E2E Automation vLB w/ CDS Use Case - ONAP-03-Run Time- Video Demo (El Alto)

Introduction

The purpose of this page is to describe the vLB use case instantiation using the Controller Design Studio in ONAP Dublin Release.

What's new in El Alto:

We can see from the demo that now we don't need to perform SDNC Preloading to instantiate the service. The VNF naming and IP addressing will be auto assigned.

Also, we can see that a configuration is generated and save in CDS DB via the new ConfigAssignBB.

And later during the instantiation process, the configuration is deployed on the VF module by CDS via the new ConfigDeployBB.

In El Alto, we have a new Robot script that can automate the E2E instantiation of the service.

Automation with Robot

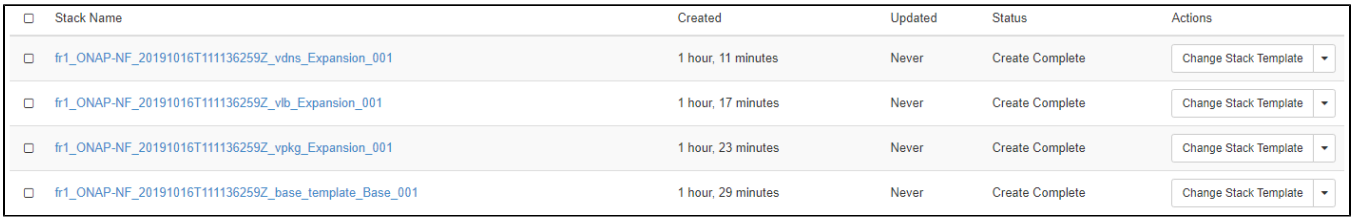
The user can run the whole E2E instantitation using automation by Robot Script.

In order to use this feature, we can follow the steps below:

E2E Instantiation using Robot

```
root@olc-rancher:~# cd oom/kubernetes/robot/
root@olc-rancher:~/oom/kubernetes/robot# ./demo-k8s.sh onap instantiateVLB_CDS
Number of parameters:
2
KEY:
instantiateVLB_CDS
++ kubectl --namespace onap get pods
++ sed 's/ .*//'
++ grep robot
+ POD=onap-robot-robot-6998b9988c-cthb7
++ dirname ./demo-k8s.sh
+ DIR=.
+ SCRIPTDIR=scripts/demoscript
+ ETEHOME=/var/opt/ONAP
+ '[' ']'
++ kubectl --namespace onap exec onap-robot-robot-6998b9988c-cthb7 -- bash -c 'ls -1q /share/logs/ | wc -l'
+ export GLOBAL_BUILD_NUMBER=17
+ GLOBAL_BUILD_NUMBER=17
++ printf %04d 17
+ OUTPUT_FOLDER=0017_demo_instantiateVLB_CDS
+ DISPLAY_NUM=107
+ VARIABLEFILES='-V /share/config/robot_properties.py'
+ kubectl --namespace onap exec onap-robot-robot-6998b9988c-cthb7 -- /var/opt/ONAP/runTags.sh -V /share/config
/robot_properties.py -v GLOBAL_BUILD_NUMBER:31780 -d /share/logs/0017_demo_instantiateVLB_CDS -i
instantiateVLB_CDS --display 107
Starting Xvfb on display :107 with res 1280x1024x24
Executing robot tests at log level TRACE
==============================================================================
Testsuites
==============================================================================
Testsuites.Demo :: Executes the VNF Orchestration Test cases including setu...
==============================================================================
Instantiate VLB_CDS                                                   | PASS |
------------------------------------------------------------------------------
Testsuites.Demo :: Executes the VNF Orchestration Test cases inclu... | PASS |
1 critical test, 1 passed, 0 failed
1 test total, 1 passed, 0 failed
==============================================================================
Testsuites                                                            | PASS |
1 critical test, 1 passed, 0 failed
1 test total, 1 passed, 0 failed
==============================================================================
Output:  /share/logs/0017_demo_instantiateVLB_CDS/output.xml
Log:     /share/logs/0017_demo_instantiateVLB_CDS/log.html
Report:  /share/logs/0017_demo_instantiateVLB_CDS/report.html
root@olc-rancher:~/oom/kubernetes/robot#
```

After running Robot, we should find the stacks created in Openstack



Stack Name	Created	Updated	Status	Actions
fr1_ONAP-NF_20191016T111136259Z_vdns_Expansion_001	1 hour, 11 minutes	Never	Create Complete	Change Stack Template
fr1_ONAP-NF_20191016T111136259Z_vlb_Expansion_001	1 hour, 17 minutes	Never	Create Complete	Change Stack Template
fr1_ONAP-NF_20191016T111136259Z_vpkg_Expansion_001	1 hour, 23 minutes	Never	Create Complete	Change Stack Template
fr1_ONAP-NF_20191016T111136259Z_base_template_Base_001	1 hour, 29 minutes	Never	Create Complete	Change Stack Template

Also, we can find the vLB configuration was updated as per the ConfigDeploy step:

vLB configuration after Robot PASS

```
root@fr1-onap-nf-20191016t111136259z-vlb-001:/opt# curl http://localhost:8183/restconf/config/vlb-business-vnf-onap-plugin:vlb-business-vnf-onap-plugin/vdns-instances -H "Authorization: Basic YWRtaW46YWRtaW4="

{"vdns-instances":{"vdns-instance":[{"ip-addr":"192.168.10.47","oam-ip-addr":"10.0.0.176","enabled":false}]}}

root@fr1-onap-nf-20191016t111136259z-vlb-001:/opt#
```

POSTMAN Manual Execution

Video demo of the vLB instantiation

blocked URL

Summary of the video demo

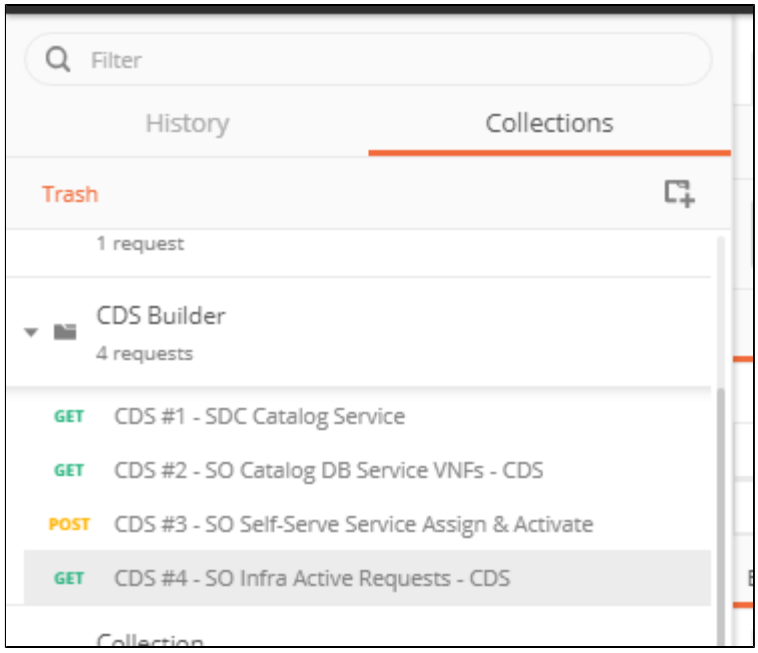
Before running the instantitation, we need to distribute the vLB service model in ONAP.

Then, we can use a Postman collection as shown in the video that has 3 Rest Calls and some code to automate the instantiation of the vLB use case:

• 1st Rest call will give us the service model details like UUID, Invariant UUID, and Service Model Name.	
• 2nd Rest call will give us the VNF and VF Module details. **STEP CDS2: Expose SO Catalog API** SO Catalog DB is **NOT** exposed by default, you will need something like the command below to be able to send the CDS #2 rest call to SO Catalog and get back the service VNF model details. `kubectl -n onap expose pod onap-so-so-catalog-db-adapter-56d9cc554b-9fszd --type=LoadBalancer`	

- 3rd Rest call will pull the details from the 1st and 2nd calls, and build the SO Service Assignment and Activation request.

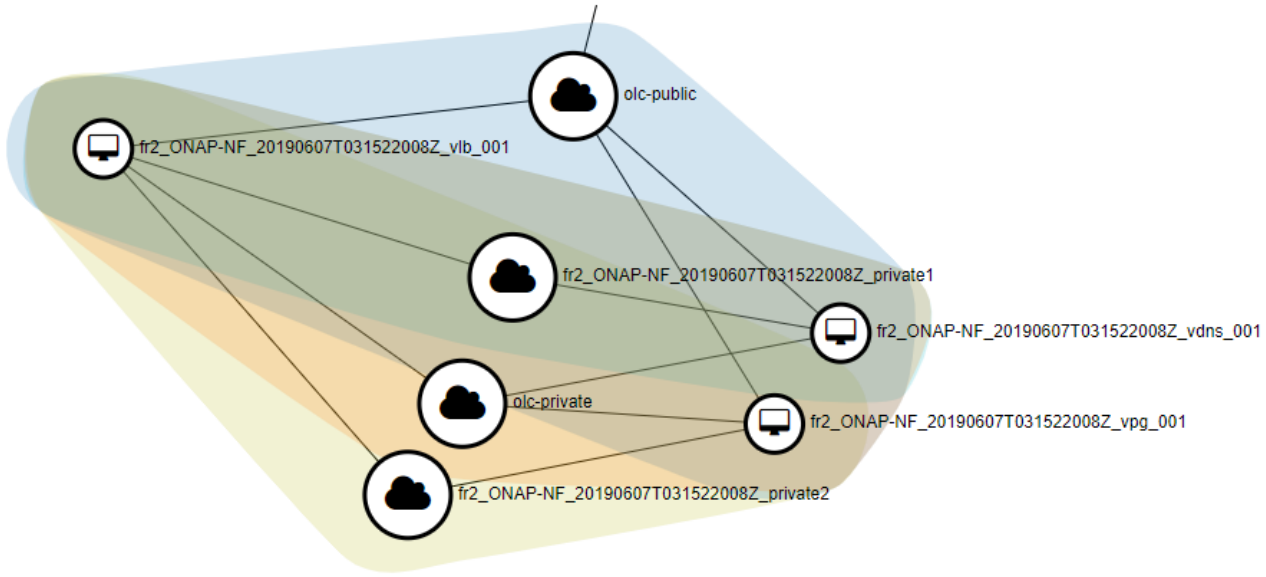
- I added a 4th Rest call in the collection that will pull the request id from the 3rd call coming from SO, and will show us the status of the requets, so we can track the progress, and see if it completes successfully.



Stack creation in Openstack

We can see the final stack created in Openstack, and the final network topology below.

Stack Name	Created	Updated	Status	Actions
fr2_ONAP-NF_20190607T031522008Z_vdns_Expansion_001	10 hours, 21 minutes	Never	Create Complete	Change Stack Template
fr2_ONAP-NF_20190607T031522008Z_vlb_Expansion_001	10 hours, 21 minutes	Never	Create Complete	Change Stack Template
fr2_ONAP-NF_20190607T031522008Z_vpkg_Expansion_001	10 hours, 22 minutes	Never	Create Complete	Change Stack Template
fr2_ONAP-NF_20190607T031522008Z_base_template_Base_001	10 hours, 22 minutes	Never	Create Complete	Change Stack Template



Environment preparation for the Postman Collection:

In order to run the Postman collection correctly, we need to create 3 environment variables in Postman:

- cds-service-model: This is the name of the service model distributed by the robot script, you can find it by running CDS #1 call once and looking for the VNF that has today's date and time.
- cds-instance-name: This is the name of the service instance we will instantiate.
- k8s: This is our ONAP Load Balancer IP Address.

Also, we need to update our IaaS Openstack parameters in the **body** of the SO Service Instantiation Rest call CDS#3:

- lcpCloudRegionId : the cloud-region name
- tenantId : the tenant id
- public_net_id : the public network id in Openstack
- onap_private_net_id : the private network id in Openstack, we need this as this is not created by the auto assignment service
- onap_private_subnet_id : and the private subnet id
- pub_key : the public key to be put on the VMs
- image_name : Ubuntu 16 image name
- flavor_name : flavor
- sec_group : security group that will be applied to the VMs

SO Workflow BBs

After the Service Instantiation Rest Call to SO, we can see that SO decomposes the service into 1 VNF + 4 VF Modules, and SO created 18 Building Blocks that will be executed to instantiate the use case.

In the video above we can see the BBs as they progressing, until the full workflow is completed, and in the video shows the stack as it comes up in Openstack.

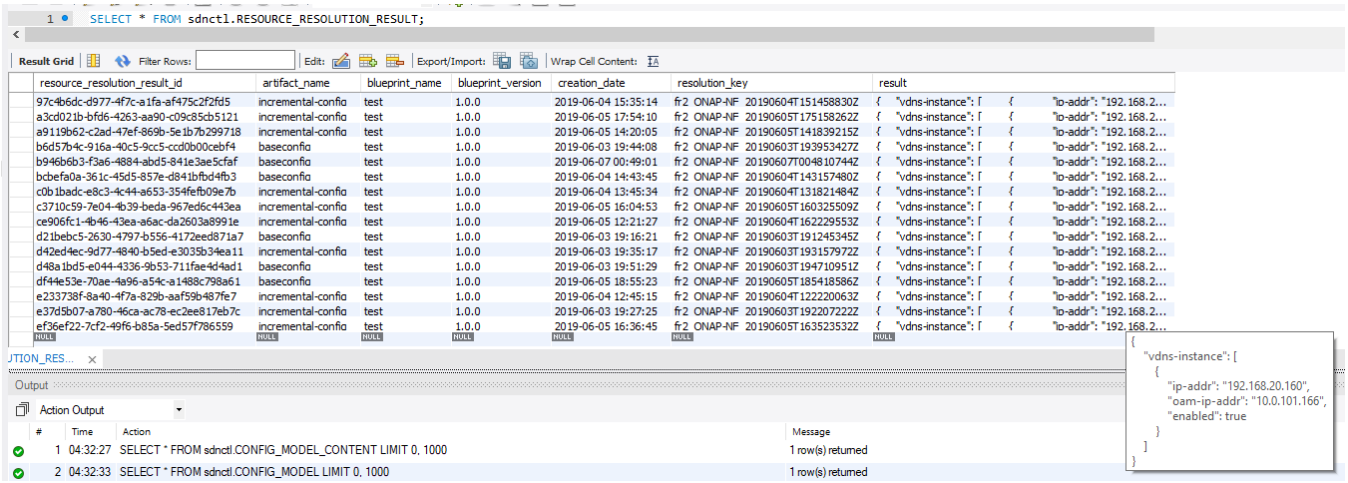
SO BPMN Logs

```
2019-06-07T03:15:10.440Z|f804a2b6-0e0d-49c4-bd67-7ba3ec0694b3| o.o.s.b.i.workflow.tasks.WorkflowAction - Found
Service - 1    Vnf - 1    VfModule - 4    VolumeGroup - 0    Network - 0    VirtualLink - 0
NetworkCollection - 0    Configuration - 0    InstanceGroup - 0
...
2019-06-07T03:15:10.519Z|f804a2b6-0e0d-49c4-bd67-7ba3ec0694b3| o.o.s.b.i.workflow.tasks.WorkflowAction - List
of BuildingBlocks to execute:
2019-06-07T03:15:10.520Z|f804a2b6-0e0d-49c4-bd67-7ba3ec0694b3| o.o.s.b.i.workflow.tasks.WorkflowAction -
AssignServiceInstanceBB
2019-06-07T03:15:10.520Z|f804a2b6-0e0d-49c4-bd67-7ba3ec0694b3| o.o.s.b.i.workflow.tasks.WorkflowAction -
AssignVnfBB
2019-06-07T03:15:10.521Z|f804a2b6-0e0d-49c4-bd67-7ba3ec0694b3| o.o.s.b.i.workflow.tasks.WorkflowAction -
AssignVfModuleBB
2019-06-07T03:15:10.521Z|f804a2b6-0e0d-49c4-bd67-7ba3ec0694b3| o.o.s.b.i.workflow.tasks.WorkflowAction -
AssignVfModuleBB
2019-06-07T03:15:10.522Z|f804a2b6-0e0d-49c4-bd67-7ba3ec0694b3| o.o.s.b.i.workflow.tasks.WorkflowAction -
AssignVfModuleBB
2019-06-07T03:15:10.522Z|f804a2b6-0e0d-49c4-bd67-7ba3ec0694b3| o.o.s.b.i.workflow.tasks.WorkflowAction -
AssignVfModuleBB
2019-06-07T03:15:10.523Z|f804a2b6-0e0d-49c4-bd67-7ba3ec0694b3| o.o.s.b.i.workflow.tasks.WorkflowAction -
ConfigAssignVnfBB
2019-06-07T03:15:10.523Z|f804a2b6-0e0d-49c4-bd67-7ba3ec0694b3| o.o.s.b.i.workflow.tasks.WorkflowAction -
CreateVfModuleBB
2019-06-07T03:15:10.524Z|f804a2b6-0e0d-49c4-bd67-7ba3ec0694b3| o.o.s.b.i.workflow.tasks.WorkflowAction -
CreateVfModuleBB
2019-06-07T03:15:10.524Z|f804a2b6-0e0d-49c4-bd67-7ba3ec0694b3| o.o.s.b.i.workflow.tasks.WorkflowAction -
CreateVfModuleBB
2019-06-07T03:15:10.525Z|f804a2b6-0e0d-49c4-bd67-7ba3ec0694b3| o.o.s.b.i.workflow.tasks.WorkflowAction -
CreateVfModuleBB
2019-06-07T03:15:10.525Z|f804a2b6-0e0d-49c4-bd67-7ba3ec0694b3| o.o.s.b.i.workflow.tasks.WorkflowAction -
ActivateVfModuleBB
2019-06-07T03:15:10.526Z|f804a2b6-0e0d-49c4-bd67-7ba3ec0694b3| o.o.s.b.i.workflow.tasks.WorkflowAction -
ActivateVfModuleBB
2019-06-07T03:15:10.526Z|f804a2b6-0e0d-49c4-bd67-7ba3ec0694b3| o.o.s.b.i.workflow.tasks.WorkflowAction -
ActivateVfModuleBB
2019-06-07T03:15:10.527Z|f804a2b6-0e0d-49c4-bd67-7ba3ec0694b3| o.o.s.b.i.workflow.tasks.WorkflowAction -
ActivateVfModuleBB
2019-06-07T03:15:10.527Z|f804a2b6-0e0d-49c4-bd67-7ba3ec0694b3| o.o.s.b.i.workflow.tasks.WorkflowAction -
ConfigDeployVnfBB
2019-06-07T03:15:10.528Z|f804a2b6-0e0d-49c4-bd67-7ba3ec0694b3| o.o.s.b.i.workflow.tasks.WorkflowAction -
ActivateVnfBB
2019-06-07T03:15:10.528Z|f804a2b6-0e0d-49c4-bd67-7ba3ec0694b3| o.o.s.b.i.workflow.tasks.WorkflowAction -
ActivateServiceInstanceBB
```

SO ConfigAssignBB

In this BB, a configlet is generated and saved in CDS DB.

The snapshot below shows the table, we can see we have 2 configs, one called baseconfig, and another called incremental config.



Below the logs generated by the CDS Blueprint Processor showing the ConfigAssign:

ConfigAssign Logs from Blueprint Processor

```
2019-06-07 03:16:02,643|||grpc-default-executor-2||||INFO||||||| processing request id f804a2b6-0e0d-49c4-bd67-
7ba3ec0694b3
2019-06-07 03:16:02,644|||grpc-default-executor-2||||INFO||||||| cba file name(test), version(1.0.0) already
present(/opt/app/onap/blueprints/deploy/test/1.0.0)
2019-06-07 03:16:02,644|||grpc-default-executor-2||||INFO||||||| blueprint base path /opt/app/onap/blueprints
/deploy/test/1.0.0
2019-06-07 03:16:02,653|||grpc-default-executor-2||||INFO||||||| Reading blueprint path(/opt/app/onap/blueprints
/deploy/test/1.0.0) and entry definition file (Definitions/vDNS-CDS.json)
2019-06-07 03:16:02,667|||grpc-default-executor-2||||INFO||||||| assign workflow config-assign input value
({"resolution-key":"fr2_ONAP-NF_20190607T031522008Z","config-assign-properties":{"service-instance-id":"
1a0fbd43-0ab6-4d67-99f4-14a890505a8d","vnf-id":"1bed94d9-9a12-458a-b891-7c04796b5af4","vnf-name":"fr2_ONAP-
NF_20190607T031522008Z","service-model-uuid":"ad40aa27-b3fe-4fc3-8755-ebb1494f5913","vnf-customization-uuid":"
6409e9d9-a469-4546-a7b4-e508ecc1e77f","service":"{instanceParams=[], instanceName=cds-test, resources={vnfs=
[{modelInfo={modelName=cds-vnf-99, modelVersionId=a44d59b8-91b4-4692-8c29-e0088c901cc6,
modelInvariantUuid=fd41f747-122d-45b9-87fd-2a6d7d434728, modelVersion=1.0, modelCustomizationId=6409e9d9-a469-
4546-a7b4-e508ecc1e77f, modelInstanceName=cds-vnf-99 0}, cloudConfiguration={lcpCloudRegionId=fr2,
tenantId=6270eaa820934710960682c506115453}, platform={platformName=test}, lineOfBusiness=
{lineOfBusinessName=LOB-Demonstration}, productFamilyId=a9a77d5a-123e-4ca2-9eb9-0b015d2ee0fb, instanceName=cds-
vnf-99 0, instanceParams=[{onap_private_net_id=olc-private, onap_private_subnet_id=olc-private, pub_key=ssh-rsa
AAAAB3NzaC1yc2EAAAADAQABAAABAQCs84Cy8+qi
/jvucay0BwFtOq3ian0ulTXFGxkZcZCR0N48j88pbHJaEqb9e25MAsrfH+7Etb9Kd5nbBThEL
/i0AyHXnDsc80Oq0sqlLcfLo3SGSurkrNoRofHboJ5Hn+N9SlWN5FCQGbTx1w3rjqR4LasAI6XxH9xpXSFyyge6ysVXH0cYaZ8sg98nFZa1fPJR9
L8COjZvF+EYudub2RC5HVyV
/sx7bliNFo9JwQh6du1abG4G7ZDjTIcYwYp21iq52UzWU28RVcAyY6AQZJu2lHLdsr8fPvyeWZpC5EqGsxI1G609m9G/dURRKwYfez
/f2ATzpn5QjEX7LrLWBM8r Generated-by-Nova, image_name=Ubuntu 16.04, flavor_name=n2.cw.standard-2, sec_group=olc-
open, install_script_version=1.4.0-SNAPSHOT, demo_artifacts_version=1.4.0-SNAPSHOT, cloud_env=openstack,
public_net_id=olc-public, aic-cloud-region=fr2}], vfModules=[{modelInfo={modelName=CdsVnf99..base_template..
module-0, modelVersionId=dd43a4cb-2123-4213-a76a-38638507eb7f, modelInvariantUuid=a22c3514-028e-4ed9-9bd8-
9dda79d35278, modelVersion=1, modelCustomizationId=b0421854-bebb-455b-a96f-33db5640b60a},
instanceName=CdsVnf99..base_template..module-0, instanceParams=[{sec_group=olc-open, public_net_id=olc-net}]},
{modelInfo={modelName=CdsVnf99..vpkg..module-1, modelVersionId=b4283579-8e0f-4de4-8eed-8640a24f3625,
modelInvariantUuid=dbad0645-3c57-4f2e-8a47-887c125b7ae0, modelVersion=1, modelCustomizationId=1339d96b-0347-
4c53-a1f2-923482aa71ec}, instanceName=CdsVnf99..vpkg..module-1, instanceParams=[{sec_group=olc-open,
public_net_id=olc-net}]}, {modelInfo={modelName=CdsVnf99..vlb..module-2, modelVersionId=d8ed100e-9c1d-4b37-a17f-
0a300e5096c7, modelInvariantUuid=3174d161-c832-4b58-ac46-1fc30f40030c, modelVersion=1,
modelCustomizationId=3df8956d-601f-4312-a5f1-f186f7ad98d4}, instanceName=CdsVnf99..vlb..module-2,
```

instanceParams=[{sec_group=olc-open, public_net_id=olc-net}]}, {modelInfo={modelName=CdsVnf99..vdns..module-3, modelVersionId=776f80d3-3e18-40c5-adc9-36061fcb452c, modelInvariantUuid=80cbf0f3-a80a-4b9b-a9ec-63006c0be349, modelVersion=1, modelCustomizationId=3c2235ff-cbe5-4037-9470-614c069aa334}, instanceName=CdsVnf99..vdns..module-3, instanceParams=[{sec_group=olc-open, public_net_id=olc-net}]}]}]}, modelInfo={modelVersion=1.0, modelVersionId=ad40aa27-b3fe-4fc3-8755-ebb1494f5913, modelInvariantId=fa3a6aa5-c77d-4b94-b300-9b7a2eb21627, modelName=cds-svc-99, modelType=service}}","Homing_Solution":"none"}})
2019-06-07 03:16:02,668|||grpc-default-executor-2||||INFO|||||| Executing workflow(config-assign) NodeTemplate (config-assign), derived from(tosca.nodes.Component)
2019-06-07 03:16:02,668|||grpc-default-executor-2||||INFO|||||| executing node template(config-assign) component(component-resource-resolution) interface(ResourceResolutionComponent) operation(process)
2019-06-07 03:16:02,668|||grpc-default-executor-2||||INFO|||||| preparing request id(f804a2b6-0e0d-49c4-bd67-7ba3ec0694b3) for workflow(config-assign) step(config-assign)
2019-06-07 03:16:02,668|||grpc-default-executor-2||||INFO|||||| resolveNodeTemplateInterfaceOperationInputs for node template (config-assign),interface name (ResourceResolutionComponent), operationName(process)
2019-06-07 03:16:02,669|||grpc-default-executor-2||||INFO|||||| input definition for node template (config-assign), values ({resolution-key={"get_input":"resolution-key"}, store-result=true, artifact-prefix-names=["baseconfig","incremental-config"]})
2019-06-07 03:16:02,669|||grpc-default-executor-2||||INFO|||||| Resolving resource for template artifact (baseconfig-template) with resource assignment artifact(baseconfig-mapping)
2019-06-07 03:16:02,728|||grpc-default-executor-2||||INFO|||||| Assignments ([[name=service-instance-id, dictionaryName=service-instance-id, dictionarySource=input], [name=vnf-id, dictionaryName=vnf-id, dictionarySource=input], [name=vdns_int_private_ip_0, dictionaryName=vdns_int_private_ip_0, dictionarySource=primary-config-data], [name=vdns_onap_private_ip_0, dictionaryName=vdns_onap_private_ip_0, dictionarySource=primary-config-data]])
2019-06-07 03:16:02,728|||grpc-default-executor-2||||INFO|||||| Sorted Sequenced Assignments ([[name=*, dictionaryName=null, dictionarySource=null], [name=service-instance-id, dictionaryName=service-instance-id, dictionarySource=input], [name=vnf-id, dictionaryName=vnf-id, dictionarySource=input], [name=vdns_onap_private_ip_0, dictionaryName=vdns_onap_private_ip_0, dictionarySource=primary-config-data], [name=vdns_int_private_ip_0, dictionaryName=vdns_int_private_ip_0, dictionarySource=primary-config-data]])
2019-06-07 03:16:02,728|||grpc-default-executor-2||||INFO|||||| Batched Sequence : ([[[name=*, dictionaryName=null, dictionarySource=null]], [[name=service-instance-id, dictionaryName=service-instance-id, dictionarySource=input], [name=vnf-id, dictionaryName=vnf-id, dictionarySource=input]], [[name=vdns_onap_private_ip_0, dictionaryName=vdns_onap_private_ip_0, dictionarySource=primary-config-data], [name=vdns_int_private_ip_0, dictionaryName=vdns_int_private_ip_0, dictionarySource=primary-config-data]]])
2019-06-07 03:16:02,729|||grpc-default-executor-2||||INFO|||||| input source template key (service-instance-id) found from input and value is ("1a0fbd43-0ab6-4d67-99f4-14a890505a8d")
2019-06-07 03:16:02,729|||grpc-default-executor-2||||INFO|||||| Setting Resource Value ("1a0fbd43-0ab6-4d67-99f4-14a890505a8d") for Resource Name (service-instance-id) of type (string)
2019-06-07 03:16:02,729|||grpc-default-executor-2||||INFO|||||| input source template key (vnf-id) found from input and value is ("1bed94d9-9a12-458a-b891-7c04796b5af4")
2019-06-07 03:16:02,729|||grpc-default-executor-2||||INFO|||||| Setting Resource Value ("1bed94d9-9a12-458a-b891-7c04796b5af4") for Resource Name (vnf-id) of type (string)
2019-06-07 03:16:02,729|||grpc-default-executor-2||||INFO|||||| Setting Resource Value () for Resource Name (vdns_onap_private_ip_0) of type (string)
2019-06-07 03:16:02,730|||grpc-default-executor-2||||INFO|||||| inputKeyMapping: {service-instance-id=service-instance-id, vnf-id=vnf-id}
2019-06-07 03:16:02,730|||grpc-default-executor-2||||INFO|||||| resolvedInputKeyMapping: {vnf-id=1bed94d9-9a12-458a-b891-7c04796b5af4, service-instance-id=1a0fbd43-0ab6-4d67-99f4-14a890505a8d}
2019-06-07 03:16:02,731|||grpc-default-executor-2||||INFO|||||| primary-config-data dictionary information : (/restconf/config/GENERIC-RESOURCE-API:services/service/1a0fbd43-0ab6-4d67-99f4-14a890505a8d/service-data/vnfs/vnf/1bed94d9-9a12-458a-b891-7c04796b5af4/vnf-data/vnf-topology/vnf-parameters-data/param/vdns_onap_private_ip_0), ({service-instance-id=service-instance-id, vnf-id=vnf-id}), ({vdns_onap_private_ip_0=value})
2019-06-07 03:16:02,731|||grpc-default-executor-2||||INFO|||||| prefix: blueprintsprocessor.restclient.primary-config-data
2019-06-07 03:16:02,731|||grpc-default-executor-2||||INFO|||||| type: basic-auth
2019-06-07 03:16:02,736|||grpc-default-executor-2||||INFO|||||| Rest request method(GET), url(/restconf/config/GENERIC-RESOURCE-API:services/service/1a0fbd43-0ab6-4d67-99f4-14a890505a8d/service-data/vnfs/vnf/1bed94d9-9a12-458a-b891-7c04796b5af4/vnf-data/vnf-topology/vnf-parameters-data/param/vdns_onap_private_ip_0)
2019-06-07 03:16:02,744|||grpc-default-executor-2||||INFO|||||| Response status(200 - OK)
2019-06-07 03:16:02,744|||grpc-default-executor-2||||INFO|||||| response: WebClientResponse(status=200, body={"param":[{"name":"vdns_onap_private_ip_0","value":"10.0.101.187","resource-resolution-data":{"capability-name":"netbox-ip-assign","resource-key":[{"name":"external_key","value":"1bed94d9-9a12-458a-b891-7c04796b5af4-vdns_onap_private_ip_0"},{"name":"vnf-id","value":"1bed94d9-9a12-458a-b891-7c04796b5af4"},{"name":"service-instance-id","value":"1a0fbd43-0ab6-4d67-99f4-14a890505a8d"},{"name":"prefix-id","value":"3"}],"status":"SUCCESS"}}]})
2019-06-07 03:16:02,744|||grpc-default-executor-2||||INFO|||||| responseStatusCode: 200
2019-06-07 03:16:02,744|||grpc-default-executor-2||||INFO|||||| responseBody: {"param":[{"name":"vdns_onap_private_ip_0","value":"10.0.101.187","resource-resolution-data":{"capability-name":"netbox-ip-assign","resource-key":[{"name":"external_key","value":"1bed94d9-9a12-458a-b891-7c04796b5af4-vdns_onap_private_ip_0"},{"name":"vnf-id","value":"1bed94d9-9a12-458a-b891-7c04796b5af4"},{"name":"service-

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instance-id","value":"1a0fbd43-0ab6-4d67-99f4-14a890505a8d"},{"name":"prefix-id","value":"3"}],"status":"
SUCCESS"}}]}
2019-06-07 03:16:02,744|||grpc-default-executor-2||||INFO||||||| Response processing type(string)
2019-06-07 03:16:02,745|||grpc-default-executor-2||||INFO||||||| populating value for output mapping
({vdns_onap_private_ip_0=value}), from json ("10.0.101.187")
2019-06-07 03:16:02,745|||grpc-default-executor-2||||INFO||||||| For template key (vdns_onap_private_ip_0)
setting value as ("10.0.101.187")
2019-06-07 03:16:02,745|||grpc-default-executor-2||||INFO||||||| Setting Resource Value ("10.0.101.187") for
Resource Name (vdns_onap_private_ip_0) of type (string)
2019-06-07 03:16:02,745|||grpc-default-executor-2||||INFO||||||| Setting Resource Value () for Resource Name
(vdns_int_private_ip_0) of type (string)
2019-06-07 03:16:02,747|||grpc-default-executor-2||||INFO||||||| inputKeyMapping: {service-instance-id=service-
instance-id, vnf-id=vnf-id}
2019-06-07 03:16:02,747|||grpc-default-executor-2||||INFO||||||| resolvedInputKeyMapping: {vnf-id=1bed94d9-9a12-
458a-b891-7c04796b5af4, service-instance-id=1a0fbd43-0ab6-4d67-99f4-14a890505a8d}
2019-06-07 03:16:02,747|||grpc-default-executor-2||||INFO||||||| primary-config-data dictionary information : (
/restconf/config/GENERIC-RESOURCE-API:services/service/1a0fbd43-0ab6-4d67-99f4-14a890505a8d/service-data/vnfs
/vnf/1bed94d9-9a12-458a-b891-7c04796b5af4/vnf-data/vnf-topology/vnf-parameters-data/param
/vdns_int_private_ip_0), ({service-instance-id=service-instance-id, vnf-id=vnf-id}),
({vdns_int_private_ip_0=value})
2019-06-07 03:16:02,747|||grpc-default-executor-2||||INFO||||||| prefix: blueprintsprocessor.restclient.primary-
config-data
2019-06-07 03:16:02,748|||grpc-default-executor-2||||INFO||||||| type: basic-auth
2019-06-07 03:16:02,754|||grpc-default-executor-2||||INFO||||||| Rest request method(GET), url(/restconf/config
/GENERIC-RESOURCE-API:services/service/1a0fbd43-0ab6-4d67-99f4-14a890505a8d/service-data/vnfs/vnf/1bed94d9-9a12-
458a-b891-7c04796b5af4/vnf-data/vnf-topology/vnf-parameters-data/param/vdns_int_private_ip_0)
2019-06-07 03:16:02,759|||grpc-default-executor-2||||INFO||||||| Response status(200 - OK)
2019-06-07 03:16:02,759|||grpc-default-executor-2||||INFO||||||| response: WebClientResponse(status=200, body=
{"param":[{"name":"vdns_int_private_ip_0","value":"192.168.20.181","resource-resolution-data":{"capability-
name":"netbox-ip-assign","resource-key":[{"name":"external_key","value":"1bed94d9-9a12-458a-b891-7c04796b5af4-
vdns_int_private_ip_0"},{"name":"vnf-id","value":"1bed94d9-9a12-458a-b891-7c04796b5af4"},{"name":"service-
instance-id","value":"1a0fbd43-0ab6-4d67-99f4-14a890505a8d"},{"name":"prefix-id","value":"1"}],"status":"
SUCCESS"}}]})
2019-06-07 03:16:02,759|||grpc-default-executor-2||||INFO||||||| responseStatusCode: 200
2019-06-07 03:16:02,759|||grpc-default-executor-2||||INFO||||||| responseBody: {"param":[{"name":"
vdns_int_private_ip_0","value":"192.168.20.181","resource-resolution-data":{"capability-name":"netbox-ip-
assign","resource-key":[{"name":"external_key","value":"1bed94d9-9a12-458a-b891-7c04796b5af4-
vdns_int_private_ip_0"},{"name":"vnf-id","value":"1bed94d9-9a12-458a-b891-7c04796b5af4"},{"name":"service-
instance-id","value":"1a0fbd43-0ab6-4d67-99f4-14a890505a8d"},{"name":"prefix-id","value":"1"}],"status":"
SUCCESS"}}]}
2019-06-07 03:16:02,759|||grpc-default-executor-2||||INFO||||||| Response processing type(string)
2019-06-07 03:16:02,760|||grpc-default-executor-2||||INFO||||||| populating value for output mapping
({vdns_int_private_ip_0=value}), from json ("192.168.20.181")
2019-06-07 03:16:02,760|||grpc-default-executor-2||||INFO||||||| For template key (vdns_int_private_ip_0)
setting value as ("192.168.20.181")
2019-06-07 03:16:02,760|||grpc-default-executor-2||||INFO||||||| Setting Resource Value ("192.168.20.181") for
Resource Name (vdns_int_private_ip_0) of type (string)
2019-06-07 03:16:02,760|||grpc-default-executor-2||||INFO||||||| Generating Resource name (service-instance-
id), type (string), value ("1a0fbd43-0ab6-4d67-99f4-14a890505a8d")
2019-06-07 03:16:02,760|||grpc-default-executor-2||||INFO||||||| Generating Resource name (vnf-id), type
(string), value ("1bed94d9-9a12-458a-b891-7c04796b5af4")
2019-06-07 03:16:02,760|||grpc-default-executor-2||||INFO||||||| Generating Resource name
(vdns_int_private_ip_0), type (string), value ("192.168.20.181")
2019-06-07 03:16:02,760|||grpc-default-executor-2||||INFO||||||| Generating Resource name
(vdns_onap_private_ip_0), type (string), value ("10.0.101.187")
2019-06-07 03:16:02,760|||grpc-default-executor-2||||INFO||||||| Generated Resource Param Data ({
  "service-instance-id" : "1a0fbd43-0ab6-4d67-99f4-14a890505a8d",
  "vnf-id" : "1bed94d9-9a12-458a-b891-7c04796b5af4",
  "vdns_int_private_ip_0" : "192.168.20.181",
  "vdns_onap_private_ip_0" : "10.0.101.187"
})
2019-06-07 03:16:02,782|||grpc-default-executor-2||||INFO||||||| resolution saved into database successfully :
({resolution-key=fr2_ONAP-NF_20190607T031522008Z, store-result=true})
2019-06-07 03:16:02,783|||grpc-default-executor-2||||INFO||||||| Resolving resource for template artifact
(incremental-config-template) with resource assignment artifact(incremental-config-mapping)
2019-06-07 03:16:02,805|||grpc-default-executor-2||||INFO||||||| Assignments ([[name=service-instance-id,
dictionaryName=service-instance-id, dictionarySource=input], [name=vnf-id, dictionaryName=vnf-id,
dictionarySource=input], [name=vdns_int_private_ip_0, dictionaryName=vdns_int_private_ip_0,
dictionarySource=primary-config-data], [name=vdns_onap_private_ip_0, dictionaryName=vdns_onap_private_ip_0,
dictionarySource=primary-config-data]])
2019-06-07 03:16:02,805|||grpc-default-executor-2||||INFO||||||| Sorted Sequenced Assignments ([[name=*,
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dictionaryName=null, dictionarySource=null], [name=service-instance-id, dictionaryName=service-instance-id,
dictionarySource=input], [name=vnf-id, dictionaryName=vnf-id, dictionarySource=input],
[name=vdns_onap_private_ip_0, dictionaryName=vdns_onap_private_ip_0, dictionarySource=primary-config-data],
[name=vdns_int_private_ip_0, dictionaryName=vdns_int_private_ip_0, dictionarySource=primary-config-data]])
2019-06-07 03:16:02,805|||grpc-default-executor-2||||INFO||||||| Batched Sequence : ([[[name=*,
dictionaryName=null, dictionarySource=null]], [[name=service-instance-id, dictionaryName=service-instance-id,
dictionarySource=input], [name=vnf-id, dictionaryName=vnf-id, dictionarySource=input]],
[[name=vdns_onap_private_ip_0, dictionaryName=vdns_onap_private_ip_0, dictionarySource=primary-config-data],
[name=vdns_int_private_ip_0, dictionaryName=vdns_int_private_ip_0, dictionarySource=primary-config-data]]])
2019-06-07 03:16:02,806|||grpc-default-executor-2||||INFO||||||| input source template key (service-instance-
id) found from input and value is ("1a0fbd43-0ab6-4d67-99f4-14a890505a8d")
2019-06-07 03:16:02,806|||grpc-default-executor-2||||INFO||||||| Setting Resource Value ("1a0fbd43-0ab6-4d67-
99f4-14a890505a8d") for Resource Name (service-instance-id) of type (string)
2019-06-07 03:16:02,806|||grpc-default-executor-2||||INFO||||||| input source template key (vnf-id) found from
input and value is ("1bed94d9-9a12-458a-b891-7c04796b5af4")
2019-06-07 03:16:02,807|||grpc-default-executor-2||||INFO||||||| Setting Resource Value ("1bed94d9-9a12-458a-
b891-7c04796b5af4") for Resource Name (vnf-id) of type (string)
2019-06-07 03:16:02,807|||grpc-default-executor-2||||INFO||||||| Setting Resource Value () for Resource Name
(vdns_onap_private_ip_0) of type (string)
2019-06-07 03:16:02,807|||grpc-default-executor-2||||INFO||||||| dName: vdns_onap_private_ip_0
2019-06-07 03:16:02,807|||grpc-default-executor-2||||INFO||||||| dSource: primary-config-data
2019-06-07 03:16:02,807|||grpc-default-executor-2||||INFO||||||| resourceDefinition: org.onap.ccsdk.cds.
controllerblueprints.resource.dict.ResourceDefinition@6f4ef7d3
2019-06-07 03:16:02,807|||grpc-default-executor-2||||INFO||||||| resourceSource: org.onap.ccsdk.cds.
controllerblueprints.core.data.NodeTemplate@5f62c18
2019-06-07 03:16:02,807|||grpc-default-executor-2||||INFO||||||| resourceSourceProperties: {verb="GET", type="
JSON", url-path="/restconf/config/GENERIC-RESOURCE-API:services/service/$service-instance-id/service-data/vnfs
/vnf/$vnf-id/vnf-data/vnf-topology/vnf-parameters-data/param/vdns_onap_private_ip_0", path="/param/0/value",
input-key-mapping={"service-instance-id":"service-instance-id","vnf-id":"vnf-id"}, output-key-mapping=
{"vdns_onap_private_ip_0":"value"}, key-dependencies=["service-instance-id","vnf-id"]}
2019-06-07 03:16:02,808|||grpc-default-executor-2||||INFO||||||| sourceProperties: org.onap.ccsdk.cds.
blueprintsprocessor.functions.resource.resolution.RestResourceSource@7efa8a5e
2019-06-07 03:16:02,808|||grpc-default-executor-2||||INFO||||||| path: /param/0/value
2019-06-07 03:16:02,808|||grpc-default-executor-2||||INFO||||||| inputKeyMapping: {service-instance-id=service-
instance-id, vnf-id=vnf-id}
2019-06-07 03:16:02,808|||grpc-default-executor-2||||INFO||||||| resolvedInputKeyMapping: {vnf-id=1bed94d9-9a12-
458a-b891-7c04796b5af4, service-instance-id=1a0fbd43-0ab6-4d67-99f4-14a890505a8d}
2019-06-07 03:16:02,808|||grpc-default-executor-2||||INFO||||||| payload:
2019-06-07 03:16:02,808|||grpc-default-executor-2||||INFO||||||| urlPath: /restconf/config/GENERIC-RESOURCE-API:
services/service/1a0fbd43-0ab6-4d67-99f4-14a890505a8d/service-data/vnfs/vnf/1bed94d9-9a12-458a-b891-7c04796b5af4
/vnf-data/vnf-topology/vnf-parameters-data/param/vdns_onap_private_ip_0
2019-06-07 03:16:02,808|||grpc-default-executor-2||||INFO||||||| verb: GET
2019-06-07 03:16:02,808|||grpc-default-executor-2||||INFO||||||| primary-config-data dictionary information : (
/restconf/config/GENERIC-RESOURCE-API:services/service/1a0fbd43-0ab6-4d67-99f4-14a890505a8d/service-data/vnfs
/vnf/1bed94d9-9a12-458a-b891-7c04796b5af4/vnf-data/vnf-topology/vnf-parameters-data/param
/vdns_onap_private_ip_0), ({service-instance-id=service-instance-id, vnf-id=vnf-id}),
({vdns_onap_private_ip_0=value})
2019-06-07 03:16:02,808|||grpc-default-executor-2||||INFO||||||| prefix: blueprintsprocessor.restclient.primary-
config-data
2019-06-07 03:16:02,809|||grpc-default-executor-2||||INFO||||||| type: basic-auth
2019-06-07 03:16:02,814|||grpc-default-executor-2||||INFO||||||| Rest request method(GET), url(/restconf/config
/GENERIC-RESOURCE-API:services/service/1a0fbd43-0ab6-4d67-99f4-14a890505a8d/service-data/vnfs/vnf/1bed94d9-9a12-
458a-b891-7c04796b5af4/vnf-data/vnf-topology/vnf-parameters-data/param/vdns_onap_private_ip_0)
2019-06-07 03:16:02,819|||grpc-default-executor-2||||INFO||||||| Response status(200 - OK)
2019-06-07 03:16:02,820|||grpc-default-executor-2||||INFO||||||| response: WebClientResponse(status=200, body=
{"param":[{"name":"vdns_onap_private_ip_0","value":"10.0.101.187","resource-resolution-data":{"capability-
name":"netbox-ip-assign","resource-key":[{"name":"external_key","value":"1bed94d9-9a12-458a-b891-7c04796b5af4-
vdns_onap_private_ip_0"},{"name":"vnf-id","value":"1bed94d9-9a12-458a-b891-7c04796b5af4"},{"name":"service-
instance-id","value":"1a0fbd43-0ab6-4d67-99f4-14a890505a8d"},{"name":"prefix-id","value":"3"}],"status":"
SUCCESS"}}]})
2019-06-07 03:16:02,820|||grpc-default-executor-2||||INFO||||||| responseStatusCode: 200
2019-06-07 03:16:02,820|||grpc-default-executor-2||||INFO||||||| responseBody: {"param":[{"name":"
vdns_onap_private_ip_0","value":"10.0.101.187","resource-resolution-data":{"capability-name":"netbox-ip-
assign","resource-key":[{"name":"external_key","value":"1bed94d9-9a12-458a-b891-7c04796b5af4-
vdns_onap_private_ip_0"},{"name":"vnf-id","value":"1bed94d9-9a12-458a-b891-7c04796b5af4"},{"name":"service-
instance-id","value":"1a0fbd43-0ab6-4d67-99f4-14a890505a8d"},{"name":"prefix-id","value":"3"}],"status":"
SUCCESS"}}]}
2019-06-07 03:16:02,820|||grpc-default-executor-2||||INFO||||||| Response processing type(string)
2019-06-07 03:16:02,820|||grpc-default-executor-2||||INFO||||||| populating value for output mapping
({vdns_onap_private_ip_0=value}), from json ("10.0.101.187")
2019-06-07 03:16:02,820|||grpc-default-executor-2||||INFO||||||| For template key (vdns_onap_private_ip_0)
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setting value as ("10.0.101.187")
2019-06-07 03:16:02,820|||grpc-default-executor-2||||INFO||||||| Setting Resource Value ("10.0.101.187") for
Resource Name (vdns_onap_private_ip_0) of type (string)
2019-06-07 03:16:02,821|||grpc-default-executor-2||||INFO||||||| Setting Resource Value () for Resource Name
(vdns_int_private_ip_0) of type (string)
2019-06-07 03:16:02,821|||grpc-default-executor-2||||INFO||||||| dName: vdns_int_private_ip_0
2019-06-07 03:16:02,821|||grpc-default-executor-2||||INFO||||||| dSource: primary-config-data
2019-06-07 03:16:02,821|||grpc-default-executor-2||||INFO||||||| resourceDefinition: org.onap.ccsdk.cds.
controllerblueprints.resource.dict.ResourceDefinition@70589c4c
2019-06-07 03:16:02,821|||grpc-default-executor-2||||INFO||||||| resourceSource: org.onap.ccsdk.cds.
controllerblueprints.core.data.NodeTemplate@447af8b3
2019-06-07 03:16:02,821|||grpc-default-executor-2||||INFO||||||| resourceSourceProperties: {verb="GET", type="
JSON", url-path="/restconf/config/GENERIC-RESOURCE-API:services/service/$service-instance-id/service-data/vnfs
/vnf/$vnf-id/vnf-data/vnf-topology/vnf-parameters-data/param/vdns_int_private_ip_0", path="/param/0/value",
input-key-mapping={"service-instance-id":"service-instance-id","vnf-id":"vnf-id"}, output-key-mapping=
{"vdns_int_private_ip_0":"value"}, key-dependencies=["service-instance-id","vnf-id"]}
2019-06-07 03:16:02,822|||grpc-default-executor-2||||INFO||||||| sourceProperties: org.onap.ccsdk.cds.
blueprintsprocessor.functions.resource.resolution.RestResourceSource@6e782218
2019-06-07 03:16:02,822|||grpc-default-executor-2||||INFO||||||| path: /param/0/value
2019-06-07 03:16:02,822|||grpc-default-executor-2||||INFO||||||| inputKeyMapping: {service-instance-id=service-
instance-id, vnf-id=vnf-id}
2019-06-07 03:16:02,822|||grpc-default-executor-2||||INFO||||||| resolvedInputKeyMapping: {vnf-id=1bed94d9-9a12-
458a-b891-7c04796b5af4, service-instance-id=1a0fbd43-0ab6-4d67-99f4-14a890505a8d}
2019-06-07 03:16:02,822|||grpc-default-executor-2||||INFO||||||| payload:
2019-06-07 03:16:02,822|||grpc-default-executor-2||||INFO||||||| urlPath: /restconf/config/GENERIC-RESOURCE-API:
services/service/1a0fbd43-0ab6-4d67-99f4-14a890505a8d/service-data/vnfs/vnf/1bed94d9-9a12-458a-b891-7c04796b5af4
/vnf-data/vnf-topology/vnf-parameters-data/param/vdns_int_private_ip_0
2019-06-07 03:16:02,822|||grpc-default-executor-2||||INFO||||||| verb: GET
2019-06-07 03:16:02,822|||grpc-default-executor-2||||INFO||||||| primary-config-data dictionary information : (
/restconf/config/GENERIC-RESOURCE-API:services/service/1a0fbd43-0ab6-4d67-99f4-14a890505a8d/service-data/vnfs
/vnf/1bed94d9-9a12-458a-b891-7c04796b5af4/vnf-data/vnf-topology/vnf-parameters-data/param
/vdns_int_private_ip_0), ({service-instance-id=service-instance-id, vnf-id=vnf-id}),
({vdns_int_private_ip_0=value})
2019-06-07 03:16:02,822|||grpc-default-executor-2||||INFO||||||| prefix: blueprintsprocessor.restclient.primary-
config-data
2019-06-07 03:16:02,823|||grpc-default-executor-2||||INFO||||||| type: basic-auth
2019-06-07 03:16:02,828|||grpc-default-executor-2||||INFO||||||| Rest request method(GET), url(/restconf/config
/GENERIC-RESOURCE-API:services/service/1a0fbd43-0ab6-4d67-99f4-14a890505a8d/service-data/vnfs/vnf/1bed94d9-9a12-
458a-b891-7c04796b5af4/vnf-data/vnf-topology/vnf-parameters-data/param/vdns_int_private_ip_0)
2019-06-07 03:16:02,832|||grpc-default-executor-2||||INFO||||||| Response status(200 - OK)
2019-06-07 03:16:02,833|||grpc-default-executor-2||||INFO||||||| response: WebClientResponse(status=200, body=
{"param":[{"name":"vdns_int_private_ip_0","value":"192.168.20.181","resource-resolution-data":{"capability-
name":"netbox-ip-assign","resource-key":[{"name":"external_key","value":"1bed94d9-9a12-458a-b891-7c04796b5af4-
vdns_int_private_ip_0"},{"name":"vnf-id","value":"1bed94d9-9a12-458a-b891-7c04796b5af4"},{"name":"service-
instance-id","value":"1a0fbd43-0ab6-4d67-99f4-14a890505a8d"},{"name":"prefix-id","value":"1"}],"status":"
SUCCESS"}}]})
2019-06-07 03:16:02,833|||grpc-default-executor-2||||INFO||||||| responseStatusCode: 200
2019-06-07 03:16:02,833|||grpc-default-executor-2||||INFO||||||| responseBody: {"param":[{"name":"
vdns_int_private_ip_0","value":"192.168.20.181","resource-resolution-data":{"capability-name":"netbox-ip-
assign","resource-key":[{"name":"external_key","value":"1bed94d9-9a12-458a-b891-7c04796b5af4-
vdns_int_private_ip_0"},{"name":"vnf-id","value":"1bed94d9-9a12-458a-b891-7c04796b5af4"},{"name":"service-
instance-id","value":"1a0fbd43-0ab6-4d67-99f4-14a890505a8d"},{"name":"prefix-id","value":"1"}],"status":"
SUCCESS"}}]}
2019-06-07 03:16:02,833|||grpc-default-executor-2||||INFO||||||| Response processing type(string)
2019-06-07 03:16:02,833|||grpc-default-executor-2||||INFO||||||| populating value for output mapping
({vdns_int_private_ip_0=value}), from json ("192.168.20.181")
2019-06-07 03:16:02,833|||grpc-default-executor-2||||INFO||||||| For template key (vdns_int_private_ip_0)
setting value as ("192.168.20.181")
2019-06-07 03:16:02,833|||grpc-default-executor-2||||INFO||||||| Setting Resource Value ("192.168.20.181") for
Resource Name (vdns_int_private_ip_0) of type (string)
2019-06-07 03:16:02,833|||grpc-default-executor-2||||INFO||||||| Generating Resource name (service-instance-
id), type (string), value ("1a0fbd43-0ab6-4d67-99f4-14a890505a8d")
2019-06-07 03:16:02,833|||grpc-default-executor-2||||INFO||||||| Generating Resource name (vnf-id), type
(string), value ("1bed94d9-9a12-458a-b891-7c04796b5af4")
2019-06-07 03:16:02,834|||grpc-default-executor-2||||INFO||||||| Generating Resource name
(vdns_int_private_ip_0), type (string), value ("192.168.20.181")
2019-06-07 03:16:02,834|||grpc-default-executor-2||||INFO||||||| Generating Resource name
(vdns_onap_private_ip_0), type (string), value ("10.0.101.187")
2019-06-07 03:16:02,834|||grpc-default-executor-2||||INFO||||||| Generated Resource Param Data ({
  "service-instance-id" : "1a0fbd43-0ab6-4d67-99f4-14a890505a8d",
  "vnf-id" : "1bed94d9-9a12-458a-b891-7c04796b5af4",
```

```
  "vdns_int_private_ip_0" : "192.168.20.181",
  "vdns_onap_private_ip_0" : "10.0.101.187"
})
2019-06-07 03:16:02,919|||grpc-default-executor-2||||INFO||||||| resolution saved into database successfully :
({resolution-key=fr2_ONAP-NF_20190607T031522008Z, store-result=true})
2019-06-07 03:16:02,920|||grpc-default-executor-2||||INFO||||||| Preparing Response...
2019-06-07 03:16:02,920|||grpc-default-executor-2||||INFO||||||| resolveNodeTemplateInterfaceOperationOutputs
for node template (config-assign),interface name (ResourceResolutionComponent), operationName(process)
2019-06-07 03:16:02,920|||grpc-default-executor-2||||INFO||||||| resolveWorkflowOutputs for workflow(config-
assign)
2019-06-07 03:16:02,924|||grpc-default-executor-2||||INFO||||||| Completed
```

Below we can the configlets that were pushed to the CDS DB:

Configlets pushed into CDS DB

```
SELECT * FROM sdnctl.RESOURCE_RESOLUTION_RESULT where resolution_key="fr2_ONAP-NF_20190607T031522008Z";

+--------------------------------------+--------------------+----------------+-------------------
+---------------------+--------------------------------
+-------------------------------------------------------------------------------------------------------------------------
-------------------------------------------------------------------+
| resource_resolution_result_id        | artifact_name      | blueprint_name | blueprint_version |
creation_date       | resolution_key                  |
result
|
+--------------------------------------+--------------------+----------------+-------------------
+---------------------+--------------------------------
+-------------------------------------------------------------------------------------------------------------------------
-------------------------------------------------------------------+
| 15ba611c-62f9-4701-aa5f-c7e698a96a3a | incremental-config | test           | 1.0.0             | 2019-06-07
03:16:02 | fr2_ONAP-NF_20190607T031522008Z | {
    "vdns-instance": [
        {
            "ip-addr": "192.168.20.181",
            "oam-ip-addr": "10.0.101.187",
            "enabled": true
        }
    ]
}   |
| 40d33748-a61a-421a-80ac-ca3fee8c4996 | baseconfig         | test           | 1.0.0             | 2019-06-07
03:16:02 | fr2_ONAP-NF_20190607T031522008Z |      {
    "vdns-instance": [
        {
            "ip-addr": "192.168.20.181",
            "oam-ip-addr": "10.0.101.187",
            "enabled": false
        }
    ]
} |
+--------------------------------------+--------------------+----------------+-------------------
+---------------------+--------------------------------
+-------------------------------------------------------------------------------------------------------------------------
-------------------------------------------------------------------+
2 rows in set (0.00 sec)
```

SO ConfigDeployBB

In this BB, the config generated by ConfigAssign from teh CDS DB, and push the config to the network element.

This happens via a python script that uses netconf library to connect to the vLB and deploys the baseconfig and the incremental config on the vLB via Netconf.

Below the logs generated by Blueprint Processor for ConfigDeply, we can Netconf session initiated OK with the vLB:

UPDATE: This is an updated version of the logs, after we added a DG that will perform 2 steps. Node #1 below resolves the IP address of the vLB, and Node #2 runs the python script that connects via NETCONF to the vLB and deploys the configuation:

ConfigDeploy logs from Blueprint Processor

```
2019-06-14 12:52:41,731|||DefaultDispatcher-worker-8||||INFO||||||| processing request id 131c9716-ecb7-4a14-
836c-bbe477b08e03
2019-06-14 12:52:41,732|||DefaultDispatcher-worker-8||||INFO||||||| cba file name(test), version(1.0.0) already
present(/opt/app/onap/blueprints/deploy/test/1.0.0)
2019-06-14 12:52:41,732|||DefaultDispatcher-worker-8||||INFO||||||| blueprint base path /opt/app/onap/blueprints
/deploy/test/1.0.0
2019-06-14 12:52:41,741|||grpc-default-executor-3||||INFO||||||| Completed
2019-06-14 12:52:41,743|||DefaultDispatcher-worker-8||||INFO||||||| Reading blueprint path(/opt/app/onap
/blueprints/deploy/test/1.0.0) and entry definition file (Definitions/vDNS-CDS.json)
2019-06-14 12:52:41,756|||DefaultDispatcher-worker-8||||INFO||||||| assign workflow config-deploy input value
({"resolution-key":"fr2_ONAP-NF_20190614T124101743Z","config-deploy-properties":{"service-instance-id":"
b3c59dca-be5a-4971-8247-2f19f8943d5c","vnf-id":"225a8a37-341a-423c-97c2-eb5a7f05d719","vnf-name":"fr2_ONAP-
NF_20190614T124101743Z","service-model-uuid":"13d2da89-6da3-41a3-b970-ae14b697aa7d","vnf-customization-uuid":"
7dec0cfb-593c-49f8-8640-c7b52922d5de"}})
2019-06-14 12:52:41,756|||DefaultDispatcher-worker-8||||INFO||||||| Executing workflow(config-deploy)
NodeTemplate(config-deploy-process), derived from(tosca.nodes.Workflow)
2019-06-14 12:52:41,756|||DefaultDispatcher-worker-8||||INFO||||||| Executing workflow(config-deploy) directed
graph NodeTemplate(config-deploy-process)
2019-06-14 12:52:41,756|||DefaultDispatcher-worker-8||||INFO||||||| Executing directed graph (/opt/app/onap
/blueprints/deploy/test/1.0.0/Plans/CONFIG_ConfigDeploy.xml)
2019-06-14 12:52:41,896|||DefaultDispatcher-worker-8||||INFO||||||| Schema path file:/opt/app/onap/lib/org.onap.
ccsdk.sli.core-sli-common-0.4.3.jar!/svclogic.xsd
2019-06-14 12:52:41,900|||DefaultDispatcher-worker-8||||INFO||||||| About to execute graph SvcLogicGraph
[module=CONFIG, rpc=ConfigDeploy, mode=sync, version=1.0.0, md5sum=50f987c5e9bcbcd4d3dfc1dee2f173ea]
2019-06-14 12:52:41,900|||DefaultDispatcher-worker-8||||INFO||||||| About to execute node # 1 (block)
2019-06-14 12:52:41,900|||DefaultDispatcher-worker-8||||INFO||||||| executing node template(nf-account-
collection) component(component-resource-resolution) interface(ResourceResolutionComponent) operation(process)
2019-06-14 12:52:41,901|||DefaultDispatcher-worker-8||||INFO||||||| preparing request id(131c9716-ecb7-4a14-
836c-bbe477b08e03) for workflow(config-deploy) step(nf-account-collection)
2019-06-14 12:52:41,901|||DefaultDispatcher-worker-8||||INFO||||||| resolveNodeTemplateInterfaceOperationInputs
for node template (nf-account-collection),interface name (ResourceResolutionComponent), operationName(process)
2019-06-14 12:52:41,901|||DefaultDispatcher-worker-8||||INFO||||||| input definition for node template (nf-
account-collection), values ({artifact-prefix-names=["nf-params"]})
2019-06-14 12:52:41,901|||DefaultDispatcher-worker-8||||INFO||||||| Resolving resource for template artifact(nf-
params-template) with resource assignment artifact(nf-params-mapping)
2019-06-14 12:52:41,945|||DefaultDispatcher-worker-8||||INFO||||||| Assignments ([[name=service-instance-id,
dictionaryName=service-instance-id, dictionarySource=input], [name=vnf-id, dictionaryName=vnf-id,
dictionarySource=input], [name=ip, dictionaryName=vlb_onap_private_ip_0, dictionarySource=primary-config-data]])
2019-06-14 12:52:41,945|||DefaultDispatcher-worker-8||||INFO||||||| Sorted Sequenced Assignments ([[name=*,
dictionaryName=null, dictionarySource=null], [name=service-instance-id, dictionaryName=service-instance-id,
dictionarySource=input], [name=vnf-id, dictionaryName=vnf-id, dictionarySource=input], [name=ip,
dictionaryName=vlb_onap_private_ip_0, dictionarySource=primary-config-data]])
2019-06-14 12:52:41,945|||DefaultDispatcher-worker-8||||INFO||||||| Batched Sequence : ([[[name=*,
dictionaryName=null, dictionarySource=null]], [[name=service-instance-id, dictionaryName=service-instance-id,
dictionarySource=input], [name=vnf-id, dictionaryName=vnf-id, dictionarySource=input]], [[name=ip,
dictionaryName=vlb_onap_private_ip_0, dictionarySource=primary-config-data]]])
2019-06-14 12:52:41,945|||DefaultDispatcher-worker-8||||INFO||||||| input source template key (service-instance-
id) found from input and value is ("b3c59dca-be5a-4971-8247-2f19f8943d5c")
2019-06-14 12:52:41,945|||DefaultDispatcher-worker-8||||INFO||||||| Setting Resource Value ("b3c59dca-be5a-4971-
8247-2f19f8943d5c") for Resource Name (service-instance-id) of type (string)
2019-06-14 12:52:41,946|||DefaultDispatcher-worker-8||||INFO||||||| input source template key (vnf-id) found
from input and value is ("225a8a37-341a-423c-97c2-eb5a7f05d719")
2019-06-14 12:52:41,946|||DefaultDispatcher-worker-8||||INFO||||||| Setting Resource Value ("225a8a37-341a-423c-
97c2-eb5a7f05d719") for Resource Name (vnf-id) of type (string)
2019-06-14 12:52:41,946|||DefaultDispatcher-worker-8||||INFO||||||| dName: vlb_onap_private_ip_0
2019-06-14 12:52:41,946|||DefaultDispatcher-worker-8||||INFO||||||| dSource: primary-config-data
2019-06-14 12:52:41,946|||DefaultDispatcher-worker-8||||INFO||||||| resourceDefinition: org.onap.ccsdk.cds.
controllerblueprints.resource.dict.ResourceDefinition@18aaa0e0
2019-06-14 12:52:41,946|||DefaultDispatcher-worker-8||||INFO||||||| resourceSource: org.onap.ccsdk.cds.
controllerblueprints.core.data.NodeTemplate@1240b3ef
2019-06-14 12:52:41,946|||DefaultDispatcher-worker-8||||INFO||||||| resourceSourceProperties: {verb="GET",
type="JSON", url-path="/restconf/config/GENERIC-RESOURCE-API:services/service/$service-instance-id/service-data
/vnfs/vnf/$vnf-id/vnf-data/vnf-topology/vnf-parameters-data/param/vlb_onap_private_ip_0", path="/param/0
```

```
/value", input-key-mapping={"service-instance-id":"service-instance-id","vnf-id":"vnf-id"}, output-key-mapping=
{"vlb_onap_private_ip_0":"value"}, key-dependencies=["service-instance-id","vnf-id"]}
2019-06-14 12:52:41,946|||DefaultDispatcher-worker-8||||INFO||||||| sourceProperties: org.onap.ccsdk.cds.
blueprintsprocessor.functions.resource.resolution.RestResourceSource@681ba719
2019-06-14 12:52:41,946|||DefaultDispatcher-worker-8||||INFO||||||| path: /param/0/value
2019-06-14 12:52:41,946|||DefaultDispatcher-worker-8||||INFO||||||| inputKeyMapping: {service-instance-
id=service-instance-id, vnf-id=vnf-id}
2019-06-14 12:52:41,946|||DefaultDispatcher-worker-8||||INFO||||||| resolvedInputKeyMapping: {vnf-id=225a8a37-
341a-423c-97c2-eb5a7f05d719, service-instance-id=b3c59dca-be5a-4971-8247-2f19f8943d5c}
2019-06-14 12:52:41,946|||DefaultDispatcher-worker-8||||INFO||||||| payload:
2019-06-14 12:52:41,947|||DefaultDispatcher-worker-8||||INFO||||||| urlPath: /restconf/config/GENERIC-RESOURCE-
API:services/service/b3c59dca-be5a-4971-8247-2f19f8943d5c/service-data/vnfs/vnf/225a8a37-341a-423c-97c2-
eb5a7f05d719/vnf-data/vnf-topology/vnf-parameters-data/param/vlb_onap_private_ip_0
2019-06-14 12:52:41,947|||DefaultDispatcher-worker-8||||INFO||||||| verb: GET
2019-06-14 12:52:41,947|||DefaultDispatcher-worker-8||||INFO||||||| primary-config-data dictionary information
: (/restconf/config/GENERIC-RESOURCE-API:services/service/b3c59dca-be5a-4971-8247-2f19f8943d5c/service-data/vnfs
/vnf/225a8a37-341a-423c-97c2-eb5a7f05d719/vnf-data/vnf-topology/vnf-parameters-data/param
/vlb_onap_private_ip_0), ({service-instance-id=service-instance-id, vnf-id=vnf-id}),
({vlb_onap_private_ip_0=value})
2019-06-14 12:52:41,947|||DefaultDispatcher-worker-8||||INFO||||||| prefix: blueprintsprocessor.restclient.
primary-config-data
2019-06-14 12:52:41,947|||DefaultDispatcher-worker-8||||INFO||||||| type: basic-auth
2019-06-14 12:52:41,952|||DefaultDispatcher-worker-8||||INFO||||||| Rest request method(GET), url(/restconf
/config/GENERIC-RESOURCE-API:services/service/b3c59dca-be5a-4971-8247-2f19f8943d5c/service-data/vnfs/vnf
/225a8a37-341a-423c-97c2-eb5a7f05d719/vnf-data/vnf-topology/vnf-parameters-data/param/vlb_onap_private_ip_0)
2019-06-14 12:52:41,957|||DefaultDispatcher-worker-8||||INFO||||||| Response status(200 - OK)
2019-06-14 12:52:41,958|||DefaultDispatcher-worker-8||||INFO||||||| response: WebClientResponse(status=200,
body={"param":[{"name":"vlb_onap_private_ip_0","value":"10.0.101.65","resource-resolution-data":{"capability-
name":"netbox-ip-assign","status":"SUCCESS","resource-key":[{"name":"external_key","value":"225a8a37-341a-423c-
97c2-eb5a7f05d719-vlb_onap_private_ip_0"},{"name":"vnf-id","value":"225a8a37-341a-423c-97c2-eb5a7f05d719"},
{"name":"service-instance-id","value":"b3c59dca-be5a-4971-8247-2f19f8943d5c"},{"name":"prefix-id","value":"
3"}]}}]})
2019-06-14 12:52:41,958|||DefaultDispatcher-worker-8||||INFO||||||| responseStatusCode: 200
2019-06-14 12:52:41,958|||DefaultDispatcher-worker-8||||INFO||||||| responseBody: {"param":[{"name":"
vlb_onap_private_ip_0","value":"10.0.101.65","resource-resolution-data":{"capability-name":"netbox-ip-assign","
status":"SUCCESS","resource-key":[{"name":"external_key","value":"225a8a37-341a-423c-97c2-eb5a7f05d719-
vlb_onap_private_ip_0"},{"name":"vnf-id","value":"225a8a37-341a-423c-97c2-eb5a7f05d719"},{"name":"service-
instance-id","value":"b3c59dca-be5a-4971-8247-2f19f8943d5c"},{"name":"prefix-id","value":"3"}]}}]}
2019-06-14 12:52:41,958|||DefaultDispatcher-worker-8||||INFO||||||| Response processing type(string)
2019-06-14 12:52:41,958|||DefaultDispatcher-worker-8||||INFO||||||| populating value for output mapping
({vlb_onap_private_ip_0=value}), from json ("10.0.101.65")
2019-06-14 12:52:41,958|||DefaultDispatcher-worker-8||||INFO||||||| For template key (ip) setting value as
("10.0.101.65")
2019-06-14 12:52:41,958|||DefaultDispatcher-worker-8||||INFO||||||| Setting Resource Value ("10.0.101.65") for
Resource Name (vlb_onap_private_ip_0) of type (string)
2019-06-14 12:52:41,958|||DefaultDispatcher-worker-8||||INFO||||||| Generating Resource name (service-instance-
id), type (string), value ("b3c59dca-be5a-4971-8247-2f19f8943d5c")
2019-06-14 12:52:41,958|||DefaultDispatcher-worker-8||||INFO||||||| Generating Resource name (vnf-id), type
(string), value ("225a8a37-341a-423c-97c2-eb5a7f05d719")
2019-06-14 12:52:41,958|||DefaultDispatcher-worker-8||||INFO||||||| Generating Resource name (ip), type
(string), value ("10.0.101.65")
2019-06-14 12:52:41,958|||DefaultDispatcher-worker-8||||INFO||||||| Generated Resource Param Data ({
  "service-instance-id" : "b3c59dca-be5a-4971-8247-2f19f8943d5c",
  "vnf-id" : "225a8a37-341a-423c-97c2-eb5a7f05d719",
  "ip" : "10.0.101.65"
})
2019-06-14 12:52:42,013|||DefaultDispatcher-worker-8||||INFO||||||| Preparing Response...
2019-06-14 12:52:42,013|||DefaultDispatcher-worker-8||||INFO|||||||
resolveNodeTemplateInterfaceOperationOutputs for node template (nf-account-collection),interface name
(ResourceResolutionComponent), operationName(process)
2019-06-14 12:52:42,013|||DefaultDispatcher-worker-8||||INFO||||||| executing node template(execute) component
(component-netconf-executor) interface(ComponentNetconfExecutor) operation(process)
2019-06-14 12:52:42,014|||DefaultDispatcher-worker-8||||INFO||||||| preparing request id(131c9716-ecb7-4a14-
836c-bbe477b08e03) for workflow(config-deploy) step(execute)
2019-06-14 12:52:42,014|||DefaultDispatcher-worker-8||||INFO||||||| resolveNodeTemplateInterfaceOperationInputs
for node template (execute),interface name (ComponentNetconfExecutor), operationName(process)
2019-06-14 12:52:42,014|||DefaultDispatcher-worker-8||||INFO||||||| input definition for node template
(execute), values ({script-type="jython", script-class-reference="Scripts/python/ConfigDeploy.py", instance-
dependencies=[], dynamic-properties="*config-deploy-properties"})
2019-06-14 12:52:42,014|||DefaultDispatcher-worker-8||||INFO||||||| creating component function of script type
(jython), reference name(Scripts/python/ConfigDeploy.py) and instanceDependencies([resource-resolution-service])
```

```
2019-06-14 12:52:42,014|||DefaultDispatcher-worker-8||||INFO||||||| Getting Jython Script Class(ConfigDeploy)
2019-06-14 12:52:42,048|||DefaultDispatcher-worker-8||||INFO||||||| Component Object org.python.proxies.
__main__$ConfigDeploy$2@4549fcc8
{'ResolutionHelper': <class common.ResolutionHelper at 0x2>, 'os': <module 'os' from '/opt/app/onap/lib/org.
python-jython-standalone-2.7.1.jar/Lib/os$py.class'>, 'log': Logger[ConfigDeploy], 'netconf_constant': <module
'netconf_constant' from '/opt/app/onap/scripts/jython/ccsdk_netconf/netconf_constant.py'>, 'NetconfClient':
<class netconfclient.NetconfClient at 0x3>, '__builtins__': <module '__builtin__' (built-in)>, 'sys': <module
'sys' (built-in)>, 'ConfigDeploy': org.python.proxies.__main__$ConfigDeploy$2@4549fcc8, '__package__': None,
'sleep': <java function sleep 0x6>, '__name__': '__main__', '__doc__': None, 'NetconfComponentFunction': <type
'org.onap.ccsdk.cds.blueprintsprocessor.functions.netconf.executor.NetconfComponentFunction'>}
Waiting 10 minutes...
2019-06-14 12:56:42,050|||DefaultDispatcher-worker-8||||INFO||||||| resolveNodeTemplateCapabilityProperties for
node template(netconf-device) capability (netconf)
2019-06-14 12:56:42,916|||DefaultDispatcher-worker-8||||INFO||||||| 10.0.101.65:2831: Connecting to Netconf
Device with timeouts C:5, R:5, I:99999
2019-06-14 12:56:42,917|||DefaultDispatcher-worker-8||||INFO||||||| 10.0.101.65:2831: Starting SSH session
2019-06-14 12:56:42,979|||DefaultDispatcher-worker-8||||INFO||||||| 10.0.101.65:2831: SSH session created
2019-06-14 12:56:44,483|||sshd-SshClient[49dab2c3]-nio2-thread-3||||WARN||||||| Server at /10.0.101.65:2831
presented unverified DSA key: SHA256:cIudj1QVStopQt45Dhrf11Abe6dghv/SQlQRjXfOtQk
2019-06-14 12:56:44,572|||DefaultDispatcher-worker-8||||INFO||||||| 10.0.101.65:2831: SSH session authenticated
2019-06-14 12:56:44,603|||DefaultDispatcher-worker-8||||INFO||||||| 10.0.101.65:2831: SSH NETCONF subsystem
channel opened
2019-06-14 12:56:44,610|||DefaultDispatcher-worker-8||||INFO||||||| 10.0.101.65:2831: Sending message:
 <?xml version="1.0" encoding="UTF-8"?>
<hello xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
  <capabilities>
    <capability>urn:ietf:params:netconf:base:1.0</capability>
    <capability>urn:ietf:params:netconf:base:1.1</capability>
  </capabilities>
</hello>
]]>]]>
2019-06-14 12:56:44,896|||Thread-25||||INFO||||||| 10.0.101.65:2831: Received message with messageId: -1
 <?xml version="1.0" encoding="UTF-8" standalone="no"?>
<hello xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
<capabilities>
<capability>urn:ietf:params:xml:ns:yang:iana-if-type?module=iana-if-type&revision=2014-05-08</capability>
<capability>urn:ietf:params:xml:ns:yang:ietf-interfaces?module=ietf-interfaces&revision=2014-05-08</capability>
<capability>urn:opendaylight:params:xml:ns:yang:controller:md:sal:binding:impl?module=opendaylight-sal-binding-
broker-impl&revision=2013-10-28</capability>
<capability>urn:ietf:params:xml:ns:yang:ietf-netconf-monitoring?module=ietf-netconf-monitoring&revision=2010-10-
04</capability>
<capability>urn:opendaylight:params:xml:ns:yang:controller:config:legacy-entity-ownership-service-provider?
module=opendaylight-legacy-entity-ownership-service-provider&revision=2016-02-26</capability>
<capability>urn:ietf:params:xml:ns:yang:ietf-inet-types?module=ietf-inet-types&revision=2010-09-24</capability>
<capability>urn:opendaylight:params:xml:ns:yang:controller:netconf:northbound:notification?module=netconf-
northbound-notification&revision=2015-08-06</capability>
<capability>urn:opendaylight:params:xml:ns:yang:controller:config:netconf:northbound:impl?module=netconf-
northbound-impl&revision=2015-01-12</capability>
<capability>urn:opendaylight:params:xml:ns:yang:controller:netconf:northbound:notification:impl?module=netconf-
northbound-notification-impl&revision=2015-08-07</capability>
<capability>urn:opendaylight:params:xml:ns:yang:controller:md:sal:binding?module=opendaylight-md-sal-
binding&revision=2013-10-28</capability>
<capability>urn:opendaylight:params:xml:ns:yang:controller:md:sal:binding:v1:codec?module=opendaylight-md-sal-
binding-v1-codec&revision=2016-07-14</capability>
<capability>urn:opendaylight:params:xml:ns:yang:controller:md:sal:core:general-entity?module=general-
entity&revision=2015-08-20</capability>
<capability>urn:opendaylight:params:xml:ns:yang:controller:md:sal:dom?module=opendaylight-md-sal-
dom&revision=2013-10-28</capability>
<capability>urn:opendaylight:params:xml:ns:yang:controller:md:sal:remote?module=sal-remote&revision=2014-01-14<
/capability>
<capability>urn:opendaylight:params:xml:ns:yang:md:sal:config:impl:cluster-singleton-service?module=cluster-
singleton-service-impl&revision=2016-07-18</capability>
<capability>urn:opendaylight:yang:extension:yang-ext?module=yang-ext&revision=2013-07-09</capability>
<capability>urn:opendaylight:params:xml:ns:yang:controller:md:sal:rest:connector?module=opendaylight-rest-
connector&revision=2014-07-24</capability>
<capability>urn:ietf:params:xml:ns:yang:rpc-context?module=rpc-context&revision=2013-06-17</capability>
<capability>urn:ietf:params:xml:ns:yang:ietf-netconf-notifications?module=ietf-netconf-
notifications&revision=2012-02-06</capability>
<capability>urn:opendaylight:params:xml:ns:yang:controller:config:netconf:auth?module=netconf-
auth&revision=2015-07-15</capability>
<capability>urn:opendaylight:params:xml:ns:yang:controller:md:sal:core:spi:operational-dom-store?
```

```
module=opendaylight-operational-dom-datastore&revision=2014-06-17</capability>
<capability>urn:ietf:params:netconf:capability:exi:1.0</capability>
<capability>urn:opendaylight:params:xml:ns:yang:controller:netconf:north:mapper?module=netconf-northbound-
mapper&revision=2015-01-14</capability>
<capability>urn:ietf:params:xml:ns:netconf:base:1.0?module=ietf-netconf&revision=2011-06-01</capability>
<capability>urn:ietf:params:xml:ns:yang:ietf-restconf-monitoring?module=ietf-restconf-monitoring&revision=2017-
01-26</capability>
<capability>urn:TBD:params:xml:ns:yang:network-topology?module=network-topology&revision=2013-10-21</capability>
<capability>urn:opendaylight:params:xml:ns:yang:vlb-business-vnf-onap-plugin?module=vlb-business-vnf-onap-
plugin&revision=2016-09-18</capability>
<capability>urn:ietf:params:xml:ns:yang:ietf-yang-types?module=ietf-yang-types&revision=2013-07-15</capability>
<capability>urn:opendaylight:params:xml:ns:yang:controller:netconf:northbound:ssh?module=netconf-northbound-
ssh&revision=2015-01-14</capability>
<capability>urn:TBD:params:xml:ns:yang:network-topology?module=network-topology&revision=2013-07-12</capability>
<capability>urn:ietf:params:netconf:capability:candidate:1.0</capability>
<capability>urn:ietf:params:xml:ns:yang:ietf-restconf?module=ietf-restconf&revision=2013-10-19</capability>
<capability>urn:opendaylight:params:xml:ns:yang:controller:md:sal:core:spi:entity-ownership-service?
module=opendaylight-entity-ownership-service&revision=2015-08-10</capability>
<capability>urn:sal:restconf:event:subscription?module=sal-remote-augment&revision=2014-07-08</capability>
<capability>instance:identifier:patch:module?module=instance-identifier-patch-module&revision=2015-11-21<
/capability>
<capability>subscribe:to:notification?module=subscribe-to-notification&revision=2016-10-28</capability>
<capability>urn:ietf:params:xml:ns:yang:ietf-restconf?module=ietf-restconf&revision=2017-01-26</capability>
<capability>urn:opendaylight:params:xml:ns:yang:controller:netconf:northbound:tcp?module=netconf-northbound-
tcp&revision=2015-04-23</capability>
<capability>urn:opendaylight:params:xml:ns:yang:controller:netconf:mdsal:mapper?module=netconf-mdsal-
mapper&revision=2015-01-14</capability>
<capability>urn:opendaylight:params:xml:ns:yang:md:sal:config:spi:cluster-singleton-service?module=cluster-
singleton-service-spi&revision=2016-07-18</capability>
<capability>urn:opendaylight:params:xml:ns:yang:controller:md:sal:common?module=opendaylight-md-sal-
common&revision=2013-10-28</capability>
<capability>urn:opendaylight:params:xml:ns:yang:controller:sal:restconf:service?module=sal-restconf-
service&revision=2015-07-08</capability>
<capability>urn:opendaylight:params:xml:ns:yang:health-vnf-onap-plugin?module=health-vnf-onap-
plugin&revision=2016-09-18</capability>
<capability>urn:opendaylight:params:xml:ns:yang:controller:inmemory-datastore-provider?module=opendaylight-
inmemory-datastore-provider&revision=2014-06-17</capability>
<capability>urn:opendaylight:params:xml:ns:yang:controller:config?module=config&revision=2013-04-05</capability>
<capability>urn:opendaylight:params:xml:ns:yang:controller:netconf:mdsal:notification?module=netconf-mdsal-
notification&revision=2015-08-03</capability>
<capability>urn:ietf:params:xml:ns:netconf:notification:1.0?module=notifications&revision=2008-07-14<
/capability>
<capability>urn:opendaylight:params:xml:ns:yang:controller:netconf:mdsal:monitoring?module=netconf-mdsal-
monitoring&revision=2015-02-18</capability>
<capability>urn:ietf:params:xml:ns:netmod:notification?module=nc-notifications&revision=2008-07-14</capability>
<capability>urn:ietf:params:xml:ns:yang:ietf-netconf-monitoring-extension?module=ietf-netconf-monitoring-
extension&revision=2013-12-10</capability>
<capability>urn:opendaylight:params:xml:ns:yang:mdsal:core:general-entity?module=odl-general-
entity&revision=2015-09-30</capability>
<capability>urn:ietf:params:netconf:base:1.1</capability>
<capability>urn:ietf:params:netconf:base:1.0</capability>
<capability>urn:opendaylight:params:xml:ns:yang:controller:md:sal:core:spi:config-dom-store?module=opendaylight-
config-dom-datastore&revision=2014-06-17</capability>
<capability>urn:opendaylight:params:xml:ns:yang:controller:config:netconf:northbound?module=netconf-
northbound&revision=2015-01-14</capability>
<capability>urn:opendaylight:params:xml:ns:yang:controller:netty?module=netty&revision=2013-11-19</capability>
<capability>urn:opendaylight:params:xml:ns:yang:controller:threadpool?module=threadpool&revision=2013-04-09<
/capability>
<capability>urn:ietf:params:xml:ns:yang:ietf-yang-library?module=ietf-yang-library&revision=2016-06-21<
/capability>
<capability>urn:opendaylight:params:xml:ns:yang:controller:protocol:framework?module=protocol-
framework&revision=2014-03-13</capability>
<capability>urn:ietf:params:xml:ns:yang:ietf-inet-types?module=ietf-inet-types&revision=2013-07-15</capability>
</capabilities>
<session-id>1</session-id>
</hello>

2019-06-14 12:56:44,898|||DefaultDispatcher-worker-8||||INFO||||||| 10.0.101.65:2831: Connected to Netconf
Device
2019-06-14 12:56:44,898|||DefaultDispatcher-worker-8||||INFO||||||| 10.0.101.65:2831: lock: messageId(1)
2019-06-14 12:56:44,898|||DefaultDispatcher-worker-8||||INFO||||||| 10.0.101.65:2831: send asyncRpc with
```

```
messageId(1)
2019-06-14 12:56:44,898|||DefaultDispatcher-worker-8||||INFO||||||| 10.0.101.65:2831: Sending message:

#161
<?xml version="1.0" encoding="UTF-8"?>
<rpc message-id="1" xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
<lock>
<target>
<candidate/>
</target>
</lock>
</rpc>
##

2019-06-14 12:56:45,129|||Thread-25||||INFO||||||| 10.0.101.65:2831: Received message with messageId: 1
 <?xml version="1.0" encoding="UTF-8" standalone="no"?>
<rpc-reply xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="1">
<ok/>
</rpc-reply>

2019-06-14 12:56:45,131|||DefaultDispatcher-worker-8||||INFO||||||| 10.0.101.65:2831: discard: messageId(2)
2019-06-14 12:56:45,131|||DefaultDispatcher-worker-8||||INFO||||||| 10.0.101.65:2831: send asyncRpc with
messageId(2)
2019-06-14 12:56:45,131|||DefaultDispatcher-worker-8||||INFO||||||| 10.0.101.65:2831: Sending message:

#133
<?xml version="1.0" encoding="UTF-8"?>
<rpc message-id="2" xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
<discard-changes/>
</rpc>
##

2019-06-14 12:56:45,137|||Thread-25||||INFO||||||| 10.0.101.65:2831: Received message with messageId: 2
 <?xml version="1.0" encoding="UTF-8" standalone="no"?>
<rpc-reply xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="2">
<ok/>
</rpc-reply>

2019-06-14 12:56:45,137|||DefaultDispatcher-worker-8||||INFO||||||| 10.0.101.65:2831: editConfig: messageId(3)
2019-06-14 12:56:45,137|||DefaultDispatcher-worker-8||||INFO||||||| 10.0.101.65:2831: send asyncRpc with
messageId(3)
2019-06-14 12:56:45,138|||DefaultDispatcher-worker-8||||INFO||||||| 10.0.101.65:2831: Sending message:

#460
<?xml version="1.0" encoding="UTF-8"?>
<rpc message-id="3" xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
<edit-config>
<target>
<candidate/>
</target>
<default-operation>none</default-operation>
<config xmlns:nc="urn:ietf:params:xml:ns:netconf:base:1.0">
{
    "vdns-instance": [
        {
            "ip-addr": "192.168.20.63",
            "oam-ip-addr": "10.0.101.63",
            "enabled": true
        }
    ]
}
</config>
</edit-config>
</rpc>
##

2019-06-14 12:56:45,148|||Thread-25||||INFO||||||| 10.0.101.65:2831: Received message with messageId: 3
 <?xml version="1.0" encoding="UTF-8" standalone="no"?>
<rpc-reply xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="3">
<ok/>
</rpc-reply>
```

```
2019-06-14 12:56:45,150|||DefaultDispatcher-worker-8||||INFO||||||| 10.0.101.65:2831: editConfig: messageId(4)
2019-06-14 12:56:45,150|||DefaultDispatcher-worker-8||||INFO||||||| 10.0.101.65:2831: send asyncRpc with
messageId(4)
2019-06-14 12:56:45,150|||DefaultDispatcher-worker-8||||INFO||||||| 10.0.101.65:2831: Sending message:

#461
<?xml version="1.0" encoding="UTF-8"?>
<rpc message-id="4" xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
<edit-config>
<target>
<candidate/>
</target>
<default-operation>none</default-operation>
<config xmlns:nc="urn:ietf:params:xml:ns:netconf:base:1.0">
{
    "vdns-instance": [
        {
            "ip-addr": "192.168.20.63",
            "oam-ip-addr": "10.0.101.63",
            "enabled": false
        }
    ]
}
</config>
</edit-config>
</rpc>
##

2019-06-14 12:56:45,154|||Thread-25||||INFO||||||| 10.0.101.65:2831: Received message with messageId: 4
 <?xml version="1.0" encoding="UTF-8" standalone="no"?>
<rpc-reply xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="4">
<ok/>
</rpc-reply>

2019-06-14 12:56:45,154|||DefaultDispatcher-worker-8||||INFO||||||| 10.0.101.65:2831: send asyncRpc with
messageId(5)
2019-06-14 12:56:45,154|||DefaultDispatcher-worker-8||||INFO||||||| 10.0.101.65:2831: Sending message:

#169
<?xml version="1.0" encoding="UTF-8"?>
<rpc message-id="5" xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
<validate>
<source>
<candidate/>
</source>
</validate>
</rpc>
##

2019-06-14 12:56:45,243|||Thread-25||||INFO||||||| 10.0.101.65:2831: Received message with messageId: 5
 <?xml version="1.0" encoding="UTF-8" standalone="no"?>
<rpc-reply message-id="5" xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
<rpc-error>
<error-type>application</error-type>
<error-tag>operation-failed</error-tag>
<error-severity>error</error-severity>
<error-message>RPC failed</error-message>
<error-info>
<operation_failed>Exception thrown</operation_failed>
</error-info>
</rpc-error>
</rpc-reply>

2019-06-14 12:56:45,244|||DefaultDispatcher-worker-8||||INFO||||||| 10.0.101.65:2831: commit: messageId(6)
2019-06-14 12:56:45,244|||DefaultDispatcher-worker-8||||INFO||||||| 10.0.101.65:2831: send asyncRpc with
messageId(6)
2019-06-14 12:56:45,244|||DefaultDispatcher-worker-8||||INFO||||||| 10.0.101.65:2831: Sending message:

#133
<?xml version="1.0" encoding="UTF-8"?>
```

```
<rpc message-id="6" xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
<commit>
</commit>
</rpc>
##

2019-06-14 12:56:45,248|||Thread-25||||INFO||||||| 10.0.101.65:2831: Received message with messageId: 6
 <?xml version="1.0" encoding="UTF-8" standalone="no"?>
<rpc-reply xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="6">
<ok/>
</rpc-reply>

2019-06-14 12:56:45,248|||DefaultDispatcher-worker-8||||INFO||||||| 10.0.101.65:2831: unLock: messageId(7)
2019-06-14 12:56:45,248|||DefaultDispatcher-worker-8||||INFO||||||| 10.0.101.65:2831: send asyncRpc with
messageId(7)
2019-06-14 12:56:45,248|||DefaultDispatcher-worker-8||||INFO||||||| 10.0.101.65:2831: Sending message:

#165
<?xml version="1.0" encoding="UTF-8"?>
<rpc message-id="7" xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
<unlock>
<target>
<candidate/>
</target>
</unlock>
</rpc>
##

2019-06-14 12:56:45,253|||Thread-25||||INFO||||||| 10.0.101.65:2831: Received message with messageId: 7
 <?xml version="1.0" encoding="UTF-8" standalone="no"?>
<rpc-reply xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="7">
<ok/>
</rpc-reply>

2019-06-14 12:56:45,253|||DefaultDispatcher-worker-8||||INFO||||||| 10.0.101.65:2831: closeSession: messageId(8)
2019-06-14 12:56:45,253|||DefaultDispatcher-worker-8||||INFO||||||| 10.0.101.65:2831: send asyncRpc with
messageId(8)
2019-06-14 12:56:45,253|||DefaultDispatcher-worker-8||||INFO||||||| 10.0.101.65:2831: Sending message:

#131
<?xml version="1.0" encoding="UTF-8"?>
<rpc message-id="8" xmlns="urn:ietf:params:xml:ns:netconf:base:1.0">
<close-session/>
</rpc>
##

2019-06-14 12:56:45,261|||Thread-25||||INFO||||||| 10.0.101.65:2831: Received message with messageId: 8
 <?xml version="1.0" encoding="UTF-8" standalone="no"?>
<rpc-reply xmlns="urn:ietf:params:xml:ns:netconf:base:1.0" message-id="8">
<ok/>
</rpc-reply>

2019-06-14 12:56:45,275|||DefaultDispatcher-worker-8||||INFO||||||| Preparing Response...
2019-06-14 12:56:45,275|||DefaultDispatcher-worker-8||||INFO|||||||
resolveNodeTemplateInterfaceOperationOutputs for node template (execute),interface name
(ComponentNetconfExecutor), operationName(process)
2019-06-14 12:56:45,275|||DefaultDispatcher-worker-8||||INFO||||||| resolveWorkflowOutputs for workflow(config-
deploy)
```

Results of the Postman Rest calls:

Below the output of the calls shown in the video:

Output of CDS #1 - SDC Service Catalog

```
REQUEST:
GET /sdc/v1/catalog/services

RESPONSE:
{
    {
        "uuid": "ad40aa27-b3fe-4fc3-8755-ebb1494f5913",
        "invariantUUID": "fa3a6aa5-c77d-4b94-b300-9b7a2eb21627",
        "name": "cds-svc-99",
        "version": "1.0",
        "toscaModelURL": "/sdc/v1/catalog/services/ad40aa27-b3fe-4fc3-8755-ebb1494f5913/toscaModel",
        "category": "Network Service",
        "lifecycleState": "CERTIFIED",
        "lastUpdaterUserId": "jm0007",
        "distributionStatus": "DISTRIBUTED"
    }
}
```

Output of CDS #2 - SO Service VNFs

```
REQUEST:
GET /ecomp/mso/catalog/v2/serviceVnfs?serviceModelName=cds-svc-99

RESPONSE:
{
    "serviceVnfs": [
        {
            "modelInfo": {
                "modelName": "cds-vnf-99",
                "modelUuid": "a44d59b8-91b4-4692-8c29-e0088c901cc6",
                "modelInvariantUuid": "fd41f747-122d-45b9-87fd-2a6d7d434728",
                "modelVersion": "1.0",
                "modelCustomizationUuid": "6409e9d9-a469-4546-a7b4-e508ecc1e77f",
                "modelInstanceName": "cds-vnf-99 0"
            },
            "toscaNodeType": "org.openecomp.resource.vf.CdsVnf99",
            "nfFunction": null,
            "nfType": null,
            "nfRole": null,
            "nfNamingCode": null,
            "multiStageDesign": "false",
            "resourceInput": null,
            "vfModules": [
                {
                    "modelInfo": {
                        "modelName": "CdsVnf99..base_template..module-0",
                        "modelUuid": "dd43a4cb-2123-4213-a76a-38638507eb7f",
                        "modelInvariantUuid": "a22c3514-028e-4ed9-9bd8-9dda79d35278",
                        "modelVersion": "1",
                        "modelCustomizationUuid": "b0421854-bebb-455b-a96f-33db5640b60a"
                    },
                    "isBase": true,
                    "vfModuleLabel": "base_template",
                    "initialCount": 1,
                    "hasVolumeGroup": false
                },
                {
                    "modelInfo": {
                        "modelName": "CdsVnf99..vpkg..module-1",
                        "modelUuid": "b4283579-8e0f-4de4-8eed-8640a24f3625",
                        "modelInvariantUuid": "dbad0645-3c57-4f2e-8a47-887c125b7ae0",
                        "modelVersion": "1",
                        "modelCustomizationUuid": "1339d96b-0347-4c53-a1f2-923482aa71ec"
                    },
                    "isBase": false,
                    "vfModuleLabel": "vpkg",
                    "initialCount": 0,
```

```
                    "hasVolumeGroup": false
                },
                {
                    "modelInfo": {
                        "modelName": "CdsVnf99..vlb..module-2",
                        "modelUuid": "d8ed100e-9c1d-4b37-a17f-0a300e5096c7",
                        "modelInvariantUuid": "3174d161-c832-4b58-ac46-1fc30f40030c",
                        "modelVersion": "1",
                        "modelCustomizationUuid": "3df8956d-601f-4312-a5f1-f186f7ad98d4"
                    },
                    "isBase": false,
                    "vfModuleLabel": "vlb",
                    "initialCount": 0,
                    "hasVolumeGroup": false
                },
                {
                    "modelInfo": {
                        "modelName": "CdsVnf99..vdns..module-3",
                        "modelUuid": "776f80d3-3e18-40c5-adc9-36061fcb452c",
                        "modelInvariantUuid": "80cbf0f3-a80a-4b9b-a9ec-63006c0be349",
                        "modelVersion": "1",
                        "modelCustomizationUuid": "3c2235ff-cbe5-4037-9470-614c069aa334"
                    },
                    "isBase": false,
                    "vfModuleLabel": "vdns",
                    "initialCount": 0,
                    "hasVolumeGroup": false
                }
            ]
        }
    ]
}
```

Output of CDS #3 - SO Service Assign & Activate

```
REQUEST:
POST /onap/so/infra/serviceInstantiation/v7/serviceInstances
{
  "requestDetails": {
    "subscriberInfo": {
      "globalSubscriberId": "Demonstration"
    },
    "requestInfo": {
      "suppressRollback": false,
      "productFamilyId": "a9a77d5a-123e-4ca2-9eb9-0b015d2ee0fb",
      "requestorId": "adt",
      "instanceName": "cds-test",
      "source": "VID"
    },
    "cloudConfiguration": {
      "lcpCloudRegionId": "fr2",
      "tenantId": "6270eaa820934710960682c506115453",
      "cloudOwner":"CloudOwner"
    },
    "requestParameters": {
      "subscriptionServiceType": "vFW",
      "userParams": [
        {
          "Homing_Solution": "none"
        },
        {
          "service": {
            "instanceParams": [
            ],
            "instanceName": "cds-test",
            "resources": {
              "vnfs": [
```

```
                {
                  "modelInfo": {
                "modelName": "cds-vnf-99",
                "modelVersionId": "a44d59b8-91b4-4692-8c29-e0088c901cc6",
                "modelInvariantUuid": "fd41f747-122d-45b9-87fd-2a6d7d434728",
                "modelVersion": "1.0",
                "modelCustomizationId": "6409e9d9-a469-4546-a7b4-e508ecc1e77f",
                "modelInstanceName": "cds-vnf-99 0"
                  },
                  "cloudConfiguration": {
                    "lcpCloudRegionId": "fr2",
                    "tenantId": "6270eaa820934710960682c506115453"
                  },
                  "platform": {
                    "platformName": "test"
                  },
                  "lineOfBusiness": {
                    "lineOfBusinessName": "LOB-Demonstration"
                  },
                  "productFamilyId": "a9a77d5a-123e-4ca2-9eb9-0b015d2ee0fb",
                  "instanceName": "cds-vnf-99 0",
                  "instanceParams": [
                    {
                      "onap_private_net_id": "olc-private",
                      "onap_private_subnet_id": "olc-private",
                      "pub_key": "ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAABAQCs84Cy8+qi
/jvucay0BwFtOq3ian0ulTXFGxkZcZCR0N48j88pbHJaEqb9e25MAsrfH+7Etb9Kd5nbBThEL
/i0AyHXnDsc80Oq0sqlLcfLo3SGSurkrNoRofHboJ5Hn+N9SlWN5FCQGbTx1w3rjqR4LasAI6XxH9xpXSFyyge6ysVXH0cYaZ8sg98nFZa1fPJR9
L8COjZvF+EYudub2RC5HVyV
/sx7bliNFo9JwQh6du1abG4G7ZDjTIcYwYp21iq52UzWU28RVcAyY6AQZJu2lHLdsr8fPvyeWZpC5EqGsxI1G609m9G/dURRKwYfez
/f2ATzpn5QjEX7LrLWBM8r Generated-by-Nova",
                      "image_name": "Ubuntu 16.04",
                      "flavor_name":"n2.cw.standard-2",
                      "sec_group":"olc-open",
                      "install_script_version":"1.4.0-SNAPSHOT",
                      "demo_artifacts_version":"1.4.0-SNAPSHOT",
                      "cloud_env":"openstack",
                      "public_net_id": "olc-public",
                      "aic-cloud-region": "fr2"
                    }
                  ],
                  "vfModules": [
                    {
                      "modelInfo": {
                        "modelName": "CdsVnf99..base_template..module-0",
                        "modelVersionId": "dd43a4cb-2123-4213-a76a-38638507eb7f",
                        "modelInvariantUuid": "a22c3514-028e-4ed9-9bd8-9dda79d35278",
                        "modelVersion": "1",
                        "modelCustomizationId": "b0421854-bebb-455b-a96f-33db5640b60a"
                       },
                      "instanceName": "CdsVnf99..base_template..module-0",
                      "instanceParams": [
                                                {
                          "sec_group": "olc-open",
                          "public_net_id": "olc-net"
                        }
                      ]
                    },
                    {
                      "modelInfo": {
                        "modelName": "CdsVnf99..vpkg..module-1",
                        "modelVersionId": "b4283579-8e0f-4de4-8eed-8640a24f3625",
                        "modelInvariantUuid": "dbad0645-3c57-4f2e-8a47-887c125b7ae0",
                        "modelVersion": "1",
                        "modelCustomizationId": "1339d96b-0347-4c53-a1f2-923482aa71ec"
                       },
                      "instanceName": "CdsVnf99..vpkg..module-1",
                      "instanceParams": [
                        {
                          "sec_group": "olc-open",
                          "public_net_id": "olc-net"
```

```
                    }
                  ]
                },
                {
                  "modelInfo": {
                    "modelName": "CdsVnf99..vlb..module-2",
                    "modelVersionId": "d8ed100e-9c1d-4b37-a17f-0a300e5096c7",
                    "modelInvariantUuid": "3174d161-c832-4b58-ac46-1fc30f40030c",
                    "modelVersion": "1",
                    "modelCustomizationId": "3df8956d-601f-4312-a5f1-f186f7ad98d4"
                   },
                  "instanceName": "CdsVnf99..vlb..module-2",
                  "instanceParams": [
                    {
                      "sec_group": "olc-open",
                      "public_net_id": "olc-net"
                    }
                  ]
                },
                {
                  "modelInfo": {
                    "modelName": "CdsVnf99..vdns..module-3",
                    "modelVersionId": "776f80d3-3e18-40c5-adc9-36061fcb452c",
                    "modelInvariantUuid": "80cbf0f3-a80a-4b9b-a9ec-63006c0be349",
                    "modelVersion": "1",
                    "modelCustomizationId": "3c2235ff-cbe5-4037-9470-614c069aa334"
                  },
                  "instanceName": "CdsVnf99..vdns..module-3",
                  "instanceParams": [
                    {
                      "sec_group": "olc-open",
                      "public_net_id": "olc-net"
                    }
                  ]
                }
              ]
            }
          ]
        },
        "modelInfo": {
          "modelVersion": "1.0",
      "modelVersionId": "ad40aa27-b3fe-4fc3-8755-ebb1494f5913",
      "modelInvariantId": "fa3a6aa5-c77d-4b94-b300-9b7a2eb21627",
      "modelName": "cds-svc-99",
            "modelType": "service"
        }
      }
    }
  ],
  "aLaCarte": false
},
"project": {
  "projectName": "Project-Demonstration"
},
"owningEntity": {
  "owningEntityId": "67f2e84c-734d-4e90-a1e4-d2ffa2e75849",
  "owningEntityName": "OE-Demonstration"
},
"modelInfo": {
  "modelVersion": "1.0",
    "modelVersionId": "ad40aa27-b3fe-4fc3-8755-ebb1494f5913",
    "modelInvariantId": "fa3a6aa5-c77d-4b94-b300-9b7a2eb21627",
    "modelName": "cds-svc-99",
 "modelType": "service"
}
  }
}

RESPONSE:
{
    "requestReferences": {
```

```
        "requestId": "f804a2b6-0e0d-49c4-bd67-7ba3ec0694b3",
        "instanceId": "1a0fbd43-0ab6-4d67-99f4-14a890505a8d",
        "requestSelfLink": "http://84.39.39.120:30277/orchestrationRequests/v7/f804a2b6-0e0d-49c4-bd67-
7ba3ec0694b3"
    }
}
```


Output of CDS #4 - SO Active Infra Requests


```
REQUEST:
GET /infraActiveRequests/f804a2b6-0e0d-49c4-bd67-7ba3ec0694b3

RESPONSE:
{
    "clientRequestId": null,
    "action": "createInstance",
    "requestStatus": "COMPLETE",
    "statusMessage": "Macro-Service-createInstance request was executed correctly.",
    "rollbackStatusMessage": null,
    "flowStatus": "Successfully completed all Building Blocks",
    "retryStatusMessage": null,
    "progress": 100,
    "startTime": "2019-06-07T03:15:07.000+0000",
    "endTime": "2019-06-07T03:18:41.000+0000",
    "source": "VID",
    "vnfId": "1bed94d9-9a12-458a-b891-7c04796b5af4",
    "vnfName": null,
    "vnfType": null,
    "serviceType": null,
    "aicNodeClli": null,
    "tenantId": "6270eaa820934710960682c506115453",
    "provStatus": null,
    "vnfParams": null,
    "vnfOutputs": null,
    "requestBody": "{\r\n  \"requestDetails\": {\r\n    \"subscriberInfo\": {\r\n      \"globalSubscriberId\":
\"Demonstration\"\r\n    },\r\n    \"requestInfo\": {\r\n      \"suppressRollback\": false,\r\n      \"
productFamilyId\": \"a9a77d5a-123e-4ca2-9eb9-0b015d2ee0fb\",\r\n      \"requestorId\": \"adt\",\r\n      \"
instanceName\": \"cds-test\",\r\n      \"source\": \"VID\"\r\n    },\r\n    \"cloudConfiguration\": {\r\n
\"lcpCloudRegionId\": \"fr2\",\r\n      \"tenantId\": \"6270eaa820934710960682c506115453\",\r\n      \"
cloudOwner\":\"CloudOwner\"\r\n    },\r\n    \"requestParameters\": {\r\n      \"subscriptionServiceType\": \"
vFW\",\r\n      \"userParams\": [\r\n        {\r\n          \"Homing_Solution\": \"none\"\r\n        },
\r\n        {\r\n          \"service\": {\r\n            \"instanceParams\": [\r\n            ],\r\n
\"instanceName\": \"cds-test\",\r\n            \"resources\": {\r\n              \"vnfs\": [\r\n
{\r\n                \"modelInfo\": {\r\n                \"modelName\": \"cds-vnf-99\",\r\n                \"
modelVersionId\": \"a44d59b8-91b4-4692-8c29-e0088c901cc6\",\r\n                \"modelInvariantUuid\": \"
fd41f747-122d-45b9-87fd-2a6d7d434728\",\r\n                \"modelVersion\": \"1.0\",\r\n                \"
modelCustomizationId\": \"6409e9d9-a469-4546-a7b4-e508ecc1e77f\",\r\n                \"modelInstanceName\": \"
cds-vnf-99 0\"\r\n                },\r\n                \"cloudConfiguration\": {\r\n                \"
lcpCloudRegionId\": \"fr2\",\r\n                \"tenantId\": \"6270eaa820934710960682c506115453\"
\r\n                },\r\n                \"platform\": {\r\n                \"platformName\": \"test\"
\r\n                },\r\n                \"lineOfBusiness\": {\r\n                \"
lineOfBusinessName\": \"LOB-Demonstration\"\r\n                },\r\n                \"productFamilyId\": \"
a9a77d5a-123e-4ca2-9eb9-0b015d2ee0fb\",\r\n                \"instanceName\": \"cds-vnf-99 0\",
\r\n                \"instanceParams\": [\r\n                {      \r\n                \"
onap_private_net_id\": \"olc-private\",\r\n                \"onap_private_subnet_id\": \"olc-private\",
\r\n                \"pub_key\": \"ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAABAQCs84Cy8+qi
/jvucay0BwFtOq3ian0ulTXFGxkZcZCR0N48j88pbHJaEqb9e25MAsrfH+7Etb9Kd5nbBThEL
/i0AyHXnDsc80Oq0sqlLcfLo3SGSurkrNoRofHboJ5Hn+N9SlWN5FCQGbTx1w3rjqR4LasAI6XxH9xpXSFyyge6ysVXH0cYaZ8sg98nFZa1fPJR9
L8COjZvF+EYudub2RC5HVyV
/sx7bliNFo9JwQh6du1abG4G7ZDjTIcYwYp21iq52UzWU28RVcAyY6AQZJu2lHLdsr8fPvyeWZpC5EqGsxI1G609m9G/dURRKwYfez
/f2ATzpn5QjEX7LrLWBM8r Generated-by-Nova\",\r\n                \"image_name\": \"Ubuntu 16.04\",
\r\n                \"flavor_name\":\"n2.cw.standard-2\",\r\n                \"sec_group\":\"olc-
open\",\r\n                \"install_script_version\":\"1.4.0-SNAPSHOT\",\r\n                \"
demo_artifacts_version\":\"1.4.0-SNAPSHOT\",\r\n                \"cloud_env\":\"openstack\",
\r\n                \"public_net_id\": \"olc-public\",\r\n                \"aic-cloud-region\": \"
fr2\"\r\n                }\r\n                ],\r\n                \"vfModules\":
[\r\n                {\r\n                \"modelInfo\": {\r\n                \"modelName\":
```

\"CdsVnf99..base_template..module-0\",\r\n \"modelVersionId\": \"dd43a4cb-2123-4213-a76a-38638507eb7f\",\r\n \"modelInvariantUuid\": \"a22c3514-028e-4ed9-9bd8-9dda79d35278\",\r\n \"modelVersion\": \"1\",\r\n \"modelCustomizationId\": \"b0421854-bebb-455b-a96f-33db5640b60a\"\r\n },\r\n \"instanceName\": \"CdsVnf99..base_template..module-0\",\r\n \"instanceParams\": [\r\n {\r\n \"sec_group\": \"olc-open\",\r\n \"public_net_id\": \"olc-net\"\r\n }\r\n]\r\n },\r\n {\r\n \"modelInfo\": {\r\n \"modelName\": \"CdsVnf99..vpkg..module-1\",\r\n \"modelVersionId\": \"b4283579-8e0f-4de4-8eed-8640a24f3625\",\r\n \"modelInvariantUuid\": \"dbad0645-3c57-4f2e-8a47-887c125b7ae0\",\r\n \"modelVersion\": \"1\",\r\n \"modelCustomizationId\": \"1339d96b-0347-4c53-a1f2-923482aa71ec\"\r\n },\r\n \"instanceName\": \"CdsVnf99..vpkg..module-1\",\r\n \"instanceParams\": [\r\n {\r\n \"sec_group\": \"olc-open\",\r\n \"public_net_id\": \"olc-net\"\r\n }\r\n]\r\n },\r\n {\r\n \"modelInfo\": {\r\n \"modelName\": \"CdsVnf99..vlb..module-2\",\r\n \"modelVersionId\": \"d8ed100e-9c1d-4b37-a17f-0a300e5096c7\",\r\n \"modelInvariantUuid\": \"3174d161-c832-4b58-ac46-1fc30f40030c\",\r\n \"modelVersion\": \"1\",\r\n \"modelCustomizationId\": \"3df8956d-601f-4312-a5f1-f186f7ad98d4\"\r\n },\r\n \"instanceName\": \"CdsVnf99..vlb..module-2\",\r\n \"instanceParams\": [\r\n {\r\n \"sec_group\": \"olc-open\",\r\n \"public_net_id\": \"olc-net\"\r\n }\r\n]\r\n },\r\n {\r\n \"modelInfo\": {\r\n \"modelName\": \"CdsVnf99..vdns..module-3\",\r\n \"modelVersionId\": \"776f80d3-3e18-40c5-adc9-36061fcb452c\",\r\n \"modelInvariantUuid\": \"80cbf0f3-a80a-4b9b-a9ec-63006c0be349\",\r\n \"modelVersion\": \"1\",\r\n \"modelCustomizationId\": \"3c2235ff-cbe5-4037-9470-614c069aa334\"\r\n },\r\n \"instanceName\": \"CdsVnf99..vdns..module-3\",\r\n \"instanceParams\": [\r\n {\r\n \"sec_group\": \"olc-open\",\r\n \"public_net_id\": \"olc-net\"\r\n }\r\n]\r\n }\r\n]\r\n }\r\n]\r\n },\r\n \"modelInfo\": {\r\n \"modelVersion\": \"1.0\",\r\n \"modelVersionId\": \"ad40aa27-b3fe-4fc3-8755-ebb1494f5913\",\r\n \"modelInvariantId\": \"fa3a6aa5-c77d-4b94-b300-9b7a2eb21627\",\r\n \"modelName\": \"cds-svc-99\",\r\n \"modelType\": \"service\"\r\n }\r\n }\r\n }\r\n],\r\n \"aLaCarte\": false\r\n },\r\n \"project\": {\r\n \"projectName\": \"Project-Demonstration\"\r\n },\r\n \"owningEntity\": {\r\n \"owningEntityId\": \"67f2e84c-734d-4e90-a1e4-d2ffa2e75849\",\r\n \"owningEntityName\": \"OE-Demonstration\"\r\n },\r\n \"modelInfo\": {\r\n \"modelVersion\": \"1.0\",\r\n \"modelVersionId\": \"ad40aa27-b3fe-4fc3-8755-ebb1494f5913\",\r\n \"modelInvariantId\": \"fa3a6aa5-c77d-4b94-b300-9b7a2eb21627\",\r\n \"modelName\": \"cds-svc-99\",\r\n \"modelType\": \"service\"\r\n }\r\n }\r\n}",
    "responseBody": null,
    "lastModifiedBy": "CamundaBPMN",
    "modifyTime": "2019-06-07T03:18:41.000+0000",
    "requestType": null,
    "volumeGroupId": null,
    "volumeGroupName": null,
    "vfModuleId": null,
    "vfModuleName": null,
    "vfModuleModelName": null,
    "aaiServiceId": null,
    "aicCloudRegion": "fr2",
    "callBackUrl": null,
    "correlator": null,
    "serviceInstanceId": "1a0fbd43-0ab6-4d67-99f4-14a890505a8d",
    "serviceInstanceName": "cds-test",
    "requestScope": "service",
    "requestAction": "createInstance",
    "networkId": null,
    "networkName": null,
    "networkType": null,
    "requestorId": "adt",
    "configurationId": null,
    "configurationName": null,
    "operationalEnvId": null,
    "operationalEnvName": null,
    "instanceGroupId": null,
    "instanceGroupName": null,
    "requestUrl": "http://84.39.39.120:30277/onap/so/infra/serviceInstantiation/v7/serviceInstances",
    "requestURI": "f804a2b6-0e0d-49c4-bd67-7ba3ec0694b3",

```
    "_links": {
        "self": {
            "href": "http://84.39.39.120:31323/infraActiveRequests/f804a2b6-0e0d-49c4-bd67-7ba3ec0694b3"
        },
        "infraActiveRequests": {
            "href": "http://84.39.39.120:31323/infraActiveRequests/f804a2b6-0e0d-49c4-bd67-7ba3ec0694b3"
        }
    }
}
```


Service Instance in SDNC MDSAL (attached in file here vdns_sdnc_mdsal.txt, as it's too big for the a collapsable code block).

Service Instance in AAI


```
REQUEST:
GET /aai/v11/business/customers/customer/Demonstration/service-subscriptions/service-subscription/vFW/service-
instances/service-instance/1a0fbd43-0ab6-4d67-99f4-14a890505a8d?depth=all

RESPONSE:
{
    "service-instance-id": "1a0fbd43-0ab6-4d67-99f4-14a890505a8d",
    "service-instance-name": "cds-test",
    "environment-context": "General_Revenue-Bearing",
    "workload-context": "Production",
    "model-invariant-id": "fa3a6aa5-c77d-4b94-b300-9b7a2eb21627",
    "model-version-id": "ad40aa27-b3fe-4fc3-8755-ebb1494f5913",
    "resource-version": "1559877521769",
    "selflink": "restconf/config/GENERIC-RESOURCE-API:services/service/1a0fbd43-0ab6-4d67-99f4-14a890505a8d
/service-data/service-topology/",
    "orchestration-status": "Active",
    "relationship-list": {
        "relationship": [
            {
                "related-to": "project",
                "related-link": "/aai/v11/business/projects/project/Project-Demonstration",
                "relationship-data": [
                    {
                        "relationship-key": "project.project-name",
                        "relationship-value": "Project-Demonstration"
                    }
                ]
            },
            {
                "related-to": "owning-entity",
                "related-link": "/aai/v11/business/owning-entities/owning-entity/67f2e84c-734d-4e90-a1e4-
d2ffa2e75849",
                "relationship-data": [
                    {
                        "relationship-key": "owning-entity.owning-entity-id",
                        "relationship-value": "67f2e84c-734d-4e90-a1e4-d2ffa2e75849"
                    }
                ]
            },
            {
                "related-to": "generic-vnf",
                "related-link": "/aai/v11/network/generic-vnfs/generic-vnf/1bed94d9-9a12-458a-b891-
7c04796b5af4",
                "relationship-data": [
                    {
                        "relationship-key": "generic-vnf.vnf-id",
                        "relationship-value": "1bed94d9-9a12-458a-b891-7c04796b5af4"
                    }
                ],
                "related-to-property": [
```

```
                    {
                        "property-key": "generic-vnf.vnf-name",
                        "property-value": "fr2_ONAP-NF_20190607T031522008Z"
                    }
                ]
            }
        ]
    }
}
```

Generic VNF in AAI

```
REQUEST:
GET {{AAI}}/aai/v11/network/generic-vnfs/generic-vnf/1bed94d9-9a12-458a-b891-7c04796b5af4?depth=all

RESPONSE:
{
    "vnf-id": "1bed94d9-9a12-458a-b891-7c04796b5af4",
    "vnf-name": "fr2_ONAP-NF_20190607T031522008Z",
    "vnf-type": "cds-svc-99/null",
    "service-id": "a9a77d5a-123e-4ca2-9eb9-0b015d2ee0fb",
    "prov-status": "NVTPROV",
    "operational-status": "out-of-service-path",
    "orchestration-status": "Active",
    "in-maint": false,
    "is-closed-loop-disabled": false,
    "resource-version": "1559877519020",
    "model-invariant-id": "fd41f747-122d-45b9-87fd-2a6d7d434728",
    "model-version-id": "a44d59b8-91b4-4692-8c29-e0088c901cc6",
    "model-customization-id": "6409e9d9-a469-4546-a7b4-e508ecc1e77f",
    "selflink": "restconf/config/GENERIC-RESOURCE-API:services/service/1a0fbd43-0ab6-4d67-99f4-14a890505a8d
/service-data/vnfs/vnf/1bed94d9-9a12-458a-b891-7c04796b5af4/vnf-data/vnf-topology/",
    "relationship-list": {
        "relationship": [
            {
                "related-to": "service-instance",
                "related-link": "/aai/v11/business/customers/customer/Demonstration/service-subscriptions
/service-subscription/vFW/service-instances/service-instance/1a0fbd43-0ab6-4d67-99f4-14a890505a8d",
                "relationship-data": [
                    {
                        "relationship-key": "customer.global-customer-id",
                        "relationship-value": "Demonstration"
                    },
                    {
                        "relationship-key": "service-subscription.service-type",
                        "relationship-value": "vFW"
                    },
                    {
                        "relationship-key": "service-instance.service-instance-id",
                        "relationship-value": "1a0fbd43-0ab6-4d67-99f4-14a890505a8d"
                    }
                ],
                "related-to-property": [
                    {
                        "property-key": "service-instance.service-instance-name",
                        "property-value": "cds-test"
                    }
                ]
            },
            {
                "related-to": "line-of-business",
                "related-link": "/aai/v11/business/lines-of-business/line-of-business/LOB-Demonstration",
                "relationship-data": [
                    {
                        "relationship-key": "line-of-business.line-of-business-name",
                        "relationship-value": "LOB-Demonstration"
                    }
```

```
                ]
            },
            {
                "related-to": "platform",
                "related-link": "/aai/v11/business/platforms/platform/test",
                "relationship-data": [
                    {
                        "relationship-key": "platform.platform-name",
                        "relationship-value": "test"
                    }
                ]
            },
            {
                "related-to": "tenant",
                "related-link": "/aai/v11/cloud-infrastructure/cloud-regions/cloud-region/CloudOwner/fr2/tenants
/tenant/6270eaa820934710960682c506115453",
                "relationship-data": [
                    {
                        "relationship-key": "cloud-region.cloud-owner",
                        "relationship-value": "CloudOwner"
                    },
                    {
                        "relationship-key": "cloud-region.cloud-region-id",
                        "relationship-value": "fr2"
                    },
                    {
                        "relationship-key": "tenant.tenant-id",
                        "relationship-value": "6270eaa820934710960682c506115453"
                    }
                ],
                "related-to-property": [
                    {
                        "property-key": "tenant.tenant-name",
                        "property-value": "0750178182_Sandbox1"
                    }
                ]
            },
            {
                "related-to": "cloud-region",
                "related-link": "/aai/v11/cloud-infrastructure/cloud-regions/cloud-region/CloudOwner/fr2",
                "relationship-data": [
                    {
                        "relationship-key": "cloud-region.cloud-owner",
                        "relationship-value": "CloudOwner"
                    },
                    {
                        "relationship-key": "cloud-region.cloud-region-id",
                        "relationship-value": "fr2"
                    }
                ],
                "related-to-property": [
                    {
                        "property-key": "cloud-region.owner-defined-type",
                        "property-value": "OwnerType"
                    }
                ]
            }
        ]
    },
    "vf-modules": {
        "vf-module": [
            {
                "vf-module-id": "a0e238aa-d219-4918-b269-66fef4add4ae",
                "vf-module-name": "fr2_ONAP-NF_20190607T031522008Z_vpkg_Expansion_001",
                "heat-stack-id": "fr2_ONAP-NF_20190607T031522008Z_vpkg_Expansion_001/2725c65d-9af3-4d60-89c6-
41ceae9767ac",
                "orchestration-status": "Active",
                "is-base-vf-module": false,
                "resource-version": "1559877459250",
                "model-invariant-id": "dbad0645-3c57-4f2e-8a47-887c125b7ae0",
                "model-version-id": "b4283579-8e0f-4de4-8eed-8640a24f3625",
```

```
                "model-customization-id": "1339d96b-0347-4c53-a1f2-923482aa71ec",
                "module-index": 0,
                "selflink": "restconf/config/GENERIC-RESOURCE-API:services/service/1a0fbd43-0ab6-4d67-99f4-
14a890505a8d/service-data/vnfs/vnf/1bed94d9-9a12-458a-b891-7c04796b5af4/vnf-data/vf-modules/vf-module/a0e238aa-
d219-4918-b269-66fef4add4ae/vf-module-data/vf-module-topology/"
            },
            {
                "vf-module-id": "c4a88399-7a7d-48d7-b010-f79b85a4306c",
                "vf-module-name": "fr2_ONAP-NF_20190607T031522008Z_base_template_Base_001",
                "heat-stack-id": "fr2_ONAP-NF_20190607T031522008Z_base_template_Base_001/e6441f43-5ac7-4010-
8f6b-ab25811a77f3",
                "orchestration-status": "Active",
                "is-base-vf-module": true,
                "resource-version": "1559877455593",
                "model-invariant-id": "a22c3514-028e-4ed9-9bd8-9dda79d35278",
                "model-version-id": "dd43a4cb-2123-4213-a76a-38638507eb7f",
                "model-customization-id": "b0421854-bebb-455b-a96f-33db5640b60a",
                "module-index": 0,
                "selflink": "restconf/config/GENERIC-RESOURCE-API:services/service/1a0fbd43-0ab6-4d67-99f4-
14a890505a8d/service-data/vnfs/vnf/1bed94d9-9a12-458a-b891-7c04796b5af4/vnf-data/vf-modules/vf-module/c4a88399-
7a7d-48d7-b010-f79b85a4306c/vf-module-data/vf-module-topology/"
            },
            {
                "vf-module-id": "c00aec40-e2fe-4b77-9762-058986c43473",
                "vf-module-name": "fr2_ONAP-NF_20190607T031522008Z_vdns_Expansion_001",
                "heat-stack-id": "fr2_ONAP-NF_20190607T031522008Z_vdns_Expansion_001/3dc085e0-d094-4484-8e91-
8e925c9982f4",
                "orchestration-status": "Active",
                "is-base-vf-module": false,
                "resource-version": "1559877466668",
                "model-invariant-id": "80cbf0f3-a80a-4b9b-a9ec-63006c0be349",
                "model-version-id": "776f80d3-3e18-40c5-adc9-36061fcb452c",
                "model-customization-id": "3c2235ff-cbe5-4037-9470-614c069aa334",
                "module-index": 0,
                "selflink": "restconf/config/GENERIC-RESOURCE-API:services/service/1a0fbd43-0ab6-4d67-99f4-
14a890505a8d/service-data/vnfs/vnf/1bed94d9-9a12-458a-b891-7c04796b5af4/vnf-data/vf-modules/vf-module/c00aec40-
e2fe-4b77-9762-058986c43473/vf-module-data/vf-module-topology/"
            },
            {
                "vf-module-id": "fc93d9d3-741b-4ae9-8981-a20310f20bbe",
                "vf-module-name": "fr2_ONAP-NF_20190607T031522008Z_vlb_Expansion_001",
                "heat-stack-id": "fr2_ONAP-NF_20190607T031522008Z_vlb_Expansion_001/d6ec42fb-30d2-4e01-b669-
6f5f88c71309",
                "orchestration-status": "Active",
                "is-base-vf-module": false,
                "resource-version": "1559877463154",
                "model-invariant-id": "3174d161-c832-4b58-ac46-1fc30f40030c",
                "model-version-id": "d8ed100e-9c1d-4b37-a17f-0a300e5096c7",
                "model-customization-id": "3df8956d-601f-4312-a5f1-f186f7ad98d4",
                "module-index": 0,
                "selflink": "restconf/config/GENERIC-RESOURCE-API:services/service/1a0fbd43-0ab6-4d67-99f4-
14a890505a8d/service-data/vnfs/vnf/1bed94d9-9a12-458a-b891-7c04796b5af4/vnf-data/vf-modules/vf-module/fc93d9d3-
741b-4ae9-8981-a20310f20bbe/vf-module-data/vf-module-topology/"
            }
        ]
    }
}
```


Run Time Flow Diagram

Main reference for CDS sequence flows is here : Instantiation - SDN-C Generic Resource API (Enhancement)

Run Time Troubleshooting

To monitor or to troubleshoot the vLB instantiation with CDS in Dublin, we can check several ONAP component logs, as described below:

Check ONAP Logs

```
#Some commands to quickly check the CDS processing.
#If you like these commands, you can create aliases, so you can quickly call them anytime.
#E.g.: alias l-sdnc='kubectl -n onap exec -it onap-sdnc-sdnc-0 -- cat /var/log/onap/sdnc/karaf.log'
#Author: abdelmuhaimen.seaudi@orange.com

#Check SDNC Logs:
kubectl -n onap exec -it onap-sdnc-sdnc-0 -- cat /var/log/onap/sdnc/karaf.log
kubectl -n onap exec -it onap-sdnc-sdnc-0 -- tail -f /var/log/onap/sdnc/karaf.log

#Check SO Openstack Adapter Logs:
kubectl -n onap get pods | grep so-openstack | grep Running | cut -f1 -d" " | xargs -i kubectl -n onap exec {}
-- cat /app/logs/openstack/debug.log
kubectl -n onap get pods | grep so-openstack | grep Running | cut -f1 -d" " | xargs -i kubectl -n onap exec {}
-- tail -f /app/logs/openstack/debug.log

#Check SO BPMN Logs:
kubectl -n onap get pods | grep so-bpmn | grep Running | cut -f1 -d" " | xargs -i kubectl -n onap exec {} --
cat /app/logs/bpmn/debug.log
kubectl -n onap get pods | grep so-bpmn | grep Running | cut -f1 -d" " | xargs -i kubectl -n onap exec {} --
tail -f /app/logs/bpmn/debug.log

#Check CDS Blueprint Processor Logs:
kubectl -n onap get pods | grep blueprints-processor | grep Running | cut -f1 -d" " | xargs -i kubectl -n onap
logs
kubectl -n onap get pods | grep blueprints-processor | grep Running | cut -f1 -d" " | xargs -i kubectl -n onap
logs {} -f

#Check Netbox Logs:
kubectl -n onap get pods | grep netbox-app | grep Running | cut -f1  -d" " | xargs -i kubectl -n onap logs
kubectl -n onap get pods | grep netbox-app | grep Running | cut -f1  -d" " | xargs -i kubectl -n onap logs {} -f

#Check Naming Service Logs:
kubectl -n onap get pods | grep name-gen | grep Running | cut -f1  -d" " | xargs -i kubectl -n onap logs
kubectl -n onap get pods | grep name-gen | grep Running | cut -f1  -d" " | xargs -i kubectl -n onap logs {} -f
```