



Post Deployment Operations

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Deactivating the USP Deployment



Caution

It is recommended that you perform the checks identified in [Pre-Deactivation/Post-Activation Health Check Summary, on page 10](#) before performing any deactivations. It is also recommended that you back up relevant data before proceeding. Refer to [Backing Up Deployment Information](#) for more information.

Execute the following command to deactivate the entire USP deployment:

```
deactivate nsd <nsd_name>
```

The output of this command is a transaction-id which can be used to monitor the deactivation progress using the following command

```
show log <transaction_id> | display xml
```

Example output for a successful USP deactivation:

Terminating the AutoDeploy VM

Terminating the AutoDeploy VM leverages the same *boot_uas.py* script used to instantiate the AutoDeploy VM.



Important

- Ensure that no changes have been made to this file since it was used to deploy AutoDeploy.
- Be sure to take a backup of the VM content if you are terminating the VM in order to upgrade with a new ISO.
- If AutoDeploy was deployed with HA support, this process terminates both VMs.

To terminate the AutoDeploy VM:

1. Log on to the Ultra M Manager Node.
2. Terminate the AutoDeploy VM.

```
./boot_uas.py --kvm --autodeploy --ha --delete-uas
```

Example command output:

```
2018-01-24 16:30:23,821 - Removing old deployment 'AutoDeploy_instance_0', if it exists
2018-01-24 16:30:24,176 - Removing old deployment 'AutoDeploy_instance_1', if it exists
```

3. View the status.

```
show uas
```

Example command output:

```
Id      Name                               State
-----
```

Terminating the AutoIT VM

Terminating the AutoIT VM leverages the same *boot_uas.py* script used to instantiate the AutoIT-VNF VM.



Important

- Ensure that no changes have been made to this file since it was used to deploy AutoIT.
- Be sure to take a backup of the VM content if you are terminating the VM in order to upgrade with a new ISO.
- If AutoIT was deployed with HA support, this process terminates both VMs.

To terminate the AutoIT VM:

1. Log on to the Ultra M Manager Node.
2. Terminate the AutoIT VM.

```
./boot_uas.py --kvm --autoit --ha --delete-uas
```

Example command output:

```
2018-01-24 16:25:23,734 - Removing old deployment 'AutoIT_instance_0', if it exists
2018-01-24 16:25:24,056 - Removing old deployment 'AutoIT_instance_1', if it exists
```

3. View the status.

```
show uas
```

Example command output:

```
Id      Name                               State
-----
```

Scaling Service Function VMs



Important

The Service Function (SF) scaling feature was first introduced in 6.0 release and made available only for testing purposes. Manual scale-out (addition) of SFs is fully supported in 6.3 release. However, the manual scale-in (removal) of SFs is still not fully qualified yet. For more information, contact your Cisco Accounts representative.

APIs can be used to manually add or remove one or more Service Function (SF) VMs within your VNF deployment.



Important

This functionality is only supported for non-Ultra M deployments. When SFs are successfully added, they are started in Standby mode.

Adding SFs to Your Deployment (Scale-out)

Follow these steps to perform SF scale-out operations.

1. Log on to the active ESC and check *yangesec.log* file to ensure SERVICE_ALIVE state:

```
cat /var/log/esc/yangesec.log
00:14:21,411 03-Jan-2018 INFO ===== SEND NOTIFICATION STARTS =====
00:14:21,411 03-Jan-2018 INFO Type: SERVICE_ALIVE
00:14:21,411 03-Jan-2018 INFO Status: SUCCESS
00:14:21,411 03-Jan-2018 INFO Status Code: 200
00:14:21,411 03-Jan-2018 INFO Status Msg: Service group deployment completed
successfully!
00:14:21,411 03-Jan-2018 INFO Tenant: admin
00:14:21,411 03-Jan-2018 INFO Deployment ID: 6b9f7cf1-0e01-43c7-9555-626e88beb277
00:14:21,411 03-Jan-2018 INFO Deployment name: vnfd-deployment-1.0.0-1
```

2. Log on to the active UEM.

3. Prepare and save the XML-based configuration for a new VM. A sample configuration is provided below. Update the values based on your deployment configuration.

```
<vnfd xmlns="http://www.cisco.com/usp/scm/vnfdservice">
  <name>vnfd-deployment</name>
  <element-group>
```

```

    <element-group-id>di-chassis</element-group-id>
  <constituent-vdu>
    <vdu-ref>session-function</vdu-ref>
    <vnfc>
      <vnfc-id>SF2</vnfc-id>
      <vnfc-ref>sf-vnfc-di-chassis</vnfc-ref>
      <host>host-4</host>
      <lifecycle-event-initialization-variable>
        <destination-path>staros_param.cfg</destination-path>
        <destination-path-variables>
          <name>CARD_TYPE_NUM</name>
          <value>0x42030100</value>
        </destination-path-variables>
        <destination-path-variables>
          <name>SLOT_CARD_NUMBER</name>
          <value>4</value>
        </destination-path-variables>
        <destination-path-variables>
          <name>VNFM_PROXY_ADDRS</name>
          <value>101.101.12.3,101.101.12.4,101.101.12.8</value>
        </destination-path-variables>
      </lifecycle-event-initialization-variable>
    </vnfc>
  </constituent-vdu>
</element-group>
</vnfd>

```

4. Commit the configuration.

```

nncs_cli -u admin
config
load merge URL/<config_file_name>.xml
commit
exit

```

5. Execute the `collect_em_logs.sh` script to capture the UEM (both NCS and VNFMProxy) logs generated during SF scale-out operation.



Important

This step is required only if there is an issue during scale-out operation.

```

<DEBUG> 03-Jan-2018::00:20:21.122 VnfdService Did-15-Worker-54: - Creating service
com.cisco.usp.vnfmproxy.scm.vnfd.VnfdService
<DEBUG> 03-Jan-2018::00:20:21.222 VnfdService Did-15-Worker-54: - Pushed VNFD to device
scm-cf-nc
<DEBUG> 03-Jan-2018::00:20:21.595 VnfcInstanceSub Cdb-ResourceManaged-2:
- Create vnfc for path:
/vnfdservice:vnfd{vnfd-deployment}/element-group{di-chassis}/constituent-vdu{session-function}/vnfc{SF2}
<DEBUG> 03-Jan-2018::00:20:21.781 ConfigVnfdManager
Cdb-ResourceManaged-2: - Deploying VDR at path
/config/vdus/session-function/BOOT_generic_di-chassis_SF2_1 for element
group with id di-chassis, const-vdu : session-function, vnfc:SF2
<DEBUG> 03-Jan-2018::00:20:21.837 VmOperStateHandler TreeCache-1: - Received ZK oper
event type: NODE_ADDED
<DEBUG> 03-Jan-2018::00:20:21.840 VmOperStateHandler TreeCache-1: - Event path
/oper/vdus/session-function/BOOT_generic_di-chassis_SF2_1
<DEBUG> 03-Jan-2018::00:20:21.841 Util TreeCache-1: - Creating/Updating Vdu in Cdb:
session-function
<DEBUG> 03-Jan-2018::00:20:21.877 VmOperStateHandler TreeCache-1: - Received ZK oper

```

```

event type: NODE_UPDATED
<DEBUG> 03-Jan-2018::00:20:21.877 VmOperStateHandler TreeCache-1: - Event path
/oper/vdus/session-function/BOOT_generic_di-chassis_SF2_1
<DEBUG> 03-Jan-2018::00:20:21.878 Util TreeCache-1: - Creating/Updating Vdu in Cdb:
session-function

```

6. Verify that the new VM is added in the NCS.

In 6.2 and earlier releases:

show vdus

CONSTITUENT STORAGE				MEMORY	
ELEMENT	IS			DEVICE CPU	DEVICE UTILS
USAGE ID	CARD TYPE	ID		NAME	GROUP
GROUP	INFRA	INITIALIZED	VIM ID	UTILS	BYTES
control-function	control-function	BOOT_generic_di-chassis_CF1_1	scm-cf-nc	scm-cf-nc	
di-chassis	true	true	10d454d2-2c44-4383-8c37-3caf3e03b658	-	-
-					
di-chassis	true	true	BOOT_generic_di-chassis_CF2_1	scm-cf-nc	scm-cf-nc
-			f4ff7d4b-cc00-48a3-b479-93e1e9758909	-	-
session-function	session-function	BOOT_generic_di-chassis_SF1_1	-	-	-
di-chassis	true	false	3b975e7b-82df-49a3-9718-09e037f43aff	-	-
-					
-			BOOT_generic_di-chassis_SF2_1	-	-
-	di-chassis	true	false		
	fb4918dd-f021-40ce-a527-b35aaf70a821	-	-	-	-

In 6.3 and later releases:

show vnfmpoxy:vnfd vnfd-deployment vdus

```

vdus vdu cf1
card-type control-function
vnfci cf1
  device-name          vnfd-deployment1
  device-group         cf-nc
  constituent-element-group ugp-standalone
  is-infra             true
  initialized          true
  vim-id               1ca3fca7-8929-4830-9e35-4cac294b62bf
vnfci cf2
  device-name          vnfd-deployment2
  device-group         cf-nc
  constituent-element-group ugp-standalone
  is-infra             true
  initialized          true
  vim-id               6ce2a22c-1c03-4f5e-95a4-c791d09a1024
vdus vdu sf1
card-type session-function
vnfci sf1
  constituent-element-group ugp-standalone
  is-infra                 true
  initialized              false
  vim-id                   de5bec01-c3e4-4bbf-8f45-ac2354fc9fbc
vnfci sf2
  constituent-element-group ugp-standalone

```

```

is-infra                true
initialized              false
vim-id                  8fe9eebc-614a-464a-8e87-5288be0528c9

```

- Repeat steps 3, on page 3 through 6, on page 5 for each additional SF you wish to add.

Removing SFs From Your Deployment (Scale-in)



Important

The manual scale-in (removal) of SFs is still not fully qualified yet. For more information, contact your Cisco Accounts representative.

Follow these steps to perform SF scale-in operations.

- Log on to the active UEM and scale-in the previously added SF VM. This removes the VM from the CDB.

```

ncli -u admin
config
vnfd vnfd-deployment element-group di-chassis constituent-vdu
session-function
no vnfc <sf_vnfc-id>
commit
end

```

- Execute the `collect_em_logs.sh` script to collect the NCS logs generated during the scale-in operation.



Important

This step is required only if there is an issue during scale-in operation.

```

<DEBUG> 03-Jan-2018::00:37:36.147 VnfdService Did-15-Worker-54: - Creating service
com.cisco.usp.vnfmproxy.scm.vnfd.VnfdService
<DEBUG> 03-Jan-2018::00:37:36.267 VnfdService Did-15-Worker-54: - Pushed VNFD to device
scm-cf-nc
<DEBUG> 03-Jan-2018::00:37:36.650 VnfcInstanceSub Cdb-ResourceManaged-2:
- Vnfc delete for path:
/vnfdservice:vnfd(vnfd-deployment)/element-group(di-chassis)/constituent-vdu(session-function)/vnfc(SF2)
<DEBUG> 03-Jan-2018::00:37:36.670 VnfcInstanceSub Cdb-ResourceManaged-2:
- Deleted VNFCI: SF2 VDU: session-function Path:
/config/vdus/session-function/BOOT_generic_di-chassis_SF2_1
<DEBUG> 03-Jan-2018::00:37:39.330 VmOperStateHandler TreeCache-1: - Received ZK oper
event type: NODE_UPDATED
<DEBUG> 03-Jan-2018::00:37:39.331 VmOperStateHandler TreeCache-1: - Event path
/oper/vdus/session-function/BOOT_generic_di-chassis_SF2_1
<DEBUG> 03-Jan-2018::00:37:39.331 Util TreeCache-1: - Creating/Updating Vdu in Cdb:
session-function
<DEBUG> 03-Jan-2018::00:38:07.507 VmOperStateHandler TreeCache-1: - Received ZK oper
event type: NODE_REMOVED
<DEBUG> 03-Jan-2018::00:38:07.507 VmOperStateHandler TreeCache-1: - Event path
/oper/vdus/session-function/BOOT_generic_di-chassis_SF2_1
<DEBUG> 03-Jan-2018::00:38:07.509 VmOperStateHandler TreeCache-1: - Handling OperVdr
delete for VduId: session-function, OperVdrId: BOOT_generic_di-chassis_SF2_1
<DEBUG> 03-Jan-2018::00:38:07.510 VmOperStateHandler TreeCache-1: - Got device names to
delete []
<DEBUG> 03-Jan-2018::00:38:07.510 Util TreeCache-1: - Removing Vdr with path:

```

```
/session-function/BOOT_generic_di-chassis_SF2_1
<DEBUG> 03-Jan-2018::00:38:07.518 Util TreeCache-1: - Removed Vdr with path:
/vnfmproxy:vdus/vdu{session-function}/vnfci{BOOT_generic_di-chassis_SF2_1}
```

3. Check the CDB after the scale-in operation.

In 6.2 and earlier releases:

show vdus

```
CONSTITUENT                                MEMORY
STORAGE

ELEMENT      IS                                DEVICE      DEVICE
USAGE                                                CPU        UTILS
ID            CARD TYPE          ID            NAME        GROUP
GROUP        INFRA  INITIALIZED  VIM ID      UTILS      BYTES
BYTES

-----
control-function control-function  BOOT_generic_di-chassis_CF1_1  scm-cf-nc  scm-cf-nc
di-chassis      true   true          10d454d2-2c44-4383-8c37-3caf3e03b658  -          -
-
di-chassis      true   true          BOOT_generic_di-chassis_CF2_1  scm-cf-nc  scm-cf-nc
f4ff7d4b-cc00-48a3-b479-93ele9758909  -          -
-
session-function session-function  BOOT_generic_di-chassis_SF1_1  -
-                di-chassis      true   false
3b975e7b-82df-49a3-9718-09e037f43aff - - -
```

In 6.3 and later releases:

show vnfmproxy:vnfd vnfd-deployment vdus

```
vdus vdu cf1
card-type control-function
vnfci cf1
  device-name          vnfd-deployment1
  device-group         cf-nc
  constituent-element-group ugp-standalone
  is-infra             true
  initialized          true
  vim-id               1ca3fca7-8929-4830-9e35-4cac294b62bf
vnfci cf2
  device-name          vnfd-deployment2
  device-group         cf-nc
  constituent-element-group ugp-standalone
  is-infra             true
  initialized          true
  vim-id               6ce2a22c-1c03-4f5e-95a4-c791d09a1024
vdus vdu sf1
card-type session-function
vnfci sf1
  constituent-element-group ugp-standalone
  is-infra                true
  initialized              false
  vim-id                   de5bec01-c3e4-4bbf-8f45-ac2354fc9fbc
vnfci sf2
  constituent-element-group ugp-standalone
  is-infra                  true
  initialized                false
  vim-id                     8fe9eebc-614a-464a-8e87-5288be0528c9
```

4. Repeat steps 1, on page 6 through 3, on page 7 to scale-in additional SFs.

Deploy and Undeploy the Card with the NCS CLI

To undeploy and redeploy the card (service or session function) using the NCS CLI:

1. Log on to the master UEM VM.
2. Access the NCS CLI.

```
sudo -i
ncs_cli -u admin -C
```

3. Undeploy or suspend the card.

```
suspend-vnfcid vnfid <name> vdu <VDU> vnfcid <VNFCI Instance>
```

For example:

```
suspend-vnfcid vnfid abc vdu sf vnfcid sf1 success true
```

4. Verify the operational status of VNF, card, VDUs. Suspending card removes the card, e.g. from CF.

In 6.2 and earlier releases:

```
show vnf-state
```

```
vnf-state running
```

In 6.3 and later releases:

```
show vnfproxy:vnfd <vnfd_name>vnf-state
```

```
vnf-state running
```

```
show card table
```

Slot	Card Type	Oper State	SPOF	Attach
1: CFC	Control Function Virtual Card	Active	No	
2: CFC	Control Function Virtual Card	Standby	-	
4: FC	1-Port Service Function Virtual Card	Standby	-	

In 6.2 and earlier releases:

```
show vdus
```

ID	CARD TYPE	ID	NAME	CPU	DEVICE	UTILS	MEMORY	STORAGE	CONSTITUENT	IS	INFRA	INITIALIZED	VIM	
														GROUP
cf	control-function	cf1	scm-cf-nc	scm-cf-nc	scm-cf-nc	ugp	ugp	ugp	ugp	ugp	ugp	ugp	ugp	ugp
76e2f28a-4427-4b1d-9c44-72ff51e0d124		cf2	scm-cf-nc	scm-cf-nc	scm-cf-nc	ugp	ugp	ugp	ugp	ugp	ugp	ugp	ugp	
b1155c6e-26f1-44c1-8832-0e9a02f7acd3		sf	session-function	sf1	-	-	-	ugp	ugp	ugp	ugp	ugp	ugp	
7822cea9-1707-4790-abb3-33bb4d26b567		sf2	-	-	-	-	-	ugp	ugp	ugp	ugp	ugp	ugp	
7fd8f37f-59cf-4c9a-811f-faa0abd30b58														

In 6.3 and later releases:

```
show vnfmpoxy:vnfd <vnfd_name> vdu
vdu vdu cf1
card-type control-function
vnfci cf1
  device-name          vnf-d-1
  device-group         cf-nc
  constituent-element-group ugp-standalone
  is-infra             true
  initialized          true
  vim-id               1ca3fca7-8929-4830-9e35-4cac294b62bf
vnfci cf2
  device-name          vnf-d-2
  device-group         cf-nc
  constituent-element-group ugp-standalone
  is-infra             true
  initialized          true
  vim-id               6ce2a22c-1c03-4f5e-95a4-c791d09a1024
vdu vdu sf1
card-type session-function
vnfci sf1
  constituent-element-group ugp-standalone
  is-infra             true
  initialized          false
  vim-id               de5bec01-c3e4-4bbf-8f45-ac2354fc9fbc
vnfci sf2
  constituent-element-group ugp-standalone
  is-infra             true
  initialized          false
  vim-id               8fe9eebc-614a-464a-8e87-5288be0528c9
```

UEM changes the status of suspended card to *undeployed*. For example, UEM Zookeeper:

In 6.2 and earlier releases:

```
[zk: localhost:2181(CONNECTED) 0] get /config/vnf
{"state":"run","name":"abcabc-autovnf-vpc-abcabc"}

[zk: localhost:2181(CONNECTED) 1] get /config/vnfd
{"name":"abcabc-autovnf-vpc-abcabc","version":"6.0","deployment-flavor-id":["generic"],
"anti-affinity-cards":["control-function","session-function"],"card-type-to-vid":{"control-function":["cf"],"session-function":["sf"]}}

[zk: localhost:2181(CONNECTED) 2] get /config/vdus/sf/sf1
{"cpts":[{"vnfc":"sf-vnfc-ugp","cpid":null,"vl":null}],"affinity":null,
"initvars":{"dest_path":"staros-param.cfg","path_vars":{"name":"CARD_TYPE_NUM","val":"0x42020100"},{"name":"SLOT_CARD_NUMBER","val":"3"},
{"name":"VNF_PROXY_ADDRS","val":"101.101.14.9,101.101.14.16,101.101.14.13"}],"operation":"create","ceg-id":"ugp","vnfci-id":"sf1",
"context-vars":null,"nat-pool":null,"vim-id":"abcabc-autovnf-vpc-abcabc-sf-1","volume":null}

[zk: localhost:2181(CONNECTED) 3] get /oper/vdus/sf/sf1
{"id":"sf1","state":"undeployed","vnfciId":"sf-vnfc-ugp",
"uuid":"sf1","host":"tblano-osd-compute-2.localdomain","vimId":"7822cea9-1707-4790-abb3-33bb4d26b567",
"cpts":[{"cpid":"eth0","state":"undeployed","subnet":"94c4ea79-eb81-4a7d-b726-4f780a05436f","netmask":"255.255.255.0",
"dhcp":true,"vl":"vl-di-internall","vnfc":"sf-vnfc-ugp","port_id":"0b5ddc23-5c43-463b-aef4-f1f0b94f90dc","ip address":"192.168.1.124",
"mac_address":"fa:16:3e:b6:26:da","network":"55d41c29-f8ed-4006-b29c-5ad3bf73bf42"},{"cpid":"eth1","state":"undeployed","nicid":1,
"subnet":"472e0423-a9c8-4eb6-9782-a741afe3b93a","netmask":"255.255.255.0","dhcp":true,"vl":"vl-autoit-abcabc-ardh","vnfc":"sf-vnfc-ugp",
"port_id":"0b5ddc23-5c43-463b-aef4-f1f0b94f90dc","ip address":"192.168.1.124",
"mac_address":"fa:16:3e:b6:26:da","network":"55d41c29-f8ed-4006-b29c-5ad3bf73bf42"}]}

[zk: localhost:2181(CONNECTED) 4] get /oper/vnf
{"state":"running","name":"abcabc-autovnf-vpc-abcabc"}

[zk: localhost:2181(CONNECTED) 5] get /oper/vdrs/sf1
{"id":"sf1","state":"undeployed","vnfciId":"sf-vnfc-ugp",
"uuid":"sf1","host":"tblano-osd-compute-2.localdomain","vimId":"7822cea9-1707-4790-abb3-33bb4d26b567",
"cpts":[{"cpid":"eth0","state":"undeployed","subnet":"94c4ea79-eb81-4a7d-b726-4f780a05436f","netmask":"255.255.255.0",
"dhcp":true,"vl":"vl-di-internall","vnfc":"sf-vnfc-ugp","port_id":"0b5ddc23-5c43-463b-aef4-f1f0b94f90dc","ip address":"192.168.1.124",
"mac_address":"fa:16:3e:b6:26:da","network":"55d41c29-f8ed-4006-b29c-5ad3bf73bf42"},{"cpid":"eth1","state":"undeployed","nicid":1,
"subnet":"472e0423-a9c8-4eb6-9782-a741afe3b93a","netmask":"255.255.255.0","dhcp":true,"vl":"vl-autoit-abcabc-ardh","vnfc":"sf-vnfc-ugp",
"port_id":"0b5ddc23-5c43-463b-aef4-f1f0b94f90dc","ip address":"192.168.1.124",
"mac_address":"fa:16:3e:b6:26:da","network":"55d41c29-f8ed-4006-b29c-5ad3bf73bf42"}]}
```

In 6.3 and later releases:

```
[zk: 30.31.14.18(CONNECTED) 0] get /config/vnfs/vnfd-deployment/vnfd
{"state":"run","name":"vnfd-deployment"}

[zk: 30.31.14.18(CONNECTED) 1] get /config/vnfs/vnfd-deployment/vnfd
{"name":"vnfd-deployment","version":"6.3","deployment-fac-id":["vgnfd"],"affinity-rack":["(to-nc-funcion!","(session-funcion!","(act-get-vol!","(to-nc-funcion!","(vgnfd)"],"session-funcion":["(sf1)"]}

[zk: 30.31.14.18(CONNECTED) 2] get /config/vnfs/vnfd-deployment/vnfdvds/sf1/sf2
{"pfs":{"vnc":"sf-vnfc-standalone","pid":"null","v":"null"},"affinity":"null","init-as":["(to-nc-funcion!","(session-funcion!","(act-get-vol!","(to-nc-funcion!","(vgnfd)"],"affinity-rack":["(to-nc-funcion!","(session-funcion!","(act-get-vol!","(to-nc-funcion!","(vgnfd)"],"vnc":"sf-vnfc-standalone","val":["30.31.14.12,30.31.14.18"]}], "generation":"bater","virtual-port-id":[""],"tag-id":"up-standalone","vnc-id":"sf2","context-as":"null","tag-id":"null","vnic-id":"vnfd-deployment-sf1-1","volume":"null","virtual-port-id":[""]}

[zk: 30.31.14.18(CONNECTED) 3] get /oper/vnfs/vnfd-deployment/vdus/sf1/sf2
{"id":"sf2","state":"undeployed","vnfdId":"vnfd-deployment","vnfcId":"sf-vnfc-ugp-standalone","uuid":"sf2","host":"tb2-compute-2.localdomain","vimId":"8fe9eebc-614a-464a-8e87-5288be0528c9","opts":{"cpid":"eth0","state":"undeployed","subnet":"f3b6a640-bcec-4be4-ab2c-e058042e0f83","netmask":"255.255.255.0","dhcp":true,"vl":"vl-di-internal1","vnc":"sf-vnfc-ugp-standalone","port_id":"c69a5d11-b803-4189-bc9e-70bee56a820","ip_address":"192.168.10.85","mac_address":"fa:16:3e:4f:a4:67","network":"e45b4f35-7438-4250-b8c6-ccc44197776e"},{"cpid":"eth1","state":"undeployed","nicid":1,"subnet":"786a040c-d87-482d-ad40-c7e5920fd0c6","netmask":"255.255.255.0","dhcp":true,"vl":"vl-autoit-vim_ardh","vnc":"sf-vnfc-ugp-standalone","port_id":"4325c98d-57a6-4a1a-ba4e-a3b77a092d0d","ip_address":"30.31.14.15","mac_address":"fa:16:3e:8a:ce:0e","network":"0317d09-5e70-4851-9415-3b9f31773d1"},{"cpid":"eth2","state":"undeployed","nicid":2,"subnet":"5a604f247d3db-62466899","netmask":"255.255.0","dhcp":true,"vl":"vl-service","vnc":"sf-vnfc-ugp-standalone","port_id":"d8ff646-4762a254dfe20","ip_address":"192.168.12.6","mac_address":"Edc6e745fd","network":"963f541-4f6b9-3d833851"},{"cpid":"eth3","state":"undeployed","nicid":3,"subnet":"5a604f247d3db-62466899","netmask":"255.255.0","dhcp":true,"vl":"vl-service","vnc":"sf-vnfc-ugp-standalone","port_id":"5aa69954b92846ab3200","ip_address":"192.168.12.5","mac_address":"Edc6e745fd","network":"963f541-4f6b9-3d833851"},"onito":true,"vnic":"sf1"}

[zk: 30.31.14.18(CONNECTED) 4] get /oper/vnfs/vnfd-deployment/vdus/vnfd
{"state":"running","name":"vnfd-deployment"}

[zk: 30.31.14.18(CONNECTED) 6] get /oper/vnfs/vnfd-deployment/vdus/sf2
{"id":"sf2","state":"undeployed","vnfdId":"vnfd-deployment","vnfcId":"sf-vnfc-ugp-standalone","uuid":"sf2","host":"tb2-compute-2.localdomain","vimId":"8fe9eebc-614a-464a-8e87-5288be0528c9","opts":{"cpid":"eth0","state":"undeployed","subnet":"f3b6a640-bcec-4be4-ab2c-e058042e0f83","netmask":"255.255.255.0","dhcp":true,"vl":"vl-di-internal1","vnc":"sf-vnfc-ugp-standalone","port_id":"c69a5d11-b803-4189-bc9e-70bee56a820","ip_address":"192.168.10.85","mac_address":"fa:16:3e:4f:a4:67","network":"e45b4f35-7438-4250-b8c6-ccc44197776e"},{"cpid":"eth1","state":"undeployed","nicid":1,"subnet":"786a040c-d87-482d-ad40-c7e5920fd0c6","netmask":"255.255.255.0","dhcp":true,"vl":"vl-autoit-vim_ardh","vnc":"sf-vnfc-ugp-standalone","port_id":"4325c98d-57a6-4a1a-ba4e-a3b77a092d0d","ip_address":"30.31.14.15","mac_address":"fa:16:3e:8a:ce:0e","network":"0317d09-5e70-4851-9415-3b9f31773d1"},{"cpid":"eth2","state":"undeployed","nicid":2,"subnet":"5a604f247d3db-62466899","netmask":"255.255.0","dhcp":true,"vl":"vl-service","vnc":"sf-vnfc-ugp-standalone","port_id":"d8ff646-4762a254dfe20","ip_address":"192.168.12.6","mac_address":"Edc6e745fd","network":"963f541-4f6b9-3d833851"},{"cpid":"eth3","state":"undeployed","nicid":3,"subnet":"5a604f247d3db-62466899","netmask":"255.255.0","dhcp":true,"vl":"vl-service","vnc":"sf-vnfc-ugp-standalone","port_id":"5aa69954b92846ab3200","ip_address":"192.168.12.5","mac_address":"Edc6e745fd","network":"963f541-4f6b9-3d833851"},"onito":true,"vnic":"sf1"}
```

5. Redeploy or resume the card by executing the following command:

```
resume-vnfcid vnfid <name> vdu <VDU> vnfcid <VNFC Instance>
```

Monitoring and Troubleshooting the Deployment

Pre-Deactivation/Post-Activation Health Check Summary

Table 1: Pre-deactivation/Post-activation Health Checks, on page 10 contains a summary of items to check/verify before performing a deactivation and/or after an activation.

Table 1: Pre-deactivation/Post-activation Health Checks

Item to Check	Notes
Checking OSP-D Server Health	Perform all identified checks.
Checking Controller Server Health	Perform all identified checks.
Checking OSD Compute Server Health	Perform all identified checks.

Item to Check	Notes
Viewing AutoVNF Operational Data	In particular, check the outputs of the following commands: <ul style="list-style-type: none"> • show uas • In releases prior to 6.0: show autovnf-oper:vip-port In 6.0 and later releases: show vnfr • In releases prior to 6.0: show autovnf-oper:vnf-em In 6.0 and later releases: show vnfr • In releases prior to 6.0: show autovnf-oper:vnfm In 6.0 and later releases: show vnfr
Viewing ESC Status	Perform all identified checks.
Viewing ESC Health	Perform all identified checks.
Viewing UEM Service Status	Perform all identified checks.
Viewing VNF Information through the Control Function	Perform all identified checks.

Checking OSP-D Server Health

Viewing Stack Status

Log on to the server on which OSP-D is running to view the stack status by executing the following command:

```
openstack stack list
```

Example output:

```
| ID | Updated Time | Stack Name | Stack Status | Creation Time |
+-----+-----+-----+-----+-----+
| db229d67-212d-4086-a266-e635b2902708 | | tb3-ultram | CREATE_COMPLETE | 2017-06-20T02:31:31Z |
| None | | | | |
+-----+-----+-----+-----+-----+
```



Note Prior to an update, the stack status may be “CREATE_COMPLETE” at the beginning of the update procedure. The stack status should read “UPDATE_COMPLETE” and list and update time at the successful completion of the update procedure.

Viewing the Bare Metal Node List

Log on to the server on which OSP-D is running to view the node list by executing the following command:

```
openstack baremetal node list
```

Example command output:

UUID	Name	Instance UUID	Power State	Provisioning State	Maintenance
6725bb18-2895-4a8a-86ad-96b00cc9df4d	None	bc903f51-8483-4522-bcd7-ac396ac626b1	power on	active	False
f1aa6356-40a0-41de-belb-fa6033c9affb	None	05fbfb44-ccd9-475d-b263-58b2deaf8554	power on	active	False
f02357a3-6f9b-46ae-b31f-1a21f6d33543	None	dd0596b1-bd35-451a-85bc-c635e7fa6d14	power on	active	False
call153d6-ffaf-481a-ac9b-bc2afc450152	None	96d2725c-9c70-4a66-9d3c-4a0356faf1c0	power on	active	False
8f338102-c114-4a7a-94f0-9e1a54494519	None	85a9a708-5eae-4ea2-8b29-dc2acd6e515d	power on	active	False
5d3d3525-2528-4801-b885-6c4b340393a6	None	315c7aea-acef-4341-aa9e-bcd594cae592	power on	active	False
ac21208b-36fd-4404-8e68-53a90df3a29f	None	9f0b2ff3-5234-42e9-81dd-c0ef5e454137	power on	active	False
a6d92bfc-0136-4c22-9988-0108df775a03	None	2a3e2086-3516-40ac-a584-3714e91858f5	power on	active	False
5f0593b7-31de-4291-b43f-a549699cd470	None	f4cc50d4-441e-4728-9984-53df29f0b7f7	power on	active	False
99225e1b-085e-4ef7-8173-4687900b741a	None	200a918e-abb3-4539-a1c4-7e30f2d8ebc2	power on	active	False
c6ec143b-a522-4d69-ab31-5b4934ad3c42	None	7c675ed5-17d9-47ad-a2ef-592353e27713	power on	active	False
e1026c43-f2a3-44ad-a385-4d4462552977	None	45b45041-656f-4ee1-8be2-976c71a35b1f	power on	active	False
122188ea-09ae-486c-b225-17cf0defe025	None	bd38818e-36ca-4fd9-a65f-c4b0e5b34977	power on	active	False
f6ecf896-6e5e-4735-8727-942478dee58a	None	82a79351-5520-4e89-ae19-48c7b6f6b39f	power on	active	False
e6db159e-008e-4186-8967-92a9faeee368	None	986affe6-23ba-48ba-ae4e-0d2226aabf55	power on	active	False
44f3a434-eaf8-4b1a-97e5-6340d277fa4e	None	1f385454-3ddb-40bd-bc6e-a55ad69fff47	power on	active	False
7ab70571-64ea-439b-a0f4-34147d01dfbf	None	6f9f76ac-3cf7-4002-94ba-39bc6f0b4c40	power on	active	False
6d478a22-874c-4611-834d-21f4809f90ce	None	8e37407f-c784-4f5f-942f-2e2c36aa3fa4	power on	active	False
0a57a5ad-d160-477e-807f-11997307bc9c	None	25b53356-9f02-4810-b722-efb6fd887879	power on	active	False
6fff3d83-ed37-4934-89e0-d632aeb37b15	None	0ea048c0-6f4b-460d-99b2-796dd694c226	power on	active	False
5496919c-c269-4860-b49a-e0d103a6a460	None	6a8e05aa-26fe-43bb-b464-ede86b9f4639	power on	active	False
513b936d-1c52-4b0a-9ac4-4101fe812f07	None	b92c5720-7db9-417b-b3d5-023046788c8e	power on	active	False

Viewing the OpenStack Server List

Log on to the server on which OSP-D is running to ensure that stack components are active and running the same image by executing the following command:

```
openstack server list
```

Example command output:

ID	Name	Status	Networks
----	------	--------	----------

Image Name			
9f0b2ff3-5234-42e9-81dd-c0ef5e454137	tb3-ultram-compute-3	ACTIVE	
ctlplane=192.200.0.133 overcloud-full_20170620T011048			
25b53356-9f02-4810-b722-efb6fd887879	tb3-ultram-compute-15	ACTIVE	
ctlplane=192.200.0.131 overcloud-full_20170620T011048			
986affe6-23ba-48ba-ae4e-0d2226aabf55	tb3-ultram-compute-11	ACTIVE	
ctlplane=192.200.0.128 overcloud-full_20170620T011048			
45b45041-656f-4ee1-8be2-976c71a35b1f	tb3-ultram-compute-8	ACTIVE	
ctlplane=192.200.0.130 overcloud-full_20170620T011048			
bd38818e-36ca-4fd9-a65f-c4b0e5b34977	tb3-ultram-compute-9	ACTIVE	
ctlplane=192.200.0.127 overcloud-full_20170620T011048			
82a79351-5520-4e89-ae19-48c7b6f6b39f	tb3-ultram-compute-10	ACTIVE	
ctlplane=192.200.0.126 overcloud-full_20170620T011048			
1f385454-3ddb-40bd-bc6e-a55ad69fff47	tb3-ultram-compute-12	ACTIVE	
ctlplane=192.200.0.118 overcloud-full_20170620T011048			
8e37407f-c784-4f5f-942f-2e2c36aa3fa4	tb3-ultram-compute-14	ACTIVE	
ctlplane=192.200.0.117 overcloud-full_20170620T011048			
315c7aea-acef-4341-aa9e-bcd594cae592	tb3-ultram-compute-2	ACTIVE	
ctlplane=192.200.0.114 overcloud-full_20170620T011048			
2a3e2086-3516-40ac-a584-3714e91858f5	tb3-ultram-compute-4	ACTIVE	
ctlplane=192.200.0.120 overcloud-full_20170620T011048			
b92c5720-7db9-417b-b3d5-023046788c8e	tb3-ultram-osd-compute-2	ACTIVE	
ctlplane=192.200.0.110 overcloud-full_20170620T011048			
7c675ed5-17d9-47ad-a2ef-592353e27713	tb3-ultram-compute-7	ACTIVE	
ctlplane=192.200.0.111 overcloud-full_20170620T011048			
0ea048c0-6f4b-460d-99b2-796dd694c226	tb3-ultram-osd-compute-0	ACTIVE	
ctlplane=192.200.0.112 overcloud-full_20170620T011048			
f4cc50d4-441e-4728-9984-53df29f0b7f7	tb3-ultram-compute-5	ACTIVE	
ctlplane=192.200.0.108 overcloud-full_20170620T011048			
dd0596b1-bd35-451a-85bc-c635e7fa6d14	tb3-ultram-controller-2	ACTIVE	
ctlplane=192.200.0.115 overcloud-full_20170620T011048			
85a9a708-5eae-4ea2-8b29-dc2acd6e515d	tb3-ultram-compute-1	ACTIVE	
ctlplane=192.200.0.102 overcloud-full_20170620T011048			
bc903f51-8483-4522-bcd7-ac396ac626b1	tb3-ultram-controller-0	ACTIVE	
ctlplane=192.200.0.105 overcloud-full_20170620T011048			
6a8e05aa-26fe-43bb-b464-ed86b9f4639	tb3-ultram-osd-compute-1	ACTIVE	
ctlplane=192.200.0.106 overcloud-full_20170620T011048			
200a918e-abb3-4539-alc4-7e30f2d8ebc2	tb3-ultram-compute-6	ACTIVE	
ctlplane=192.200.0.109 overcloud-full_20170620T011048			
05fbfb44-ccd9-475d-b263-58b2deaf8554	tb3-ultram-controller-1	ACTIVE	
ctlplane=192.200.0.113 overcloud-full_20170620T011048			
96d2725c-9c70-4a66-9d3c-4a0356faf1c0	tb3-ultram-compute-0	ACTIVE	
ctlplane=192.200.0.107 overcloud-full_20170620T011048			
6f9f76ac-3cf7-4002-94ba-39bc6f0b4c40	tb3-ultram-compute-13	ACTIVE	
ctlplane=192.200.0.103 overcloud-full_20170620T011048			

Viewing the OpenStack Stack Resource List

Log on to the server on which OSP-D is running to view the stack resources and their status by executing the following command:

```
openstack stack resource list name
```

Example command output:

resource_name	physical_resource_id	resource_status	updated_time
UpdateWorkflow	94270702-cd8b-4441-a09e-5c9da0c2d02b		
OS::TripleO::Tasks::UpdateWorkflow	CREATE_COMPLETE	2017-06-27T22:04:00Z	

```

| CephStorageHostsDeployment | 196dbba7-5d66-4a9c-9308-f47ff4ddbe2d |
OS::Heat::StructuredDeployments | CREATE_COMPLETE | 2017-06-27T22:04:00Z |
| OsdComputeAllNodesDeployment | 6a5775c0-03d8-453f-92d8-be6ea5aed853 |
OS::Heat::StructuredDeployments | CREATE_COMPLETE | 2017-06-27T22:04:00Z |
| BlockStorageHostsDeployment | 97b2f70a-c295-4437-9222-8248ec30badf |
OS::Heat::StructuredDeployments | CREATE_COMPLETE | 2017-06-27T22:04:00Z |
| CephStorage | 1bc20bb0-516a-4eb5-85e2-be9d30e2f6e8 |
OS::Heat::ResourceGroup | CREATE_COMPLETE | 2017-06-27T22:04:00Z |
| AllNodesDeploySteps | da9ead69-b83e-4cc9-86e8-8d823c02843b |
OS::TripleO::PostDeploySteps | CREATE_COMPLETE | 2017-06-27T22:04:00Z |
| CephStorageAllNodesDeployment | e5ee9df8-fae1-4641-9cfb-038c8f4eca85 |
OS::Heat::StructuredDeployments | CREATE_COMPLETE | 2017-06-27T22:04:00Z |

```

Verifying Node Reachability

Log on to the server on which OSP-D is running to ensure the node reachability and availability by executing the following command:

```

for i in $(nova list| grep ACTIVE| awk '{print $12}' | sed 's\ctlplane=\\g'
) ; do ssh heat-admin@${i} uptime ; done

```

This command establishes an SSH session with each node and report the system uptime. Investigate any node that does not reply or has an unexpected uptime.

Example command output:

```

14:47:10 up 18:15, 0 users, load average: 0.01, 0.02, 0.05
14:47:11 up 18:14, 0 users, load average: 9.50, 9.15, 12.32
14:47:11 up 18:14, 0 users, load average: 9.41, 9.09, 12.26
14:47:11 up 18:14, 0 users, load average: 10.41, 10.28, 10.49
14:47:12 up 18:15, 0 users, load average: 0.00, 0.02, 0.05
14:47:12 up 18:14, 0 users, load average: 0.18, 0.06, 0.06
14:47:12 up 18:15, 0 users, load average: 0.00, 0.03, 0.05
14:47:12 up 18:15, 0 users, load average: 0.00, 0.01, 0.05
14:47:13 up 18:14, 0 users, load average: 0.02, 0.02, 0.05
14:47:13 up 18:14, 0 users, load average: 8.23, 8.66, 12.29
14:47:13 up 18:14, 0 users, load average: 8.76, 8.87, 12.14
14:47:14 up 18:15, 0 users, load average: 0.01, 0.04, 0.05
14:47:14 up 18:15, 0 users, load average: 9.30, 9.08, 10.12
14:47:14 up 18:15, 0 users, load average: 0.01, 0.06, 0.05
14:47:14 up 18:14, 0 users, load average: 8.31, 8.61, 11.96
14:47:15 up 18:14, 0 users, load average: 17.08, 12.09, 11.06
14:47:15 up 17:09, 0 users, load average: 1.64, 1.33, 1.10
14:47:15 up 17:04, 0 users, load average: 1.02, 0.77, 0.79
14:47:16 up 16:58, 0 users, load average: 0.55, 0.63, 0.72
14:47:16 up 23:46, 0 users, load average: 2.68, 3.46, 3.89
14:47:16 up 1 day, 5 min, 0 users, load average: 4.10, 4.27, 4.44
14:47:17 up 23:53, 0 users, load average: 1.90, 2.32, 2.24

```

Verify NTP is running

To verify the operational status of NTP server:

1. Log on to the server on which OSP-D is running to ensure that NTP is running on all nodes in the cluster by executing the following command:

```

for i in $(nova list| grep ACTIVE| awk '{print $12}' | sed
's\ctlplane=\\g' ) ; do ssh heat-admin@${i} systemctl status ntpd |grep
Active; done

```

This command establishes an SSH session with each node and lists the ntpd status.

Example command output:

```

Active: active (running) since Tue 2017-07-11 20:32:25 UTC; 18h ago
Active: active (running) since Tue 2017-07-11 20:32:28 UTC; 18h ago
Active: active (running) since Tue 2017-07-11 20:32:50 UTC; 18h ago
Active: active (running) since Tue 2017-07-11 20:32:28 UTC; 18h ago
Active: active (running) since Tue 2017-07-11 20:32:14 UTC; 18h ago
Active: active (running) since Tue 2017-07-11 20:32:30 UTC; 18h ago
Active: active (running) since Tue 2017-07-11 20:32:22 UTC; 18h ago
Active: active (running) since Tue 2017-07-11 20:32:16 UTC; 18h ago
Active: active (running) since Tue 2017-07-11 20:32:35 UTC; 18h ago
Active: active (running) since Tue 2017-07-11 20:32:31 UTC; 18h ago
Active: active (running) since Tue 2017-07-11 20:32:30 UTC; 18h ago
Active: active (running) since Tue 2017-07-11 20:32:25 UTC; 18h ago
Active: active (running) since Tue 2017-07-11 20:32:19 UTC; 18h ago
Active: active (running) since Tue 2017-07-11 20:32:14 UTC; 18h ago
Active: active (running) since Tue 2017-07-11 20:32:41 UTC; 18h ago
Active: active (running) since Tue 2017-07-11 20:32:30 UTC; 18h ago
Active: active (running) since Tue 2017-07-11 21:37:32 UTC; 17h ago
Active: active (running) since Tue 2017-07-11 21:43:16 UTC; 17h ago
Active: active (running) since Tue 2017-07-11 21:48:57 UTC; 17h ago
Active: active (running) since Tue 2017-07-11 15:01:30 UTC; 23h ago
Active: active (running) since Tue 2017-07-11 14:42:10 UTC; 24h ago
Active: active (running) since Tue 2017-07-11 14:54:06 UTC; 23h ago

```

2. Verify that all the OpenStack nodes are synced to NTP server.

```

for i in $(nova list | grep -i overc- | awk '{print $12}' | sed
's/ctlplane=//g') ; do (ssh -o StrictHostKeyChecking=no heat-admin@$i
sudo ntpstat | grep NTP) ; done

```

```

[stack@j19bxb-ospd ~]$ for i in $(nova list | grep -i overc- | awk '{print $12}' | sed
's/ctlplane=//g') ; do (ssh -o StrictHostKeyChecking=no heat-admin@$i sudo ntpstat |
grep NTP) ; done
synchronised to NTP server (10.84.96.130) at stratum 3
synchronised to NTP server (10.84.96.130) at stratum 3
synchronised to NTP server (10.84.96.130) at stratum 3
synchronised to NTP server (10.84.96.130) at stratum 3
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synchronised to NTP server (10.84.96.130) at stratum 3
synchronised to NTP server (10.84.96.130) at stratum 3
synchronised to NTP server (10.84.96.130) at stratum 3

```

3. Check the NTP status on the server on which OSP-D is running by executing the following command:

```
systemctl status ntpd |grep Active
```

Investigate any node that is not actively running NTP.

Checking OSP-D Server Health

Verifying VM and Other Service Status and Quotas

Log on to the server on which OSP-D is running to verify that Overcloud VMs are active and running by executing the following commands:

```
cd /home/stack
source ~/<stack_name>rc-core
nova list
```



Note Overcloud VM status can also be checked through the Horizon GUI.

Example command output:

```
+-----+-----+-----+-----+-----+
| ID                                     | Name                                     |
| Status | Task State | Power State | Networks                                     |
+-----+-----+-----+-----+-----+
| 407891a2-85bb-4b84-a023-bca4ff304fc5 | auto-deploy-vm-uas-0                   |
| ACTIVE | -           | Running      | mgmt=172.16.181.21, 10.84.123.13           |
+-----+-----+-----+-----+-----+
| bb4c06c5-b328-47bd-ac57-a72a9b4bb496 | auto-it-vm-uas-0                       |
| ACTIVE | -           | Running      | mgmt=172.16.181.19, 10.84.123.12           |
+-----+-----+-----+-----+-----+
| fc0e47d3-e59e-41a3-9d8d-99371de1c4c5 | tb3-bxb-autovnf1-uas-0                 | | |
| ACTIVE | -           | Running      | tb3-bxb-autovnf1-uas-orchestration=172.17.180.10; |
|                                               | tb3-bxb-autovnf1-uas-management=172.17.181.8   |
+-----+-----+-----+-----+-----+
| 8056eff1-913e-479a-ac44-22eba42ceee1 | tb3-bxb-autovnf1-uas-1                 | | |
| ACTIVE | -           | Running      | tb3-bxb-autovnf1-uas-orchestration=172.17.180.6; |
|                                               | tb3-bxb-autovnf1-uas-management=172.17.181.12  |
+-----+-----+-----+-----+-----+
| 4e9fab14-dad0-4789-bc52-1fac3e40b7cc | tb3-bxb-autovnf1-uas-2                 | | |
| ACTIVE | -           | Running      | tb3-bxb-autovnf1-uas-orchestration=172.17.180.13; |
|                                               | tb3-bxb-autovnf1-uas-management=172.17.181.3   |
+-----+-----+-----+-----+-----+
| 1a4e65e3-9f9d-429f-a604-6dfb45ef2a45 | tb3-bxb-vnfm1-ESC-0                   | | |
| ACTIVE | -           | Running      | tb3-bxb-autovnf1-uas-orchestration=172.17.180.3; |
|                                               | tb3-bxb-autovnf1-uas-management=172.17.181.4   |
+-----+-----+-----+-----+-----+
| 7f4ec2dc-e8a8-4f6c-bf6e-8f29735e9fca | tb3-bxb-vnfm1-ESC-1                   | | |
| ACTIVE | -           | Running      | tb3-bxb-autovnf1-uas-orchestration=172.17.180.14; |
|                                               | tb3-bxb-autovnf1-uas-management=172.17.181.5   |
+-----+-----+-----+-----+-----+
| 1c9fc0bd-dc16-426f-b387-c2b75b3a1c16 | tb3-bxb-vnfm1-em_tb3-bx_0_190729a1-c703-4e15-b0b3-795e2e876f55 |
| ACTIVE | -           | -             | -                                             |
+-----+-----+-----+-----+-----+
```



```

Running      | tb3-bxb-autovnf1-uas-orchestration=172.17.180.4;
tb3-bxb-autovnf1-uas-management=172.17.181.9

|
| 9a407a06-929a-49ce-8bae-4df35b5f8b40 |
tb3-bxb-vnfm1-em_tb3-bx_0_92c5224b-1f1f-4f3f-8ac8-137be69ce473 | ACTIVE | -
Running      | tb3-bxb-autovnf1-uas-orchestration=172.17.180.5;
tb3-bxb-autovnf1-uas-management=172.17.181.10

|
| e4528022-6e7b-43f9-94f6-a6ab6289478d |
tb3-bxb-vnfm1-em_tb3-bx_0_d9f7ecb2-a7dc-439b-b492-5ce0402264ea | ACTIVE | -
Running      | tb3-bxb-autovnf1-uas-orchestration=172.17.180.2;
tb3-bxb-autovnf1-uas-management=172.17.181.7

|
| 2calle5b-8eec-456d-9001-1f2600605ad4 |
vnfd1-deployment_c1_0_5b287829-6a9d-4c0a-97d0-a5e0f645b767 | ACTIVE | -
Running      | tb3-bxb-autovnf1-uas-orchestration=172.17.180.16;
tb3-bxb-vnfm1-di-internal1=192.168.1.4; tb3-bxb-autovnf1-uas-management=172.17.181.15;
tb3-bxb-vnfm1-di-internal2=192.168.2.5

|
| 0bdbd9e3-926a-4abe-81b3-95dc42ea0676 |
vnfd1-deployment_c2_0_7074a450-5268-4c94-965b-8fb809410d14 | ACTIVE | -
Running      | tb3-bxb-autovnf1-uas-orchestration=172.17.180.15;
tb3-bxb-vnfm1-di-internal1=192.168.1.2; tb3-bxb-autovnf1-uas-management=172.17.181.18;
tb3-bxb-vnfm1-di-internal2=192.168.2.6

|
| 8b07a9b1-139f-4a12-b16e-d35cb17f6668 |
vnfd1-deployment_s10_0_f6d110f9-9e49-43fe-be14-4ab87ca3334c | ACTIVE | -
Running      | tb3-bxb-autovnf1-uas-orchestration=172.17.180.7;
tb3-bxb-vnfm1-di-internal1=192.168.1.8; tb3-bxb-vnfm1-service-network1=10.10.10.3,
10.10.10.10; tb3-bxb-vnfm1-service-network2=20.20.20.5, 20.20.20.4;
tb3-bxb-vnfm1-di-internal2=192.168.2.12
|
| 4ff0ce2e-1d97-4056-a7aa-018412c0385d |
vnfd1-deployment_s3_0_5380ef6c-6fe3-4e92-aa44-d94ef6e94235 | ACTIVE | -
Running      | tb3-bxb-autovnf1-uas-orchestration=172.17.180.19;
tb3-bxb-vnfm1-di-internal1=192.168.1.5; tb3-bxb-vnfm1-service-network1=10.10.10.7, 10.10.10.2;
tb3-bxb-vnfm1-service-network2=20.20.20.9, 20.20.20.6; tb3-bxb-vnfm1-di-internal2=192.168.2.8

|
| 3954cd6e-0f12-4d4b-8558-2e035c126d9a |
vnfd1-deployment_s4_0_e5ae4aa9-a90e-4bfe-aaff-82ffd8f7fe34 | ACTIVE | -
Running      | tb3-bxb-autovnf1-uas-orchestration=172.17.180.8;
tb3-bxb-vnfm1-di-internal1=192.168.1.9; tb3-bxb-vnfm1-service-network1=10.10.10.13,
10.10.10.8; tb3-bxb-vnfm1-service-network2=20.20.20.12, 20.20.20.10;
tb3-bxb-vnfm1-di-internal2=192.168.2.3
|
| 2cc6728c-2982-42bf-bb8b-198a14fdb31 |
vnfd1-deployment_s5_0_1d57c15d-alde-40d4-aac2-1715f01ac50a | ACTIVE | -
Running      | tb3-bxb-autovnf1-uas-orchestration=172.17.180.17;
tb3-bxb-vnfm1-di-internal1=192.168.1.7; tb3-bxb-vnfm1-service-network1=10.10.10.5,
10.10.10.18; tb3-bxb-vnfm1-service-network2=20.20.20.11, 20.20.20.2;
tb3-bxb-vnfm1-di-internal2=192.168.2.4
|
| 876cc650-ae8b-497b-805a-24a305be6c13 |
vnfd1-deployment_s6_0_05e13a62-623c-4749-ae2a-15c70dd12e16 | ACTIVE | -
Running      | tb3-bxb-autovnf1-uas-orchestration=172.17.180.11;
tb3-bxb-vnfm1-di-internal1=192.168.1.6; tb3-bxb-vnfm1-service-network1=10.10.10.12,
10.10.10.9; tb3-bxb-vnfm1-service-network2=20.20.20.13, 20.20.20.18;
tb3-bxb-vnfm1-di-internal2=192.168.2.16
|
| 89f7245e-c2f7-4041-b5e6-1eee48641cfd |
vnfd1-deployment_s7_0_3a4d7273-e808-4b5f-8877-7aa182483d93 | ACTIVE | -
Running      | tb3-bxb-autovnf1-uas-orchestration=172.17.180.24;
tb3-bxb-vnfm1-di-internal1=192.168.1.12; tb3-bxb-vnfm1-service-network1=10.10.10.14,
10.10.10.6; tb3-bxb-vnfm1-service-network2=20.20.20.20, 20.20.20.8;
tb3-bxb-vnfm1-di-internal2=192.168.2.7

```

```

| 535b0bca-d3c5-4d99-ba41-9953da6339f4 |
vnfd1-deployment_s8_0_1e0f3ebf-b6e0-4bfe-9b1c-985dc32e1519 | ACTIVE | - |
Running | tb3-bxb-autovnf1-uas-orchestration=172.17.180.18;
tb3-bxb-vnfm1-di-internal1=192.168.1.14; tb3-bxb-vnfm1-service-network1=10.10.10.17,
10.10.10.11; tb3-bxb-vnfm1-service-network2=20.20.20.17, 20.20.20.15;
tb3-bxb-vnfm1-di-internal2=192.168.2.9 |
| dfdfafab-a624-4063-bae6-63c4a757473f |
vnfd1-deployment_s9_0_26db8332-8dac-43fc-84c5-71a8b975fd17 | ACTIVE | - |
Running | tb3-bxb-autovnf1-uas-orchestration=172.17.180.22;
tb3-bxb-vnfm1-di-internal1=192.168.1.10; tb3-bxb-vnfm1-service-network1=10.10.10.21,
10.10.10.24; tb3-bxb-vnfm1-service-network2=20.20.20.23, 20.20.20.22;
tb3-bxb-vnfm1-di-internal2=192.168.2.19 |
+-----+-----+-----+-----+

```

Checking Cinder Type

Log on to the server on which OSP-D is running to check the Cinder volume type by executing the following commands:

```

cd /home/stack
source ~/<stack_name>rc-core
cinder type-list

```

Example command output:

```

+-----+-----+-----+-----+
| ID | Name | Description | Is_Public |
+-----+-----+-----+-----+
| 208ef179-dfe4-4735-8a96-e7beee472944 | LUKS | - | True |
+-----+-----+-----+-----+

```

```

cinder type-show LUKS

```

Example command output:

```

+-----+-----+
| Property | Value |
+-----+-----+
| description | None |
| extra_specs | {} |
| id | bf855b0f-8b3f-42bf-9497-05013b4ddad9 |
| is_public | True |
| name | LUKS |
| os-volume-type-access:is_public | True |
| qos_specs_id | None |
+-----+-----+

```

Checking Core Project (Tenant) and User Core

Log on to the server on which OSP-D is running to check the core projects and users by executing the following commands:

```

cd /home/stack
source ~/<stack_name> rc-core
openstack project list

```

Example command output:

```

+-----+-----+
| ID | Name |
+-----+-----+
| 271ab207a197465f9d166c2dc7304b18 | core |
+-----+-----+

```

```
| 52547e0fca994cd682aa733b941d0f68 | service |
| 9543ad9db4dd422ea5aedf04756d3682 | admin   |
+-----+-----+
```

openstack project show core

Example command output:

```
+-----+-----+
| Field      | Value                                     |
+-----+-----+
| description | core tenant                             |
| enabled     | True                                     |
| id          | 271ab207a197465f9d166c2dc7304b18      |
| name        | core                                     |
| properties  |                                          |
+-----+-----+
```

openstack project show service

Example command output:

```
+-----+-----+
| Field      | Value                                     |
+-----+-----+
| description | Tenant for the openstack services      |
| enabled     | True                                     |
| id          | 52547e0fca994cd682aa733b941d0f68      |
| name        | service                                 |
| properties  |                                          |
+-----+-----+
```

openstack project show admin

Example command output:

```
+-----+-----+
| Field      | Value                                     |
+-----+-----+
| description | admin tenant                             |
| enabled     | True                                     |
| id          | 9543ad9db4dd422ea5aedf04756d3682      |
| name        | admin                                     |
| properties  |                                          |
+-----+-----+
```

openstack user list

Example command output:

```
+-----+-----+
| ID                                               | Name |
+-----+-----+
| 1ac7208b033a41ccba805d86bf60dbb7             | admin |
| a6adac4ee79c4206a29de5165d7c7a6a             | neutron |
| 79da40fe88c64de7a93bc691a42926ea             | heat |
| 525048a99816474d91d692d9516e951c             | nova |
| 8d6688db8d19411080eeb4c84c1d586b             | glance |
| 9aadd12171474d1e8bcbacf890e070ab             | cinder |
| d2ee641a72c4493995de70a1a9671f2b             | heat-cfn |
| 7fbb088c15e1428ab6ce677aad5415f4             | swift |
| 828cbf69cf564747a81bb313208a1c21             | core |
| 40563efc469d4c1295de0d6d4cf545c2             | tom |
+-----+-----+
```

openstack user show core

Example command output:

```
+-----+-----+
| Field      | Value      |
+-----+-----+
| email      | None       |
| enabled    | True       |
| id         | 828cbf69cf564747a81bb313208a1c21 |
| name       | core       |
| project_id | 271ab207a197465f9d166c2dc7304b18 |
| username   | core       |
+-----+-----+
```

openstack role list**Example command output:**

```
+-----+-----+
| ID          | Name       |
+-----+-----+
| 315d3058519a4b1a9385e11aa5ffe25b | admin      |
| 585de968688e4257bc76f6dec13752cb | ResellerAdmin |
| 9717fe8079ba49e9ba9eadd5a37689e7 | swiftoperator |
| 9fe2ff9ee4384b1894a90878d3e92bab | _member_    |
| d75dcf507bfa4a6abee3aee3bb0323c6 | heat_stack_user |
+-----+-----+
```

openstack role show admin**Example command output:**

```
+-----+-----+
| Field      | Value      |
+-----+-----+
| domain_id  | None       |
| id         | 315d3058519a4b1a9385e11aa5ffe25b |
| name       | admin      |
+-----+-----+
```

Checking Nova/Neutron Security Groups

Log on to the server on which OSP-D is running to check Nova and Neutron security groups by executing the following commands:

nova secgroup-list**Example command output:**

WARNING: Command secgroup-list is deprecated and will be removed after Nova 15.0.0 is released. Use python-neutronclient or python-openstackclient instead.

```
+-----+-----+-----+
| Id          | Name      | Description      |
+-----+-----+-----+
| ce308d67-7645-43c1-a83e-89d3871141a2 | default  | Default security group |
+-----+-----+-----+
```

neutron security-group-list**Example command output:**

```
+-----+-----+-----+
| id          | name      | security_group_rules |
+-----+-----+-----+
| 4007a7a4-e7fa-4ad6-bc74-fc0b20f0b60c | default  | egress, IPv4         |
+-----+-----+-----+
```

```

|                                     |                                     | egress, IPv6
|                                     |                                     |
|                                     |                                     | ingress, IPv4, remote_group_id:
4007a7a4-e7fa-4ad6-bc74-fc0b20f0b60c |                                     |
|                                     |                                     | ingress, IPv6, remote_group_id:
4007a7a4-e7fa-4ad6-bc74-fc0b20f0b60c |                                     |
| 8bee29ae-88c0-4d5d-b27a-a123f20b6858 | default | egress, IPv4
|                                     |                                     |
|                                     |                                     | egress, IPv6
|                                     |                                     |
|                                     |                                     | ingress, IPv4, 1-65535/tcp,
remote_ip_prefix: 0.0.0.0/0          |                                     |
|                                     |                                     | ingress, IPv4, 1-65535/udp,
remote_ip_prefix: 0.0.0.0/0          |                                     |
|                                     |                                     | ingress, IPv4, icmp, remote_ip_prefix:
0.0.0.0/0                            |                                     |
|                                     |                                     | ingress, IPv4, remote_group_id:
8bee29ae-88c0-4d5d-b27a-a123f20b6858 |                                     |
|                                     |                                     | ingress, IPv6, remote_group_id:
8bee29ae-88c0-4d5d-b27a-a123f20b6858 |                                     |
| b6b27428-35a3-4be4-af9b-38559132d28e | default | egress, IPv4
|                                     |                                     |
|                                     |                                     | egress, IPv6
|                                     |                                     |
|                                     |                                     | ingress, IPv4, remote_group_id:
b6b27428-35a3-4be4-af9b-38559132d28e |                                     |
|                                     |                                     | ingress, IPv6, remote_group_id:
b6b27428-35a3-4be4-af9b-38559132d28e |                                     |
| ce308d67-7645-43c1-a83e-89d3871141a2 | default | egress, IPv4
|                                     |                                     |
|                                     |                                     | egress, IPv6
|                                     |                                     |
|                                     |                                     | ingress, IPv4, 1-65535/tcp,
remote_ip_prefix: 0.0.0.0/0          |                                     |
|                                     |                                     | ingress, IPv4, 1-65535/udp,
remote_ip_prefix: 0.0.0.0/0          |                                     |
|                                     |                                     | ingress, IPv4, icmp, remote_ip_prefix:
0.0.0.0/0                            |                                     |
|                                     |                                     | ingress, IPv4, remote_group_id:
ce308d67-7645-43c1-a83e-89d3871141a2 |                                     |
|                                     |                                     | ingress, IPv6, remote_group_id:
ce308d67-7645-43c1-a83e-89d3871141a2 |                                     |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+

```

neutron security-group-show ce308d67-7645-43c1-a83e-89d3871141a2

Example command output:

```

+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| Field          | Value                                     |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| created_at     | 2017-06-03T04:57:01Z                   |
| description    | Default security group                  |
| id             | ce308d67-7645-43c1-a83e-89d3871141a2  |
| name           | default                                 |
| project_id     | 271ab207a197465f9d166c2dc7304b18     |
| revision_number | 4                                       |

```

```
| security_group_rules | {  
| |  
| | | "remote_group_id": null,  
| | | |  
| | | | "direction": "egress",  
| | | | |  
| | | | "protocol": null,  
| | | | |  
| | | | "description": null,  
| | | | |  
| | | | "ethertype": "IPv4",  
| | | | |  
| | | | "remote_ip_prefix": null,  
| | | | |  
| | | | "port_range_max": null,  
| | | | |  
| | | | "updated_at": "2017-06-03T04:57:01Z",  
| | | | |  
| | | | "security_group_id": "ce308d67-7645-43c1-a83e-89d3871141a2",  
| | | | |  
| | | | "port_range_min": null,  
| | | | |  
| | | | "revision_number": 1,  
| | | | |  
| | | | "tenant_id": "271ab207a197465f9d166c2dc7304b18",  
| | | | |  
| | | | "created_at": "2017-06-03T04:57:01Z",  
| | | | |  
| | | | "project_id": "271ab207a197465f9d166c2dc7304b18",  
| | | | |  
| | | | "id": "337838dd-0612-47f8-99e8-7d4f58dc09d6"  
| | | }  
| | | {  
| | | | "remote_group_id": null,  
| | | | |  
| | | | "direction": "ingress",  
| | | | |  
| | | | "protocol": "udp",  
| | | | |  
| | | | "description": "",  
| | | | |  
| | | | "ethertype": "IPv4",  
| | | | |  
| | | | "remote_ip_prefix": "0.0.0.0/0",  
| | | | |  
| | | | "port_range_max": 65535,  
| | | | |  
| | | | "updated_at": "2017-06-03T04:57:20Z",  
| | | | |  
| | | | "security_group_id": "ce308d67-7645-43c1-a83e-89d3871141a2",  
| | | | |  
| | | | "port_range_min": 1,  
| | | | |  
| | | | "revision_number": 1,  
| | | | |  
| | | | "tenant_id": "271ab207a197465f9d166c2dc7304b18",  
| | | | |  
| | | | "created_at": "2017-06-03T04:57:20Z",  
| | | | |  
| | | | "project_id": "271ab207a197465f9d166c2dc7304b18",  
| | | | }  
| | }  
| }
```

```
|                                     | "id": "48b04902-d617-4e25-ad0d-4d087128f3b9"|  
|                                     | }  
|                                     | {  
|                                     | "remote_group_id": null,  
|                                     | "direction": "ingress",  
|                                     | "protocol": "icmp",  
|                                     | "description": "",  
|                                     | "ethertype": "IPv4",  
|                                     | "remote_ip_prefix": "0.0.0.0/0",  
|                                     | "port_range_max": null,  
|                                     | "updated_at": "2017-06-03T04:57:33Z",  
|                                     | "security_group_id": "ce308d67-7645-43c1-a83e-89d3871141a2",  
|                                     | "port_range_min": null,  
|                                     | "revision_number": 1,  
|                                     | "tenant_id": "271ab207a197465f9d166c2dc7304b18",  
|                                     | "created_at": "2017-06-03T04:57:33Z",  
|                                     | "project_id": "271ab207a197465f9d166c2dc7304b18",  
|                                     | "id": "68913f31-6788-4473-8b3b-90a264e9ef62"|  
|                                     | }  
|                                     | {  
|                                     | "remote_group_id": null,  
|                                     | "direction": "ingress",  
|                                     | "protocol": "tcp",  
|                                     | "description": "",  
|                                     | "ethertype": "IPv4",  
|                                     | "remote_ip_prefix": "0.0.0.0/0",  
|                                     | "port_range_max": 65535,  
|                                     | "updated_at": "2017-06-03T04:57:02Z",  
|                                     | "security_group_id": "ce308d67-7645-43c1-a83e-89d3871141a2",  
|                                     | "port_range_min": 1,  
|                                     | "revision_number": 1,  
|                                     | "tenant_id": "271ab207a197465f9d166c2dc7304b18",
```

```

|                                     |      "created_at": "2017-06-03T04:57:02Z",
|                                     |      "project_id": "271ab207a197465f9d166c2dc7304b18",
|                                     |      "id": "85ece95b-d361-4986-8db0-78d1a404dd3c"
|                                     |    }
|                                     |  {
|                                     |    "remote_group_id": null,
|                                     |    "direction": "egress",
|                                     |    "protocol": null,
|                                     |    "description": null,
|                                     |    "ethertype": "IPv6",
|                                     |    "remote_ip_prefix": null,
|                                     |    "port_range_max": null,
|                                     |    "updated_at": "2017-06-03T04:57:01Z",
|                                     |    "security_group_id": "ce308d67-7645-43c1-a83e-89d3871141a2",
|                                     |    "port_range_min": null,
|                                     |    "revision_number": 1,
|                                     |    "tenant_id": "271ab207a197465f9d166c2dc7304b18",
|                                     |    "created_at": "2017-06-03T04:57:01Z",
|                                     |    "project_id": "271ab207a197465f9d166c2dc7304b18",
|                                     |    "id": "88320991-5232-44f6-b74b-8cfe934165d0"
|                                     |  }
|                                     |  {
|                                     |    "remote_group_id": "ce308d67-7645-43c1-a83e-89d3871141a2",
|                                     |    "direction": "ingress",
|                                     |    "protocol": null,
|                                     |    "description": null,
|                                     |    "ethertype": "IPv4",
|                                     |    "remote_ip_prefix": null,
|                                     |    "port_range_max": null,
|                                     |    "updated_at": "2017-06-03T04:57:01Z",
|                                     |    "security_group_id": "ce308d67-7645-43c1-a83e-89d3871141a2",
|                                     |    "port_range_min": null,

```



```

|
|         "revision_number": 1,
|
|         "tenant_id": "271ab207a197465f9d166c2dc7304b18",
|
|         "created_at": "2017-06-03T04:57:01Z",
|
|         "project_id": "271ab207a197465f9d166c2dc7304b18",
|
|         "id": "ba306ee2-d21f-48be-9de2-7f04bea5e43a"
|
|     }
|
|     {
|
|         "remote_group_id": "ce308d67-7645-43c1-a83e-89d3871141a2",
|
|         "direction": "ingress",
|
|         "protocol": null,
|
|         "description": null,
|
|         "ethertype": "IPv6",
|
|         "remote_ip_prefix":null,
|
|         "port_range_max": null,
|
|         "updated_at": "2017-06-03T04:57:01Z",
|
|         "security_group_id": "ce308d67-7645-43c1-a83e-89d3871141a2",
|
|         "port_range_min": null,
|
|         "revision_number": 1,
|
|         "tenant_id": "271ab207a197465f9d166c2dc7304b18",
|
|         "created_at": "2017-06-03T04:57:01Z",
|
|         "project_id": "271ab207a197465f9d166c2dc7304b18",
|
|         "id": "deb7752c-e642-462e-92f0-5dff983f0739"
|
|     }
|
| tenant_id      | 271ab207a197465f9d166c2dc7304b18
|
| updated_at    | 2017-06-03T04:57:33Z
|
+-----+-----+

```

Checking Tenant Project Default Quotas

Log on to the server on which OSP-D is running to check default project quotas by executing the following commands:

```
nova quota-show
```

Example command output:

```
+-----+-----+
| Quota          | Limit  |

```

```
+-----+
| instances          | 1000 |
| cores             | 1000 |
| ram               | 5120000 |
| metadata_items    | 128  |
| injected_files     | 100  |
| injected_file_content_bytes | 1024000 |
| injected_file_path_bytes | 255  |
| key_pairs         | 100  |
| server_groups     | 10   |
| server_group_members | 10  |
+-----+
```

openstack project list | grep core

Example command output:

```
| 271ab207a197465f9d166c2dc7304b18 | core |
```

nova quota-class-show 271ab207a197465f9d166c2dc7304b18

Example command output:

```
+-----+
| Quota              | Limit |
+-----+
| instances          | 10    |
| cores             | 20    |
| ram               | 51200 |
| floating_ips      | 10    |
| fixed_ips         | -1    |
| metadata_items    | 128   |
| injected_files     | 5     |
| injected_file_content_bytes | 10240 |
| injected_file_path_bytes | 255   |
| key_pairs         | 100   |
| security_groups   | 10    |
| security_group_rules | 20   |
+-----+
```

neutron quota-show

Example command output:

```
+-----+
| Field              | Value |
+-----+
| floatingip        | 100   |
| network           | 1000  |
| port              | 4092  |
| rbac_policy       | 10    |
| router            | 100   |
| security_group    | 100   |
| security_group_rule | 300  |
| subnet           | 1000  |
| subnetpool       | -1    |
| trunk             | -1    |
+-----+
```

openstack project list | grep core

Example command output:

```
| 271ab207a197465f9d166c2dc7304b18 | core |
```

cinder quota-show 271ab207a197465f9d166c2dc7304b18

Example command output:

```

+-----+-----+
| Property          | Value |
+-----+-----+
| backup_gigabytes  | 1000  |
| backups           | 10    |
| gigabytes         | 8092  |
| gigabytes_LUKS   | -1    |
| per_volume_gigabytes | -1    |
| snapshots        | 300   |
| snapshots_LUKS   | -1    |
| volumes          | 500   |
| volumes_LUKS     | -1    |
+-----+-----+

```

Checking the Nova Hypervisor List

Log on to the server on which OSP-D is running to check the status of nova api on all compute nodes by executing the following command:

```
nova hypervisor-list
```

Example command output:

```

+-----+-----+-----+-----+
| ID | Hypervisor hostname          | State | Status |
+-----+-----+-----+-----+
| 3  | tb3-ultram-compute-7.localdomain | up    | enabled |
| 6  | tb3-ultram-compute-6.localdomain | up    | enabled |
| 9  | tb3-ultram-osd-compute-0.localdomain | up    | enabled |
| 12 | tb3-ultram-compute-9.localdomain | up    | enabled |
| 15 | tb3-ultram-compute-0.localdomain | up    | enabled |
| 18 | tb3-ultram-compute-14.localdomain | up    | enabled |
| 21 | tb3-ultram-compute-2.localdomain | up    | enabled |
| 24 | tb3-ultram-compute-8.localdomain | up    | enabled |
| 27 | tb3-ultram-compute-13.localdomain | up    | enabled |
| 30 | tb3-ultram-compute-15.localdomain | up    | enabled |
| 33 | tb3-ultram-compute-12.localdomain | up    | enabled |
| 36 | tb3-ultram-compute-5.localdomain | up    | enabled |
| 39 | tb3-ultram-osd-compute-1.localdomain | up    | enabled |
| 42 | tb3-ultram-compute-10.localdomain | up    | enabled |
| 45 | tb3-ultram-compute-11.localdomain | up    | enabled |
| 48 | tb3-ultram-compute-3.localdomain | up    | enabled |
| 51 | tb3-ultram-osd-compute-2.localdomain | up    | enabled |
| 54 | tb3-ultram-compute-4.localdomain | up    | enabled |
| 57 | tb3-ultram-compute-1.localdomain | up    | enabled |
+-----+-----+-----+-----+

```

Checking the Router Main Configuration

Log on to the server on which OSP-D is running to check the Neutron router by entering the following commands:

```
neutron router-list
```

Example command output:

```

+-----+-----+-----+-----+-----+
| id                | distributed | ha    | name | external_gateway_info |
+-----+-----+-----+-----+-----+
| 2d0cdee4-bb5e-415b-921c-97caf0aa0cd1 | main | {"network_id": "1c46790f-cab5-4b1d-afc7-a637fe2dbe08", | False | True |

```

```
|
| {"subnet_id": | | | "enable_snat": true, "external_fixed_ips":
| "ip_address": | | | | "a23a740e-3ad0-4fb1-8526-3353dfd0010f",
| | | | "10.169.127.176"}}
|
```

```
[stack@lbucs001-ospd ~]$ neutron router-show
2d0cdee4-bb5e-415b-921c-97caf0aa0cd1
```

Example command output:

Field	Value
admin_state_up	True
availability_zone_hints	
availability_zones	nova
created_at	2017-06-03T05:05:08Z
description	
distributed	False
external_gateway_info	{"network_id": "1c46790f-cab5-4b1d-afc7-a637fe2dbe08", "enable_snat": true, "external_fixed_ips": [{"subnet_id": "a23a740e-3ad0-4fb1-8526-3353dfd0010f", "ip_address": "10.169.127.176"}]}
flavor_id	
ha	True
id	2d0cdee4-bb5e-415b-921c-97caf0aa0cd1
name	main
project_id	271ab207a197465f9d166c2dc7304b18
revision_number	94
routes	
status	ACTIVE
tenant_id	271ab207a197465f9d166c2dc7304b18
updated_at	2017-07-28T00:44:27Z

Checking the External Network Using the core-project-id

Log on to the server on which OSP-D is running to check the external network configuration by entering the following commands:

```
neutron net-list
```

Example command output:

id	name
1236bd98-5389-42f9-bac8-433997525549	LBUCS001-AUTOIT-MGMT
c63451f2-7e44-432e-94fc-167f6a31e4aa	172.16.182.0/24
1c46790f-cab5-4b1d-afc7-a637fe2dbe08	LBUCS001-EXTERNAL-MGMT
a23a740e-3ad0-4fb1-8526-3353dfd0010f	10.169.127.160/27
1c70a9ab-212e-4884-b7d5-4749c44a87b6	LBPGW101-DI-INTERNAL1
e619b02e-84e0-48d9-9096-f16adc84f1cc	HA network tenant 271ab207a197465f9d166c2dc7304b18
cefd5f5f-0c97-4027-b385-ca1a57f2cfac	169.254.192.0/18

neutron net-show 1c46790f-cab5-4b1d-afc7-a637fe2dbe08**Example command output:**

Field	Value
admin_state_up	True
availability_zone_hints	
availability_zones	
created_at	2017-06-05T07:18:59Z
description	
id	1c46790f-cab5-4b1d-afc7-a637fe2dbe08
ipv4_address_scope	
ipv6_address_scope	
is_default	False
mtu	1500
name	LBUCS001-EXTERNAL-MGMT
port_security_enabled	True
project_id	271ab207a197465f9d166c2dc7304b18
provider:network_type	vlan
provider:physical_network	datacentre
provider:segmentation_id	101
qos_policy_id	
revision_number	6
router:external	True
shared	False
status	ACTIVE
subnets	a23a740e-3ad0-4fb1-8526-3353dfd0010f
tags	
tenant_id	271ab207a197465f9d166c2dc7304b18
updated_at	2017-06-05T07:22:51Z

Note down the **provider:segmentation_id**. In this example, 101 is the vlan for the external interface.

neutron subnet-list**Example command output:**

id	name	cidr
a23a740e-3ad0-4fb1-8526-3353dfd0010f	LBUCS001-EXTERNAL-MGMT	10.169.127.160/27
		{"start": "10.169.127.168", "end": "10.169.127.190"}
c63451f2-7e44-432e-94fc-167f6a31e4aa	LBUCS001-AUTOIT-MGMT	

```

172.16.182.0/24 | {"start": "172.16.182.2", "end":           |
|
| "172.16.182.254"} |
| cefd5f5f-0c97-4027-b385-cala57f2cfac | HA subnet tenant |
169.254.192.0/18 | {"start": "169.254.192.1", "end":           |
|
| "169.254.255.254"} | 271ab207a197465f9d166c2dc7304b18 |

```

```
neutron subnet-show a23a740e-3ad0-4fb1-8526-3353dfd0010f
```

Example command output:

```

+-----+-----+
| Field | Value |
+-----+-----+
| allocation_pools | {"start": "10.169.127.168", "end": "10.169.127.190"} |
| cidr | 10.169.127.160/27 |
| created_at | 2017-06-05T07:22:51Z |
| description | |
| dns_nameservers | |
| enable_dhcp | False |
| gateway_ip | 10.169.127.163 |
| host_routes | |
| id | a23a740e-3ad0-4fb1-8526-3353dfd0010f |
| ip_version | 4 |
| ipv6_address_mode | |
| ipv6_ra_mode | |
| name | LBUCS001-EXTERNAL-MGMT |
| network_id | 1c46790f-cab5-4b1d-afc7-a637fe2dbe08 |
| project_id | 271ab207a197465f9d166c2dc7304b18 |
| revision_number | 2 |
| service_types | |
| subnetpool_id | |
| tenant_id | 271ab207a197465f9d166c2dc7304b18 |
| updated_at | 2017-06-05T07:22:51Z |
+-----+-----+

```

Checking the Staging Network Configuration

Log on to the server on which OSP-D is running to check the staging network configuration by entering the following commands:

```
neutron subnet-show <ext-mgmt-id>
```

<ext-mgmt-id> is the ID for the external management interface as obtained through the **neutron subnet-list** command output.

Example output:

```

+-----+-----+
| Field | Value |
+-----+-----+
| allocation_pools | {"start": "10.169.127.168", "end": "10.169.127.190"} |
| cidr | 10.169.127.160/27 |
| created_at | 2017-06-05T07:22:51Z |
| description | |
| dns_nameservers | |
| enable_dhcp | False |
| gateway_ip | 10.169.127.163 |
| host_routes | |
| id | a23a740e-3ad0-4fb1-8526-3353dfd0010f |
| ip_version | 4 |

```

```

| ipv6_address_mode |
| ipv6_ra_mode     |
| name              | LBUCS001-EXTERNAL-MGMT
| network_id        | 1c46790f-cab5-4b1d-afc7-a637fe2dbe08
| project_id        | 271ab207a197465f9d166c2dc7304b18
| revision_number   | 2
| service_types     |
| subnetpool_id     |
| tenant_id         | 271ab207a197465f9d166c2dc7304b18
| updated_at        | 2017-06-05T07:22:51Z
+-----+-----+

```

neutron subnet-show <autoit-mgmt-id>

<autoit-mgmt-id> is the ID for the AutoIT management interface as obtained through the **neutron subnet-list** command output.

Example output:

```

+-----+-----+
| Field          | Value
+-----+-----+
| allocation_pools | {"start": "172.16.182.2", "end": "172.16.182.254"}
| cidr            | 172.16.182.0/24
| created_at      | 2017-06-05T07:41:45Z
| description      |
| dns_nameservers |
| enable_dhcp     | True
| gateway_ip      | 172.16.182.1
| host_routes     |
| id              | c63451f2-7e44-432e-94fc-167f6a31e4aa
| ip_version      | 4
| ipv6_address_mode |
| ipv6_ra_mode    |
| name            | LBUCS001-AUTOIT-MGMT
| network_id      | 1236bd98-5389-42f9-bac8-433997525549
| project_id      | 271ab207a197465f9d166c2dc7304b18
| revision_number | 2
| service_types   |
| subnetpool_id   |
| tenant_id       | 271ab207a197465f9d166c2dc7304b18
| updated_at      | 2017-06-05T07:41:45Z
+-----+-----+

```

Checking the DI-Internal and Service Network Configurations

Log on to the server on which OSP-D is running to check the DI-internal and service network configuration by entering the following commands:

neutron net-list

Example command output:

```

+-----+-----+
| id              | name
| subnets        |
+-----+-----+
| 1236bd98-5389-42f9-bac8-433997525549 | LBUCS001-AUTOIT-MGMT
| c63451f2-7e44-432e-94fc-167f6a31e4aa | 172.16.182.0/24
| 1c46790f-cab5-4b1d-afc7-a637fe2dbe08 | LBUCS001-EXTERNAL-MGMT
| a23a740e-3ad0-4fb1-8526-3353dfd0010f | 10.169.127.160/27
| 1c70a9ab-212e-4884-b7d5-4749c44a87b6 | LBPGW101-DI-INTERNAL1
| e619b02e-84e0-48d9-9096-f16adc84f1cc | HA network tenant 271ab207a197465f9d166c2dc7304b18
+-----+-----+

```

```
| cefd5f5f-0c97-4027-b385-cala57f2cfac 169.254.192.0/18 |
```

neutron net-show LBPGW101-DI-INTERNAL1

Example command output:

```
+-----+
| Field                | Value                                     |
+-----+-----+
| admin_state_up      | True                                     |
| availability_zone_hints |                                           |
| availability_zones   |                                           |
| created_at          | 2017-07-28T22:25:53Z                   |
| description         |                                           |
| id                  | 1c70a9ab-212e-4884-b7d5-4749c44a87b6   |
| ipv4_address_scope  |                                           |
| ipv6_address_scope  |                                           |
| mtu                 | 1500                                    |
| name                | LBPGW101-DI-INTERNAL1                 |
| port_security_enabled | True                                    |
| project_id          | 271ab207a197465f9d166c2dc7304b18     |
| provider:network_type | flat                                    |
| provider:physical_network | phys_pcie1_0                          |
| provider:segmentation_id |                                           |
| qos_policy_id       |                                           |
| revision_number     | 3                                       |
| router:external     | False                                  |
| shared              | True                                    |
| status              | ACTIVE                                  |
| subnets            |                                           |
| tags                |                                           |
| tenant_id           | 271ab207a197465f9d166c2dc7304b18     |
| updated_at          | 2017-07-28T22:25:53Z                   |
+-----+-----+
```

neutron subnet-list

Example command output:

```
+-----+-----+-----+-----+
| id                | allocation_pools                        | name                | cidr                |
+-----+-----+-----+-----+
| 96ae7e6e-f2e9-4fa5-a816-769c5a79f8f4 | LBPGW101-DI-INTERNAL1-SUBNET          | 192.168.1.0/24      | {"start": "192.168.1.2", "end":  
|                                           | "192.168.1.254"}                      |
| a23a740e-3ad0-4fb1-8526-3353dfd0010f | LBUCS001-EXTERNAL-MGMT                | 10.169.127.160/27  | {"start": "10.169.127.168", "end":  
|                                           | "10.169.127.190"}                      |
| c63451f2-7e44-432e-94fc-167f6a31e4aa | LBUCS001-AUTOIT-MGMT                  | 172.16.182.0/24    | {"start": "172.16.182.2", "end":  
|                                           | "172.16.182.254"}                      |
| cefd5f5f-0c97-4027-b385-cala57f2cfac | HA subnet tenant                       | 169.254.192.0/18  | {"start": "169.254.192.1", "end":  
|                                           | 271ab207a197465f9d166c2dc7304b18     |
|                                           | "169.254.255.254"}                      |
+-----+-----+-----+-----+
```


Checking the Flavor List

Log on to the server on which OSP-D is running to check the flavor list and to by entering the following command:

```
nova flavor-list
```

Example command output:

ID	Name	Memory_MB	Disk	Ephemeral
eff0335b-3374-46c3-a3de-9f4b1ccaee04	DNUCS002-AUTOIT-FLAVOR	8192	80	0

Checking Host Aggregate and Availability Zone Configuration

Log on to the server on which OSP-D is running to check the host aggregate and availability zone configurations for the OSD Compute and for the AutoDeploy and AutoIT VMs.



Note It is assumed that the AutoDeploy and AutoIT VMs reside on the same OSD Compute node.

This is done by executing the following commands:

```
cd /home/stack  
source ~/<stack_name>rc-core  
nova aggregate-list
```

Example command output:

Id	Name	Availability Zone
108	LBUCS001-AUTOIT	mgmt
147	LBPGW101-EM-MGMT1	-
150	LBPGW101-SERVICE1	-
153	LBPGW101-CF-MGMT1	-

```
nova aggregate-show LBUCS001-AUTOIT
```

Id	Name	Availability Zone	Hosts	Metadata
108	LBUCS001-AUTOIT	mgmt	'newtonoc-osd-compute-0.localdomain'	'availability_zone=mgmt', 'mgmt=true'



Note This information can also be verified through the Horizon GUI. Login to Horizon as the user core and navigate to **Project > Compute > Instances**. Check each instance to verify that the status is Active and the power state is Running.

Correct any instance that does not meet these criteria before continuing.

Checking Controller Server Health



Note The commands in this section should be executed on any one of the Controller nodes and do not need to be repeated on the other Controller nodes unless an issue is observed.

Checking the Pacemaker Cluster Stack (PCS) Status

Log on to one of the Controller nodes and verify that the group of resources in the PCS cluster are active and in the expected state by executing the following command:

```
sudo pcs status
```

Example command output:

```
Cluster name: tripleo_cluster
Stack: corosync
Current DC: tb3-ultram-controller-0 (version 1.1.15-11.e17_3.4-e174ec8) - partition with
quorum
Last updated: Wed Jul 12 13:28:56 2017      Last change: Tue Jul 11 21:45:09 2017 by
root via crm_attribute on tb3-ultram-controller-0

3 nodes and 22 resources configured

Online: [ tb3-ultram-controller-0 tb3-ultram-controller-1 tb3-ultram-controller-2 ]

Full list of resources:

ip-192.200.0.104      (ocf::heartbeat:IPaddr2):      Started tb3-ultram-controller-1
ip-10.84.123.6 (ocf::heartbeat:IPaddr2):      Started tb3-ultram-controller-0
ip-11.119.0.42 (ocf::heartbeat:IPaddr2):      Started tb3-ultram-controller-0
Clone Set: haproxy-clone [haproxy]
  Started: [ tb3-ultram-controller-0 tb3-ultram-controller-1 tb3-ultram-controller-2 ]
Master/Slave Set: galera-master [galera]
  Masters: [ tb3-ultram-controller-0 tb3-ultram-controller-1 tb3-ultram-controller-2 ]
ip-11.120.0.47 (ocf::heartbeat:IPaddr2):      Started tb3-ultram-controller-1
ip-11.118.0.49 (ocf::heartbeat:IPaddr2):      Started tb3-ultram-controller-0
Clone Set: rabbitmq-clone [rabbitmq]
  Started: [ tb3-ultram-controller-0 tb3-ultram-controller-1 tb3-ultram-controller-2 ]
ip-11.120.0.48 (ocf::heartbeat:IPaddr2):      Started tb3-ultram-controller-1
Master/Slave Set: redis-master [redis]
  Masters: [ tb3-ultram-controller-0 ]
  Slaves: [ tb3-ultram-controller-1 tb3-ultram-controller-2 ]
openstack-cinder-volume      (systemd:openstack-cinder-volume):      Started
tb3-ultram-controller-0
my-ipmilan-for-controller-0      (stonith:fence_ipmilan):      Started
tb3-ultram-controller-0
my-ipmilan-for-controller-1      (stonith:fence_ipmilan):      Started
tb3-ultram-controller-1
my-ipmilan-for-controller-2      (stonith:fence_ipmilan):      Started
tb3-ultram-controller-0

Daemon Status:
  corosync: active/enabled
  pacemaker: active/enabled
  pcsd: active/enabled
```

From the output of this command, ensure that:

- All 3 controllers are listed as Online
- haproxy-clone is started on all 3 controllers
- galera-master lists all 3 controllers as Masters
- rabbitmq-clone is started on all 3 controllers
- redis-master lists one controller as master and the other 2 controllers as slaves
- openstack-cinder-volume is started on one node
- my-ipmilan/stonith is started on all 3 controllers
- Daemons corosync, pacemaker and pcsd are active and enabled



Note If the output displays any “Failed Actions”, execute the **sudo pcs resource cleanup** command and then re-execute the **sudo pcs status** command.

Checking Ceph Storage Status

Log on to the Controller node and verify the health of the Ceph storage from the Controller node by executing the following command:

```
sudo ceph status
```

Example command output:

```
cluster eb2bb192-b1c9-11e6-9205-525400330666
  health HEALTH_OK
  monmap e1: 3 mons at
{tb3-ultram-controller-0=11.118.0.10:6789/0,tb3-ultram-controller-1=11.118.0.11:6789/0,
tb3-ultram-controller-2=11.118.0.12:6789/0}
  election epoch 152, quorum 0,1,2
tb3-ultram-controller-0,tb3-ultram-controller-1,tb3-ultram-controller-2
  osdmap e158: 12 osds: 12 up, 12 in
  flags sortbitwise,require_jewel_osds
  pgmap v1417251: 704 pgs, 6 pools, 321 GB data, 110 kobjects
    961 GB used, 12431 GB / 13393 GB avail
    704 active+clean
  client io 53755 B/s wr, 0 op/s rd, 7 op/s wr
```

From the output of this command, ensure that:

- health is listed as HEALTH_OK
- The correct number of monitors are listed in the monmap
- The correct number of OSDs are listed in the osdmap

Checking Controller Node Services

Log on to the Controller node and check the status of all services by executing the following command:

```
sudo systemctl list-units "openstack*" "neutron*" "openvswitch"
```

Example command output:

```

UNIT                                LOAD  ACTIVE SUB    DESCRIPTION
neutron-dhcp-agent.service         loaded active running OpenStack Neutron DHCP
Agent
neutron-l3-agent.service           loaded active running OpenStack Neutron Layer
  3 Agent
neutron-metadata-agent.service     loaded active running OpenStack Neutron Metadata
  Agent
neutron-openvswitch-agent.service  loaded active running OpenStack Neutron Open
vSwitch Agent
neutron-ovs-cleanup.service        loaded active exited  OpenStack Neutron Open
vSwitch Cleanup Utility
neutron-server.service             loaded active running OpenStack Neutron Server
openstack-cinder-api.service       loaded active running OpenStack Cinder API
Server
openstack-cinder-scheduler.service loaded active running OpenStack Cinder Scheduler
  Server
openstack-cinder-volume.service    loaded active running Cluster Controlled
openstack-cinder-volume
openstack-glance-api.service       loaded active running OpenStack Image Service
  (code-named Glance) API server
openstack-glance-registry.service  loaded active running OpenStack Image Service
  (code-named Glance) Registry server
openstack-heat-api-cfn.service     loaded active running Openstack Heat
CFN-compatible API Service
openstack-heat-api-cloudwatch.service loaded active running OpenStack Heat CloudWatch
  API Service
openstack-heat-api.service         loaded active running OpenStack Heat API Service
openstack-heat-engine.service      loaded active running Openstack Heat Engine
Service
openstack-nova-api.service         loaded active running OpenStack Nova API Server
openstack-nova-conductor.service   loaded active running OpenStack Nova Conductor
  Server
openstack-nova-consoleauth.service loaded active running OpenStack Nova VNC console
  auth Server
openstack-nova-novncproxy.service  loaded active running OpenStack Nova NoVNC
Proxy Server
openstack-nova-scheduler.service   loaded active running OpenStack Nova Scheduler
  Server
openstack-swift-account-auditor.service loaded active running OpenStack Object Storage
  (swift) - Account Auditor
openstack-swift-account-reaper.service loaded active running OpenStack Object Storage
  (swift) - Account Reaper
openstack-swift-account-replicator.service loaded active running OpenStack Object Storage
  (swift) - Account Replicator
openstack-swift-account.service    loaded active running OpenStack Object Storage
  (swift) - Account Server
openstack-swift-container-auditor.service loaded active running OpenStack Object Storage
  (swift) - Container Auditor
openstack-swift-container-replicator.service loaded active running OpenStack Object Storage
  (swift) - Container Replicator
openstack-swift-container-updater.service loaded active running OpenStack Object Storage
  (swift) - Container Updater
openstack-swift-container.service  loaded active running OpenStack Object Storage
  (swift) - Container Server
openstack-swift-object-auditor.service loaded active running OpenStack Object Storage
  (swift) - Object Auditor
openstack-swift-object-expirer.service loaded active running OpenStack Object Storage
  (swift) - Object Expirer
openstack-swift-object-replicator.service loaded active running OpenStack Object Storage
  (swift) - Object Replicator
openstack-swift-object-updater.service loaded active running OpenStack Object Storage
  (swift) - Object Updater

```

```

openstack-swift-object.service          loaded active running OpenStack Object Storage
  (swift) - Object Server
openstack-swift-proxy.service          loaded active running OpenStack Object Storage
  (swift) - Proxy Server
openvswitch.service                    loaded active exited Open vSwitch

```

```

LOAD   = Reflects whether the unit definition was properly loaded.
ACTIVE = The high-level unit activation state, i.e. generalization of SUB.
SUB    = The low-level unit activation state, values depend on unit type.

```

```

43 loaded units listed. Pass --all to see loaded but inactive units, too.
To show all installed unit files use 'systemctl list-unit-files'.

```

Check the RabbitMQ Database Status

From each of the controller nodes, determine if the rabbitmq database is in a good state by executing the following command:

```
sudo rabbitmqctl eval 'rabbit_diagnostics:maybe_stuck() .'
```

Example command output:

```

2017-07-20 01:58:02 There are 11020 processes.
2017-07-20 01:58:02 Investigated 0 processes this round, 5000ms to go.
2017-07-20 01:58:03 Investigated 0 processes this round, 4500ms to go.
2017-07-20 01:58:03 Investigated 0 processes this round, 4000ms to go.
2017-07-20 01:58:04 Investigated 0 processes this round, 3500ms to go.
2017-07-20 01:58:04 Investigated 0 processes this round, 3000ms to go.
2017-07-20 01:58:05 Investigated 0 processes this round, 2500ms to go.
2017-07-20 01:58:05 Investigated 0 processes this round, 2000ms to go.
2017-07-20 01:58:06 Investigated 0 processes this round, 1500ms to go.
2017-07-20 01:58:06 Investigated 0 processes this round, 1000ms to go.
2017-07-20 01:58:07 Investigated 0 processes this round, 500ms to go.
2017-07-20 01:58:07 Found 0 suspicious processes.
ok

```

If the database is healthy, the command returns “Found 0 suspicious processes.” If the database is not healthy, the command returns 1 or more suspicious processes. Contact your local support representative if suspicious processes are found.

Checking OSD Compute Server Health

Checking Ceph Status

Log on to the OSD Compute and check the Ceph storage status by executing the following command:

```
sudo ceph status
```

Example command output:

```

sudo ceph status
  cluster eb2bb192-b1c9-11e6-9205-525400330666
  health HEALTH_OK
  monmap e1: 3 mons at
{tb3-ultram-controller-0=11.118.0.10:6789/0,tb3-ultram-controller-1=11.118.0.11:6789/0,
tb3-ultram-controller-2=11.118.0.12:6789/0}
  election epoch 152, quorum 0,1,2
tb3-ultram-controller-0,tb3-ultram-controller-1,tb3-ultram-controller-2
  osdmap e158: 12 osds: 12 up, 12 in
  flags sortbitwise,require_jewel_osds
  pgmap v1417867: 704 pgs, 6 pools, 321 GB data, 110 kobjects

```

```

961 GB used, 12431 GB / 13393 GB avail
704 active+clean
client io 170 kB/s wr, 0 op/s rd, 24 op/s wr

```

Checking OSD Compute Node Services

Log on to each OSD Compute node and check the status of all services by executing the following command:

```
sudo systemctl list-units "openstack*" "neutron*" "openvswitch"
```

Example command output:

```

UNIT                                LOAD    ACTIVE SUB    DESCRIPTION
neutron-openvswitch-agent.service  loaded active running OpenStack Neutron Open vSwitch
Agent
neutron-ovs-cleanup.service        loaded active exited OpenStack Neutron Open vSwitch
Cleanup Utility
neutron-sriov-nic-agent.service     loaded active running OpenStack Neutron SR-IOV NIC
Agent
openstack-nova-compute.service      loaded active running OpenStack Nova Compute Server
openvswitch.service                loaded active exited Open vSwitch

```

```

LOAD    = Reflects whether the unit definition was properly loaded.
ACTIVE  = The high-level unit activation state, i.e. generalization of SUB.
SUB     = The low-level unit activation state, values depend on unit type.

```

```

6 loaded units listed. Pass --all to see loaded but inactive units, too.
To show all installed unit files use 'systemctl list-unit-files'.

```

Monitoring AutoDeploy Operations

This section identifies various commands that can be used to determine the status and health of AutoDeploy.

To use them, you must:

1. Log on to the AutoDeploy VM as *ubuntu*. Use the password that was created earlier for this user.
2. Become the root user.

```
sudo -i
```

Viewing AutoDeploy Logs

AutoDeploy logs are available on the AutoDeploy VM in the following directory:

```
/var/log/upstart/autodeploy.log
```



Important

To access the command used to view logs, you must be logged in to the Confd CLI as the *admin* user on the AutoDeploy VM:

```
confd_cli -u admin -C
```

When prompted, you must enter the *admin* user password.

AutoDeploy Transaction Logs

Execute the following command to display AutoDeploy transaction logs:

```
show log $TX-ID | display xml
```

Example VIM-ORCH and VIM Activation Log:

```
2018-01-23 22:01:56,266 - Send Deployment notification for: autoit-instance
2018-01-23 22:08:36,876 - Deployment activate-ns-deployment: autoit initiated
2018-01-23 22:08:36,919 - Send Deployment notification for: autoit-instance
2018-01-23 22:08:36,951 - Deployment activate-ns-deployment: autoit initiated
2018-01-23 22:08:37,004 - Send Deployment notification for: autoit-deploy
2018-01-23 22:08:37,029 - Image '/var/cisco/isos/rhel-server-7.3-x86_64-dvd.iso' exists
2018-01-23 22:08:37,134 - Send Deployment notification for: autoit-instance
2018-01-23 22:08:37,165 - Deployment activate-ns-deployment: autoit started
2018-01-23 22:08:37,181 - Adding NSR: autoit-instance
2018-01-23 22:08:37,215 - Start pipeline of 1 tasks
2018-01-23 22:08:37,257 - Scheduling Task: autoit
2018-01-23 22:08:37,269 - Waiting for all workers to finish the transactions
2018-01-23 22:08:37,364 - Send Deployment notification for: autoit-deploy
2018-01-23 22:08:37,387 - Deployment activate-ns-deployment: autoit started
2018-01-23 22:08:37,395 - Skipping VNF pre-deployment , since VNFD is not defined
2018-01-23 22:08:37,424 - Skipping VNF-Package pre-deployment, since is not defined
2018-01-23 22:08:37,440 - Skipping VIM-Artifact pre-deployment, since VIM-Artifact is not
defined
2018-01-23 22:08:37,463 - VIM-Orchestrator deployment pre-check success, entry already
exists. Continuing...
2018-01-23 22:08:37,470 - VIM deployment pre-check success, entry already exists.
Continuing...
2018-01-23 22:08:37,501 - NS pre-check success
2018-01-23 22:08:37,513 - Copying '/var/cisco/isos/rhel-server-7.3-x86_64-dvd.iso' to
'/var/cisco/isos/underc_rhel-server-7.3-x86_64-dvd.iso'
/tmp/_MEIulQrBS/Crypto/Cipher/blockalgo.py:141: FutureWarning: CTR mode needs counter
parameter, not IV
2018-01-23 22:09:00,685 - Connected to AutoIT[172.21.203.121]
2018-01-23 22:09:02,281 - Skipping VNFDs
2018-01-23 22:09:02,298 - Skipping VNF-PACKAGE
2018-01-23 22:09:02,314 - Skipping VIM-Artifact
2018-01-23 22:09:02,332 - XML:[<config>
  <nsd xmlns="http://www.cisco.com/usp/nfv/usp-nsds">
    <nsd-id>autoit</nsd-id>
    <vim-orch>underc</vim-orch>
    <vim>overc</vim>
  </nsd>
  <vim-orchd xmlns="http://www.cisco.com/usp/nfv/usp-vim-orch">
    <vim-orch-id>underc</vim-orch-id>
    <hostname>tb3-undercloud</hostname>
    <domain-name>cisco.com</domain-name>
  </vim-orchd>
</config>
.
.
.
2018-01-23 22:38:53,531 - VIM-ORCH: in-progress:84/84
2018-01-23 22:38:53,781 - Received vim-orchestrator-deployment-event for
underc:1516745343-313472/1516745343-460684 with status:success
2018-01-23 22:38:53,811 - VIM-ORCH: success:None/None
2018-01-23 22:38:53,983 - Received vim-deployment-event for
overc:1516745343-313472/1516745343-581981 with status:in-progress
2018-01-23 22:38:54,426 - Received vim-deployment-event for
overc:1516745343-313472/1516745343-581981 with status:in-progress
2018-01-23 23:39:15,038 - Received vim-deployment-event for
overc:1516745343-313472/1516745343-581981 with status:success
2018-01-23 23:39:15,113 - Received ns-deployment-event for autoit:1516745343-313472 with
status:success
```

```

2018-01-23 23:39:15,167 - RPC NS[autoit:autoit-instance] success
2018-01-23 23:39:15,271 - Deployment activate-ns-deployment: autoit succeeded
2018-01-23 23:39:15,344 - Send Deployment notification for: autoit-deploy
No handlers could be found for logger "AutoVNF-Traces"
2018-01-23 23:39:15,518 - All workers finished the job
2018-01-23 23:39:15,532 - Deployment activate-ns-deployment: autoit succeeded
2018-01-23 23:39:15,571 - Send Deployment notification for: autoit-instance

```

Example Tenant Creation Log:

```

2018-01-23 23:48:54,420 - Deployment activate-ns-deployment: autoit initiated
2018-01-23 23:48:54,449 - Send Deployment notification for: autoit-instance
2018-01-23 23:48:54,465 - Parsing role for tenant 'sjccore'
2018-01-23 23:48:54,473 - Parsing credentials for tenant 'sjccore'
2018-01-23 23:48:54,484 - Parsing attributes for tenant 'sjccore'
2018-01-23 23:48:54,540 - Deployment activate-ns-deployment: autoit initiated
2018-01-23 23:48:54,574 - Send Deployment notification for: autoit-deploy
2018-01-23 23:48:54,599 - Image '/var/cisco/isos/rhel-server-7.3-x86_64-dvd.iso' exists
2018-01-23 23:48:54,666 - Send Deployment notification for: autoit-instance
2018-01-23 23:48:54,689 - Deployment activate-ns-deployment: autoit started
2018-01-23 23:48:54,691 - Adding NSR: autoit-instance
2018-01-23 23:48:54,712 - Start pipeline of 1 tasks
2018-01-23 23:48:54,723 - Scheduling Task: autoit
2018-01-23 23:48:54,749 - Waiting for all workers to finish the transactions
2018-01-23 23:48:54,804 - Send Deployment notification for: autoit-deploy
2018-01-23 23:48:54,806 - Deployment activate-ns-deployment: autoit started
2018-01-23 23:48:54,822 - Skipping VNF pre-deployment , since VNFD is not defined
2018-01-23 23:48:54,829 - Skipping VNF-Package pre-deployment, since is not defined
2018-01-23 23:48:54,862 - VIM-Artifact deployment pre-check success
2018-01-23 23:48:54,866 - VIM-Orchestrator deployment pre-check success, entry already
exists. Continuing...
2018-01-23 23:48:54,879 - VIM deployment pre-check success, entry already exists.
Continuing...
2018-01-23 23:48:54,885 - NS pre-check success
2018-01-23 23:48:54,895 - Skipping copy, file
'/var/cisco/isos/underc_rhel-server-7.3-x86_64-dvd.iso' already exists
/tmp/_MEIulQrBS/Crypto/Cipher/blockalgo.py:141: FutureWarning: CTR mode needs counter
parameter, not IV
2018-01-23 23:48:55,244 - Connected to AutoIT[172.21.203.121]
2018-01-23 23:48:55,259 - Skipping VNFDs
2018-01-23 23:48:55,274 - Skipping VNF-PACKAGE
2018-01-23 23:48:55,279 - XML:[<config>
  <nsd xmlns="http://www.cisco.com/usp/nfv/usp-nsds">
    <nsd-id>autoit</nsd-id>
    <vim-identity>vim1</vim-identity>
  .
  .
  .
2018-01-23 23:48:56,419 - Received vim-orchestrator-deployment-event for
underc:1516751336-209342/1516751336-428695 with status:success
2018-01-23 23:48:56,441 - VIM-ORCH: success:None/None
2018-01-23 23:48:56,540 - Received vim-deployment-event for
overc:1516751336-209342/1516751336-532373 with status:in-progress
2018-01-23 23:48:56,671 - Received vim-deployment-event for
overc:1516751336-209342/1516751336-532373 with status:success
2018-01-23 23:48:56,802 - Received vim-deployment-event for
sjccore:1516751336-209342/1516751336-654858 with status:in-progress
2018-01-23 23:49:13,305 - Received vim-deployment-event for
sjccore:1516751336-209342/1516751336-654858 with status:success
2018-01-23 23:49:13,387 - Received ns-deployment-event for autoit:1516751336-209342 with
status:success
2018-01-23 23:49:13,414 - RPC NS[autoit:autoit-instance] success
2018-01-23 23:49:13,496 - Deployment activate-ns-deployment: autoit succeeded
2018-01-23 23:49:13,540 - Send Deployment notification for: autoit-deploy

```



```
No handlers could be found for logger "AutoVNF-Traces"
2018-01-23 23:49:13,670 - All workers finished the job
2018-01-23 23:49:13,689 - Deployment activate-ns-deployment: autoit succeeded
2018-01-23 23:49:13,723 - Send Deployment notification for: autoit-instance
```

Example AutoVNF Creation Log:

```
<config xmlns="http://tail-f.com/ns/config/1.0">
  <log xmlns="http://www.cisco.com/usp/nfv/usp-transaction">
    <tx-id>1516900912-955117</tx-id>
    <log>
      2018-01-25 17:21:54,162 - Send Deployment notification for: autoit-instance
      2018-01-25 17:21:54,195 - Deployment activate-ns-deployment: autoit started
      2018-01-25 17:21:54,225 - Adding NSR: autoit-instance
      2018-01-25 17:21:54,288 - Start pipeline of 1 tasks
      2018-01-25 17:21:54,312 - Scheduling Task: autoit
      2018-01-25 17:21:54,342 - Waiting for all workers to finish the transactions
      2018-01-25 17:23:19,325 - All workers finished the job
      2018-01-25 17:23:19,365 - Deployment activate-ns-deployment: autoit succeeded
      2018-01-25 17:23:19,517 - Send Deployment notification for: autoit-instance
      2018-01-25 17:24:28,117 - Deployment activate-ns-deployment: tb3-autovnf_vpc initiated
      2018-01-25 17:24:28,209 - Send Deployment notification for: tb3-autovnf_vpc-instance
      2018-01-25 17:21:54,505 - Send Deployment notification for: autoit-deploy
      2018-01-25 17:21:54,550 - Deployment activate-vnf-deployment: autoit started
      2018-01-25 17:21:54,588 - Adding NSR: autoit-instance, VNFR: autoit-tb3-autovnf1, vlrs:
      None
      2018-01-25 17:21:54,661 - VNF deployment pre-check success(all-not-present)
      2018-01-25 17:21:55,001 - Connected to AutoIT[10.84.123.51]
      2018-01-25 17:21:55,039 - XML:[&lt;config>
        &lt;nsd xmlns="http://www.cisco.com/usp/nfv/usp-nsds">
          &lt;nsd-id>autoit&lt;/nsd-id>
          &lt;vim-identity>vim2&lt;/vim-identity>
        .
        .
        .
      &lt;?xml version="1.0" encoding="UTF-8"?>
      &lt;rpc-reply xmlns="urn:ietf:params:xml:ns:netconf:base:1.0"
      message-id="urn:uuid:1d0dd00b-a3a9-4e10-9a71-376680d05dca"
      xmlns:nc="urn:ietf:params:xml:ns:netconf:base:1.0">&lt;transaction-id
      xmlns='http://www.cisco.com/usp/nfv/usp-nsds'>1516901142-922838&lt;/transaction-id>
      &lt;/rpc-reply>
      2018-01-25 17:25:04,646 - &lt;?xml version="1.0" encoding="UTF-8"?>
      &lt;rpc-reply xmlns="urn:ietf:params:xml:ns:netconf:base:1.0"
      message-id="urn:uuid:1d0dd00b-a3a9-4e10-9a71-376680d05dca"
      xmlns:nc="urn:ietf:params:xml:ns:netconf:base:1.0">&lt;transaction-id
      xmlns='http://www.cisco.com/usp/nfv/usp-nsds'>1516901142-922838&lt;/transaction-id>
      &lt;/rpc-reply>
      2018-01-25 17:25:04,736 - Waiting for deployment notifications for tx-id '1516901142-922838'
      2018-01-25 17:25:04,816 - Received ns-deployment-event for tb3-autovnf_vpc:1516901142-922838
      with status:requested
      2018-01-25 17:25:04,851 - Received vim-deployment-event for
      tb3-vnf1-rack:1516901142-922838/1516901143-301032 with status:requested
      2018-01-25 17:25:04,908 - VIM: requested:None/None
      2018-01-25 17:25:04,977 - Received vnf-package-deployment-event for
      usp_6_0:1516901142-922838/1516901143-337769 with status:requested
      2018-01-25 17:25:05,034 - VNF-PKG[usp_6_0]: requested, activate-vnf-package
      2018-01-25 17:25:05,118 - Received vnf-deployment-event for
      esc:1516901142-922838/1516901143-372586 with status:requested
      2018-01-25 17:25:05,166 - Received vnf-deployment-event for
      vpc:1516901142-922838/1516901143-418832 with status:requested
      2018-01-25 17:25:05,201 - Received ns-deployment-event for tb3-autovnf_vpc:1516901142-922838
      with status:in-progress
      2018-01-25 17:25:05,235 - Received vim-deployment-event for
      tb3-vnf1-rack:1516901142-922838/1516901143-301032 with status:in-progress
      2018-01-25 17:25:05,269 - VIM: in-progress:None/None
      2018-01-25 17:25:15,753 - Received vim-deployment-event for
      tb3-vnf1-rack:1516901142-922838/1516901143-301032 with status:success
      2018-01-25 17:25:15,786 - VIM: success:None/None
      2018-01-25 17:25:15,889 - Received vnf-package-deployment-event for
      usp_6_0:1516901142-922838/1516901143-337769 with status:in-progress
```

```

2018-01-25 17:25:15,927 - VNF-PKG[usp_6_0]: in-progress, activate-vnf-package
2018-01-25 17:27:44,479 - Received vnf-package-deployment-event for
usp_6_0:1516901142-922838/1516901143-337769 with status:success
2018-01-25 17:27:44,566 - VNF-PKG[usp_6_0]: success, activate-vnf-package
2018-01-25 17:27:44,624 - Received vnf-deployment-event for
esc:1516901142-922838/1516901143-372586 with status:in-progress
2018-01-25 17:31:13,916 - Received vnf-deployment-event for
esc:1516901142-922838/1516901143-372586 with status:success
2018-01-25 17:31:13,972 - Received vnf-deployment-event for
vpc:1516901142-922838/1516901143-418832 with status:in-progress
2018-01-25 17:45:29,291 - Received vnf-deployment-event for
vpc:1516901142-922838/1516901143-418832 with status:success
2018-01-25 17:45:29,318 - Received ns-deployment-event for tb3-autovnf_vpc:1516901142-922838
with status:success
2018-01-25 17:45:29,382 - RPC NS[tb3-autovnf_vpc:tb3-autovnf_vpc-instance] success
2018-01-25 17:45:30,000 - Deployment activate-ns-deployment: tb3-autovnf_vpc succeeded
2018-01-25 17:45:30,141 - Send Deployment notification for: tb3-autovnf_vpc-deploy</log>
</log>
</config>

```

Checking AutoDeploy Processes

Check the status of AutoDeploy VM by entering the following commands:

```

service autodeploy status
service uas-confd status

```

Determining the Running AutoDeploy Version

To display the version of the AutoDeploy software role that is currently operational:

```
show uas
```

Example output:

```

uas version                6.0.0
uas state                  active
uas external-connection-point 172.28.185.132
INSTANCE IP      STATE  ROLE
-----
172.28.185.133  alive  CONFD-MASTER
172.28.185.134  alive  CONFD-SLAVE

NAME                LAST HEARTBEAT
-----
AutoDeploy-MASTER  2018-01-24 21:29:54
USPCFMWorker       2018-01-24 21:29:45
USPCHBWorker       2018-01-24 21:29:45
USPCWorker         2018-01-24 21:29:45

```

Monitoring AutoIT Operations

This section identifies various commands that can be used to determine the status and health of AutoIT.

To use them, you must:

1. Log on to the AutoIT VM as *ubuntu*. Use the password that was created earlier for this user.

2. Become the *root* user.

```
sudo -i
```

Viewing AutoIT Logs

AutoIT maintains logs containing information pertaining to UAS deployment and termination transactions. The *autoit.log* file is located in the following directory on the Ultra M Manager Node:

```
/var/log/cisco/usp/auto-it/autoit.log
```

Example Deployment Log:

```
tail -100f /var/log/cisco/usp/auto-it/autoit.log &^C
```

```
2017-05-25 22:04:57,527 - INFO: Received a request to list config folder names.
2017-05-25 22:04:57,527 - INFO: config contents are:
2017-05-25 22:04:57,536 - INFO: Received a request to list config folder names.
2017-05-25 22:04:57,536 - INFO: config contents are:
2017-05-25 22:04:57,545 - INFO: Received a request to create a configuration folder.
2017-05-25 22:04:57,551 - INFO: Received a request to create a configuration folder.
2017-05-25 22:04:57,553 - INFO: Received request to download package: system.cfg from ISO
2017-05-25 22:04:57,563 - INFO: Received request to download package: system.cfg from ISO
2017-05-25 22:04:57,565 - INFO: Received request to download package: system.cfg from ISO
2017-05-25 22:04:57,566 - INFO: Received request to upload config file system.cfg to config
    named vnf-pkg1
2017-05-25 22:04:57,567 - INFO: Uploaded file system.cfg to config named vnf-pkg1

2017-05-25 22:05:54,268 - INFO: Received request to upload ISO usp-5_1_0.iso
2017-05-25 22:05:54,268 - INFO: Saving ISO to /tmp/tmpxu7Mu0/usp-5_1_0.iso
2017-05-25 22:06:30,678 - INFO: Mounting ISO to /tmp/tmpxu7Mu0/iso_mount
2017-05-25 22:06:30,736 - INFO: ISO version already installed, (5.1.0-662)
2017-05-25 22:06:31,355 - INFO: Received a request to list file names in config named
    vnf-pkg1.
2017-05-25 22:06:31,355 - INFO: config contents are: system.cfg
2017-05-25 22:06:31,362 - INFO: Received a request to list file names in config named
    vnf-pkg1-images.
2017-05-25 22:06:31,362 - INFO: config contents are:
2017-05-25 22:06:31,370 - INFO: Received request to get ISO details 5.1.0-662
2017-05-25 22:06:31,391 - INFO: Received a request to get an Host Aggregate details
2017-05-25 22:06:31,857 - INFO: Getting Host Aggregate failed: Aggregate
    'auto-test-sjc-servicel' not found on OpenStack setup
2017-05-25 22:06:31,872 - INFO: Received a request to deploy an Host Aggregate
2017-05-25 22:06:32,415 - INFO: Deploying Host Aggregate 'auto-test-sjc-servicel' completed
2017-05-25 22:06:32,427 - INFO: Received a request to get an Host Aggregate details
2017-05-25 22:06:32,975 - INFO: Getting Host Aggregate failed: Aggregate
    'auto-test-sjc-cf-esc-mgmt1' not found on OpenStack setup
2017-05-25 22:06:32,986 - INFO: Received a request to deploy an Host Aggregate
2017-05-25 22:06:33,513 - INFO: Deploying Host Aggregate 'auto-test-sjc-cf-esc-mgmt1'
    completed
2017-05-25 22:06:33,524 - INFO: Received a request to get an Host Aggregate details
2017-05-25 22:06:33,881 - INFO: Getting Host Aggregate failed: Aggregate
    'auto-test-sjc-em-autovnf-mgmt1' not found on OpenStack setup
2017-05-25 22:06:33,891 - INFO: Received a request to deploy an Host Aggregate
2017-05-25 22:06:34,535 - INFO: Deploying Host Aggregate 'auto-test-sjc-em-autovnf-mgmt1'
    completed
2017-05-25 22:06:34,580 - INFO: Received a request to deploy AutoVnf
2017-05-25 22:06:40,340 - INFO: Creating AutoVnf deployment (3 instance(s)) on
    'http://172.21.201.217:5000/v2.0' tenant 'core' user 'core', ISO '5.1.0-662'
2017-05-25 22:06:40,340 - INFO: Creating network 'auto-testautovnf1-uas-management'
2017-05-25 22:06:42,241 - INFO: Created network 'auto-testautovnf1-uas-management'
2017-05-25 22:06:42,241 - INFO: Creating network 'auto-testautovnf1-uas-orchestration'
```

```

2017-05-25 22:06:42,821 - INFO: Created network 'auto-testautovnf1-uas-orchestration'
2017-05-25 22:06:42,888 - INFO: Created flavor 'auto-testautovnf1-uas'
2017-05-25 22:06:42,888 - INFO: Loading image 'auto-testautovnf1-usp-uas-1.0.0-601.qcow2'
from '/opt/cisco/usp/bundles/5.1.0-662/uas-bundle/usp-uas-1.0.0-601.qcow2'
2017-05-25 22:06:53,927 - INFO: Loaded image 'auto-testautovnf1-usp-uas-1.0.0-601.qcow2'
2017-05-25 22:06:53,928 - INFO: Creating volume 'auto-testautovnf1-uas-vol-0' with command

[/opt/cisco/usp/apps/auto-it/vnf/./common/autoit/./autoit_os_utils/scripts/autoit_volume_staging.sh
OS_USERNAME core OS_TENANT_NAME core OS_PASSWORD **** OS_AUTH_URL
http://172.21.201.217:5000/v2.0 ARG_TENANT core ARG_DEPLOYMENT test-uas ARG_VM_NAME
auto-testautovnf1-uas-vol-0 ARG_VOLUME_TYPE LUKS FILE_1 /tmp/tmphtAJ6/encrypted.cfg]
2017-05-25 22:07:06,104 - INFO: Created volume 'auto-testautovnf1-uas-vol-0'
2017-05-25 22:07:06,104 - INFO: Creating volume 'auto-testautovnf1-uas-vol-1' with command

[/opt/cisco/usp/apps/auto-it/vnf/./common/autoit/./autoit_os_utils/scripts/autoit_volume_staging.sh
OS_USERNAME core OS_TENANT_NAME core OS_PASSWORD **** OS_AUTH_URL
http://172.21.201.217:5000/v2.0 ARG_TENANT core ARG_DEPLOYMENT test-uas ARG_VM_NAME
auto-testautovnf1-uas-vol-1 ARG_VOLUME_TYPE LUKS FILE_1 /tmp/tmphtAJ6/encrypted.cfg]
2017-05-25 22:07:17,598 - INFO: Created volume 'auto-testautovnf1-uas-vol-1'
2017-05-25 22:07:17,598 - INFO: Creating volume 'auto-testautovnf1-uas-vol-2' with command

[/opt/cisco/usp/apps/auto-it/vnf/./common/autoit/./autoit_os_utils/scripts/autoit_volume_staging.sh
OS_USERNAME core OS_TENANT_NAME core OS_PASSWORD **** OS_AUTH_URL
http://172.21.201.217:5000/v2.0 ARG_TENANT core ARG_DEPLOYMENT test-uas ARG_VM_NAME
auto-testautovnf1-uas-vol-2 ARG_VOLUME_TYPE LUKS FILE_1 /tmp/tmphtAJ6/encrypted.cfg]
2017-05-25 22:07:29,242 - INFO: Created volume 'auto-testautovnf1-uas-vol-2'
2017-05-25 22:07:30,477 - INFO: Assigned floating IP '172.21.201.59' to IP '172.57.11.101'
2017-05-25 22:07:33,843 - INFO: Creating instance 'auto-testautovnf1-uas-0' and attaching
volume 'auto-testautovnf1-uas-vol-0'
2017-05-25 22:08:00,717 - INFO: Created instance 'auto-testautovnf1-uas-0'
2017-05-25 22:08:00,717 - INFO: Creating instance 'auto-testautovnf1-uas-1' and attaching
volume 'auto-testautovnf1-uas-vol-1'
2017-05-25 22:08:27,577 - INFO: Created instance 'auto-testautovnf1-uas-1'
2017-05-25 22:08:27,578 - INFO: Creating instance 'auto-testautovnf1-uas-2' and attaching
volume 'auto-testautovnf1-uas-vol-2'
2017-05-25 22:08:58,345 - INFO: Created instance 'auto-testautovnf1-uas-2'
2017-05-25 22:08:58,345 - INFO: Deploy request completed
2017-05-25 22:14:07,201 - INFO: Received request to download file system.cfg from config
named vnf-pkg1
2017-05-25 22:19:05,050 - INFO: Received a request to list config folder names.
2017-05-25 22:19:05,051 - INFO: config contents are: vnf-pkg1-images,vnf-pkg1
2017-05-25 22:19:05,059 - INFO: Received a request to list config folder names.
2017-05-25 22:19:05,059 - INFO: config contents are: vnf-pkg1-images,vnf-pkg1
2017-05-25 22:19:05,066 - INFO: Received a request to create a configuration folder.
2017-05-25 22:19:05,073 - INFO: Received a request to create a configuration folder.
2017-05-25 22:19:05,076 - INFO: Received request to download package: system.cfg from ISO
2017-05-25 22:19:05,083 - INFO: Received request to download package: system.cfg from ISO
2017-05-25 22:19:05,085 - INFO: Received request to download package: system.cfg from ISO
2017-05-25 22:19:05,086 - INFO: Received request to upload config file system.cfg to config
named vnf-pkg2
2017-05-25 22:19:05,087 - INFO: Uploaded file system.cfg to config named vnf-pkg2
2017-05-25 22:19:59,895 - INFO: Received request to upload ISO usp-5_1_0.iso
2017-05-25 22:19:59,895 - INFO: Saving ISO to /tmp/tmpWbdnmx/usp-5_1_0.iso
2017-05-25 22:20:21,395 - INFO: Mounting ISO to /tmp/tmpWbdnmx/iso_mount
2017-05-25 22:20:22,288 - INFO: ISO version already installed, (5.1.0-662)
2017-05-25 22:20:23,203 - INFO: Received a request to list file names in config named
vnf-pkg2.
2017-05-25 22:20:23,203 - INFO: config contents are: system.cfg
2017-05-25 22:20:23,211 - INFO: Received a request to list file names in config named
vnf-pkg2-images.
2017-05-25 22:20:23,211 - INFO: config contents are:
2017-05-25 22:20:23,220 - INFO: Received request to get ISO details 5.1.0-662
2017-05-25 22:20:23,251 - INFO: Received a request to get an Host Aggregate details
2017-05-25 22:20:23,621 - INFO: Getting Host Aggregate failed: Aggregate

```

```

'auto-test-sjc-em-autovnf-mgmt2' not found on OpenStack setup
2017-05-25 22:20:23,633 - INFO: Received a request to deploy an Host Aggregate
2017-05-25 22:20:24,301 - INFO: Deploying Host Aggregate 'auto-test-sjc-em-autovnf-mgmt2'
completed
2017-05-25 22:20:24,313 - INFO: Received a request to get an Host Aggregate details
2017-05-25 22:20:24,843 - INFO: Getting Host Aggregate failed: Aggregate
'auto-test-sjc-service2' not found on OpenStack setup
2017-05-25 22:20:24,853 - INFO: Received a request to deploy an Host Aggregate
2017-05-25 22:20:25,524 - INFO: Deploying Host Aggregate 'auto-test-sjc-service2' completed
2017-05-25 22:20:25,537 - INFO: Received a request to get an Host Aggregate details
2017-05-25 22:20:25,898 - INFO: Getting Host Aggregate failed: Aggregate
'auto-test-sjc-cf-esc-mgmt2' not found on OpenStack setup
2017-05-25 22:20:25,909 - INFO: Received a request to deploy an Host Aggregate
2017-05-25 22:20:26,540 - INFO: Deploying Host Aggregate 'auto-test-sjc-cf-esc-mgmt2'
completed
2017-05-25 22:20:26,584 - INFO: Received a request to deploy AutoVnf
2017-05-25 22:20:31,604 - INFO: Creating AutoVnf deployment (3 instance(s)) on
'http://172.21.201.217:5000/v2.0' tenant 'core' user 'core', ISO '5.1.0-662'
2017-05-25 22:20:31,605 - INFO: Creating network 'auto-testautovnf2-uas-management'
2017-05-25 22:20:33,720 - INFO: Created network 'auto-testautovnf2-uas-management'
2017-05-25 22:20:33,720 - INFO: Creating network 'auto-testautovnf2-uas-orchestration'
2017-05-25 22:20:34,324 - INFO: Created network 'auto-testautovnf2-uas-orchestration'
2017-05-25 22:20:34,402 - INFO: Created flavor 'auto-testautovnf2-uas'
2017-05-25 22:20:34,402 - INFO: Loading image 'auto-testautovnf2-usp-uas-1.0.0-601.qcow2'
from '/opt/cisco/usp/bundles/5.1.0-662/uas-bundle/usp-uas-1.0.0-601.qcow2'
2017-05-25 22:20:43,169 - INFO: Loaded image 'auto-testautovnf2-usp-uas-1.0.0-601.qcow2'
2017-05-25 22:20:43,169 - INFO: Creating volume 'auto-testautovnf2-uas-vol-0' with command

[/opt/cisco/usp/apps/auto-it/vnf/./common/autoit/./autoit_os_utils/scripts/autoit_volume_staging.sh
OS_USERNAME core OS_TENANT_NAME core OS_PASSWORD **** OS_AUTH_URL
http://172.21.201.217:5000/v2.0 ARG_TENANT core ARG_DEPLOYMENT test-uas ARG_VM_NAME
auto-testautovnf2-uas-vol-0 ARG_VOLUME_TYPE LUKS FILE_1 /tmp/tmpelmMIL/encrypted.cfg]
2017-05-25 22:20:54,713 - INFO: Created volume 'auto-testautovnf2-uas-vol-0'
2017-05-25 22:20:54,714 - INFO: Creating volume 'auto-testautovnf2-uas-vol-1' with command

[/opt/cisco/usp/apps/auto-it/vnf/./common/autoit/./autoit_os_utils/scripts/autoit_volume_staging.sh
OS_USERNAME core OS_TENANT_NAME core OS_PASSWORD **** OS_AUTH_URL
http://172.21.201.217:5000/v2.0 ARG_TENANT core ARG_DEPLOYMENT test-uas ARG_VM_NAME
auto-testautovnf2-uas-vol-1 ARG_VOLUME_TYPE LUKS FILE_1 /tmp/tmpelmMIL/encrypted.cfg]
2017-05-25 22:21:06,203 - INFO: Created volume 'auto-testautovnf2-uas-vol-1'
2017-05-25 22:21:06,204 - INFO: Creating volume 'auto-testautovnf2-uas-vol-2' with command

[/opt/cisco/usp/apps/auto-it/vnf/./common/autoit/./autoit_os_utils/scripts/autoit_volume_staging.sh
OS_USERNAME core OS_TENANT_NAME core OS_PASSWORD **** OS_AUTH_URL
http://172.21.201.217:5000/v2.0 ARG_TENANT core ARG_DEPLOYMENT test-uas ARG_VM_NAME
auto-testautovnf2-uas-vol-2 ARG_VOLUME_TYPE LUKS FILE_1 /tmp/tmpelmMIL/encrypted.cfg]
2017-05-25 22:21:18,184 - INFO: Created volume 'auto-testautovnf2-uas-vol-2'
2017-05-25 22:21:19,626 - INFO: Assigned floating IP '172.21.201.64' to IP '172.67.11.101'
2017-05-25 22:21:22,762 - INFO: Creating instance 'auto-testautovnf2-uas-0' and attaching
volume 'auto-testautovnf2-uas-vol-0'
2017-05-25 22:21:49,741 - INFO: Created instance 'auto-testautovnf2-uas-0'
2017-05-25 22:21:49,742 - INFO: Creating instance 'auto-testautovnf2-uas-1' and attaching
volume 'auto-testautovnf2-uas-vol-1'
2017-05-25 22:22:16,881 - INFO: Created instance 'auto-testautovnf2-uas-1'
2017-05-25 22:22:16,881 - INFO: Creating instance 'auto-testautovnf2-uas-2' and attaching
volume 'auto-testautovnf2-uas-vol-2'
2017-05-25 22:22:43,304 - INFO: Created instance 'auto-testautovnf2-uas-2'
2017-05-25 22:22:43,304 - INFO: Deploy request completed
2017-05-25 22:28:08,865 - INFO: Received request to download file system.cfg from config
named vnf-pkg2
2017-05-25 22:40:03,550 - INFO: Received request to download file system.cfg from config
named vnf-pkg1

```

Example Termination Log:

```

2017-05-25 22:53:30,970 - INFO: Received a request to destroy AutoVnf
2017-05-25 22:53:31,310 - INFO: Destroying AutoVnf deployment on
'http://172.21.201.217:5000/v2.0' tenant 'core' user 'core', ISO '5.1.0-662'
2017-05-25 22:53:32,698 - INFO: Removed floating IP '172.21.201.64'
2017-05-25 22:53:34,114 - INFO: 3 instance(s) found with name matching 'auto-testautovnf2'
2017-05-25 22:53:34,448 - INFO: Removing volume 'auto-testautovnf2-uas-vol-2'
2017-05-25 22:53:43,481 - INFO: Removed volume 'auto-testautovnf2-uas-vol-2'
2017-05-25 22:53:43,481 - INFO: Removing instance 'auto-testautovnf2-uas-2'
2017-05-25 22:53:47,080 - INFO: Removed instance 'auto-testautovnf2-uas-2'
2017-05-25 22:53:47,283 - INFO: Removing volume 'auto-testautovnf2-uas-vol-1'
2017-05-25 22:53:56,508 - INFO: Removed volume 'auto-testautovnf2-uas-vol-1'
2017-05-25 22:53:56,508 - INFO: Removing instance 'auto-testautovnf2-uas-1'
2017-05-25 22:54:00,290 - INFO: Removed instance 'auto-testautovnf2-uas-1'
2017-05-25 22:54:00,494 - INFO: Removing volume 'auto-testautovnf2-uas-vol-0'
2017-05-25 22:54:04,714 - INFO: Removed volume 'auto-testautovnf2-uas-vol-0'
2017-05-25 22:54:04,714 - INFO: Removing instance 'auto-testautovnf2-uas-0'
2017-05-25 22:54:11,647 - INFO: Removed instance 'auto-testautovnf2-uas-0'
2017-05-25 22:54:15,107 - INFO: 1 image(s) 'auto-testautovnf2-usp-uas-1.0.0-601.qcow2'
found, removing
2017-05-25 22:54:19,289 - INFO: Removed network 'auto-testautovnf2-uas-management'
2017-05-25 22:54:20,463 - INFO: Removed network 'auto-testautovnf2-uas-orchestration'
2017-05-25 22:54:20,541 - INFO: Removed flavor 'auto-testautovnf2-uas'
2017-05-25 22:54:20,541 - INFO: Destroy request completed
2017-05-25 22:54:20,562 - INFO: Received a request to get an Host Aggregate details
2017-05-25 22:54:20,925 - INFO: Getting Host Aggregate 'auto-test-sjc-em-autovnf-mgmt2'
completed
2017-05-25 22:54:20,940 - INFO: Received a request to destroy an Host Aggregate
2017-05-25 22:54:21,564 - INFO: Destroying Host Aggregate 'auto-test-sjc-em-autovnf-mgmt2'
completed
2017-05-25 22:54:21,575 - INFO: Received a request to get an Host Aggregate details
2017-05-25 22:54:21,930 - INFO: Getting Host Aggregate 'auto-test-sjc-service2' completed
2017-05-25 22:54:21,947 - INFO: Received a request to destroy an Host Aggregate
2017-05-25 22:54:22,456 - INFO: Destroying Host Aggregate 'auto-test-sjc-service2' completed
2017-05-25 22:54:22,468 - INFO: Received a request to get an Host Aggregate details
2017-05-25 22:54:22,826 - INFO: Getting Host Aggregate 'auto-test-sjc-cf-esc-mgmt2' completed
2017-05-25 22:54:22,840 - INFO: Received a request to destroy an Host Aggregate
2017-05-25 22:54:23,394 - INFO: Destroying Host Aggregate 'auto-test-sjc-cf-esc-mgmt2'
completed
2017-05-25 22:56:55,925 - INFO: Received a request to destroy AutoVnf
2017-05-25 22:56:56,391 - INFO: Destroying AutoVnf deployment on
'http://172.21.201.217:5000/v2.0' tenant 'core' user 'core', ISO '5.1.0-662'
2017-05-25 22:56:57,507 - INFO: Removed floating IP '172.21.201.59'
2017-05-25 22:56:58,614 - INFO: 3 instance(s) found with name matching 'auto-testautovnf1'
2017-05-25 22:56:58,949 - INFO: Removing volume 'auto-testautovnf1-uas-vol-2'
2017-05-25 22:57:08,166 - INFO: Removed volume 'auto-testautovnf1-uas-vol-2'
2017-05-25 22:57:08,166 - INFO: Removing instance 'auto-testautovnf1-uas-2'
2017-05-25 22:57:15,117 - INFO: Removed instance 'auto-testautovnf1-uas-2'
2017-05-25 22:57:15,323 - INFO: Removing volume 'auto-testautovnf1-uas-vol-1'
2017-05-25 22:57:24,501 - INFO: Removed volume 'auto-testautovnf1-uas-vol-1'
2017-05-25 22:57:24,502 - INFO: Removing instance 'auto-testautovnf1-uas-1'
2017-05-25 22:57:28,275 - INFO: Removed instance 'auto-testautovnf1-uas-1'
2017-05-25 22:57:28,722 - INFO: Removing volume 'auto-testautovnf1-uas-vol-0'
2017-05-25 22:57:37,702 - INFO: Removed volume 'auto-testautovnf1-uas-vol-0'
2017-05-25 22:57:37,703 - INFO: Removing instance 'auto-testautovnf1-uas-0'
2017-05-25 22:57:44,622 - INFO: Removed instance 'auto-testautovnf1-uas-0'
2017-05-25 22:57:47,921 - INFO: 1 image(s) 'auto-testautovnf1-usp-uas-1.0.0-601.qcow2'
found, removing
2017-05-25 22:57:52,453 - INFO: Removed network 'auto-testautovnf1-uas-management'
2017-05-25 22:57:53,677 - INFO: Removed network 'auto-testautovnf1-uas-orchestration'
2017-05-25 22:57:53,760 - INFO: Removed flavor 'auto-testautovnf1-uas'
2017-05-25 22:57:53,760 - INFO: Destroy request completed

```

Viewing AutoIT Operational Data

View the AutoIT operational data by executing the following command:

```
show uas
```

Example show uas Command Output

```
uas version          6.0.0
uas state            active
uas external-connection-point 172.28.185.132
INSTANCE IP        STATE  ROLE
-----
172.28.185.133    alive  CONFD-MASTER
172.28.185.134    alive  CONFD-SLAVE

NAME                LAST HEARTBEAT
-----
AutoIT-MASTER      2018-01-24 21:24:30
USPCFMWorker        2018-01-24 21:24:30
USPCHBWorker        2018-01-24 21:24:30
USPCWorker          2018-01-24 21:24:30
```



Important

In case of standalone mode (non-HA) deployments, the *uas external-connection-point* information and *Instance IP* table are not applicable and are not displayed.

Checking AutoIT Processes

Verify that key processes are running on the AutoIT VM:

With Ubuntu 14.04:

```
service autoit status
```

Example output:

```
AutoIT is running.
```

Check ConfD.

```
service uas-confd status
```

With Ubuntu 16.04:

```
* autoit.service - Job that runs the autoit daemon
Loaded: loaded (/etc/systemd/system/autoit.service; static; vendor preset: enabled)
Active: active (running) since Fri 2018-09-21 22:11:54 UTC; 1 weeks 0 days ago
Main PID: 1320 (autoit.sh)
CGroup: /system.slice/autoit.service
|-1320 /bin/sh /etc/cisco/autoit.sh start
|-1337 /bin/sh /etc/cisco/autoit.sh start
|-1338 /opt/cisco/usp/uas/autoit/autoit
|-1339 tee -a /var/log/upstart/autoit.log
|-1341 /opt/cisco/usp/uas/autoit/autoit
|-1346 /opt/cisco/usp/uas/autoit/autoit
|-1347 /opt/cisco/usp/uas/autoit/autoit
|-1348 /opt/cisco/usp/uas/autoit/autoit
|-1349 /opt/cisco/usp/uas/autoit/autoit
|-1350 /opt/cisco/usp/uas/autoit/autoit
```

```
|-1352 /opt/cisco/usp/uas/autoit/autoit
`-1353 /opt/cisco/usp/uas/autoit/autoit
```

Monitoring AutoVNF Operations

This section identifies various commands that can be used to determine the status and health of AutoVNF.

To use them, you must:

1. Log on to the AutoVNF VM as *ubuntu*. Use the password that was created earlier for this user.
2. Become the root user.

```
sudo -i
```

Viewing AutoVNF Logs

General AutoVNF Logs

AutoVNF logs are available on the AutoVNF VM in the following file:

```
/var/log/upstart/autovnf.log
```

To collect AutoVNF logs:

1. Navigate to the *scripts* directory.
2. Launch the *collect-uas-logs.sh* script to collect the logs.

```
cd /opt/cisco/usp/uas/scripts
```

```
sudo ./collect-uas-logs.sh
```

Example log output:

```
Creating log tarball uas-logs-2017-05-26_00.24.55.UTC.tar.bz2 ...
uas-logs/
uas-logs/autovnf/
uas-logs/autovnf/autovnf_server.log
uas-logs/autovnf/a15bf26c-41a1-11e7-b3ab-fa163eccaffc/
uas-logs/autovnf/a15bf26c-41a1-11e7-b3ab-fa163eccaffc/netconf_traces
uas-logs/autovnf/a15bf26c-41a1-11e7-b3ab-fa163eccaffc/vnfd
uas-logs/autovnf/audit.log
uas-logs/autovnf/579b4546-41a2-11e7-b3ab-fa163eccaffc/
uas-logs/autovnf/579b4546-41a2-11e7-b3ab-fa163eccaffc/netconf_traces
uas-logs/autovnf/579b4546-41a2-11e7-b3ab-fa163eccaffc/vnfd
uas-logs/ha/
uas-logs/ha/info.log
uas-logs/uas_manager/
uas-logs/uas_manager/info.log
uas-logs/zk/
uas-logs/zk/zookeeper.out
uas-logs/zk/zookeeper.log
uas-logs/upstart/
uas-logs/upstart/uas-confd.log
uas-logs/upstart/zk.log
uas-logs/upstart/autovnf.log
uas-logs/upstart/uws-ae.log
uas-logs/upstart/ensemble.log
```



```

===== Tarball available at: /tmp/uas-logs-2017-05-26_00.24.55.UTC.tar.bz2
=====

To extract the tarball, run: "tar jxf /tmp/uas-logs-2017-05-26_00.24.55.UTC.tar.bz2"

```

AutoVNF Transaction Logs

AutoVNF server and transaction logs are available on the Ultra M Manager Node in the following directory on the UAS VM:

```
/var/log/cisco-uas/autovnf
```

Inside this directory are transaction sub-directories, VNFD information and NETCONF traces are provided for the given transaction.

Example:

```

total 3568
drwxr-xr-x 4 root root    4096 May 25 23:31 ./
drwxr-xr-x 7 root root    4096 May 25 19:39 ../
drwxr-xr-x 2 root root    4096 May 25 23:31 579b4546-41a2-11e7-b3ab-fa163eccaffc/
drwxr-xr-x 2 root root    4096 May 25 23:29 a15bf26c-41a1-11e7-b3ab-fa163eccaffc/
-rw-r--r-- 1 root root 3632813 May 26 18:33 audit.log
-rw-r--r-- 1 root root      0 May 25 23:26 autovnf_server.log

```

```
cd a15bf26c-41a1-11e7-b3ab-fa163eccaffc
```

```

total 2568
drwxr-xr-x 2 root root    4096 May 25 23:29 ./
drwxr-xr-x 4 root root    4096 May 25 23:31 ../
-rw-r--r-- 1 root root 2614547 May 25 23:37 netconf_traces
-rw-r--r-- 1 root root      0 May 25 23:29 vnfd

```

AutoVNF Event Logs

Event logs provide useful information on UAS task progress. These logs are located in the *autovnf.log* file within the following directory on the UAS VM:

```
/var/log/upstart
```

Event logs are filed by transaction ID. To view transaction IDs:

1. Login to the ConfD CLI as the *admin* user.

```
confd_cli -u admin -C
```

2. Enter the *admin* user password when prompted.

3. List the transactions.

```
show transactions
```

Example output:

TX ID	STATUS	TX TYPE	DEPLOYMENT ID	TIMESTAMP
562c18b0-4199-11e7-ad05-fa163ec6a7e4		vnf-deployment	vnfd2-deployment	
2017-05-25T22:27:28.962293-00:00	deployment-success			
abf51428-4198-11e7-ad05-fa163ec6a7e4		vnfm-deployment	ab-auto-test-vnfm2	
2017-05-25T22:22:43.389059-00:00	deployment-success			

To view the logs associated with a specific transaction:

```
show log <transaction_id> | display xml
```

Example log pertaining to VNF deployment:

```
<config xmlns="http://tail-f.com/ns/config/1.0">
  <logs xmlns="http://www.cisco.com/usp/nfv/usp-autovnf-oper">
    <tx-id>abf51428-4198-11e7-ad05-fa163ec6a7e4</tx-id>
    <log>2017-05-25 22:22:43,402 - VNF Deployment RPC triggered for deployment:
ab-auto-test-vnfm2, deactivate: 0
2017-05-25 22:22:43,446 - Notify deployment
2017-05-25 22:22:43,472 - VNF Deployment Transaction: abf51428-4198-11e7-ad05-fa163ec6a7e4 for
deployment: ab-auto-test-vnfm2 started
2017-05-25 22:22:43,497 - Downloading Image:
http://172.21.201.63:80/bundles/5.1.0-662/vnfm-bundle/ESC-2_3_2_143.qcow2
2017-05-25 22:22:49,146 - Image: //opt/cisco/vnf-staging/vnfm_image downloaded
successfully
2017-05-25 22:22:49,714 - Checking network 'public' existence
2017-05-25 22:22:49,879 - Checking flavor 'ab-auto-test-vnfm2-ESC-flavor' non existence
2017-05-25 22:22:50,124 - Checking image 'ab-auto-test-vnfm2-ESC-image' non existence
2017-05-25 22:22:50,598 - Checking network 'auto-testautovnf2-uas-management' existence
2017-05-25 22:22:50,752 - Checking network 'auto-testautovnf2-uas-orchestration' existence
2017-05-25 22:22:50,916 - Checking instance 'ab-auto-test-vnfm2-ESC-0' non existence
2017-05-25 22:22:51,357 - Checking instance 'ab-auto-test-vnfm2-ESC-1' non existence
2017-05-25 22:22:52,084 - Creating flavor 'ab-auto-test-vnfm2-ESC-flavor'
2017-05-25 22:22:52,184 - Loading image 'ab-auto-test-vnfm2-ESC-image' from
'//opt/cisco/vnf-staging/vnfm_image'...
2017-05-25 22:23:06,444 - ESC HA mode is ON
2017-05-25 22:23:07,118 - Allocated these IPs for ESC HA: ['172.67.11.3', '172.67.11.4',
'172.67.11.5']
2017-05-25 22:23:08,228 - Creating VNF 'ab-auto-test-vnfm2-ESC-0' with [python
//opt/cisco/vnf-staging/bootvm.py ab-auto-test-vnfm2-ESC-0 --flavor
ab-auto-test-vnfm2-ESC-flavor --image b29e7a72-9ad0-4178-aa35-35df0a2b23b7 --net
auto-testautovnf2-uas-management --gateway_ip 172.67.11.1 --net
auto-testautovnf2-uas-orchestration
--os_auth_url http://172.21.201.217:5000/v2.0 --os_tenant_name core --os_username *****
--os_password ***** --bs_os_auth_url http://172.21.201.217:5000/v2.0 --bs_os_tenant_name
core --bs_os_username ***** --bs_os_password ***** --esc_ui_startup false
--esc_params_file /tmp/esc_params.cfg --encrypt_key ***** --user_pass *****
--user_confd_pass ***** --kad_vif eth0 --kad_vip 172.67.11.5 --ipaddr 172.67.11.3 dhcp
--ha_node_list 172.67.11.3 172.67.11.4 --file
root:0755:/opt/cisco/esc/esc-scripts/esc_volume_em_staging.sh:
/opt/cisco/usp/uas/autovnf/vnfms/esc-scripts/esc_volume_em_staging.sh
--file
root:0755:/opt/cisco/esc/esc-scripts/esc_vpc_chassis_id.py:/opt/cisco/usp/uas/autovnf/vnfms/esc-scripts/esc_vpc_chassis_id.py
--file
root:0755:/opt/cisco/esc/esc-scripts/esc_vpc-di-internal-keys.sh:/opt/cisco/usp/uas/autovnf/vnfms/esc-scripts/esc_vpc-di-internal-keys.sh]...
2017-05-25 22:24:13,329 - ESC started!
2017-05-25 22:24:13,803 - Creating VNF 'ab-auto-test-vnfm2-ESC-1' with [python
//opt/cisco/vnf-staging/bootvm.py ab-auto-test-vnfm2-ESC-1 --flavor
ab-auto-test-vnfm2-ESC-flavor --image b29e7a72-9ad0-4178-aa35-35df0a2b23b7 --net
auto-testautovnf2-uas-management --gateway_ip 172.67.11.1 --net
auto-testautovnf2-uas-orchestration
--os_auth_url http://172.21.201.217:5000/v2.0 --os_tenant_name core --os_username *****
--os_password ***** --bs_os_auth_url http://172.21.201.217:5000/v2.0 --bs_os_tenant_name
core --bs_os_username ***** --bs_os_password ***** --esc_ui_startup false
--esc_params_file /tmp/esc_params.cfg --encrypt_key ***** --user_pass *****
--user_confd_pass ***** --kad_vif eth0 --kad_vip 172.67.11.5 --ipaddr 172.67.11.4 dhcp
--ha_node_list 172.67.11.3 172.67.11.4
--file root:0755:/opt/cisco/esc/esc-scripts/esc_volume_em_staging.sh:
/opt/cisco/usp/uas/autovnf/vnfms/esc-scripts/esc_volume_em_staging.sh --file
root:0755:/opt/cisco/esc/esc-scripts/esc_vpc_chassis_id.py:/opt/cisco/usp/uas/autovnf/vnfms/esc-scripts/esc_vpc_chassis_id.py
--file
root:0755:/opt/cisco/esc/esc-scripts/esc_vpc-di-internal-keys.sh:/opt/cisco/usp/uas/autovnf/vnfms/esc-scripts/esc_vpc-di-internal-keys.sh]...
2017-05-25 22:25:12,660 - ESC started!
2017-05-25 22:25:12,677 - Waiting for VIM to declare 2 instance(s) active
```

```

2017-05-25 22:25:18,254 - Instance(s) are active
2017-05-25 22:25:18,271 - Waiting for VNFM to be ready...
2017-05-25 22:25:18,292 - Connection to VNFM (esc) at 172.67.11.5
2017-05-25 22:25:21,313 - Could not establish NETCONF session to 172.67.11.5
2017-05-25 22:25:31,341 - Connection to VNFM (esc) at 172.67.11.5
2017-05-25 22:25:31,362 - Could not establish NETCONF session to 172.67.11.5
2017-05-25 22:25:41,379 - Connection to VNFM (esc) at 172.67.11.5
2017-05-25 22:25:41,397 - Could not establish NETCONF session to 172.67.11.5
2017-05-25 22:25:51,424 - Connection to VNFM (esc) at 172.67.11.5
2017-05-25 22:25:51,495 - Could not establish NETCONF session to 172.67.11.5
2017-05-25 22:26:01,521 - Connection to VNFM (esc) at 172.67.11.5
2017-05-25 22:26:01,539 - Could not establish NETCONF session to 172.67.11.5
2017-05-25 22:26:11,563 - Connection to VNFM (esc) at 172.67.11.5
2017-05-25 22:26:11,591 - Could not establish NETCONF session to 172.67.11.5
2017-05-25 22:26:21,617 - Connection to VNFM (esc) at 172.67.11.5
2017-05-25 22:26:21,635 - Could not establish NETCONF session to 172.67.11.5
2017-05-25 22:26:31,662 - Connection to VNFM (esc) at 172.67.11.5
2017-05-25 22:26:31,680 - Could not establish NETCONF session to 172.67.11.5
2017-05-25 22:26:41,706 - Connection to VNFM (esc) at 172.67.11.5
2017-05-25 22:26:41,726 - Could not establish NETCONF session to 172.67.11.5
2017-05-25 22:26:51,748 - Connection to VNFM (esc) at 172.67.11.5
2017-05-25 22:26:51,765 - Could not establish NETCONF session to 172.67.11.5
2017-05-25 22:27:01,791 - Connection to VNFM (esc) at 172.67.11.5
2017-05-25 22:27:02,204 - NETCONF Sessions (Transaction/Notifications) established
2017-05-25 22:27:02,507 - Notify VNFM Up
2017-05-25 22:27:02,525 - VNFM Transaction: abf51428-4198-11e7-ad05-fa163ec6a7e4 for
deployment: ab-auto-test-vnfm2 completed successfully.
2017-05-25 22:27:02,545 - Notify deployment</log>
</logs>
</config>

```

Example log pertaining to VNF deployment:

```

<config xmlns="http://tail-f.com/ns/config/1.0">
  <logs xmlns="http://www.cisco.com/usp/nfv/usp-autovnf-oper">
    <tx-id>562c18b0-4199-11e7-ad05-fa163ec6a7e4</tx-id>
    <log>2017-05-25 22:27:29,039 - Notify deployment
2017-05-25 22:27:29,062 - Connection to VNFM (esc) at 172.67.11.5
2017-05-25 22:27:29,404 - NETCONF Sessions (Transaction/Notifications) established
2017-05-25 22:27:29,420 - Get Images
2017-05-25 22:27:29,435 - NETCONF get-config Request sent, waiting for reply
2017-05-25 22:27:29,560 - NETCONF Transaction success!
2017-05-25 22:27:29,570 - Get Flavors List
2017-05-25 22:27:29,582 - Adding images ...
2017-05-25 22:27:29,592 - Creating Images
2017-05-25 22:27:29,603 - image: ab-auto-test-vnfm2-element-manager
2017-05-25 22:27:29,620 - src:
http://172.21.201.63:80/bundles/5.1.0-662/em-bundle/em-1_0_0_532.qcow2
2017-05-25 22:27:29,630 - disk_format: qcow2
2017-05-25 22:27:29,641 - container_format: bare
2017-05-25 22:27:29,655 - serial_console: True
2017-05-25 22:27:29,665 - disk_bus: virtio
2017-05-25 22:27:29,674 - NETCONF edit-config Request sent, waiting for reply
2017-05-25 22:27:29,901 - NETCONF Transaction success!
2017-05-25 22:27:29,911 - Waiting for VNFM to process CREATE_IMAGE transaction
2017-05-25 22:27:46,987 - | CREATE_IMAGE | ab-auto-test-vnfm2-element-manager | SUCCESS
| (1/1)
2017-05-25 22:27:47,004 - NETCONF transaction completed successfully!
2017-05-25 22:27:47,749 - Creating Images
2017-05-25 22:27:47,764 - image: ab-auto-test-vnfm2-control-function
2017-05-25 22:27:47,776 - src:
http://172.21.201.63:80/bundles/5.1.0-662/ugp-bundle/qvpc-di-cf.qcow2
2017-05-25 22:27:47,793 - disk_format: qcow2
2017-05-25 22:27:47,805 - container_format: bare
2017-05-25 22:27:47,819 - serial_console: True

```

```

2017-05-25 22:27:47,831 - disk_bus: virtio
2017-05-25 22:27:47,841 - NETCONF edit-config Request sent, waiting for reply
2017-05-25 22:27:48,317 - NETCONF Transaction success!
2017-05-25 22:27:48,331 - Waiting for VNFM to process CREATE_IMAGE transaction
2017-05-25 22:27:56,403 - | CREATE_IMAGE | ab-auto-test-vnfm2-control-function | SUCCESS
| (1/1)
2017-05-25 22:27:56,434 - NETCONF transaction completed successfully!
2017-05-25 22:27:56,822 - Creating Images
2017-05-25 22:27:56,838 - image: ab-auto-test-vnfm2-session-function
2017-05-25 22:27:57,267 - src:
http://172.21.201.63:80/bundles/5.1.0-662/ugp-bundle/qvpc-di-sf.qcow2
2017-05-25 22:27:57,412 - disk_format: qcow2
2017-05-25 22:27:57,423 - container_format: bare
2017-05-25 22:27:57,523 - serial_console: True
2017-05-25 22:27:57,535 - disk_bus: virtio
2017-05-25 22:27:57,550 - NETCONF edit-config Request sent, waiting for reply
2017-05-25 22:27:58,378 - NETCONF Transaction success!
2017-05-25 22:27:58,391 - Waiting for VNFM to process CREATE_IMAGE transaction
2017-05-25 22:28:06,339 - | CREATE_IMAGE | ab-auto-test-vnfm2-session-function | SUCCESS
| (1/1)
2017-05-25 22:28:06,355 - NETCONF transaction completed successfully!
2017-05-25 22:28:06,367 - Images added successfully
2017-05-25 22:28:06,378 - Creating flavors ...
2017-05-25 22:28:06,388 - Creating flavors
2017-05-25 22:28:06,432 - flavor: ab-auto-test-vnfm2-element-manager
2017-05-25 22:28:06,444 - vcpus: 2
2017-05-25 22:28:06,457 - memory_mb: 4096
2017-05-25 22:28:06,469 - root_disk_mb: 40960
2017-05-25 22:28:06,481 - ephemeral_disk_mb: 0
2017-05-25 22:28:06,491 - swap_disk_mb: 0
2017-05-25 22:28:06,505 - NETCONF edit-config Request sent, waiting for reply
2017-05-25 22:28:06,781 - NETCONF Transaction success!
2017-05-25 22:28:06,793 - Waiting for VNFM to process CREATE_FLAVOR transaction
2017-05-25 22:28:07,286 - | CREATE_FLAVOR | ab-auto-test-vnfm2-element-manager | SUCCESS
| (1/1)
2017-05-25 22:28:07,298 - NETCONF transaction completed successfully!
2017-05-25 22:28:07,310 - Creating flavors
2017-05-25 22:28:07,328 - flavor: ab-auto-test-vnfm2-control-function
2017-05-25 22:28:07,341 - vcpus: 8
2017-05-25 22:28:07,358 - memory_mb: 16384
2017-05-25 22:28:07,374 - root_disk_mb: 6144
2017-05-25 22:28:07,386 - ephemeral_disk_mb: 0
2017-05-25 22:28:07,398 - swap_disk_mb: 0
2017-05-25 22:28:07,410 - NETCONF edit-config Request sent, waiting for reply
2017-05-25 22:28:07,586 - NETCONF Transaction success!
2017-05-25 22:28:07,603 - Waiting for VNFM to process CREATE_FLAVOR transaction
2017-05-25 22:28:07,818 - | CREATE_FLAVOR | ab-auto-test-vnfm2-control-function | SUCCESS
| (1/1)
2017-05-25 22:28:07,830 - NETCONF transaction completed successfully!
2017-05-25 22:28:07,842 - Creating flavors
2017-05-25 22:28:07,853 - flavor: ab-auto-test-vnfm2-session-function
2017-05-25 22:28:07,865 - vcpus: 8
2017-05-25 22:28:07,877 - memory_mb: 16384
2017-05-25 22:28:07,889 - root_disk_mb: 6144
2017-05-25 22:28:07,901 - ephemeral_disk_mb: 0
2017-05-25 22:28:07,917 - swap_disk_mb: 0
2017-05-25 22:28:07,928 - NETCONF edit-config Request sent, waiting for reply
2017-05-25 22:28:08,204 - NETCONF Transaction success!
2017-05-25 22:28:08,216 - Waiting for VNFM to process CREATE_FLAVOR transaction
2017-05-25 22:28:08,455 - | CREATE_FLAVOR | ab-auto-test-vnfm2-session-function | SUCCESS
| (1/1)
2017-05-25 22:28:08,473 - NETCONF transaction completed successfully!
2017-05-25 22:28:08,489 - Flavors created successfully
2017-05-25 22:28:08,501 - Onboarding configuration file: ('control-function',

```

```
'staros_config.txt', 'http://172.21.201.63:5001/configs/vnf-pkg2/files/system.cfg')
2017-05-25 22:28:08,547 - NETCONF get-operational Request sent, waiting for reply
2017-05-25 22:28:08,724 - NETCONF Transaction success!
2017-05-25 22:28:08,855 - Notify VDU Create Catalog for : element-manager, status:
SUCCESS, txid: 562c18b0-4199-11e7-ad05-fa163ec6a7e4
2017-05-25 22:28:08,892 - Notify VDU Create Catalog for : control-function, status:
SUCCESS, txid: 562c18b0-4199-11e7-ad05-fa163ec6a7e4
2017-05-25 22:28:09,008 - Notify VDU Create Catalog for : session-function, status:
SUCCESS, txid: 562c18b0-4199-11e7-ad05-fa163ec6a7e4
2017-05-25 22:28:09,024 - NETCONF get-config Request sent, waiting for reply
2017-05-25 22:28:09,151 - NETCONF Transaction success!
2017-05-25 22:28:14,837 - Deployment: vnf2-deployment started ...
2017-05-25 22:28:14,858 - Generating VNF
2017-05-25 22:28:14,930 - VNF generated successfully.
2017-05-25 22:28:14,966 - Generating configuration files for EM
2017-05-25 22:28:14,979 - Creating VIP Ports
2017-05-25 22:28:16,970 - VIP ports created successfully
2017-05-25 22:28:16,987 - Deploying EM
2017-05-25 22:28:17,000 - Added anti-affinity placement policy for ab-auto-test-vnfm2-em-1
2017-05-25 22:28:17,012 - Added anti-affinity placement policy for ab-auto-test-vnfm2-em-2
2017-05-25 22:28:17,025 - Added anti-affinity placement policy for ab-auto-test-vnfm2-em-3
2017-05-25 22:28:17,041 - Starting Service Deployment: ab-auto-test-vnfm2-em
2017-05-25 22:28:17,054 - Start VM: ab-auto-test-vnfm2-em-1
2017-05-25 22:28:17,066 - Start VM: ab-auto-test-vnfm2-em-2
2017-05-25 22:28:17,077 - Start VM: ab-auto-test-vnfm2-em-3
2017-05-25 22:28:17,089 - NETCONF edit-config Request sent, waiting for reply
2017-05-25 22:28:17,721 - NETCONF Transaction success!
2017-05-25 22:28:17,733 - Waiting for VNFM to process SERVICE_ALIVE transaction
2017-05-25 22:29:37,185 - | VM_DEPLOYED | ab-auto-test-vnfm2-em-1 | SUCCESS | Waiting
for: SERVICE_ALIVE|
2017-05-25 22:29:59,679 - | VM_ALIVE | ab-auto-test-vnfm2-em-1 | SUCCESS | Waiting for:
SERVICE_ALIVE|
2017-05-25 22:30:42,170 - | VM_DEPLOYED | ab-auto-test-vnfm2-em-2 | SUCCESS | Waiting
for: SERVICE_ALIVE|
2017-05-25 22:30:59,620 - | VM_ALIVE | ab-auto-test-vnfm2-em-2 | SUCCESS | Waiting for:
SERVICE_ALIVE|
2017-05-25 22:31:51,510 - | VM_DEPLOYED | ab-auto-test-vnfm2-em-3 | SUCCESS | Waiting
for: SERVICE_ALIVE|
2017-05-25 22:32:13,584 - | VM_DEPLOYED | c2 | SUCCESS | Waiting for: SERVICE_ALIVE|
2017-05-25 22:32:29,639 - | VM_ALIVE | ab-auto-test-vnfm2-em-3 | SUCCESS | Waiting for:
SERVICE_ALIVE|
2017-05-25 22:32:29,661 - | SERVICE_ALIVE | ab-auto-test-vnfm2-em | SUCCESS | (1/1)
2017-05-25 22:32:29,674 - NETCONF transaction completed successfully!
2017-05-25 22:32:29,687 - EM Online !
2017-05-25 22:32:29,699 - HA-VIP[element-manager] : 172.67.11.12
2017-05-25 22:32:29,716 - HA-VIP[control-function] : 172.67.11.13
2017-05-25 22:32:29,729 - Deployment: vnf2-deployment completed successfully.
2017-05-25 22:32:29,742 - NETCONF get-operational Request sent, waiting for reply
2017-05-25 22:32:30,221 - NETCONF Transaction success!
2017-05-25 22:32:30,261 - Notify EM Up
2017-05-25 22:32:30,274 - VNF Transaction completed successfully!
2017-05-25 22:32:30,292 - Notify deployment</log>
</logs>
</config>
```

Viewing AutoVNF Operational Data

AutoVNF maintains history information for all transactions, associated events, and related error/information logs in persistent storage. These logs are useful for monitoring deployment progress and for troubleshooting issues.

These logs can be retrieved at time using the “task-id” returned as well as by running ConfD “show” commands.

To access these commands, you must be logged in to the ConfD CLI as the *admin* user on the AutoVNF VM:

```
confd_cli -u admin -C
```

When prompted, enter the *admin* user password.

[Table 2: ConfD Log Descriptions, on page 54](#) provides a list of the available commands and describes the information in the output.

Table 2: ConfD Log Descriptions

ConfD Command	Purpose
In releases prior to 6.0: show autovnf-oper:errors In 6.0 and later releases: show uas	Displays a list of any deployment errors that may have occurred.
In releases prior to 6.0: show autovnf-oper:logs display xml In 6.0 and later releases: show log display xml	Displays log messages for AutoVNF transactions.
In releases prior to 6.0: show autovnf-oper:network-catalog In 6.0 and later releases: show vnf-packager	Displays information for the networks deployed with USP.
In releases prior to 6.0: show autovnf-oper:transactions In 6.0 and later releases: show transaction	Displays a list of transaction IDs that correspond to the USP deployment along with their execution date, time, and status.
In releases prior to 6.0: show autovnf-oper:vdu-catalog In 6.0 and later releases: show vnfr	Displays information pertaining to the virtual descriptor units (VDUs) used to deploy USP.
In releases prior to 6.0: show autovnf-oper:vip-port In 6.0 and later releases: show vnfr	Displays information port, network, and virtual IP addresses information.

ConfD Command	Purpose
In releases prior to 6.0: show autovnf-oper:vnfm In 6.0 and later releases: show vnfr	Displays information pertaining to the VNFM deployment and UEM VM deployment.
show confd-state	Displays information pertaining to confd-state on AutoVNF.
show confd-state ha	Displays information pertaining to HA specific confd-state on AutoVNF.
show log <transaction_id>	Displays detailed log information for a specific transaction ID.
show running-config	Displays the configuration running on the AutoVNF.
show uas	Displays information pertaining to the AutoVNF VM deployment.
In releases prior to 6.0: show usp In 6.0 and later releases: show vnfr	Displays information pertaining to the overall USP VM deployment.

NOTES:

- Log information can be saved out of ConfD to a file for later retrieval using one of the following commands:

```
show log transaction_id | save url
```

OR

```
show autovnf-oper: command | save url
```

Where *transaction_id* is a specific ID, *url* is a valid directory path, and *command* is one of the command operators identified in [Table 2: ConfD Log Descriptions, on page 54](#).

Example show confd-state Command Output

```
show confd-state
```

```
confd-state version 6.3.1
confd-state epoll false
confd-state daemon-status started
confd-state ha mode master
confd-state ha node-id confd-master
confd-state ha connected-slave [ a2dd5178-afae-4b3a-8b2b-910216583501 ]
```

```

                                EXPORTED
NAME                            REVISION  NAMESPACE
  PREFIX                        TO ALL    EXPORTED TO

```

Example show confd-state ha Command Output

```

iana-crypt-hash          2014-08-06  urn:ietf:params:xml:ns:yang:iana-crypt-hash
  ianach                  X            -
ietf-inet-types          2013-07-15  urn:ietf:params:xml:ns:yang:ietf-inet-types
  inet                    X            -
ietf-netconf-acm         2012-02-22  urn:ietf:params:xml:ns:yang:ietf-netconf-acm
  nacm                    X            -
ietf-netconf-monitoring 2010-10-04  urn:ietf:params:xml:ns:yang:ietf-netconf-monitoring
  ncm                     X            -
<-- SNIP -->

```

Example show confd-state ha Command Output

```

show confd-state ha

confd-state ha mode master
confd-state ha node-id confd-master
confd-state ha connected-slave [ a2dd5178-afae-4b3a-8b2b-910216583501 ]

```

Example show log Command Output

```

show log <transaction_id> | display xml

```

Example show running-config Command Output

```

show running-config

<-- SNIP -->
autovnf:secure-token autovnf-admin
  user      $8$YQiswhu0QLpA4N2kBo7t5eZN2uUW0L19m8WaaBzkVoc=
  password  $8$mSaszfxjZ8My8Y/FqLL3Sasn1b/DmRh3pdblataq49cM=
  !
autovnf:secure-token autovnf-oper
  user      $8$kTEQZ4YNdV6BcnH3ggRHJPmhk6lsh5KQFqhsQnh/KV8=
  password  $8$KdTbd7ZeYuHrpdKlk5m888cke3ZGIM7RbEMJwMwCjfo=
  !
autovnf:secure-token em-login
  user      $8$jVDkSMi/W1XzkZj/qx07kEfHB9PlpPlnzCKUSjWiPXA=
  password  $8$52ELrKMilGT/nad5WcPgUh7cijHiizAt8A8Tly79Q/I=
  !
autovnf:secure-token confd-auth
  user      $8$bHYvP179/hlGW08qoTnJFmm8A1HqqlREsasX+G1SAPw=
  password  $8$S52APq1vb9WhLjbsPNSwiBmAmaGltzTTmSkktKs8reo=
  !
volume-catalog em-volume
  volume type LUKS
  volume size 1024
  volume bus ide
  volume bootable false
  !
volume-catalog cf-boot
  volume type LUKS
  volume size 16
  volume bus ide
  volume bootable true
  !
volume-catalog cf-cdr
  volume type LUKS
  volume size 200
  volume bus ide
  volume bootable false
  !
autovnf:network-catalog di-internall
pre-created di-internall

```



```

type          sriov-flat
physnet       phys_pciel_0
ip-prefix     192.168.1.0/24
dhcp          true
vlan-tag      true
vlan          2110
<-- SNIP -->

<-- SNIP -->
autovnf:vdu-catalog control-function
ha-type       one-to-one
health-check-frequency 10
health-probe-max-miss 6
recovery-type recovery-restart
image location http://172.21.201.63:80/bundles/5.1.0-662/ugp-bundle/qvpc-di-cf.qcow2
neds netconf
ned-id        cisco-staros-nc
port-number   830
authentication confd-auth
!
volumes cf-cdr
!
volumes cf-boot
!
flavor host-aggregate auto-test-sjc-cf-esc-mgmt1
flavor vcpus           8
flavor ram              16384
flavor root-disk        6
flavor ephemeral-disk   0
flavor swap-disk        0
flavor anti-affinity-placement true
configuration staros_config.txt
  apply-at day-zero
  source-url http://172.21.201.63:5001/configs/vnf-pkg1/files/system.cfg
<-- SNIP -->

```

Example show uas Command Output

```

show uas
uas version          6.0.0
uas state            active
uas external-connection-point 50.50.50.67 INSTANCE
IP          STATE   ROLE
-----
10.2.3.6   alive  CONFD-MASTER
10.2.3.11  alive  CONFD-SLAVE

NAME                                     LAST HEARTBEAT
-----
AutoVNF-MASTER                          2018-01-20 02:35:03
ESCHearBeatMonitor-fremont-autovnf-vpc  2018-01-20 02:35:00
USPCFMWorker                             2018-01-20 02:34:51
USPCHBWorker                             2018-01-20 02:35:00
USPCWorker                               2018-01-20 02:35:00

```



Important

In this example, 10.2.3.6 is the confd-master and the active UAS VM.

**Important**

In case of standalone mode (non-HA) deployments, the *uas external-connection-point* information and *Instance IP* table are not applicable and are not displayed.

Example output that shows the floating IP for AutoVNF:

```
-SNIP-
nsd autoit
vim-identity vim1
vim-artifact vim_artifact_one
vnf-package [ usp_5_7 ]
vld mgmt
  vl-type management
  network-instance bmarconi-management
!
vld orch
  vl-type orchestration
  network sjc-orch
!
vnfd f-autovnf
vnf-type usp-uas
version 6.0
high-availability true
nsd fremont-autovnf
configuration boot-time 1800
configuration set-vim-instance-name true
external-connection-point avf
  connection-point eth0
  floating-ip enabled
  floating-ip external-network public
!
vnfc avf
health-check disabled
health-check boot-time 300
vdu vdu-id autovnf
  connection-point eth0
  virtual-link service-vl mgmt
!
  connection-point eth1
  virtual-link service-vl orch
!
!
!
-SNIP-
```

The current version of AutoVNF software can also be seen through the USP UWS – AutoVNF User Interface under –

- the Site Overview screen (Service Deployment > Site) only if the AutoVNF configuration type is a record.
- the Auto-Vnf Configuration Overview screen only if the AutoVNF configuration type is a record.
- the UWS – AutoVNF dashboard.

Example show vnfr Command Output

```
show vnfr

vnfr sj-autovnf-esc
vnfd esc
```

```

vnf-type esc
state      deployed
external-connection-point esc
  connection-point-instance-id sj-autovnf-esc-ha-vip
  virtual-link-ref             uas-management
  ip-address                   12.12.12.40
  mac-address                  fa:16:3e:6a:db:9b
  connection-point-type       virtual-port
  port-id                      37a14e07-52f7-48c0-9dbb-471146a709a5
vdu esc
vnfc-instance sj-autovnf-esc-esc-1
  state      deployed
  vnfc       esc
  flavor-key sj-autovnf-esc
  uuid       83f44e0f-380e-4320-a35a-34de82cf84dd
  image name /vnfm-bundle/ESC-4_2_0_74.qcow2
  image version "Version: 4.2.0.74, SHA1: de45b53, Date: Sat Sep 01 08:51:12 EDT 2018"
  image package usp_6_0
  image uuid c35c2a86-6d60-4259-85cc-d023803c7245
  host       tb2-compute-15.localdomain
  vdu-type   cisco-esc
  connection-point-instance eth0
    virtual-link-ref       uas-management
    ip-address             12.12.12.22
    mac-address            fa:16:3e:e8:d6:b1
    connection-point-type virtual-port
    port-id                f0f6b82f-336f-4f9f-aae5-d581be8cfa63
  connection-point-instance eth1
    virtual-link-ref       uas-orchestration
    ip-address             22.22.22.27
    mac-address            fa:16:3e:16:32:4c
    connection-point-type virtual-port
    port-id                f2b7aeae-83f1-4f83-b45e-f92b3a1f6600
vnfc-instance sj-autovnf-esc-esc-2
  state      deployed
  vnfc       esc
  flavor-key sj-autovnf-esc-esc
  uuid       087a5b48-db45-4002-a157-51fa37236545
  image name /vnfm-bundle/ESC-4_2_0_74.qcow2
  image version "Version: 4.2.0.74, SHA1: de45b53, Date: Sat Sep 01 08:51:12 EDT 2018"
  image package usp_6_0
  image uuid c35c2a86-6d60-4259-85cc-d023803c7245
  host       tb2-compute-12.localdomain
  vdu-type   cisco-esc
  connection-point-instance eth0
    virtual-link-ref       uas-management
    ip-address             12.12.12.37
    mac-address            fa:16:3e:48:c4:6c
    connection-point-type virtual-port
    port-id                8cb138ab-c575-4eb2-a622-d2648042f48f
  connection-point-instance eth1
    virtual-link-ref       uas-orchestration
    ip-address             22.22.22.28
    mac-address            fa:16:3e:98:78:07
    connection-point-type virtual-port
    port-id                7d73aeae-81e1-410b-ac3a-e34c1bd23c16
vnfr sj-autovnf-vpc
vnfd       vpc
vnf-type   ugp
state      ha-error
external-connection-point cf
  connection-point-instance-id CF-sj-autovnf-vpc-vip
  virtual-link-ref             uas-management
  ip-address                   12.12.12.43

```

Example show vnfr Command Output

```

mac-address          fa:16:3e:04:80:b7
connection-point-type virtual-port
port-id              984a6e8b-107a-48f7-b0b4-398a308aff9a
external-connection-point em
connection-point-instance-id em-sj-autovnf-vpc-vip
virtual-link-ref     uas-management
ip-address           12.12.12.35
mac-address          fa:16:3e:b4:7e:b8
connection-point-type virtual-port
port-id              f47c2150-932c-455f-99c1-7b77fe47a9d7
vdu cf
vnfc-instance sj-autovnf-vpc-cf-0
state          alive
vnfc           cf
flavor-key    sj-autovnf-vpc-cf
uuid          a46de643-b76d-4307-91e8-996b79da4c1e
image name    /ugp-bundle/qvpc-di-cf.qcow2
image version "Version: 21.10.M0.70226, SHA1: NA, Date: Thu Sep 06 10:07:27 EDT 2018"
image package usp_6_0
image uuid    6d63f613-9b46-4bd9-853d-024dcf27f1a7
host          tb2-compute-9.localdomain
vdu-type      control-function
connection-point-instance eth0
virtual-link-ref di-internall1
ip-address      192.168.10.105
mac-address     fa:16:3e:46:f8:79
connection-point-type pnic-sriov
port-id         b408eedd-8650-44e2-930c-95ee2c9ae380
connection-point-instance eth1
virtual-link-ref uas-management
ip-address      12.12.12.44
mac-address     fa:16:3e:5e:e0:bc
connection-point-type virtual-port
port-id         3e94bcdb-0e58-44e1-99a5-366f7453df02
connection-point-instance eth2
virtual-link-ref uas-orchestration
ip-address      22.22.22.33
mac-address     fa:16:3e:c5:58:c6
connection-point-type virtual-port
port-id         e0a51253-5740-4e34-b4a2-ba6cdaa504cf
vnfc-instance sj-autovnf-vpc-cf-1
state          alive
vnfc           cf
flavor-key    sj-autovnf-vpc-cf
uuid          10b1e4c2-d3e5-494c-bec9-26bd38e4c705
image name    /ugp-bundle/qvpc-di-cf.qcow2
image version "Version: 21.10.M0.70226, SHA1: NA, Date: Thu Sep 06 10:07:27 EDT 2018"
image package usp_6_0
image uuid    6d63f613-9b46-4bd9-853d-024dcf27f1a7
host          tb2-compute-12.localdomain
vdu-type      control-function
connection-point-instance eth0
virtual-link-ref di-internall1
ip-address      192.168.10.99
mac-address     fa:16:3e:94:3d:38
connection-point-type pnic-sriov
port-id         c1df9769-fcdc-4cb1-b7ea-f791ef80ff65
connection-point-instance eth1
virtual-link-ref uas-management
ip-address      12.12.12.47
mac-address     fa:16:3e:66:27:71
connection-point-type virtual-port
port-id         7d77aac2-6409-499a-a4b0-afc4c70e6904
connection-point-instance eth2

```

```

    virtual-link-ref    uas-orchestration
    ip-address          22.22.22.45
    mac-address         fa:16:3e:c3:c1:a4
    connection-point-type virtual-port
    port-id             75d7b8c7-1801-4cce-b665-64a060414abd
vdu em
vnfc-instance sj-autovnf-vpc-em-1
state         ha-error
vnfc          em
flavor-key    sj-autovnf-vpc-em
uuid          119edc4c-9ba0-48f8-a928-63e0c3c88f22
image name    /em-bundle/em-6_3_0_4148.qcow2
image version "Version: 6.3.0, SHA1: 40d8f29, Date: Thu Aug 30 22:15:22 EDT 2018"
image package usp_6_0
image uuid    d21b6d92-9964-4db8-8376-4a645fecfbf2
host         tb2-compute-14.localdomain
vdu-type     element-manager
connection-point-instance eth0
    virtual-link-ref    uas-orchestration
    ip-address          22.22.22.40
    mac-address         fa:16:3e:33:57:a6
    connection-point-type virtual-port
    port-id             050d8843-f309-45b3-889a-a1516a338c9f
connection-point-instance eth1
    virtual-link-ref    uas-management
    ip-address          12.12.12.26
    mac-address         fa:16:3e:02:b8:4a
    connection-point-type virtual-port
    port-id             ae8036c5-1a91-488d-98f2-65a8fe57a033
vnfc-instance sj-autovnf-vpc-em-2
state         ha-error
vnfc          em
flavor-key    sj-autovnf-vpc-em
uuid          dd2c9327-c954-49bf-803c-ca38d718da2c
image name    /em-bundle/em-6_3_0_4148.qcow2
image version "Version: 6.3.0, SHA1: 40d8f29, Date: Thu Aug 30 22:15:22 EDT 2018"
image package usp_6_0
image uuid    d21b6d92-9964-4db8-8376-4a645fecfbf2
host         tb2-compute-15.localdomain
vdu-type     element-manager
connection-point-instance eth0
    virtual-link-ref    uas-orchestration
    ip-address          22.22.22.46
    mac-address         fa:16:3e:e5:f7:18
    connection-point-type virtual-port
    port-id             30816589-9a12-4c1d-840c-c84100f714f4
connection-point-instance eth1
    virtual-link-ref    uas-management
    ip-address          12.12.12.45
    mac-address         fa:16:3e:f3:ff:4e
    connection-point-type virtual-port
    port-id             cf9d991f-e45b-41ed-9ac1-7e6f0bee620b
vdu sf
vnfc-instance sj-autovnf-vpc-sf-0
state         alive
vnfc          sf
flavor-key    sj-autovnf-vpc-sf
uuid          d9b13253-a67e-4078-a75c-04d834577cc2
image name    /ugp-bundle/qvpc-di-xf.qcow2
image version "Version: 21.10.M0.70226, SHA1: NA, Date: Thu Sep 06 10:07:27 EDT 2018"
image package usp_6_0
image uuid    c65df544-0230-4e86-88bf-4aa93e0e268d
host         tb2-compute-14.localdomain
vdu-type     session-function

```

Example show vnf-packager Command Output

```

connection-point-instance eth0
virtual-link-ref          di-internall1
ip-address                192.168.10.95
mac-address               fa:16:3e:87:49:22
connection-point-type    pnic-sriov
port-id                   5d9a9a89-5857-48cb-8081-7273c4b9354c
connection-point-instance eth1
virtual-link-ref          uas-orchestration
ip-address                22.22.22.18
mac-address               fa:16:3e:8f:47:ce
connection-point-type    virtual-port
port-id                   d7dd7006-0134-4767-af02-1922d351d1d5
connection-point-instance eth2
virtual-link-ref          vpc-svc
ip-address                22.11.11.8
mac-address               fa:16:3e:a6:fa:9e
connection-point-type    virtual-port
port-id                   1c5dda23-65f0-4541-ace5-0d6e5e1564ea
vnfc-instance sj-autovnf-vpc-sf-1
state                     alive
vnfc                      sf
flavor-key                 sj-autovnf-vpc-sf
uuid                       868158de-e202-4af4-9f3e-c5c7722c5a7f
image name                 /ugp-bundle/qvpc-di-xf.qcow2
image version              "Version: 21.10.M0.70226, SHA1: NA, Date: Thu Sep 06 10:07:27 EDT 2018"
image package              usp_6_0
image uuid                 c65df544-0230-4e86-88bf-4aa93e0e268d
host                       tb2-compute-15.localdomain
vdu-type                   session-function
connection-point-instance eth0
virtual-link-ref          di-internall1
ip-address                192.168.10.97
mac-address               fa:16:3e:bb:ee:38
connection-point-type    pnic-sriov
port-id                   c166c76d-3ef9-4f52-a243-25b49ae0886f
connection-point-instance eth1
virtual-link-ref          uas-orchestration
ip-address                22.22.22.47
mac-address               fa:16:3e:b0:8e:75
connection-point-type    virtual-port
port-id                   9dd61ba8-9455-4f0a-a6ce-13ef28ce6c39
connection-point-instance eth2
virtual-link-ref          vpc-svc
ip-address                22.11.11.13
mac-address               fa:16:3e:25:5a:56
connection-point-type    virtual-port
port-id                   3f8b60aa-4155-4192-b537-afb812d784da

```

Example show vnf-packager Command Output

show vnf-packager

```

version                  "Version: 6.4.M0, SHA1: cdd46bcm, Build-Number: 0"
image application-function
image-uri                /ugp-bundle/qvpc-di-xf.qcow2
vim-id                   c65df544-0230-4e86-88bf-4aa93e0e268d
version                  "Version: 21.10.M0.70226, SHA1: NA, Date: Thu Sep 06 10:07:27 EDT 2018"
disk-format              qcow2
image automation-service
image-uri                /uas-bundle/usp-uas-6.3.0-0.qcow2
vim-id                   b32d2aeb-9dbe-42f0-99bf-982db8ae7ae8
version                  "Version: 6.3.0, SHA1: 175ea8em, Date: Thu Sep 06 16:17:26 PDT 2018"
disk-format              qcow2

```

```

image cisco-esc
  image-uri /vnfm-bundle/ESC-4_2_0_74.qcow2
  vim-id c35c2a86-6d60-4259-85cc-d023803c7245
  version "Version: 4.2.0.74, SHA1: de45b53, Date: Sat Sep 01 08:51:12 EDT 2018"
  disk-format qcow2
image control-function
  image-uri /ugp-bundle/qvpc-di-cf.qcow2
  vim-id 6d63f613-9b46-4bd9-853d-024dcf27f1a7
  version "Version: 21.10.M0.70226, SHA1: NA, Date: Thu Sep 06 10:07:27 EDT 2018"
  disk-format qcow2
image element-manager
  image-uri /em-bundle/em-6_3_0_4148.qcow2
  vim-id d21b6d92-9964-4db8-8376-4a645fecfbf2
  version "Version: 6.3.0, SHA1: 40d8f29, Date: Thu Aug 30 22:15:22 EDT 2018"
  disk-format qcow2
image network-function
  image-uri /ugp-bundle/qvpc-di-xf.qcow2
  vim-id c65df544-0230-4e86-88bf-4aa93e0e268d
  version "Version: 21.10.M0.70226, SHA1: NA, Date: Thu Sep 06 10:07:27 EDT 2018"
  disk-format qcow2
image session-function
  image-uri /ugp-bundle/qvpc-di-xf.qcow2
  vim-id c65df544-0230-4e86-88bf-4aa93e0e268d
  version "Version: 21.10.M0.70226, SHA1: NA, Date: Thu Sep 06 10:07:27 EDT 2018"
  disk-format qcow2
image user-plane-function
  image-uri /ugp-bundle/qvpc-si-21.10.M0.70226.qcow2
  vim-id 078bc882-d29c-4974-a21d-dbf2bc59149b
  version "Version: 21.10.M0.70226, SHA1: NA, Date: Thu Sep 06 10:07:27 EDT 2018"
  disk-format qcow2
configuration bootvm
  data-id 1538437650-071830
configuration staros
  data-id 1538437650-060109
vnf-packager 6.4.M0-6133
vnf-package usp_6_t
  version "Version: 6.4.M0, SHA1: cdd46bcm, Build-Number: 6133"
image application-function
  image-uri /ugp-bundle/qvpc-di-xf.qcow2
  vim-id d3b3dd85-464d-4b49-90f1-5dc59c9a111b
  version "Version: 21.10.M0.70226, SHA1: NA, Date: Thu Sep 06 10:07:27 EDT 2018"
  disk-format qcow2
image automation-service
  image-uri /uas-bundle/usp-uas-6.3.0-4206.qcow2
  vim-id 294e5f52-453a-4bd8-8192-b8144607759f
  version "Version: 6.3.0, SHA1: 175ea8e, Date: Wed Sep 05 06:15:40 EDT 2018"
  disk-format qcow2
image cisco-esc
  image-uri /vnfm-bundle/ESC-4_2_0_74.qcow2
  vim-id 87a322cc-3736-407d-855f-f2a566fadd22
  version "Version: 4.2.0.74, SHA1: de45b53, Date: Sat Sep 01 08:51:12 EDT 2018"
  disk-format qcow2
image control-function
  image-uri /ugp-bundle/qvpc-di-cf.qcow2
  vim-id 22b34ebf-060c-4e99-8083-e702cef96aca
  version "Version: 21.10.M0.70226, SHA1: NA, Date: Thu Sep 06 10:07:27 EDT 2018"
  disk-format qcow2
image element-manager
  image-uri /em-bundle/em-6_3_0_4148.qcow2
  vim-id c4424476-a9b6-4308-98b3-4aa0f441d5c1
  version "Version: 6.3.0, SHA1: 40d8f29, Date: Thu Aug 30 22:15:22 EDT 2018"
  disk-format qcow2
image network-function
  image-uri /ugp-bundle/qvpc-di-xf.qcow2

```

```

vim-id      d3b3dd85-464d-4b49-90f1-5dc59c9a111b
version     "Version: 21.10.M0.70226, SHA1: NA, Date: Thu Sep 06 10:07:27 EDT 2018"
disk-format qcow2
image session-function
image-uri   /ugp-bundle/qvpc-di-xf.qcow2
vim-id      d3b3dd85-464d-4b49-90f1-5dc59c9a111b
version     "Version: 21.10.M0.70226, SHA1: NA, Date: Thu Sep 06 10:07:27 EDT 2018"
disk-format qcow2
image user-plane-function
image-uri   /ugp-bundle/qvpc-si-21.10.M0.70226.qcow2
vim-id      8c78ef58-4556-4e8c-bef6-8f98a33bf6c1
version     "Version: 21.10.M0.70226, SHA1: NA, Date: Thu Sep 06 10:07:27 EDT 2018"
disk-format qcow2
configuration bootvm
  data-id 1538437651-235460
configuration staros
  data-id 1538437651-221341

```

UAS Log Collection

The UAS generates and consolidates a comprehensive set of UAS logs and VNF diagnostic information from StarOS device for troubleshooting purposes. The log collection includes logs from all components in a deployed UAS cluster, i.e. from AutoIT, AutoDeploy, AutoVNF, UEM, ESC and StarOS.

This section describes the following topics:

- [Feature Description, on page 64](#)
- [Limitations, on page 64](#)
- [Collecting the UAS Logs, on page 65](#)
 - [Via the ConfD CLI Command, on page 65](#)
 - [Via the Standalone Script, on page 66](#)
- [Collecting VNF Diagnostic Information, on page 68](#)
- [Sample Logs, on page 69](#)

Feature Description

Automation of UAS log collection is facilitated through the use of ConfD CLI command **collect-logs**. When this command is executed, the logs from all or required components can be collected and copied to a common location.

Limitations

The following limitations exist with the UAS log collection feature.

- With the use of ConfD CLI approach, it is not possible to collect logs for AutoDeploy and AutoIT. To aggregate logs for these two components, use the standalone script.

- Direct collection of logs from CF, SF, UP instances is not supported. If VNFDs corresponding to these instances are invoked directly, appropriate error message will be recorded in the log file of AutoDeploy and AutoVNF.

Collecting the UAS Logs

The UAS logs can be collected using one of the following approaches:

- [Via the ConfD CLI Command, on page 65](#)
- [Via the Standalone Script, on page 66](#)

Via the ConfD CLI Command

UAS logs collection is automated through a remote procedure call (RPC) executed from the ConfD command line interface (CLI). The RPC “collect-logs” has been introduced to collect logs from the AutoVNF, ESC and UEM.

This command, on execution, fetches the logs from components under given NSD and VNFD levels in a deployed setup and creates a final consolidated tar ball comprising all logs.



Important

When the ConfD CLI command is used, the log collection for AutoDeploy and AutoIT components is not supported.

This command can be invoked from ConfD CLI of AutoDeploy and AutoVNF.



Important

The IP and credentials of instances are fetched from oper data of AutoDeploy/AutoVNF. So, the logs can be collected for instances whose VNFR is present in oper db.

To collect the UAS logs via ConfD CLI:

1. Login to the ConfD CLI as the *admin* user on the AutoDeploy VM or AutoVNF VM.

```
confd_cli -u admin -C
```

2. Enter the *admin* user password when prompted.

3. Execute the following command:

```
collect-logs nsd-id <nsd id>
```

This command collects logs from all components present under given NSD and also from deploy-nsd if present.

To collect logs by VNFD ID, use the following command:

```
collect-logs nsd-id <nsd id> vnfd vnfd id
```

This command collects logs from components specific to the given VNFD. Additionally, under given vnfd, corresponding AutoVNF logs of the given NSD will also be collected in case of RPC invoked from AutoDeploy (outside AutoVNF).

For example, if VNFD of ESC, or UEM is invoked from AutoDeploy, the corresponding AutoVNF logs of given VNFD will also be collected, since log collection happens through respective AutoVNF in case of multiple AutoVNFs deployed through a single AutoDeploy.

The vnf-diags from StarOS instances will be collected along with the UEM logs.

- View the status of log collection using the AutoDeploy or AutoVNF logs under `/var/log/upstart/` based on where it is invoked.

If invoked from AutoDeploy, the RPC internally connects with AutoVNF and collects logs from UAS instances. The respective progress can be viewed from AutoVNF log.

- Untar the `autocollect_logs.tgz` file to extract the collected logs.

```
tar -zxvf autocollect_logs.tgz
```

Note that the output consolidated tar ball `autocollect_logs.tgz` is created under `/var/log/autocollect/` directory of the instance (AutoDeploy/AutoVNF) from where the log collection RPC was invoked.



Important

Every time the log collection is triggered, the `/var/log/autocollect` directory will be automatically cleaned and then new logs will be copied.

Example output:

```
vnf-logs/
vnf-logs/em/
vnf-logs/em/abc-vnf-vnf1-em-rmuruga-em1-1-em-logs-2018-08-09_06.41.25.UTC.tar.bz2
vnf-logs/em/abc-vnf-vnf1-em-rmuruga-em1-2-em-logs-2018-08-09_06.40.35.UTC.tar.bz2
vnf-logs/autovnf/
vnf-logs/autovnf/autoit-f-autovnf1-rmuruga-avf-2-uas-logs-2018-08-09_06.40.06.UTC.tar.bz2
vnf-logs/autovnf/autoit-f-autovnf1-rmuruga-avf-1-uas-logs-2018-08-09_06.40.49.UTC.tar.bz2
vnf-logs/esc/
vnf-logs/esc/esc_log_abc-vnf-vnf1-esc-rmuruga-esc-2_2018-08-09_06.40.15.UTC.tar.bz2
vnf-logs/esc/esc_log_abc-vnf-vnf1-esc-rmuruga-esc-1_2018-08-09_06.39.42.UTC.tar.bz2
```

Via the Standalone Script

The UAS uses a standalone script "`collect_all_uas_logs.py`" to generate and consolidate a comprehensive set of UAS logs and VNF diagnostic information from StarOS device for troubleshooting purposes.

Before using this script, you should be aware of the following:

- AutoVNF IP and SSH credentials (username and password)
- AutoVNF NETCONF login credentials
- Login credentials for UEM and ESC
- Login credentials for AutoIT and AutoDeploy

This script is available in the AutoIT, AutoDeploy and AutoVNF VMs in the `/opt/cisco/usp/uas/scripts/` directory.

A sample yaml file (`sample_config.yaml`) is present in the same directory along with the script. The yaml file should be updated with proper IP and credential details.

Example configuration of `sample_config.yaml` file:

```

uas-cluster:
  autovnf:
    172.21.201.237:
      autovnf:
        login:
          user: ubuntu
          password: Cisco@123
      netconf:
        user: admin
        password: Cisco@123
  .
  .
  .

```

**Important**

You can exclude AutoDeploy or AutoIT for log collection by commenting out the phrase ‘autodeploy’ or ‘autoit’ using ‘#’ in the yaml file.

For example:

```
#autodeploy:
```

To collect the UAS logs via the standalone script:

1. Log on to the AutoDeploy, AutoIT or AutoVNF VM using the user credentials specified during deployment.
2. Navigate to the *scripts* directory.

```
cd /opt/cisco/usp/uas/scripts
```

3. Edit the *sample_config.yaml* file using a standard text editor to update the appropriate credential details and save it.
4. Launch the *collect_all_uas_logs.py* script to collect the logs.

```
sudo ./collect_all_uas_logs.py -cfgfile sample_config.yaml
```

The script starts collecting the logs and the progress is displayed on the console. Upon completion, a final tar file *autocollect_logs.tgz* will be copied to */var/log/autocollect/* directory.

Detailed logs are stored in a log file named *autocollect.log* under the */var/log/autocollect/* directory.

**Note**

The logs directory will be cleared and re-created for every execution of the script.

Example output:

```

sudo ./collect_all_uas_logs.py --cfgfile sample_config.yaml
2018-07-26 08:52:57,273 - Uas-cluster present in config
2018-07-26 08:52:57,273 - .....Executing step 1 of 4.....
2018-07-26 08:52:57,273 - Collecting logs from uas instances
2018-07-26 08:53:06,530 - Logs collected successfully from esc 48.48.48.24
2018-07-26 08:53:09,677 - Logs collected successfully from autovnf 38.38.38.23
2018-07-26 08:53:09,784 - Logs collected successfully from esc 48.48.48.16
2018-07-26 08:53:15,404 - Logs collected successfully from autovnf 38.38.38.26
2018-07-26 08:54:21,160 - Logs collected successfully from vnf-em 38.38.38.11
2018-07-26 08:54:24,829 - Logs collected successfully from vnf-em 38.38.38.27
2018-07-26 08:54:24,831 - Generating tar file for uas instance 10.225.202.93
2018-07-26 08:54:25,260 - Log collection completed for uas instance 10.225.202.93.
2018-07-26 08:54:25,261 - Auto-it present in config

```

```

2018-07-26 08:54:25,261 - .....Executing step 2 of 4.....
2018-07-26 08:54:25,261 - Collecting logs from Autoit 10.225.202.77
2018-07-26 08:54:25,847 - Logs collected successfully for instance 10.225.202.77
2018-07-26 08:54:25,847 - Auto-deploy present in config
2018-07-26 08:54:25,848 - .....Executing step 3 of 4.....
2018-07-26 08:54:25,848 - Collecting logs from Autodeploy 10.225.202.64
2018-07-26 08:54:26,454 - Logs collected successfully for instance 10.225.202.64
2018-07-26 08:54:26,454 - .....Executing step 4 of 4.....
2018-07-26 08:54:26,454 - Generating consolidated final tar file
2018-07-26 08:54:26,499 - Log collection script completed. Please collect the tar file
'autocollect_logs.tgz' under /var/log/autocollect/

```

5. Extract the contents of *autocollect_logs.tgz* file using the following command:

```
tar -zxvf autocollect_logs.tgz
```

The following are the contents of the *autocollect_logs.tgz* tar file:

- .bz2 files for each AutoDeploy and AutoIT logs
- Two log files — *autocollect.log* for AutoDeploy logs and *autocollect-vnf_<autovnf ip>.log* for logs collected from AutoVNF and its instances.



Important In case of failures of any UAS cluster nodes, check the *autocollect-vnf_<autovnf ip>.log* for the detailed error message.

- *uas_logs_<autovnf ip>.tgz* — This file comprises tar bundles for the UAS cluster.

When the *uas_logs_<autovnf ip>.tgz* tar file is extracted, a *vnf-logs* directory is created with individual sub-directories for *em*, *esc*, and *autovnf* for storing the corresponding collected tar file contents.

If the VNF diagnostic log files are unavailable in the *diags* directory under *em*, you can use **vnf-collect-diags** RPC command from UEM VM to collect the logs. For information on collecting logs through the RPC, see the [Collecting VNF Diagnostic Information, on page 68](#) section.

The logs collected through the RPC are also stored in the *diags* directory under *em* directory.

6. Verify that files have been extracted.

```
ls -lt
```

Example output:

```

total 2488
-rw-r--r-- 1 root root 1174824 Jul 26 08:54 uas_logs_10.225.202.93.tgz
-rw-r--r-- 1 root root 43113 Jul 26 08:54
auto-it-5571-cups-1-uas-logs-2018-07-26_08.54.25.UTC.tar.bz2
-rw-r--r-- 1 root root 3197 Jul 26 08:54 autocollect-vnf_10.225.202.93.log
-rw-r--r-- 1 root root 47104 Jul 26 08:54
auto-deploy-5571-cups-1-uas-logs-2018-07-26_08.54.26.UTC.tar.bz2
-rw-r--r-- 1 root root 3488 Jul 26 08:54 autocollect.log
-rw-r--r-- 1 root root 1266857 Jul 26 08:54 autocollect_logs.tgz

```

Collecting VNF Diagnostic Information

The VNF diagnostic information can also be collected through the use of **vnf-collect-diags** RPC command in UEM VM.

To collect the diagnostic information from StarOS device:

1. Log on to the master UEM VM.

2. Access the NCS CLI.

```
sudo -i
ncs_cli -u admin -C
```

3. Execute the following command to collect VNF diagnostic logs from StarOS device.

```
vnf-collect-diags [ correlator <correlator id> vnfd <vnfd-id> ]
```

This command collects the VNF diagnostic log files and makes it available in the */var/log/em/diags-<correlator id>* directory.

4. Check the per-VNF diagnostic collection status using the following command:

```
show vnf-collect-diags-status
```

Example output:

```
NAME                               STATUS
-----
xyz_autovnf-cups-c-abc  in-progress
```

Sample Logs

This section provides a few sample log files.

AutoDeploy Log:

```
2018-08-09 06:40:10,385 - Deployment uas-log-collection: autoit initiated
2018-08-09 06:40:10,385 - Send Deployment notification for: autoit-instance
2018-08-09 06:40:10,385 - Deploy nsd present under given nsd: abc-vnf
2018-08-09 06:40:10,415 - avf nsd, vnfd is autoit, f-autovnf1
2018-08-09 06:40:10,430 - Direct log collection not supported for vdu-type: control-function
2018-08-09 06:40:10,442 - Uas-cluster present in config
2018-08-09 06:40:10,448 - Collecting logs from uas instances
2018-08-09 06:40:10,453 - Fetching Autovnf, Esc and EM details for 10.225.202.64
2018-08-09 06:40:10,459 - Initiating nc session to 10.225.202.64
/usr/lib/python2.7/dist-packages/Crypto/Cipher/blockalgo.py:141: FutureWarning: CTR mode
needs counter parameter, not IV
  self._cipher = factory.new(key, *args, **kwargs)
2018-08-09 06:40:11,091 - VNFR list fetched successfully
2018-08-09 06:40:11,097 - Instances details retrieved from Autovnf
2018-08-09 06:40:11,333 - Uas ip details retrieved for 10.225.202.64 : {None: ['45.45.45.53',
'45.45.45.30'], 'esc': ['44.44.44.14', '44.44.44.23'], 'autovnf': ['45.45.45.6',
'45.45.45.28'], 'vnf-em': ['45.45.45.11', '45.45.45.13']}
2018-08-09 06:40:11,509 - Removing staged files from Autovnf
2018-08-09 06:40:11,586 - Files removed successfully
2018-08-09 06:40:11,870 - Connected to Autovnf[10.225.202.64]
2018-08-09 06:40:12,117 - Collecting logs from esc 44.44.44.14
2018-08-09 06:40:17,122 - Collecting logs from esc 44.44.44.23
2018-08-09 06:40:22,125 - Collecting logs from autovnf 45.45.45.6
2018-08-09 06:40:23,364 - Logs collected successfully from autovnf 45.45.45.6
2018-08-09 06:40:23,625 - Logs collected successfully from esc 44.44.44.23
2018-08-09 06:40:27,131 - Collecting logs from autovnf 45.45.45.28
2018-08-09 06:40:32,139 - Collecting logs from vnf-em 45.45.45.11
2018-08-09 06:40:32,230 - Logs collected successfully from autovnf 45.45.45.28
2018-08-09 06:40:32,248 - Logs collected successfully from esc 44.44.44.14
```

```

2018-08-09 06:40:37,144 - Collecting logs from vnf-em 45.45.45.13
2018-08-09 06:40:38,332 - Logs collected successfully from vnf-em 45.45.45.13
2018-08-09 06:41:10,963 - Logs collected successfully from vnf-em 45.45.45.11
2018-08-09 06:41:11,084 - All threads finished working for uas instance 10.225.202.64
2018-08-09 06:41:11,091 - Generating tar file for uas instance 10.225.202.64
2018-08-09 06:41:11,315 - Copying the tar file to Autodeploy...
2018-08-09 06:41:11,469 - Tar file successfully copied to Autodeploy under
/var/log/autocollect/ directory
2018-08-09 06:41:11,477 - Log collection completed for uas instance 10.225.202.64.
2018-08-09 06:41:11,491 - Log collection script completed. Please collect the tar file
'autocollect_logs.tgz' under /var/log/autocollect/
2018-08-09 06:41:11,498 - Deployment uas-log-collection: autoit succeeded
2018-08-09 06:41:11,521 - Send Deployment notification for: autoit-instance

```

AutoVNF Log:

```

2018-08-09 06:40:34,474 - Directory /var/log/autocollect/vnf-logs/esc created successfully
to stage files
2018-08-09 06:40:34,474 - Attempting ssh to 44.44.44.14
2018-08-09 06:40:34,641 - Executing script collect_esc_log.sh in 44.44.44.14
2018-08-09 06:40:39,475 - Attempting ssh to 44.44.44.23
2018-08-09 06:40:39,641 - Executing script collect_esc_log.sh in 44.44.44.23
2018-08-09 06:40:44,477 - Directory /var/log/autocollect/vnf-logs/autovnf created successfully
to stage files
2018-08-09 06:40:44,477 - Attempting ssh to 45.45.45.6
2018-08-09 06:40:44,642 - Executing script collect-uas-logs.sh in 45.45.45.6
2018-08-09 06:40:45,199 - Output file to collect in 45.45.45.6 is
autoit-f-autovnf1-rmuruga2-avf-2-uas-logs-2018-08-09_06.40.06 UTC.tar.bz2
2018-08-09 06:40:45,340 - Collecting bz2 file from instance 45.45.45.6
2018-08-09 06:40:45,346 - Logs collected successfully for instance 45.45.45.6
2018-08-09 06:40:45,415 - Output file to collect in 44.44.44.23 is
esc_log_abc-vnf-vnf1-esc-rmuruga2-esc-2_2018-08-09_06.40.15 UTC.tar.bz2
2018-08-09 06:40:45,623 - Collecting bz2 file from instance 44.44.44.23
2018-08-09 06:40:45,629 - Logs collected successfully for instance 44.44.44.23
2018-08-09 06:40:49,483 - Attempting ssh to 45.45.45.28
2018-08-09 06:40:49,652 - Executing script collect-uas-logs.sh in 45.45.45.28
2018-08-09 06:40:53,979 - Output file to collect in 45.45.45.28 is
autoit-f-autovnf1-rmuruga2-avf-1-uas-logs-2018-08-09_06.40.49 UTC.tar.bz2
2018-08-09 06:40:54,090 - Output file to collect in 44.44.44.14 is
esc_log_abc-vnf-vnf1-esc-rmuruga2-esc-1_2018-08-09_06.39.42 UTC.tar.bz2
2018-08-09 06:40:54,118 - Collecting bz2 file from instance 45.45.45.28
2018-08-09 06:40:54,216 - Logs collected successfully for instance 45.45.45.28
2018-08-09 06:40:54,296 - Collecting bz2 file from instance 44.44.44.14
2018-08-09 06:40:54,357 - Logs collected successfully for instance 44.44.44.14
2018-08-09 06:40:54,491 - Attempting to collect vnf diags through Em 45.45.45.11
2018-08-09 06:40:59,490 - Attempting to collect vnf diags through Em 45.45.45.13
2018-08-09 06:40:59,741 - Vnf diags not collected through 45.45.45.13 as it can be collected
only from Master Em instance
2018-08-09 06:40:59,741 - Directory /var/log/autocollect/vnf-logs/em created successfully
to stage files
2018-08-09 06:40:59,741 - Attempting ssh to 45.45.45.13
2018-08-09 06:40:59,913 - Executing script collect-em-logs.sh in 45.45.45.13
2018-08-09 06:41:00,178 - Output file to collect in 45.45.45.13 is
abc-vnf-vnf1-em-rmuruga2-em1-2-em-logs-2018-08-09_06.40.35 UTC.tar.bz2
2018-08-09 06:41:00,317 - Collecting bz2 file from instance 45.45.45.13
2018-08-09 06:41:00,322 - Logs collected successfully for instance 45.45.45.13
2018-08-09 06:41:25,592 - Vnf-diags logs collected through EM: 45.45.45.11
2018-08-09 06:41:25,592 - Attempting ssh to 45.45.45.11
2018-08-09 06:41:25,724 - Executing script collect-em-logs.sh in 45.45.45.11
2018-08-09 06:41:32,846 - Output file to collect in 45.45.45.11 is
abc-vnf-vnf1-em-rmuruga2-em1-1-em-logs-2018-08-09_06.41.25 UTC.tar.bz2
2018-08-09 06:41:32,993 - Collecting bz2 file from instance 45.45.45.11
2018-08-09 06:41:33,044 - Logs collected successfully for instance 45.45.45.11

```

Logs for unsupported vnf

```

2018-08-09 07:00:11,466 - Deployment uas-log-collection: abc-vnf initiated
2018-08-09 07:00:11,481 - Send Deployment notification for: abc-vnf-instance
2018-08-09 07:00:11,496 - Unsupported Log collection. No oper data retrieved for given vnf:
    vpc-up
2018-08-09 07:00:11,502 - Deployment uas-log-collection: abc-vnf failed
2018-08-09 07:00:11,520 - Send Deployment notification for: abc-vnf-instance

```

Monitoring VNFM Operations



Note The Cisco Elastic Services Controller (ESC) is the only VNFM supported in this release.

Viewing ESC Status

ESC status can be viewed from the ESC command line or by executing a REST API from AutoVNF.

Monitoring Status Through the ESC Command Line

Log on to the primary ESC VM and execute the following command from the command line:

```
escadm status
```

Example command output:

```
0 ESC status=0 ESC Master Healthy
```

Monitoring Status Through an AutoVNF API

Log on to the master AutoVNF VM and execute the following command:

```
curl -u admin:<password> -k https://<master_vnfm_address>:60000/esc/health
```

Example command output:

```
{"message": "ESC services are running.", "status_code": "2000"}
```

Status code and message display information about ESC health conditions as identified in [Table 3: ESC Status Code Messages, on page 71](#). Status codes in the 2000s imply ESC is operational, 5000 status codes imply at least one of the ESC components is not in service.

Table 3: ESC Status Code Messages

Code	Message
2000	ESC services are running
2010	ESC services are running. ESC High-Availability node not reachable.
2020	ESC services are running. One or more VIM services (keystone, nova) not reachable.*
2030	ESC services are running. VIM credentials not provided.
2040	ESC services running. VIM is configured, ESC initializing connection to VIM.

Code	Message
2100	ESC services are running. ESC High-Availability node not reachable. One or more VIM services (nova) not reachable
5010	ESC service ESC_MANAGER not running.
5020	ESC service CONFD not running.
5030	ESC service MONA not running.
5040	ESC service VIM_MANAGER not running.
5090	More than one ESC service (confd, mona) not running.**

Viewing ESC Health

ESC health can be viewed by logging on to the primary ESC VM and executing the following command from the command line:

```
health.sh
```

Example command output:

```
esc ui is disabled -- skipping status check
esc_monitor start/running, process 840
esc_mona is up and running ...
vimmanager start/running, process 2807

vimmanager start/running, process 2807
esc_confd is started
tomcat6 (pid 2973) is running... [ OK ]
postgresql-9.4 (pid 2726) is running...
ESC service is running...
Active VIM = OPENSTACK
ESC Operation Mode=OPERATION

/opt/cisco/esc/esc_database is a mountpoint
===== ESC HA (MASTER) with DRBD =====
DRBD_ROLE_CHECK=0
MNT_ESC_DATABASE_CHECK=0
VIMMANAGER_RET=0
ESC_CHECK=0
STORAGE_CHECK=0
ESC_SERVICE_RET=0
MONA_RET=0
ESC_MONITOR_RET=0
=====
ESC HEALTH PASSED
```

Viewing ESC Logs

ESC logs are available on the VNF VM in the following directory:

```
/var/log/esc/
```

Two levels of logs are available for ESC:

- [ESC Logs, on page 73](#)
- [ESC YANG Logs, on page 74](#)

Refer also to the ESC user documentation for additional information on monitoring and maintaining the software.

ESC Logs

To collect ESC logs:

1. Log on to the primary VNF VM.
2. Navigate to the scripts directory.
cd /opt/cisco/esc/esc-scripts
3. Launch the *collect-esc-logs.sh* script to collect the logs.
sudo ./collect-esc-logs.sh

Example log output:

We trust you have received the usual lecture from the local System Administrator. It usually boils down to these three things:

- ```
#1) Respect the privacy of others.
#2) Think before you type.
#3) With great power comes great responsibility.
```

```
[sudo] password for admin: Creating log tarball:
/var/tmp/esc_log-2017-05-25_18.09.31.UTC.tar.bz2
Creating temporary working directory: /var/tmp/esc_log-2017-05-25_18.09.31.UTC
```

```
Dumping thread status of ESCManager from tomcat pid 2973 to catalina.out
escadm-output.txt
vm_info.txt
esc_version.txt
esc/
esc/vimmanager/
esc/vimmanager/operations_vimmanager.log
esc/vimmanager/vimmanager.log
esc/esc_gc.log.2.current
esc/esc_gc.log.0
esc/escmanager.log
esc/event_escmanager.log
esc/escmanager_tagged.log
esc/esc_gc.log.1
esc/custom_script/
esc/pgstartup.log
esc/mona/
esc/mona/actions_mona.log
esc/mona/mona_gc.log.0.current
esc/mona/rules_mona.log
esc/mona/mona.log
tar: esc/mona/mona.log: file changed as we read it
esc/confd/
esc/confd/global.data
esc/confd/devel.log
esc/confd/confd.log
esc/confd/browser.log
esc/confd/audit.log
esc/confd/netconf.trace
```

```

esc/confd/netconf.log
esc/spy.log
esc/error_escmanager.log
esc/esc_monitor.log
esc/esc_haagent.log
esc/yangesc.log
esc/debug_yangesc.log
esc/esc_confd.log
boot.log
secure
messages
dmesg
tomcat6/
tomcat6/localhost.2017-05-24.log
tomcat6/host-manager.2017-05-24.log
tomcat6/manager.2017-05-24.log
tomcat6/catalina.out
tomcat6/catalina.2017-05-24.log
audit/
audit/audit.log
postgresql/data/pg_log/
postgresql/data/pg_log/postgresql-Thu.log
postgresql/data/pg_log/postgresql-Wed.log
esc-config/esc-config.xml
Warning: tar completed with status: 1

Tarball file: /var/tmp/esc_log-2017-05-25_18.09.31.UTC.tar.bz2
Symbolic link: /tmp/esc_log-2017-05-25_18.09.31.UTC.tar.bz2

Suggestions:
 1. Transfer the tarball file from the esc vm
 2. Remove the tarball and symbolic link (to save ESC disk space):
 sudo rm /var/tmp/esc_log-2017-05-25_18.09.31.UTC.tar.bz2
 sudo rm /tmp/esc_log-2017-05-25_18.09.31.UTC.tar.bz2
 3. Command to list contents of tarball:
 tar jtvf esc_log-2017-05-25_18.09.31.UTC.tar.bz2
 4. Command to extract from the tarball:
 tar jxf esc_log-2017-05-25_18.09.31.UTC.tar.bz2

```

## ESC YANG Logs

ESC YANG logs are stored in the following file:

```
/var/log/esc/yangesc.log
```

# Monitoring VNF Operations

## Viewing UEM Service Status

1. Log on to the master UEM VM as the user *ubuntu*.
2. Access the NCS CLI.
 

```
/opt/cisco/usp/packages/nso/ncs-4.1.1/bin/ncs_cli -C -u admin
```
3. Check the NCS state.
 

```
show ncs-state ha
```

**Example command output:**

```
ncs-state ha mode master
ncs-state ha node-id 3-1501714180
ncs-state ha connected-slave [4-1501714262]
```

4. Display the health of cluster.

```
show ems
```

**Example command output:**

| EM | VNFM |     |       |         |
|----|------|-----|-------|---------|
| ID | SLA  | SCM | PROXY | VERSION |
| 3  | UP   | UP  | UP    | 5.7.0   |
| 6  | UP   | UP  | UP    | 5.7.0   |

**Important**

The UEM services will no longer run on the slave UEM to simplify troubleshooting, maintenance, and synchronization related issues.

## Viewing UEM Logs

To collect UEM logs:

1. Navigate to the *scripts* directory.

```
cd /opt/cisco/em-scripts
```

2. Launch the *collect-em-logs.sh* script to collect the logs.

```
sudo ./collect-em-logs.sh
```

**Example log output:**

```
Collecting Zookeeper nodes...
Traceback (most recent call last):
 File "/opt/cisco/em-scripts/zk_dump.py", line 2, in <module>
 from kazoo.client import KazooClient
ImportError: No module named kazoo.client

Creating log tarball em-logs-2017-05-26_00.37.28.UTC.tar.bz2 ...
em-logs/
em-logs/upstart/
em-logs/upstart/proxy.log
em-logs/upstart/zk.log
em-logs/upstart/ncs.log
em-logs/scm/
em-logs/scm/audit.log.1.gz
em-logs/scm/ncserr.log.1
em-logs/scm/ncs-java-vm.log.2.gz
em-logs/scm/xpath.trace.1.gz
em-logs/scm/ncs-java-vm.log.1.gz
em-logs/scm/xpath.trace.2.gz
em-logs/scm/ncs-java-vm.log
em-logs/scm/ncserr.log.siz
em-logs/scm/xpath.trace
em-logs/scm/audit.log
em-logs/scm/audit.log.2.gz
```

```

em-logs/scm/ncserr.log.idx
em-logs/sla/
em-logs/sla/sla-mgr.log
em-logs/sla/sla-system.log
em-logs/zookeeper/
em-logs/zookeeper/zookeeper.out
em-logs/zookeeper/zookeeper.log
em-logs/vnfm-proxy/
em-logs/vnfm-proxy/vnfm-proxy.log

===== Tarball available at: /tmp/em-logs-2017-05-26_00.37.28.UTC.tar.bz2
=====

To extract the tarball, run: "tar jxf /tmp/em-logs-2017-05-26_00.37.28.UTC.tar.bz2"

```

## Viewing UEM Zookeeper Logs

The UEM maintains logs on the Zookeeper process. The logs are located in the following directories:

```

/var/log/em/zookeeper/zookeeper.log
/var/log/em/zookeeper/zookeeper.out

```

For logs from 3rd Zookeeper instance, check the following directories:

```

/var/log/em/zookeeper/arbitrator/zookeeper.log
/var/log/em/zookeeper/arbitrator/zookeeper.out

```

To collect the contents of UEM Zookeeper database, use the following command:

```
sudo ./collect-em-logs.sh -add-zookeeper
```

If "new -add-zookeeper" flag is specified, then by default, zookeeper data is collected in a single file named *zk\_data*.

For a larger deployment, Zookeeper content can be collected in sub-folders. To collect the Zookeeper content in sub-folders, specify "-tree-output" flag as shown in the following command:

```
sudo ./collect-em-logs.sh -add-zookeeper -tree-output
```

When this command is executed, Zookeeper contents are collected under *zk\_data* directory.

## Viewing VNF Information through the Control Function

Information on the VNF deployment can be obtained by executing commands on the Control Function (CF) VNFC. To access the CF CLI:

1. Open an SSH connection to the IP address of the management interface associated with CF1.
2. Press **Enter** to bring up the log in prompt.
3. Enter the username and password.
4. At the Exec mode prompt, enter each of the following commands and observe the results to ensure that the VNF components have been properly deployed according to the desired configuration:

| Command                                                                                                                                              | Purpose                                                                                                                                                                                               |
|------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>show card table</b>                                                                                                                               | Displays all VM types (e.g. CF, SF, NF, and AF) that have been deployed.                                                                                                                              |
| <b>show crash list</b>                                                                                                                               | Displays software crash events records and associated dump files (minicore, NPU or kernel) for all crashes or a specified crash event. Verify that there are no new or unexpected crashes listed.     |
| <b>show emctrl vdu list</b>                                                                                                                          | Displays card to VM mappings for the VNF. Each card should have a valid universally unique identifier (UUID).                                                                                         |
| <b>show rct stats</b>                                                                                                                                | Displays statistics associated with Recovery Control Task (RCT) events, including migrations, switchovers and shutdowns. RCT statistics are associated with card-to-card session recovery activities. |
| <b>show session progress</b>                                                                                                                         | Displays session progress information for the current context filtered by the options specified. Check for any active or new calls before proceeding with a deactivation.                             |
| <b>show version verbose</b>                                                                                                                          | Displays the software version that has been deployed.                                                                                                                                                 |
| <b>show vdu summary</b>                                                                                                                              | Displays general information pertaining to the virtual descriptor units (VDUs) that have been deployed.                                                                                               |
| In releases prior to 6.0:<br><b>show usf vdu all</b><br>In 6.0 and later releases:<br><b>show vnfr vdu all</b>                                       | Displays detailed information for the VDUs that have been deployed for the USF VDU.                                                                                                                   |
| In releases prior to 6.0:<br><b>show usf vdu-group all</b><br>In 6.0 and later releases:<br><b>show vnfr vdu-group all</b>                           | Displays information for VDU groups pertaining to the USF VNF use case (if deployed).                                                                                                                 |
| In releases prior to 6.0:<br><b>show usf network-path all</b><br>In 6.0 and later releases:<br><b>show vnfr network-path all</b>                     | Displays network path information for USF VNF components (if deployed).                                                                                                                               |
| In releases prior to 6.0:<br><b>show usf service-function-chain all</b><br>In 6.0 and later releases:<br><b>show vnfr service-function-chain all</b> | Displays SFC information for the USF VNF (if deployed).                                                                                                                                               |

# Monitoring and Recovering AutoVNF Through AutoIT

AutoIT provides the ability to monitor and auto-recover AutoVNF instances.

This functionality is enabled through configuration of the AutoVNF VNFC(s) at the time of deployment. Once enabled, AutoIT automatically monitors for faults/failures of the AutoVNF VNFC(s) for which the functionality is enabled. If a fault/failure is detected, AutoIT automatically attempts to auto-heal/recover (redeploy) the VNFC(s).



## Important

The Provisioning Network (floating) IP address is required to leverage the health monitoring functionality.

The following parameters must be configured at the VNFC-level:

**Table 4: Health Check Descriptor Parameters**

| Parameter       | Required | Type          | Description                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------------|----------|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enabled         | O        | bool          | Enable/Disable health monitoring.                                                                                                                                                                                                                                                                                                                                                                                                       |
| probe-frequency | O        | uint16        | Health Check Frequency in seconds. UAS uses this as health probe time, meaning every polling interval UAS will invoke health check. Default value is 10 seconds.                                                                                                                                                                                                                                                                        |
| probe-max-miss  | O        | uint16        | Maximum number of health probe misses before VNFC instance is declared dead. Default value is 6.                                                                                                                                                                                                                                                                                                                                        |
| recovery-type   | O        | choice string | Recovery type. It can be one of the following: <ul style="list-style-type: none"> <li>• restart: Recovery only by restarting, move the VNFC instance to error after max retries</li> <li>• external: Recovery performed by external entity. No auto-recovery</li> <li>• restart-then-redeploy: Restart the VM on failure. After maximum retries, redeploy the failed VNFC instances.</li> </ul> Default value is restart-then-redeploy. |
| retry-count     | O        | uint16        | Number of retries to recover the VNFC Instance. Default value is set to restart-then-redeploy.                                                                                                                                                                                                                                                                                                                                          |
| boot-time       | O        | uint16        | Initial Bootup time for the VNFC. Default value is 300 seconds.                                                                                                                                                                                                                                                                                                                                                                         |
| script          | O        | string        | Script to check VNFC health, by default UAS ICMP script will be used.                                                                                                                                                                                                                                                                                                                                                                   |

The above parameters are configured at the VNFC-level within the VNF descriptor information that is part of the deployment network service descriptor (NSD) as shown in the following example configuration:

```
nsd <nsd_name>
...
 vnfd <autovnf_vnfd_name>
...
 vnfc <autovnf_vnfc_name>
 health-check enabled
 health-check probe-frequency 10
 health-check probe-max-miss 6
 health-check retry-count 6
 health-check recovery-type restart-then-redeploy
 health-check boot-time 300
...

```

Refer to the *Cisco Ultra Services Platform NETCONF API Guide* for more information on the use of these and other parameters related to VNF configuration and deployment.

In the event that automatic recovery is not possible, an API is available to manually recover the VNFC(s).

VNFC status can be viewed by executing the **show vnfr** command from AutoIT. Additional details can be found in the transaction logs for the deployment.

To manually recover a failed AutoVNF VNFC, execute the following command:

```
recover nsd-id <nsd_name> vnfd <vnfd_name>
```

## Monitoring and Recovering VNFC Through AutoVNF

The UEM, CF, and SF VNFCs were autorecovered through the VNFM (ESC). In these situations, AutoVNF was not informed of these events. With this release, the AutoVNF monitors these VNFC VMs and can auto-recover them if required. Additionally, the AutoVNF can also monitor the VNFM (ESC) VMs and provide auto-recovery as needed.

This functionality is enabled through configuration of the VNFC(s) at the time of deployment. Once enabled, AutoVNF automatically monitors for faults/failures of the VNFCs for which the functionality is enabled. If a fault/failure is detected, AutoVNF automatically attempts to auto-heal/recover (redeploy) the VNFC(s).



### Important

The Provisioning Network (floating) IP address is required to leverage the health monitoring functionality.

This functionality is currently only supported for the following VNFCs:

- VNFM (ESC)
- UEM
- CF
- SF



### Important

Ultra M Manager sends fault notification when VMs are down and/or recovered.

The following parameters must be configured at the VNFC-level:

**Table 5: Health Check Descriptor Parameters**

| Parameter       | Required | Type          | Description                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------------|----------|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enabled         | O        | bool          | Enable/disable health monitoring.                                                                                                                                                                                                                                                                                                                                                                                                       |
| probe-frequency | O        | uint16        | Health Check Frequency in seconds. UAS uses this as health probe time, meaning every polling interval UAS will invoke health check. Default value is 10 seconds.                                                                                                                                                                                                                                                                        |
| probe-max-miss  | O        | uint16        | Maximum number of health probe misses before VNFC instance is declared dead. Default value is 6.                                                                                                                                                                                                                                                                                                                                        |
| recovery-type   | O        | choice string | Recovery type. It can be one of the following: <ul style="list-style-type: none"> <li>• restart: Recovery only by restarting, move the VNFC instance to error after max retries</li> <li>• external: Recovery performed by external entity. No auto-recovery</li> <li>• restart-then-redeploy: Restart the VM on failure. After maximum retries, redeploy the failed VNFC instances.</li> </ul> Default value is restart-then-redeploy. |
| retry-count     | O        | uint16        | Number of retries to recover the VNFC Instance. Default value is set to restart-then-redeploy.                                                                                                                                                                                                                                                                                                                                          |
| boot-time       | O        | uint16        | Initial bootup time for the VNFC. Default value is 300 seconds.                                                                                                                                                                                                                                                                                                                                                                         |
| script          | O        | string        | Script to check VNFC health, by default UAS ICMP script will be used.                                                                                                                                                                                                                                                                                                                                                                   |

The above parameters are configured at the VNFC-level within the VNF descriptor information that is part of the deployment network service descriptor (NSD) as shown in the following example configuration:

```

nsd <nsd_name>
...
 vnfd <autovnf_vnfd_name>
...
 vnfc <vnfm_vnfc_name>
 health-check enabled
 health-check probe-frequency 10
 health-check probe-max-miss 6
 health-check retry-count 6
 health-check recovery-type restart-then-redeploy
 health-check boot-time 300
...
 vnfc <uem_vnfc_name>
 health-check enabled
 health-check probe-frequency 10

```



```

health-check probe-max-miss 6
health-check retry-count 6
health-check recovery-type restart-then-redeploy
health-check boot-time 300
...
vnfc <cf_vnfc_name>
health-check enabled
health-check probe-frequency 10
health-check probe-max-miss 6
health-check retry-count 6
health-check recovery-type restart-then-redeploy
health-check boot-time 300
...
vnfc <sf_vnfc_name>
health-check enabled
health-check probe-frequency 10
health-check probe-max-miss 6
health-check retry-count 6
health-check recovery-type restart-then-redeploy
health-check boot-time 300
...

```

Refer to the *Cisco Ultra Services Platform NETCONF API Guide* for more information on the use of these and other parameters related to VNF configuration and deployment.

In the event that automatic recovery is not possible, an API is available to manually recover the VNFC(s).

VNFC status can be viewed by executing the **show vnfr** command from AutoIT. Additional details can be found in the transaction logs for the deployment.

To manually recover a failed VNFC, execute the following command:

```
recover nsd-id <nsd_name> vnfd <vnfd_name>
```

## Troubleshooting Deactivation Process and Issues

### NOTES:

- The deactivate process is idempotent and can be multiple times and without error. The system will retry to remove any resources that remain.
- If a deactivation fails (a transaction failure occurs), look at the logs on various UAS software components (AutoDeploy, AutoIT, and AutoVNF), VNFM (ESC), and UEM.
- If deactivation has failed, you must ensure that a clean up is performed either using automation tools or manually if necessary.
- Activation must not be reattempted until all of the previous artifacts have been removed.

## Deactivation Fails Due to Communication Errors with AutoVNF

### Problem Description

During the AutoVNF deactivation process, AutoDeploy indicates that it is unable to deactivate the AutoVNF. This is observed through:

- AutoDeploy transaction log

- AutoDeploy upstart log

#### Possible Cause(s)

- AutoDeploy is not able to communicate with AutoVNF.

#### Action(s) to Take

- Check network connectivity between the AutoDeploy VM and the AutoVNF VIP.
- Check the management and orchestration network.
- Address any connectivity issues.

#### Next Steps

- Once connectivity issues are addressed, perform the deactivate procedure again.

## Deactivation Fails Because AutoDeploy Generates an Exception

#### Problem Description

AutoDeploy generates an exception error during the deactivation process.

#### Possible Cause(s)

- Connectivity issues
- Configuration issues
- OpenStack/VIM specific issues
- Hardware issues

#### Action(s) to Take

1. Capture logs from `/var/log/upstart/autodeploy.log` along with exception error message.
2. Log on to AutoIT and collect the logs from `/var/log/upstart/autoit.log` along with the exception message, if any.
3. Log on to VIP of the active (master) AutoVNF VM and perform a cleanup by running the **deactivate** command from there.

1. Log on to the AutoVNF VM as the default user, *ubuntu*.

2. Switch to the root user.

```
sudo su
```

3. Enter the ConfD CLI.

```
confd_cli -C -u admin
```

4. Enter the *admin* user password when prompted.

5. Deactivate the deployment.

```
deactivate nsd-id <nsd_name>
```

4. Check the last transaction log to verify that the deactivation was successful. (Transactions are auto-sorted by timestamp, so it should be the last one in the list.)

**Example commands and outputs:**

**show transactions**

| TX ID              | TX TYPE        | ID      | TIMESTAMP                        | STATUS |
|--------------------|----------------|---------|----------------------------------|--------|
| -----              |                |         |                                  |        |
| 1500605583-055162  | vnf-deployment | dep-5-5 | 2017-07-21T02:53:03.055205-00:00 |        |
| deployment-failed  | -              |         |                                  |        |
| 1500606090-581863  | vnf-deployment | dep-5-5 | 2017-07-21T03:01:30.581892-00:00 |        |
| deployment-success | -              |         |                                  |        |
| 1500606127-221084  | vnf-deployment | dep-5-5 | 2017-07-21T03:02:07.221114-00:00 |        |
| deployment-success | -              |         |                                  |        |

```
show log 1500606127-221084 | display xml
<config xmlns="http://tail-f.com/ns/config/1.0">
 <log xmlns="http://www.cisco.com/usp/nfv/usp-autovnf-oper">
 <tx-id>1500606127-221084</tx-id>
 <log>2017-07-21 03:02:07,276 - Notify deployment
2017-07-21 03:02:07,297 - Connection to VNFM (esc) at 172.16.181.107
2017-07-21 03:02:07,418 - NETConf Sessions (Transaction/Notifications) established
...

```

5. Manually delete the AutoDeploy VM using the information in [Terminating the AutoDeploy VM, on page 2](#).

**Next Steps**

- Open a support case providing all of the log information that was collected.

## Deactivation Fails Because of AutoVNF-VNFM Communication Issues

**Problem Description**

During the AutoVNF deactivation process, AutoVNF indicates that it is unable to deactivate the VNFM. This is observed through:

- AutoVNF transaction log
- AutoVNF upstart log

**Possible Cause(s)**

- AutoVNF is not able to communicate with the VNFM.

**Action(s) to Take**

- Check network connectivity between the master AutoVNF VM and the VNFM VIP.
- Check the management and orchestration network.
- Address any connectivity issues.

**Next Steps**

- Once connectivity issues are addressed, perform the deactivate procedure again.

## Deactivation Fails Because of Issue at VNFM

### Problem Description

During the AutoVNF deactivation process, the VNFM returns an error. This is observed through:

- AutoVNF transaction log
- AutoVNF upstart log
- ESC logs

### Possible Cause(s)

- ESC health is not good due to an issue or network connectivity.
- ESC is not able to communicate with the VIM.
- ESC has an internal error.
- AutoVNF is unable to create/delete OpenStack artifacts.

### Action(s) to Take

1. Check `/var/log/esc/yangesc.log` for any issues or error messages.
2. Run `health.sh` to determine the health of ESC.
3. Check network connectivity and address an issues. Retry the deactivation.
4. Check network connectivity with the VIM and address any issues. Retry the deactivation.
5. Determine if ESC has a deployment configuration. From the active ESC VM:

```
/opt/cisco/esc/confd/bin/confd_cli -C
show running-config
```

If a configuration is present, most likely ESC is still retrying the deactivation, allow more time for the process to continue.

If no configuration exists, check if there are deployment artifacts still on the VIM. Retry the deactivation.

6. Collect logs by running `collect_esc_log.sh` from both the active and standby ESC VMs.
7. Perform a manual cleanup.




---

**Note** Only artifacts which UAS created need to be removed. Any pre-created artifacts must remain in place.

---

1. Login on to the VIM as tenant.
2. Remove all VMs.
3. Remove all VIP Ports.
4. Remove all networks.
5. Remove all flavors.
6. Remove all volumes.

7. Remove all images.
8. Remove host-aggregate created as part of automation.

#### Next Steps

- Open a support case providing all of the log information that was collected.

## Deactivation Fails Because AutoVNF Generates an Exception

### Problem Description

AutoVNF generates an exception error during the deactivation process.

### Possible Cause(s)

- Connectivity issues
- Configuration issues
- OpenStack/VIM specific issues
- Hardware issues

### Action(s) to Take

1. Collect all logs from */var/log/cisco-uas*.
2. Perform a manual cleanup.



---

**Note** Only artifacts which UAS created need to be removed. Any pre-created artifacts can remain in place.

---

1. Login on to the VIM as tenant.
2. Remove all VMs.
3. Remove all VIP Ports.
4. Remove all networks.
5. Remove all flavors.
6. Remove all volumes.
7. Remove all images.
8. Remove host-aggregate created as part of automation.

#### Next Steps

- Open a support case providing all of the log information that was collected.

# Troubleshooting UEM Issues

This section contains information on troubleshooting UEM issues.

## UEM VM Stuck in a Boot Loop

### Problem Description

Processes that normally run on the UEM VM are unable to start and the VM is stuck in a boot-loop.

### Possible Cause(s)

There is an error with the Zookeeper database keeping the Zookeeper process and other UEM processes from starting. (No other UEM process can be started unless the Zookeeper process has started.)



**Important**

Release 6.3 onwards, no UEM services will run on the slave UEM.

### Action(s) to Take

1. Check the UEM Zookeeper logs. Refer to [Viewing UEM Zookeeper Logs, on page 76](#).
2. Look for error messages similar to the following:

```
[myid:4] - INFO [main:FileSnap@83] - Reading snapshot
/var/lib/zookeeper/data/version-2/snapshot.5000004ba
[myid:4] - ERROR [main:QuorumPeer@557] - Unable to load database on disk
java.io.EOFException
```

If the above errors exist, proceed to the next step. If not, further debugging is required. Please contact your local support representative.

3. Rebuild the Zookeeper database.
  1. Check the health of Master and Slave EM instances. Execute the following commands on each instance.

#### Master UEM VM:

```
sudo -i
ncs_cli -u admin -C
admin connected from 127.0.0.1 using console on deploymentem-1
```

#### show ems

| EM ID | SLA | SCM | VNFM PROXY | VERSION |
|-------|-----|-----|------------|---------|
| 3     | UP  | UP  | UP         | 5.7.0   |
| 6     | UP  | UP  | UP         | 5.7.0   |

#### exit



**Important**

Only the master UEM status may be displayed in the above command because the slave UEM is in the boot loop.

```
show ncs-state ha
ncs-state ha mode master
ncs-state ha node-id 6-1506059686
ncs-state ha connected-slave [3-1506059622]
```

#### Slave UEM VM:



#### Important

The slave UEM may not be accessible if it is experiencing the boot loop issue.

```
sudo -i
ncs_cli -u admin -C
admin connected from 127.0.0.1 using console on deploymentem-1
```

```
show ems
EM VNFM
ID SLA SCM PROXY VERSION

3 UP UP UP 5.7.0
6 UP UP UP 5.7.0
```

```
exit
```

```
show ncs-state ha
ncs-state ha mode slave
ncs-state ha node-id 3-1506059622
ncs-state ha master-node-id 6-1506059686
```

2. Log on to the node on which Zookeeper data is corrupted.
3. Enable the debug mode.

```
/opt/cisco/em-scripts/enable_debug_mode.sh
Disable EM reboot. Enable debug mode
```

4. Reboot the VM in order to enter the debug mode.
5. Remove the corrupted data.

```
cd /var/lib/zookeeper/data/
ls
myid version-2 zookeeper_server.pid
```

```
mv version-2 version-2_old
```

Check for corrupted data in the arbiter directory as well.

```
cd /var/lib/zookeeper/arbiter/data
ls
myid version-2 zookeeper_server.pid
```

```
mv version-2 version-2_old
```



#### Important

This process removes the Zookeeper database by renaming it for additional debugging/recovery.

6. Reboot the node instance for it to reconcile and rebuild the Zookeeper database from a healthy UEM instance.

**reboot**

7. Log on to the UEM VM upon reboot.
8. Validate that the database has been successfully rebuilt on the previously failing UEM node.

```
sudo -i
```

```
ncs_cli -u admin -C
```

```
admin connected from 127.0.0.1 using console on vnfdeploymentem-0
```

```
show ems
```

```
EM VNFM
ID SLA SCM PROXY VERSION

3 UP UP UP 5.7.0
6 UP UP UP 5.7.0
```

```
show ncs-state ha
```

```
ncs-state ha mode slave
ncs-state ha node-id 3-1506093933
ncs-state ha master-node-id 6-1506093930
```

```
exit
```

```
cd /var/lib/zookeeper/data/
```

```
ls
```

```
myid version-2 version-2_old zookeeper_server.pid
```

```
cat /var/log/em/zookeeper/zookeeper.log
```

```
<---SNIP--->
2017-09-22 15:25:35,192 [myid:3] - INFO
[QuorumPeer[myid=3]/0:0:0:0:0:0:0:2181:Follower@61] - FOLLOWING - LEADER ELECTION
 TOOK - 236
2017-09-22 15:25:35,194 [myid:3] - INFO
[QuorumPeer[myid=3]/0:0:0:0:0:0:0:2181:QuorumPeer$QuorumServer@149] - Resolved
hostname: 30.30.62.6 to address: /30.30.62.6
2017-09-22 15:25:35,211 [myid:3] - INFO
[QuorumPeer[myid=3]/0:0:0:0:0:0:0:2181:Learner@329] - Getting a snapshot from leader
2017-09-22 15:25:35,224 [myid:3] - INFO
[QuorumPeer[myid=3]/0:0:0:0:0:0:0:2181:FileTxnSnapLog@240] - Snapshotting:
0x200000050 to /var/lib/zookeeper/data/version-2/snapshot.200000050
2017-09-22 15:25:37,561 [myid:3] - INFO
[NIOServerCxn.Factory:0.0.0.0/0.0.0.0:2181:NIOServerCxnFactory@192] - Accepted socket
connection from /30.30.62.15:58011
2017-09-22 15:25:37,650 [myid:3] - WARN
[NIOServerCxn.Factory:0.0.0.0/0.0.0.0:2181:ZooKeeperServer@882] - Connection request
from old client /30.30.62.15:58011; will be dropped if server is in r-o mode
2017-09-22 15:25:37,652 [myid:3] - INFO
[NIOServerCxn.Factory:0.0.0.0/0.0.0.0:2181:ZooKeeperServer@928] - Client attempting
to establish new session at /30.30.62.15:58011
<---SNIP--->
```

Also, check the logs in the `/var/log/em/zookeeper/arbiter` directory.

9. Disable the UEM debug mode on the VM on which the Zookeeper database was rebuilt.

```
/opt/cisco/em-scripts/disable_debug_mode.sh
```

```
Disable debug mode
```

**Next Steps**

Open a support case providing all the log information that was collected.