DCAE_INSTANCE_ID.dcae-tca",
  "policyVersion": "1.0.0.5",
  "policyName": "vFirewall",
  "policyScope": "resource=SampleResource,service=SampleService,type=SampleType,
closedLoopControlName=SampleClosedLoop",
  "target_type": "VNF",
  "AAI": {
    "generic-vnf.vnf-name": "zdfw1fwl01fwl02"
  },
  "closedLoopAlarmStart": 1484855291527925,
  "closedLoopEventStatus": "ONSET",
  "closedLoopControlName": "ControlLoop-vFirewall-d0a1dfc6-94f5-4fd4-a5b5-4630b438850a",
  "version": "1.0.2",
  "target": "generic-vnf.vnf-name",
  "requestID": "8c1b8bd8-06f7-493f-8ed7-daaa4cc481bc",
  "from": "DCAE"
}
```

AAI vnf-name query

<https://{aai}/aai/v11/network/generic-vnfs/generic-vnf?vnf-name=zdfw1fwl01fwl02>

AAI named-query response

For a different vnfName

```
{
  "vnf-id": "4e46ad6c-cebe-4460-858e-b5806883271b",
  "vnf-name": "vfw7f5a57d6",
  "vnf-type": "da818f33-97e1-4edf-98a5/5759f208-b75c-4b35-9599 0",
  "service-id": "a322c144-537c-4532-bf1b-0a4889083388",
  "prov-status": "PREPROV",
  "orchestration-status": "Created",
  "in-maint": false,
  "is-closed-loop-disabled": false,
  "resource-version": "1521467089262",
  "model-invariant-id": "a1efbbdd-2077-4b86-9fc0-244af99760f0",
  "model-version-id": "34c3221b-1326-4f35-9ed7-6f2f7e59d788",
  "model-customization-id": "1798c9a9-eaae-438f-bac3-b013599e8909",
  "nf-type": "",
  "nf-function": "",
  "nf-role": "",
  "nf-naming-code": "",
  "relationship-list": {
    "relationship": [
      {
        "related-to": "service-instance",
        "related-link": "/aai/v11/business/customers/customer/DemoCust_7d454ef5-f5ea-4346-b2d3-e9797f5a57d6/service-subscriptions/service-subscription/vFW/service-instances/service-instance/7c45e4f7-aa7a-4130-9ee3-c5c1d81840df",
        "relationship-data": [
          {
            "relationship-key": "customer.global-customer-id",
            "relationship-value": "DemoCust_7d454ef5-f5ea-4346-b2d3-e9797f5a57d6"
          },
          {
            "relationship-key": "service-subscription.service-type",
            "relationship-value": "vFW"
          }
        ]
      }
    ]
  }
}
```

```

        },
        {
            "relationship-key": "service-instance.service-instance-id",
            "relationship-value": "7c45e4f7-aa7a-4130-9ee3-c5c1d81840df"
        }
    ],
    "related-to-property": [
        {
            "property-key": "service-instance.service-instance-name",
            "property-value": "Service_Ete_Name7d454ef5-f5ea-4346-b2d3-e9797f5a57d6"
        }
    ]
},
{
    "related-to": "vserver",
    "related-link": "/aai/v11/cloud-infrastructure/cloud-regions/cloud-region/CloudOwner/RegionOne/tenants/tenant/50b190410b2a4c229d8a6044a80ab7c1/vservers/vserver/3f3f3c72-269d-45e6-8953-692424f2df1f",
    "relationship-data": [
        {
            "relationship-key": "cloud-region.cloud-owner",
            "relationship-value": "CloudOwner"
        },
        {
            "relationship-key": "cloud-region.cloud-region-id",
            "relationship-value": "RegionOne"
        },
        {
            "relationship-key": "tenant.tenant-id",
            "relationship-value": "50b190410b2a4c229d8a6044a80ab7c1"
        },
        {
            "relationship-key": "vserver.vserver-id",
            "relationship-value": "3f3f3c72-269d-45e6-8953-692424f2df1f"
        }
    ],
    "related-to-property": [
        {
            "property-key": "vserver.vserver-name",
            "property-value": "demofwl01pgn"
        }
    ]
},
{
    "related-to": "vserver",
    "related-link": "/aai/v11/cloud-infrastructure/cloud-regions/cloud-region/CloudOwner/RegionOne/tenants/tenant/50b190410b2a4c229d8a6044a80ab7c1/vservers/vserver/4c45d0a4-a873-4d95-87ca-2a198322c9c4",
    "relationship-data": [
        {
            "relationship-key": "cloud-region.cloud-owner",
            "relationship-value": "CloudOwner"
        },
        {
            "relationship-key": "cloud-region.cloud-region-id",
            "relationship-value": "RegionOne"
        },
        {
            "relationship-key": "tenant.tenant-id",
            "relationship-value": "50b190410b2a4c229d8a6044a80ab7c1"
        },
        {
            "relationship-key": "vserver.vserver-id",
            "relationship-value": "4c45d0a4-a873-4d95-87ca-2a198322c9c4"
        }
    ],
    "related-to-property": [
        {
            "property-key": "vserver.vserver-name",
            "property-value": "demofwl01snk"
        }
    ]
}
],

```

```

{
  "related-to": "vserver",
  "related-link": "/aai/v11/cloud-infrastructure/cloud-regions/cloud-region/CloudOwner/RegionOne/tenants/tenant/50b190410b2a4c229d8a6044a80ab7c1/vservers/vserver/b96416ef-fc4e-49cb-8120-1d56686d2e90",
  "relationship-data": [
    {
      "relationship-key": "cloud-region.cloud-owner",
      "relationship-value": "CloudOwner"
    },
    {
      "relationship-key": "cloud-region.cloud-region-id",
      "relationship-value": "RegionOne"
    },
    {
      "relationship-key": "tenant.tenant-id",
      "relationship-value": "50b190410b2a4c229d8a6044a80ab7c1"
    },
    {
      "relationship-key": "vserver.vserver-id",
      "relationship-value": "b96416ef-fc4e-49cb-8120-1d56686d2e90"
    }
  ],
  "related-to-property": [
    {
      "property-key": "vserver.vserver-name",
      "property-value": "vfw7f5a57d6"
    }
  ]
}
]
}
}
}

```

APPC request

```

{
  "CommonHeader": {
    "TimeStamp": 1500997725298,
    "APIVer": "1.01",
    "RequestID": "664be3d2-6c12-4f4b-a3e7-c349acced200",
    "RequestTrack": [],
    "Flags": []
  },
  "Action": "ModifyConfig",
  "Payload": {
    "generic-vnf.vnf-id": "fw0001vm001fw001",
    "pg-streams": {
      "pg-stream": [
        {
          "id": "fw_udp1",
          "is-enabled": "true"
        },
        {
          "id": "fw_udp2",
          "is-enabled": "true"
        },
        {
          "id": "fw_udp3",
          "is-enabled": "true"
        },
        {
          "id": "fw_udp4",
          "is-enabled": "true"
        },
        {
          "id": "fw_udp5",
          "is-enabled": "true"
        }
      ]
    }
  }
}

```

```
}  
}
```

APPC response

ACCEPT response

```
{  
  "Status": {  
    "Value": "ACCEPTED",  
    "Code": "100"  
  },  
  "Payload": {  
    "pg-streams": "{\\\\"pg-streams\\": {\\\\"pg-stream\\": [{\\\\"id\\": \\\"fw_udp1\\\", \\\"is-enabled\\\": \\\"true\\\"}, {\\\\"id\\": \\\"fw_udp2\\\", \\\"is-enabled\\\": \\\"true\\\"}, {\\\\"id\\": \\\"fw_udp3\\\", \\\"is-enabled\\\": \\\"true\\\"}, {\\\\"id\\": \\\"fw_udp4\\\", \\\"is-enabled\\\": \\\"true\\\"}, {\\\\"id\\": \\\"fw_udp5\\\", \\\"is-enabled\\\": \\\"true\\\"} ]}}",  
    "generic-vnf.vnf-id": "fw0001vm001fw001"  
  },  
  "CommonHeader": {  
    "TimeStamp": "1493841850199",  
    "APIVer": "1.01",  
    "RequestID": "664be3d2-6c12-4f4b-a3e7-c349acced200",  
    "SubrequestID": null,  
    "OriginatorID": null  
  }  
}
```

SUCCESS response

```
{  
  "Status": {  
    "Value": "SUCCESS",  
    "Code": "400"  
  },  
  "Payload": {  
    "pg-streams": "{\\\\"pg-streams\\": {\\\\"pg-stream\\": [{\\\\"id\\": \\\"fw_udp1\\\", \\\"is-enabled\\\": \\\"true\\\"}, {\\\\"id\\": \\\"fw_udp2\\\", \\\"is-enabled\\\": \\\"true\\\"}, {\\\\"id\\": \\\"fw_udp3\\\", \\\"is-enabled\\\": \\\"true\\\"}, {\\\\"id\\": \\\"fw_udp4\\\", \\\"is-enabled\\\": \\\"true\\\"}, {\\\\"id\\": \\\"fw_udp5\\\", \\\"is-enabled\\\": \\\"true\\\"} ]}}",  
    "generic-vnf.vnf-id": "fw0001vm001fw001"  
  },  
  "CommonHeader": {  
    "TimeStamp": "1493841850199",  
    "APIVer": "1.01",  
    "RequestID": "664be3d2-6c12-4f4b-a3e7-c349acced200",  
    "SubrequestID": null,  
    "OriginatorID": null  
  }  
}
```

vDNS Use Case

vDNS - TCA Configuration Policy Payload

```
tca_policy: "{  
  "domain": "measurementsForVfScaling",  
  "metricsPerEventName": [{  
    "eventName": "vLoadBalancer",
```

```

        "controlLoopSchemaType": "VM",
        "policyScope": "DCAE",
        "policyName": "DCAE.Config_tca-hi-lo",
        "policyVersion": "v0.0.1",
        "thresholds": [{
            "closedLoopControlName": "ControlLoop-vDNS-6f37f56d-a87d-4b85-b6a9-cc953cf779b3",
            "version": "1.0.2",
            "fieldPath": "$.event.measurementsForVfScalingFields.vNicUsageArray[*].
receivedTotalPacketsDelta",
            "thresholdValue": 300,
            "direction": "GREATER_OR_EQUAL",
            "severity": "CRITICAL",
            "closedLoopEventStatus": "ONSET"
        }]
    }
}

```

vDNS - Operational Policy

```

controlLoop:
  version: 2.0.0
  controlLoopName: ControlLoop-vDNS-6f37f56d-a87d-4b85-b6a9-cc953cf779b3
  trigger_policy: unique-policy-id-1-scale-up
  timeout: 1200
  abatement: false
policies:
- id: unique-policy-id-1-scale-up
  name: Create a new VF Module
  description:
  actor: S0
  recipe: VF Module Create
  target:
    type: VNF
  retry: 0
  timeout: 1200
  success: final_success
  failure: final_failure
  failure_timeout: final_failure_timeout
  failure_retries: final_failure_retries
  failure_exception: final_failure_exception
  failure_guard: final_failure_guard

```

DCAE Control Loop Event (TCA) - vDNS

```

{
    "closedLoopEventClient": "DCAE_INSTANCE_ID.dcae-tca",
    "policyVersion": "1.0.0.5",
    "policyName": "vLoadBalancer",
    "policyScope": "resource=SampleResource,service=SampleService,type=SampleType,
closedLoopControlName=SampleClosedLoop",
    "target_type": "VM",
    "AAI": {
        "vserver.vserver-name": "dfw1lb01lb01"
    },
    "closedLoopAlarmStart": 1484677482204798,
    "closedLoopEventStatus": "ONSET",
    "closedLoopControlName": "ControlLoop-vDNS-6f37f56d-a87d-4b85-b6a9-cc953cf779b3",
    "version": "1.0.2",
    "target": "vserver.vserver-name",
    "requestID": "97964e10-686e-4790-8c45-bdfa61df770f",
    "from": "DCAE"
}

```

AAI named-query request

```

{
  "query-parameters": {
    "named-query": {
      "named-query-uuid": "4ff56a54-9e3f-46b7-a337-07a1d3c6b469"
    }
  },
  "instance-filters": {
    "instance-filter": [{
      "vserver": {
        "vserver-name": "dfw1lb01lb01"
      }
    }]
  }
}

```

AAI named-query response

```

{
  "inventory-response-item": [
    {
      "vserver": {
        "vserver-id": "6ed3642c-f7a1-4a7c-9290-3d51fe1531eb",
        "vserver-name": "zdfw1lb01lb02",
        "vserver-name2": "zdfw1lb01lb02",
        "prov-status": "ACTIVE",
        "vserver-selflink": "http://10.12.25.2:8774/v2.1/41d6d38489bd40b09ea8a6b6b852dcdb/servers/6ed3642c-f7a1-4a7c-9290-3d51fe1531eb",
        "in-maint": false,
        "is-closed-loop-disabled": false,
        "resource-version": "1510606403522"
      },
      "extra-properties": {},
      "inventory-response-items": {
        "inventory-response-item": [
          {
            "model-name": "vLoadBalancer",
            "generic-vnf": {
              "vnf-id": "db373a8d-f7be-4d02-8ac8-6ca4c305d144",
              "vnf-name": "Vfmodule_vLB1113",
              "vnf-type": "vLoadBalancer-1106/vLoadBalancer 0",
              "service-id": "66f157fc-4148-4880-95f5-e120677e98d1",
              "prov-status": "PREPROV",
              "orchestration-status": "Created",
              "in-maint": false,
              "is-closed-loop-disabled": false,
              "resource-version": "1510604011851",
              "model-invariant-id": "cee050ed-92a5-494f-ab04-234307a846dc",
              "model-version-id": "fd65becc-6b2c-4fe8-ace9-cc29db9a3da2",
              "model-customization-id": "1983c783-444f-4e79-af3a-85e5d49628f3",
              "nf-type": "",
              "nf-function": "",
              "nf-role": "",
              "nf-naming-code": ""
            },
            "extra-properties": {
              "extra-property": [
                {
                  "property-name": "model-ver.model-version-id",
                  "property-value": "fd65becc-6b2c-4fe8-ace9-cc29db9a3da2"
                },
                {
                  "property-name": "model-ver.model-name",
                  "property-value": "vLoadBalancer"
                },
                {
                  "property-name": "model.model-type",
                  "property-value": "resource"
                }
              ]
            }
          }
        ]
      }
    }
  ]
}

```



```

        "property-name": "model.model-invariant-id",
        "property-value": "cee050ed-92a5-494f-ab04-234307a846dc"
    },
    {
        "property-name": "model-ver.model-version",
        "property-value": "1.0"
    }
]
},
"inventory-response-items": {
    "inventory-response-item": [
        {
            "model-name": "vLoadBalancer-1106",
            "service-instance": {
                "service-instance-id": "3b12f31f-8f2d-4f5c-b875-61ff1194b941",
                "service-instance-name": "vLoadBalancer-1113",
                "model-invariant-id": "1321d60d-f7ff-4300-96c2-6bf0b3268b7a",
                "model-version-id": "732d4692-4b97-46f9-a996-0b3339e88c50",
                "resource-version": "1510603936425"
            },
            "extra-properties": {
                "extra-property": [
                    {
                        "property-name": "model-ver.model-version-id",
                        "property-value": "732d4692-4b97-46f9-a996-0b3339e88c50"
                    },
                    {
                        "property-name": "model-ver.model-name",
                        "property-value": "vLoadBalancer-1106"
                    },
                    {
                        "property-name": "model.model-type",
                        "property-value": "service"
                    },
                    {
                        "property-name": "model.model-invariant-id",
                        "property-value": "1321d60d-f7ff-4300-96c2-6bf0b3268b7a"
                    },
                    {
                        "property-name": "model-ver.model-version",
                        "property-value": "1.0"
                    }
                ]
            }
        }
    ]
},
{
    "model-name": "Vloadbalancer..base_vlb..module-0",
    "vf-module": {
        "vf-module-id": "e6b3e3eb-34e1-4c00-b8c1-2a4fbe479b12",
        "vf-module-name": "Vfmodule_vLB1113-1",
        "heat-stack-id": "Vfmodule_vLB1113-1/3dd6d900-772f-4fcc-a0cb-
e250ab2bb4db",

        "orchestration-status": "active",
        "is-base-vf-module": true,
        "resource-version": "1510604612557",
        "model-invariant-id": "6d760188-9a24-451a-b05b-e08b86cb94f2",
        "model-version-id": "93facad9-55f2-4fe0-9574-814c2bc2d071",
        "model-customization-id": "93fd5bd4-8051-4074-8530-c0c504604df5",
        "module-index": 0
    },
    "extra-properties": {
        "extra-property": [
            {
                "property-name": "model-ver.model-version-id",
                "property-value": "93facad9-55f2-4fe0-9574-814c2bc2d071"
            },
            {
                "property-name": "model-ver.model-name",
                "property-value": "Vloadbalancer..base_vlb..module-0"
            }
        ]
    }
}

```

```

    "property-name": "model.model-type",
    "property-value": "resource"
  },
  {
    "property-name": "model.model-invariant-id",
    "property-value": "6d760188-9a24-451a-b05b-e08b86cb94f2"
  },
  {
    "property-name": "model-ver.model-version",
    "property-value": "1"
  }
]
},
{
  "model-name": "Vloadbalancer..dnsscaling..module-1",
  "vf-module": {
    "vf-module-id": "dummy_db373a8d-f7be-4d02-8ac8-6ca4c305d144",
    "vf-module-name": "dummy_db373a8d-f7be-4d02-8ac8-6ca4c305d144",
    "is-base-vf-module": false,
    "resource-version": "1510610079687",
    "model-invariant-id": "356a1cff-71f2-4086-9980-a2927ce11c1c",
    "model-version-id": "6b93d804-cfc8-4be3-92cc-9336d135859a"
  },
  "extra-properties": {
    "extra-property": [
      {
        "property-name": "model-ver.model-version-id",
        "property-value": "6b93d804-cfc8-4be3-92cc-9336d135859a"
      },
      {
        "property-name": "model-ver.model-name",
        "property-value": "Vloadbalancer..dnsscaling..module-1"
      },
      {
        "property-name": "model.model-type",
        "property-value": "resource"
      },
      {
        "property-name": "model.model-invariant-id",
        "property-value": "356a1cff-71f2-4086-9980-a2927ce11c1c"
      },
      {
        "property-name": "model-ver.model-version",
        "property-value": "1"
      }
    ]
  }
}
],
{
  "tenant": {
    "tenant-id": "41d6d38489bd40b09ea8a6b6b852dcabd",
    "tenant-name": "Integration-SB-00",
    "resource-version": "1509587770200"
  },
  "extra-properties": {},
  "inventory-response-items": {
    "inventory-response-item": [
      {
        "cloud-region": {
          "cloud-owner": "CloudOwner",
          "cloud-region-id": "RegionOne",
          "cloud-type": "SharedNode",
          "owner-defined-type": "OwnerType",
          "cloud-region-version": "v1",
          "cloud-zone": "CloudZone",
          "sriov-automation": false,
          "resource-version": "1509587770092"

```

```

    },
    "extra-properties": {}
  }
]
}

```

SO request

NOTE: Robot must add preload for dummy module for this to work.

```
{
  "requestDetails": {
    "modelInfo": {
      "modelType": "vfModule",
      "modelInvariantId": "356a1cff-71f2-4086-9980-a2927ce11c1c",
      "modelVersionId": "6b93d804-cfc8-4be3-92cc-9336d135859a",
      "modelName": "Vloadbalancer..dnsscaling..module-1",
      "modelVersion": "1"
    },
    "cloudConfiguration": {
      "lcpCloudRegionId": "RegionOne",
      "tenantId": "41d6d38489bd40b09ea8a6b6b852dcbd"
    },
    "requestInfo": {
      "instanceName": "vDNS_vLB1113-1",
      "source": "POLICY",
      "suppressRollback": false,
      "requestorId": "policy"
    },
    "relatedInstanceList": [
      {
        "relatedInstance": {
          "instanceId": "3b12f31f-8f2d-4f5c-b875-61ff1194b941",
          "modelInfo": {
            "modelType": "service",
            "modelInvariantId": "1321d60d-f7ff-4300-96c2-6bf0b3268b7a",
            "modelVersionId": "732d4692-4b97-46f9-a996-0b3339e88c50",

```

```

        "modelName": "vLoadBalancer-1106",

        "modelVersion": "1.0"

    }

},

{

    "relatedInstance": {

        "instanceId": "db373a8d-f7be-4d02-8ac8-6ca4c305d144",

        "modelInfo": {

            "modelType": "vnf",

            "modelInvariantId": "cee050ed-92a5-494f-ab04-234307a846dc",

            "modelVersionId": "fd65becc-6b2c-4fe8-ace9-cc29db9a3da2",

            "modelName": "vLoadBalancer",

            "modelVersion": "1.0",

            "modelCustomizationName": "vLoadBalancer 0"

        }

    }

},

    "requestParameters": {}

}

```

SO Response

```

SUCCESS:
{
    "requestReferences": {
        "instanceId": "ff305d54-75b4-ff1b-bdb2-eb6b9e5460ff",
        "requestId": "e4f95e0c-a013-4530-8e59-c5c5f9e539b6"
    },
    "httpResponseCode": 200
}

```

VOLTE Use Case

VOLTE - Operational Policy

```

controlLoop:
    version: 2.0.0

```

```
controlLoopName: ControlLoop-VOLTE-2179b738-fd36-4843-a71a-a8c24c70c55b
trigger_policy: unique-policy-id-1-restart
timeout: 3600
abatement: false
```

policies:

```
- id: unique-policy-id-1-restart
  name: Restart the VM
  description:
  actor: VFC
  recipe: Restart
  target:
    type: VM
  retry: 3
  timeout: 1200
  success: final_success
  failure: final_failure
  failure_timeout: final_failure_timeout
  failure_retries: final_failure_retries
  failure_exception: final_failure_exception
  failure_guard: final_failure_guard
```

DCAE Control Loop Event (HOLMES) - VOLTE

```
{
  "closedLoopEventClient": "DCAE.HolmesInstance",
  "policyVersion": "1.0.0.5",
  "policyName": "vVOLTE",
  "policyScope": "resource=volte,service=VolteService,type=SampleType,closedLoopControlName=CL-VOLTE-SIG-
d925ed73-8231-4d02-9545-db4e101f88f8",
  "target_type": "VM",
  "AAI": {
    "vserver.vserver-name": "dfw1lb01lb01",
    "service-instance.service-instance-id" : "TBD",
    "generic-vnf.vnf-id" : "TBD",
    "generic-vnf.vnf-name" : "TBD"
  },
  "closedLoopAlarmStart": 1484677482204798,
  "closedLoopEventStatus": "ONSET",
  "closedLoopControlName": "ControlLoop-VOLTE-2179b738-fd36-4843-a71a-a8c24c70c55b",
  "version": "1.0.2",
  "target": "vserver.vserver-name",
  "requestID": "97964e10-686e-4790-8c45-bdfa61df770f",
  "from": "DCAE"
}
```

A&AI Call

This call is a simple GET in order to retrieve "is-closed-loop-diabile" flag.

A&AI Response

Below is a sample GET response format. Field values are just examples. Will update to real values later.

```
{
  "vnf-id": "5e49ca06-2972-4532-9ed4-6d071588d792",
  "vnf-name": "USUCP0PC0IL0110UJRT01",
  "vnf-type": "RT",
  "service-id": "d7bb0a21-66f2-4e6d-87d9-9ef3ced63ae4",
  "equipment-role": "UCPE",
  "orchestration-status": "created",
  "management-option": "ATT",
  "ipv4-oam-address": "32.40.68.35",
  "ipv4-loopback0-address": "32.40.64.57",
```

```

"nm-lan-v6-address": "2001:1890:e00e:fffe::1345",
"management-v6-address": "2001:1890:e00e:fffd::36",
"in-maint": false,
"is-closed-loop-disabled": false,
"resource-version": "1493389458092",
"relationship-list": {"relationship": [
  {
    "related-to": "service-instance",
    "related-link": "https://aai-int1.test.att.com:8443/aai/v9/business/customers/customer
/1610_Func_Global_20160817084727/service-subscriptions/service-subscription/uCPE-VMS/service-instances/service-
instance/USUCP0PC0IL0110UJZZ01",
    "relationship-data": [
      {
        "relationship-key": "customer.global-customer-id",
        "relationship-value": "1610_Func_Global_20160817084727"
      },
      {
        "relationship-key": "service-subscription.service-type",
        "relationship-value": "uCPE-VMS"
      },
      {
        "relationship-key": "service-instance.service-instance-id",
        "relationship-value": "USUCP0PC0IL0110UJZZ01"
      }
    ],
    "related-to-property": [{"property-key": "service-instance.service-instance-name"}]
  },
  {
    "related-to": "vserver",
    "related-link": "https://aai-int1.test.att.com:8443/aai/v9/cloud-infrastructure/cloud-regions
/cloud-region/att-aic/AAIAIC25/tenants/tenant/USUCP0PC0IL0110UJZZ01%3A%3AuCPE-VMS/vservers/vserver/3b2558f4-
39d8-40e7-bfc7-30660fb52c45",
    "relationship-data": [
      {
        "relationship-key": "cloud-region.cloud-owner",
        "relationship-value": "att-aic"
      },
      {
        "relationship-key": "cloud-region.cloud-region-id",
        "relationship-value": "AAIAIC25"
      },
      {
        "relationship-key": "tenant.tenant-id",
        "relationship-value": "USUCP0PC0IL0110UJZZ01::uCPE-VMS"
      },
      {
        "relationship-key": "vserver.vserver-id",
        "relationship-value": "3b2558f4-39d8-40e7-bfc7-30660fb52c45"
      }
    ],
    "related-to-property": [
      {
        "property-key": "vserver.vserver-name",
        "property-value": "USUCP0PC0IL0110UJZZ01-vsrx"
      }
    ]
  }
]}
}

```

VFC request

Request URI:
 POST http(s)://[hostname][:port]/api/nsldcm/v1/ns/{nsInstanceId }/heal

Request JSON:

```

{
  " healVnfData": {
    "vnfInstanceId": "1",
    "cause": "vm is down",

```

```

        "additionalParams": {
            "action": "restartvm",
            "actionvminfo": {
                "vmid": "33",
                "vmname": "xgw - smp11"
            }
        }
    }
}

```

VFC response

Response JSON with response code 202:

```

{
    "jobId": "1"
}

```

Get Operation Status to read the status

GET http(s)://[hostname][:port]/api/nsldm/v1/jobs/{jobId}&responseId={responseId}

Response JSON with response code 200:

```

{
    "jobId": "1234566",
    "responseDescriptor": {
        "progress": "40",
        "status": "proccessing",
        "statusDescription": "OMC VMs are decommissioned in VIM",
        "errorCode": null,
        "responseId": "42",
        "responseHistoryList": [{
            "progress": "40",
            "status": "proccessing",
            "statusDescription": "OMC VMs are decommissioned in VIM",
            "errorCode": null,
            "responseId": "1"
        }, {
            "progress": "41",
            "status": "proccessing",
            "statusDescription": "OMC VMs are decommissioned in VIM",
            "errorCode": null,
            "responseId": "2"
        }
    ]
}

```

vCPE Use Case

vCPE - TCA Configuration Policy Payload

```

tca_policy: "{
    "domain": "measurementsForVfScaling",
    "metricsPerEventName": [{
        "eventName": "Measurement_vGMUX",
        "controlLoopSchemaType": "VNF",
        "policyScope": "DCAE",
        "policyName": "DCAE.Config_tca-hi-lo",
        "policyVersion": "v0.0.1",
        "thresholds": [{
            "closedLoopControlName": "ControlLoop-vCPE-48f0c2c3-a172-4192-9ae3-052274181b6e",
            "version": "1.0.2",
            "fieldPath": "$.event.measurementsForVfScalingFields.additionalMeasurements[*].

```

```

arrayOfFields[0].value",
    "thresholdValue": 0,
    "direction": "EQUAL",
    "severity": "MAJOR",
    "closedLoopEventStatus": "ABATED"
  }, {
    "closedLoopControlName": "ControlLoop-vcPE-48f0c2c3-a172-4192-9ae3-052274181b6e",
    "version": "1.0.2",
    "fieldPath": "$.event.measurementsForVfScalingFields.additionalMeasurements[*].
arrayOfFields[0].value",
    "thresholdValue": 0,
    "direction": "GREATER",
    "severity": "CRITICAL",
    "closedLoopEventStatus": "ONSET"
  }]
}]
}

```

vcPE Operational Policy

```

controlLoop:
  version: 2.0.0
  controlLoopName: ControlLoop-vcPE-48f0c2c3-a172-4192-9ae3-052274181b6e
  trigger_policy: unique-policy-id-1-restart
  timeout: 3600
  abatement: true

policies:
- id: unique-policy-id-1-restart
  name: Restart the VM
  description:
  actor: APPC
  recipe: Restart
  target:
    type: VM
  retry: 3
  timeout: 1200
  success: final_success
  failure: final_failure
  failure_timeout: final_failure_timeout
  failure_retries: final_failure_retries
  failure_exception: final_failure_exception
  failure_guard: final_failure_guard

```

DCAE Control Loop Event (TCA) - vcPE

```

{
  "closedLoopControlName": "ControlLoop-vcPE-48f0c2c3-a172-4192-9ae3-052274181b6e",
  "version": "1.0.2",
  "requestID": "0abc0000-b032-4e4b-bd30-88260f444888",
  "closedLoopAlarmStart": 1478189220547,
  "closedLoopEventClient": "DCAE_INSTANCE_ID.dcae-tca",
  "target_type": "VNF",
  "target": "generic-vnf.vnf-name",
  "AAI": {
    "generic-vnf.vnf-name" : "vcPE_Infrastructure_vGMUX_demo_app"
  },
  "from": "DCAE",
  "policyScope": "DCAE",
  "policyName": "DCAE.Config_tca-hi-lo",
  "policyVersion": "v0.0.1",
  "closedLoopEventStatus": "ONSET"
}

```


APPC request

```
{
  "body": {
    "input": {
      "common-header": {
        "timestamp": "2017-08-25T21:06:23.037Z",
        "api-ver": "2.00",
        "originator-id": "a20e2073-30b1-4357-893b-f5ed57b66ef0",
        "request-id": "a20e2073-30b1-4357-893b-f5ed57b66ef0",
        "sub-request-id": "1",
        "flags": {}
      },
      "action": "Restart",
      "action-identifiers": {
        "vnf-id": "vCPE_Infrastructure_vGMUX_demo_app"
      }
    },
    "version": "2.0",
    "rpc-name": "restart",
    "correlation-id": "a20e2073-30b1-4357-893b-f5ed57b66ef0-1",
    "type": "request"
  }
}
```

APPC response

```
{
  "body": {
    "output": {
      "common-header": {
        "timestamp": "2017-08-25T21:06:23.037Z",
        "api-ver": "2.00",
        "originator-id": "a20e2073-30b1-4357-893b-f5ed57b66ef0",
        "request-id": "a20e2073-30b1-4357-893b-f5ed57b66ef0",
        "sub-request-id": "1",
        "flags": {}
      },
      "status": {
        "code": 400,
        "message": "Restart Successful"
      }
    },
    "version": "2.00",
    "rpc-name": "restart",
    "correlation-id": "a20e2073-30b1-4357-893b-f5ed57b66ef0-1",
    "type": "response"
  }
}
```

DCAE ABATED Control Loop Event

```
{
  "closedLoopControlName": "ControlLoop-vCPE-48f0c2c3-a172-4192-9ae3-052274181b6e",
  "version": "1.0.2",
  "requestID": "0abc0000-b032-4e4b-bd30-88260f444888",
  "closedLoopAlarmStart": 1478189220547,
  "closedLoopAlarmEnd": 1478589220547,
  "closedLoopEventClient": "DCAE_INSTANCE_ID.dcae-tca",
  "target_type": "VNF",
  "target": "generic-vnf.vnf-name",
  "AAI": {
    "generic-vnf.vnf-name" : "vCPE_Infrastructure_vGMUX_demo_app"
  },
  "from": "DCAE",
}
```

```
}  
  "policyScope": "DCAE",  
  "policyName": "DCAE.Config_tca-hi-lo",  
  "policyVersion": "v0.0.1",  
  "closedLoopEventStatus": "ABATED"
```