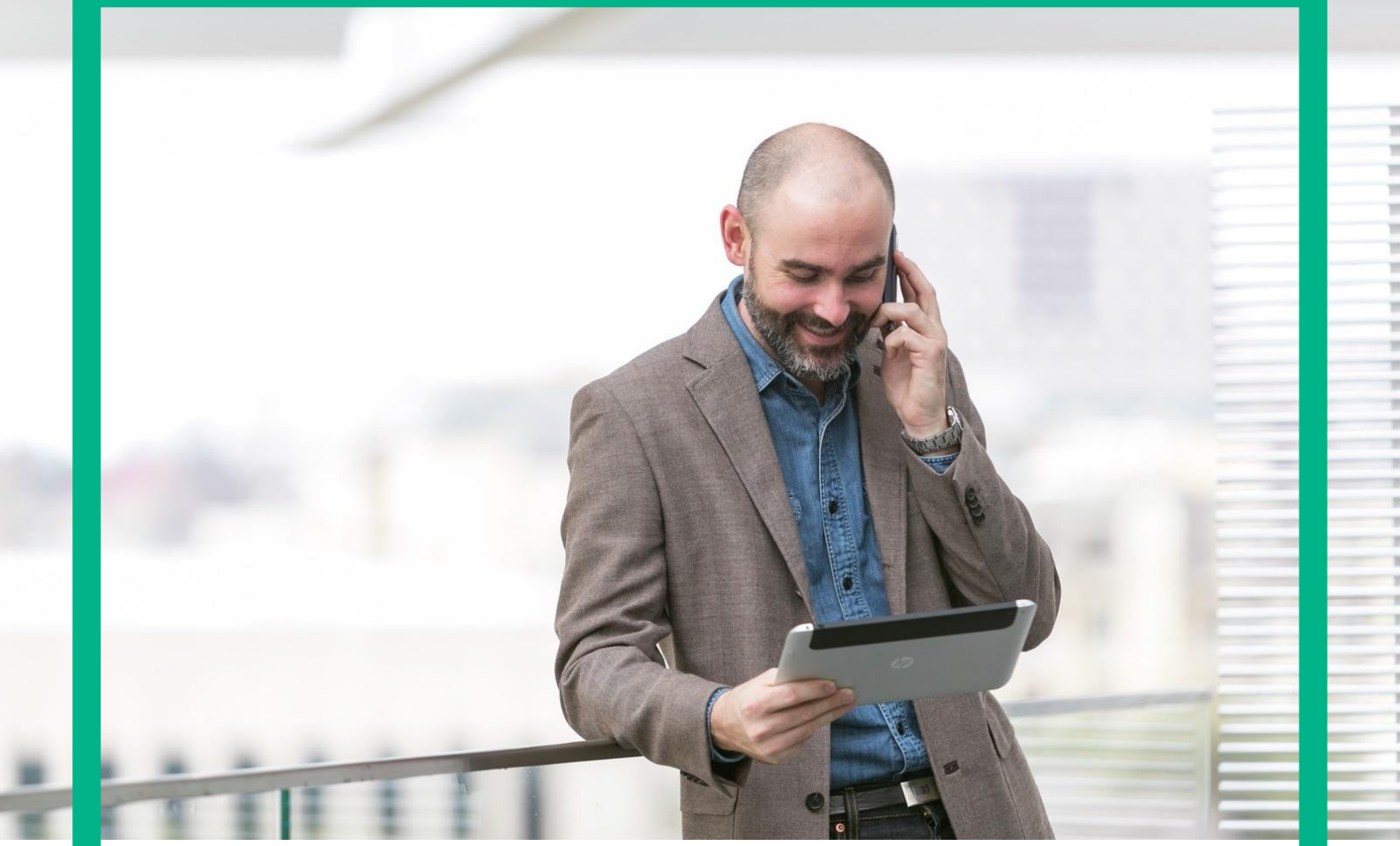


HPE NFV Director

Troubleshooting Guide

Release 4.1

Second Edition

Hewlett Packard Enterprise

Notices

Contents

List of tables

List of figures

Preface

About this guide

This document describes the commonly encountered issues, and steps and procedures to troubleshoot them. This is an ever evolving document, that will be enriched with information as and when there are newer inputs available.

Audience

This guide is primarily for the NFV Director Support staff to help troubleshoot any issue. It is also for any NFV Director user that encounters issues during installation, and operations.

Document history

Table 1: Document history

Edition	Date	Description
1.0	14 October 2016	First Edition

Chapter 1 User Management issues

The 3 main things to know are:

1. NFVD users are stored in an LDAP system which can be either Active Directory or OpenLDAP
2. At creation time, the user password is sent by mail to the end user
3. The authentication process is done via the NFVD Authentication Server which is collocated with the NFVD UI. Status of NFVD Authentication Server can be verified by running the command on NFVD UI VM:

   ```
   /opt/HPE/nfvd/bin/nfv-director.sh -c idp status
   ```

   You get the following output:

   ```
   NFVD Authentication Server          : [Running]
   ```

As a consequence, most User Management problems are:

- For User creation
  - A wrong LDAP configuration or LDAP system not accessible
  - A wrong mail configuration or SMTP server not accessible
- For User authentication
  - A wrong LDAP configuration or LDAP system not accessible
  - A wrong NFVD Authentication Server configuration or NFVD Authentication Server not running

1.1 Checking LDAP configuration

1.1.1 Checking connectivity

The LDAP server connection parameters are defined on the Fulfillment server in the JBoss configuration file located in `/opt/HP/jboss/standalone/configuration/standalone.xml`.

There are 2 LDAP Resource adapters in this file (look for tag <resource-adapter>):

- ldap-management-DS
- ldap-service-DS

For these 2 adapters, please check that the URL defined by the "providerUrl" property can be accessed (from the FF server) using the credentials defined by “validationDN” and "securityCredentials".

```
providerURL: ldap://<LDAP_HOST>:389
validationDN: dc=<<DOMAIN_NAME_LOWERCASE>>,dc=<<DOMAIN_SUFFIX>>
securityCredentials: <<PASSWORD_FOR_ADMIN_USER_ACCOUNT>>
```

An example would be:

```
<<DOMAIN_NAME_LOWERCASE>>                    = nfvd
<<DOMAIN_SUFFIX_LOWERCASE>>                  = domain
<<PASSWORD_FOR_ADMIN_USER_ACCOUNT>>          = MySecretPassword
```

It can be checked also using a tool like *Apache Directory Browser* from which you should be able to browse data stored in LDAP.

You can get the Apache Directory studio from https://directory.apache.org/studio/

1.1.2 Checking NFVD configuration files

Depending on whether your LDAP system is Active Directory or OpenLDAP, the /opt/HP/jboss/standalone/deployments/nfvd.ear/nfvd-modules-ext-4.1.1-SNAPSHOT.jar/META-INF/beans.xml configuration file is different.

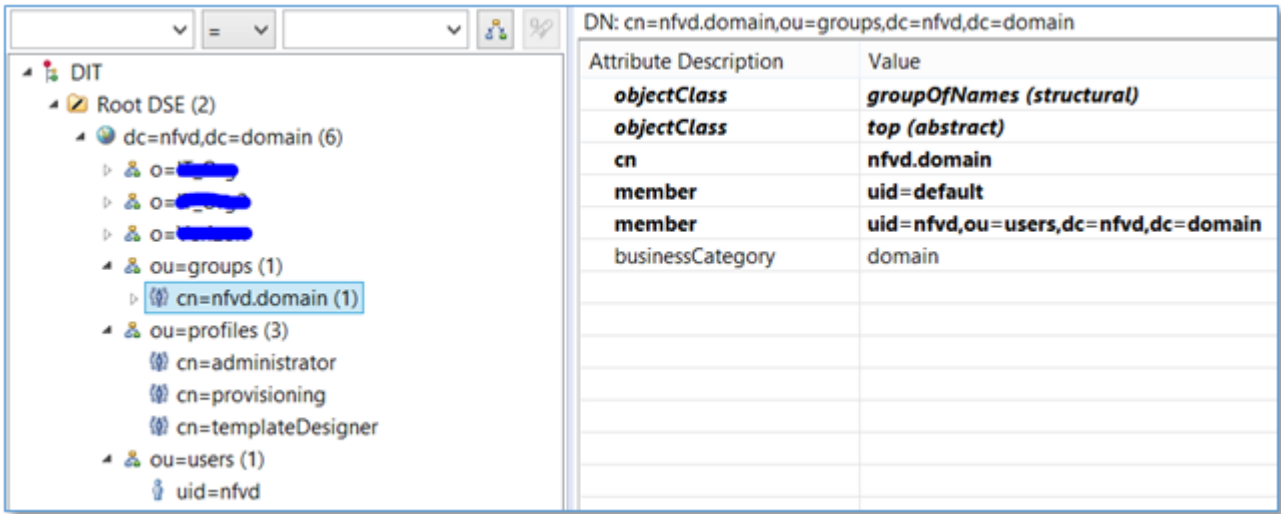
Basically, when you are using OpenLDAP, the “OMI decorators” and the “beans alternatives” should be commented.

Please check the *Installation and Configuration Guide and Administration Guide* for details.

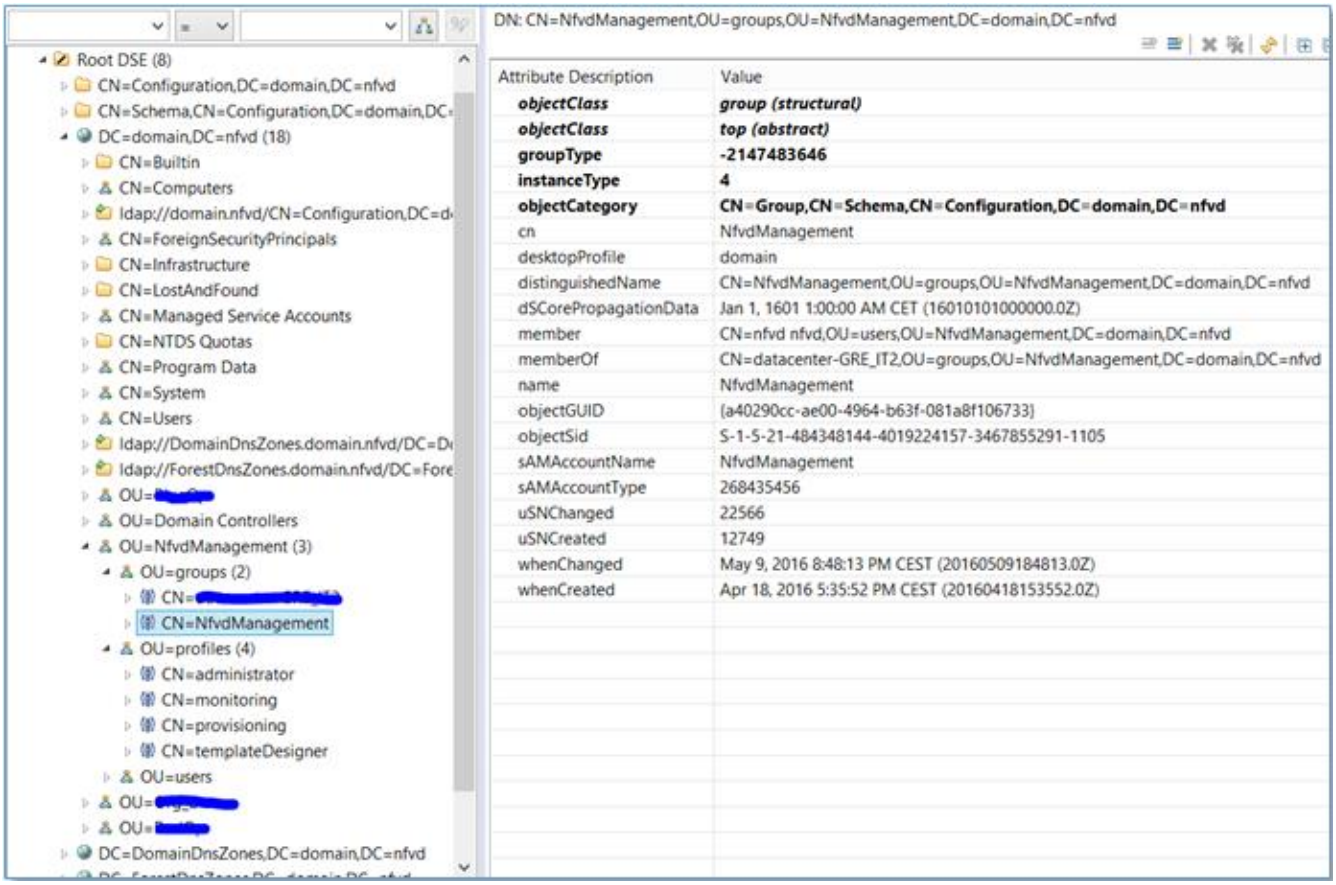
1.1.3 Checking LDAP structure

Depending on whether your LDAP system is Active Directory or OpenLDAP, the LDAP structure is not the same.

For the ‘OpenLDAP’ case, it looks like:



For the ‘Active Directory’ case, it looks like:



If that's not the case, please check the *Installation, Configuration and Administration guide* for details.

1.2 Checking E-mail configuration

To be able to create users, either via command line (for the domain user) or via the NFVD UI, you need to be able to send mail from the FF Server. If the mail cannot be sent, the user creation will be cancelled.

Those mails are sent by the SOSA services on the FF server.

First, check that SOSA services are running:

```
/opt/HPE/nfvd/bin/nfv-director.sh -c sosa status
```

It gives the output indicating whether Sosa is running or not.

Then, in file /opt/OV/ServiceActivator/EP/SOSA/conf/sosa_conf.xml, check that the following queue is defined:

```
<Queue name="mailqueue" className="com.hp.sosa.modules.sosamodule.queues.basic.BasicQueue" >
  <Parameter name="queue.threads" value="5"/>
  <Parameter name="queue.max.parallelism" value="2"/>
  <Sae name="MWFM_SA_EXECUTOR" medium_load="100" load_threshold="0"/>
</Queue>
```

Then, in file /etc/opt/OV/ServiceActivator/config/mwfm.xml, check the MailManager module and check the value of the parameter "smtp_server".

The host defined in this parameter must be reachable from the FF Server.

Also check that you can send a mail using this SMTP server to the mail address used in the user creation form (or in the nfvd_createUser.sh command line).

Ultimately, messages listed in the NFVD_EMAIL_SENDER queue in the HPSA UI (*http://<FF Server>:<FF Port>/activator)* can provide more information on the root cause of the problem.

1.3 Checking NFV Director Authentication Server

If you have your credentials but you can't log into the NFVD UI:

- Check that the information you entered in the login window is correct:
  - One of the most common mistake is to forget the '@OrganizationName' part after the login name
- Check that the *NFVD Authentication Server* and the *Apache couchdb* service are running by running the following command on the NFVD UI host:

  ```
  /opt/HPE/nfvd/bin/nfv-director.sh status
  ```

  Check the following lines in the output:

  ```
  Apache CouchDB                    : [Running]
  UOC server                        : [Running]
  NFVD Authentication Server        : [Running]
  NFVD Image Uploader Service       : [Running]
  ```

If the *NFVD Authentication Server* does start correctly, please check server, stderr log files located in `/opt/uoc2/jboss-eap-6.4/standalone/log` to determine the root cause of the error.

1.4 Analyzing log files

If you still can't connect or create users after all verifications described in the previous sections, you will have to look into the log files on the FF server in /opt/HP/jboss/standalone/log.

As such the starting point is the file nfvd-stats.log which contains one line per API call with the following format

```
Timestamp | UUID | Operation | URI | Response | Info | Duration
```

First, identify the line corresponding to the operation which is failing.

Usually the `Response` is different from 200.

Then note down the UUID corresponding to this line.

Finally, find all lines in file nfvd.log containing this UUID in order to have much more details on the root cause of the error.

```
Example: grep <UUID> /opt/HP/jboss/standalone/log/nfvd.log
```

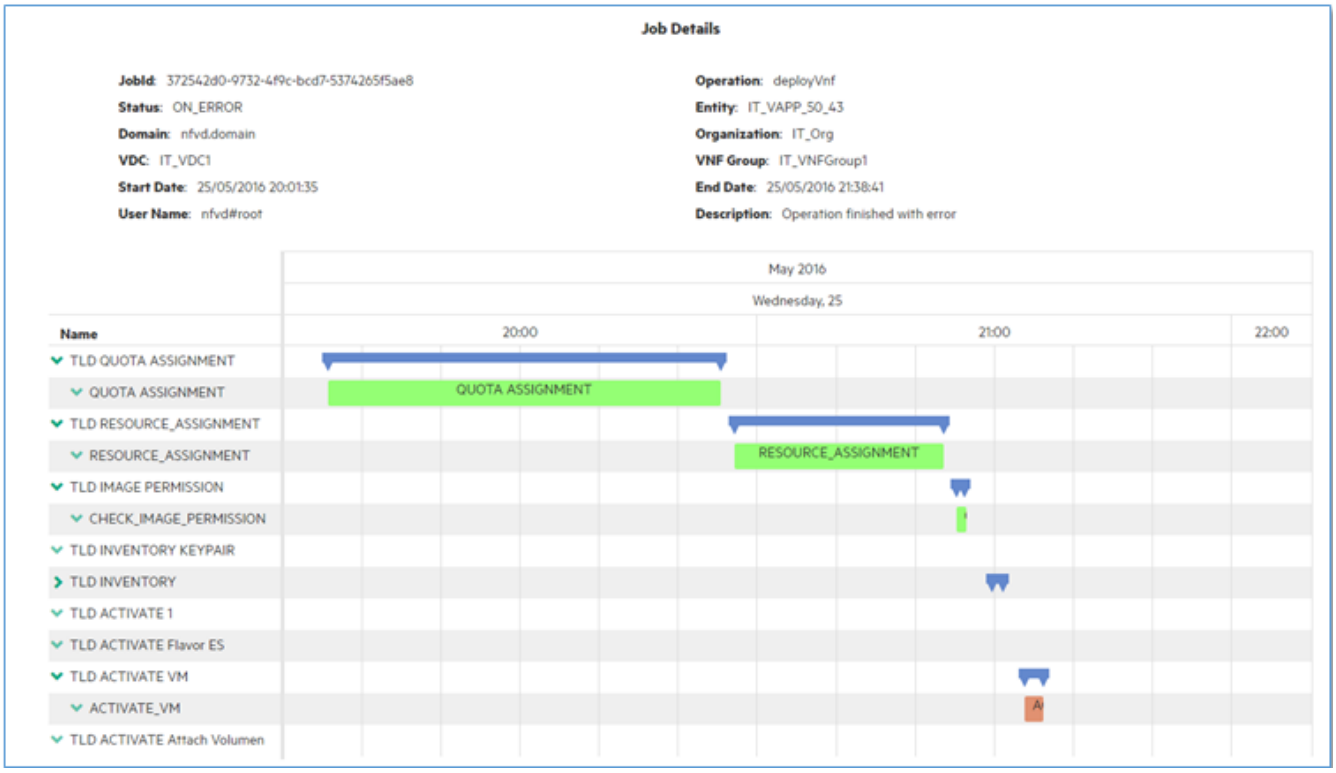
Ultimately, you should also look at file server.log that will log all other traces.

Chapter 2 Deployment issues

When you have an error during an operation (deploy, undeploy, scale, start, stop...) on one of the NFVD entities (Organization, VDC, VNF Group, Virtual Networks, VNF, VM...), the starting point is always the Job management screen.

From this screen, you can identify the Job Task which is in failure.

For example, in the screenshot below, we can see that ACTIVATE_VM task is causing the VNF deployment error.



Depending on the task in error, the origin of the problem can be of two kinds:

1. Error coming from NFVD (ex: quota assignment, resource assignment, check image permission...)
2. Error coming from the infrastructure itself:
   - From the VIM during a creation or an activation of an OpenStack object (ex: network creation, VM activation, Flavor creation...)
   - From DCN (ex: create L3 domain, create ingress / egress policies...)
   - From SiteScope (ex: create monitors, start monitors...)

Once you have identified the job task which is in error, the next source of information to identify the problem is the Service Activator UI at *http://<FF Server>:<FF Port>/activator* (default admin password is admin123).

In the "messages", look for the message tab corresponding to the job task in failure (warning: there is not a 1-to-1 mapping). Look also at the tabs containing the name 'Error'.

It usually contains some useful information about the source of the error.

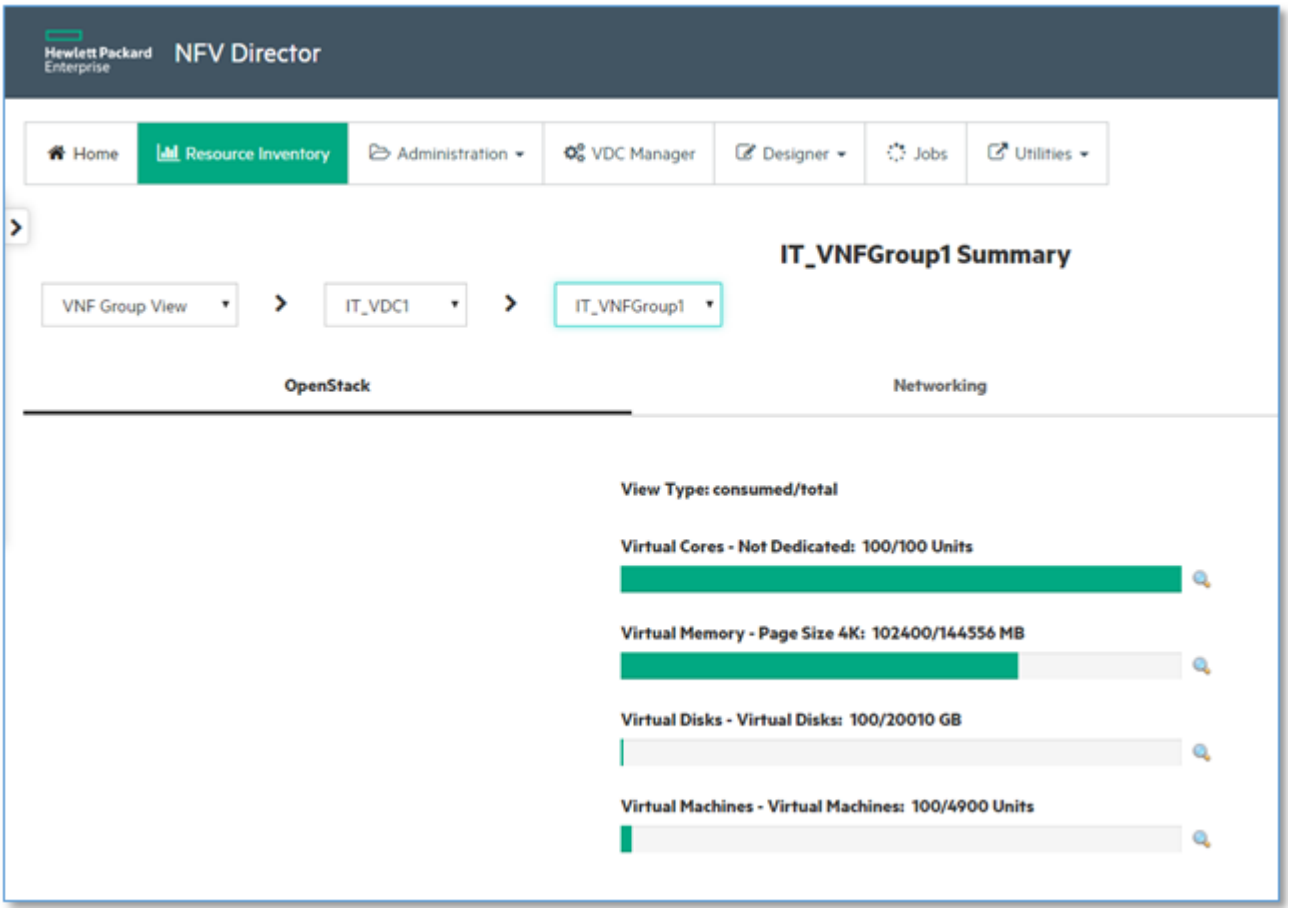
Then you can check the next sections that try to cover most common error situations you might encounter

2.1 Troubleshooting Quota Assignment issues

Deployment failure during the "QUOTA ASSIGNMENT" task are usually due to the fact that you are over exceeding one of the quota assigned to your VNF Group. Or maybe because you have forgotten to set any quota to your VNF group.

This can be checked easily – for example from an organization/VNF Group user – in the Resource Inventory screen using the VNF Group View.

In the example below, any VNF Deployment will fail because the number of Virtual Cores – Not Dedicated has reached the quota allocated for this VNF Group.



Please refer to the *NFV Director User Guide* to understand how to change the quotas.

2.2 Troubleshooting Resource assignment issues

Resource assignment issues arise when NFVD can't find any resource in the VIM corresponding to the characteristics of the VM you are trying to deploy.

The 2 main potential causes are:

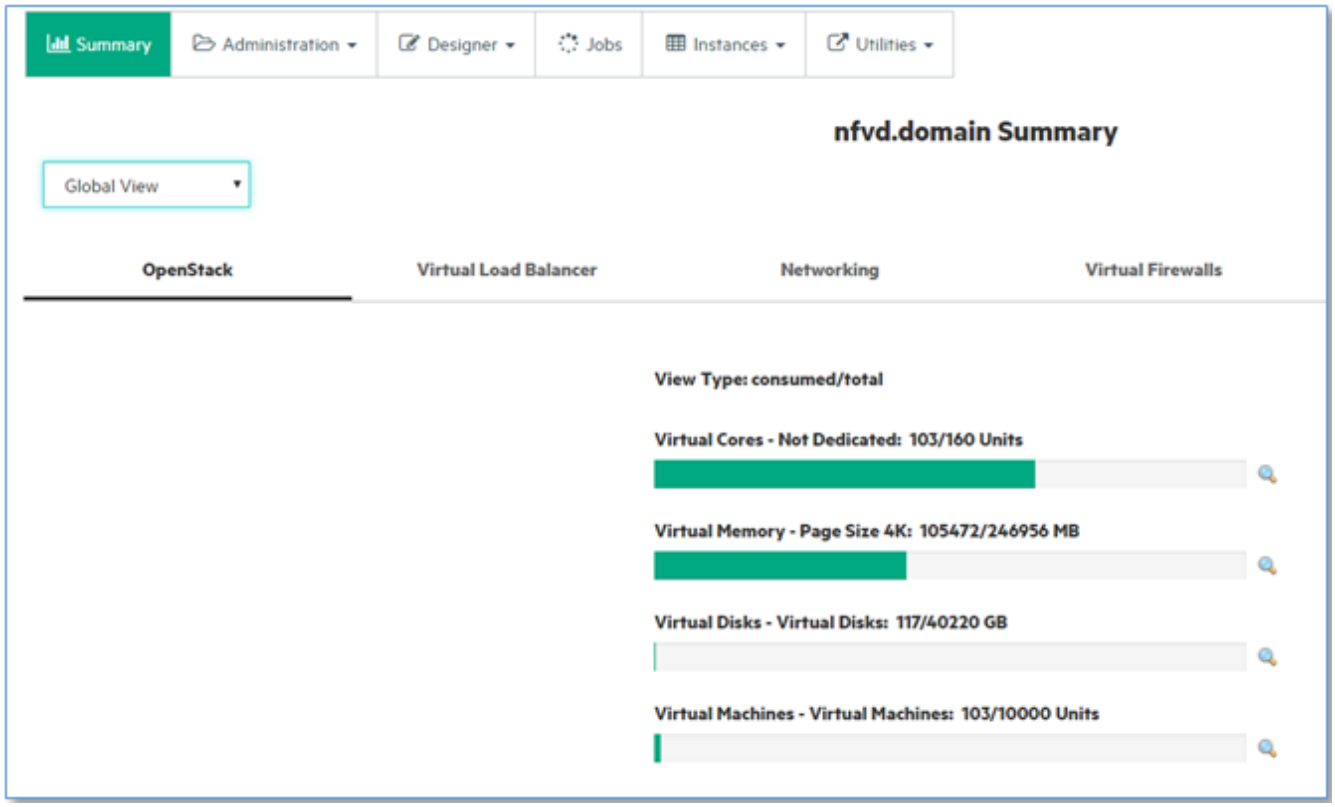
1. Your VIM is running out of resources of a certain kind
2. Your VM template specifies something that doesn't exist in the VIM

2.2.1 VIM is running out of resources

When logged as a 'domain' user you can use the Global view of the Summary tab to check the amount of consumed resources compared to the total available resources.

In case you have several DCs, please use the Organization view in order to check the same information but this time for the organization in which you are encountering the problem.

To resolve the problem, there is no magic...either you remove some already deployed VMs that are not being used, or you ask to add resources in the VIM and trigger discovery to update the resource in NFV D.



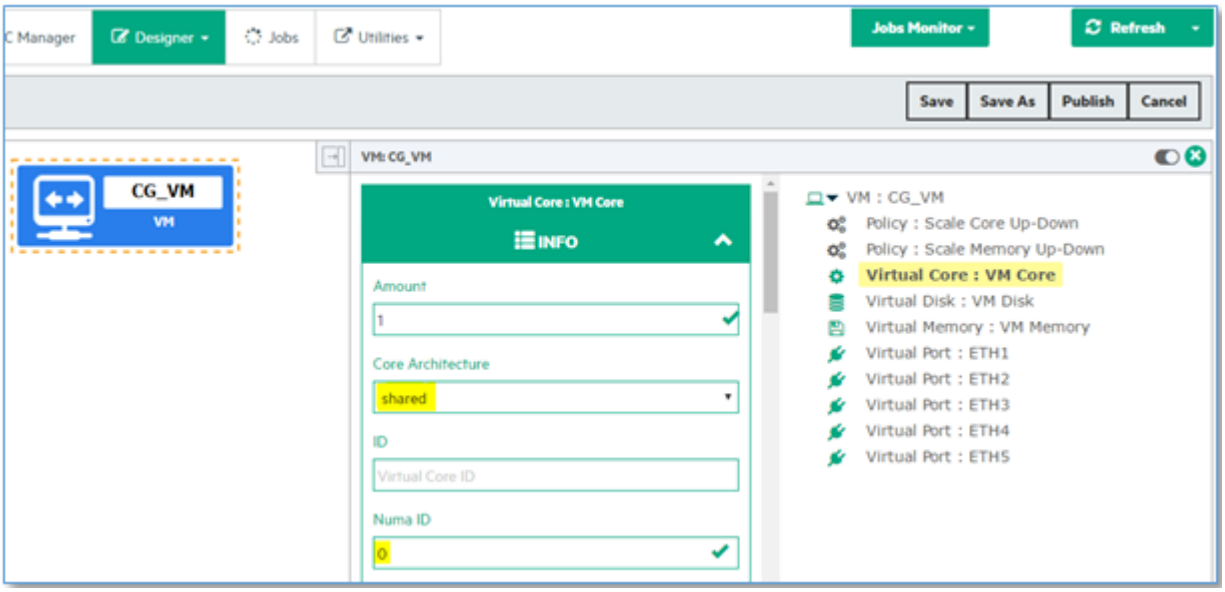
2.2.2 VM template is not compatible with the VIM resources

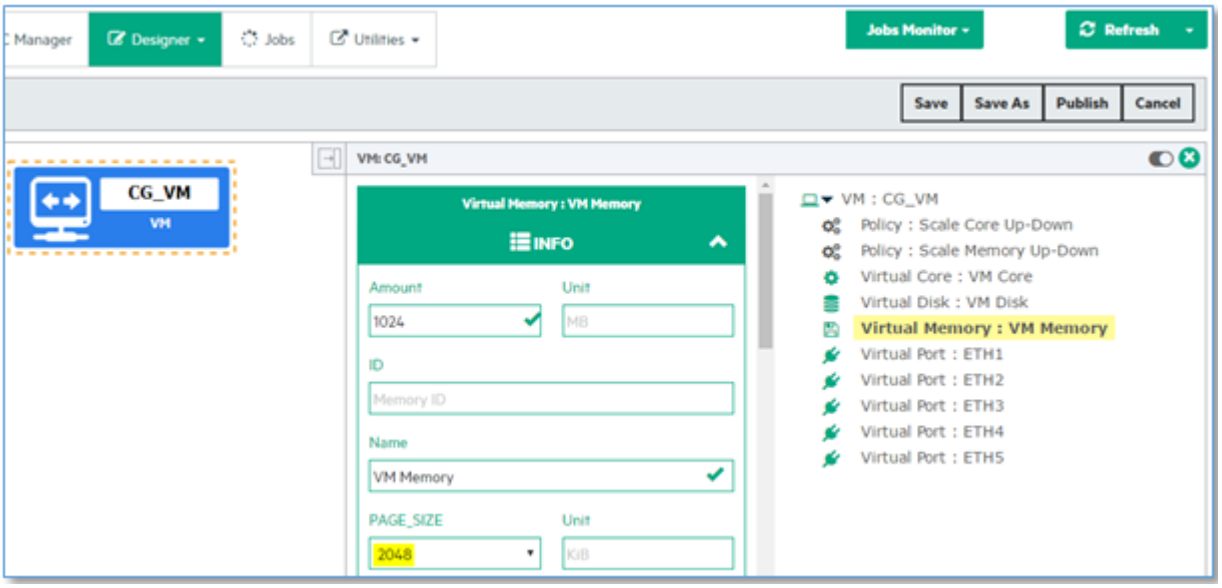
This is the most common error with resource assignment.

When you define your VNF template, the VMs (and sub components) have some predefined characteristics, such as:

- Core: Architecture (shared or dedicated)
- Core: Numa Id
- Memory: Page Size

These parameters are accessible in the VNFC designer and illustrated by the screenshot below:

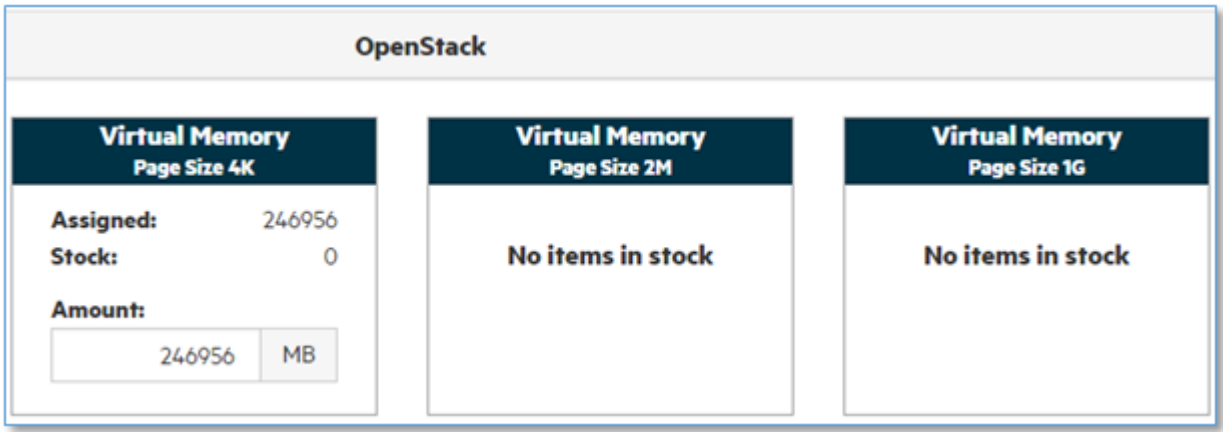




If resources you have in your VIM (visible in the Resource Catalog) do not match the characteristics defined for your template, then the deployment will fail in the RESOURCE_ASSIGNMENT task.

Note that depending on the chosen VM template some attributes might be read-only.

Typical example is to try to deploy a Standard VM template for which the default PAGE_SIZE for the Memory is set to 2048KiB in a VIM having only Virtual Memory with a Page size to 4K as illustrated below:



As you cannot change what was physically discovered, the only option you have is to set the right value in your VM template in the VNFC designer.

Note that depending on the chosen VM template, some attributes might be read-only.

2.3 Troubleshooting issue with images

You may encounter issues with images in two particular cases:

1. Your VNF Group doesn't have the permission to use the image
2. The FF server can't access the image repository folder

2.3.1 Issues with Image Permission

In this case, the deployment will typically fail in the CHECK_IMAGE_PERMISSION task.

Usually, the cause is that the image name defined in the VM template is not granted to your VNF Group.

Please check the *NFV Director User Guide* to understand how to upload images and – when the upload is not "public" – how to grant it to the Organization, VDC and VNF Group.

NOTE: By default, cirros image is proposed in VM standard template, but it is not published by default in NFVD.

2.3.2 Issues with access to image repository

If for some reasons the FF server cannot access the folder defined by the NFVD Image Uploader Service then you'll have an error when NFVD will upload the image to the VIM.

The image repository is defined by the FINAL_PATH variable in /opt/uoc2/image-uploader-service/config/application.js. By default, it's /var/opt/uoc2/server/public/addons/plugins/nfvd_portal/image_repository.

2.4 Troubleshooting VIM-related deployment issues

Other deployment issues (VDC, Network, VM, Flavors, Images...) can be caused by the VIM itself.

Finding the root cause is usually tricky but most of the time the error message returned by the VIM can be retrieved from the server.log file located on the FF server in /opt/HP/jboss/standalone/log.

You can filter all logs corresponding to the requests sent to Openstack as well at the response from Openstack by executing:

```
grep 'RMI TCP' /opt/HP/jboss/standalone/log/server.log
```

2.5 Troubleshooting NUMA id issues.

If we are executing a set of operations that need several Virtual Machines, a considerable amount of Virtual Machines, depending on the template that we are using for our component, it might be possible that during some of our activations, the cores present to be used as resources in our solution will be insufficient to activate all our Virtual Machines, this could happen if the specific NUMA conditions set in our components will not find enough resources in the system.

In this specific case, the error thrown is :

""fault": {"message": "Build of instance **********UUID******** was re-scheduled: Insufficient compute resources: Requested instance NUMA topology cannot fit the given host NUMA topology.", "**

This line was extracted from the following traces of the "server.log".

Openstack Log--> responseJson:
{"server": {"status": "ERROR",
"wrs-res:topology": "node:0,
1024MB, pgsize:2M,
vcpus:0,
unallocated",
"updated": "2016-09-25T17:48:13Z",
"hostId": "",
"OS-EXT-SRV-ATTR:host": null,
"addresses": {},
"links": [{"href": "http://*.*.*.*:18774/v2/*****UUID*****/servers/*****UUID*****",
"rel": "self"}, {"href": "http://*.*.*.*:18774/*****UUID*****/servers/*****UUID*****",
"rel": "bookmark"}],
"wrs-res:vcpus": [1, 1, 1],
"key_name": null,
"image": {"id": "*****UUID*****",
"links": [{"href": "http://*.*.*.*:18774/*****UUID*****/images/*****UUID*****",
"rel": "bookmark"}]},
"wrs-if:nics": [],
"wrs-sg:server_group": "",
"OS-EXT-STS:vm_state": "error",
"OS-EXT-SRV-ATTR:instance_name": "instance-00000ce5",
"OS-SRV-USG:launched_at": null,
"OS-EXT-SRV-ATTR:hypervisor_hostname": null,
"flavor": {"id": "34e83cc0-7cc2-470b-9e9d-95d397aae873",
"links": [{"href": "http://10.0.0.150:18774/*****UUID*****/flavors/*****UUID*****",
"rel": "bookmark"}]},
"id": "*****UUID*****",
"OS-SRV-USG:terminated_at": null,
"OS-EXT-AZ:availability_zone": " AZ_DEV1",
"user_id": "d2465d929509447ea45bcf84480a9e18",
"name": "carrier_grade", "created": "2016-09-25T17:48:11Z",
"tenant_id": "d40ac87d56d24686a226ba343e6b219b",
"OS-DCF:diskConfig": "MANUAL",
"os-extended-volumes:volumes_attached": [],
"accessIPv4": "",
"accessIPv6": "",
"fault": {"message": "Build of instance 7399850e-8d6b-429f-ad8e-354c32d95ca9 was re-scheduled: Insufficient compute resources: Requested instance NUMA topology cannot fit the given host NUMA topology.",
"code": 500, "details": " File \"./usr/lib64/python2.7/site-packages/nova/compute/manager.py\",
line 2328, in _do_build_and_run_instance\n File \"./usr/lib64/python2.7/site-packages/nova/compute/manager.py\",
line 2437, in _build_and_run_instance\n", "created": "2016-09-25T17:48:13Z"}, "OS-EXT-STS:task_state": null,
"OS-EXT-STS:power_state": 0,
"config_drive": "",
"metadata": {}}}

In this case the template that has been used is "VNFC-D-vm-CG-palette", this template correspond with a HCG Virtual machine, a Carrier Grade VM, when this type of machine is harvesting resources the HCG VMs will look in the resources for the exact amount of cores, depending on the value of the NUMA attribute the cores will be treated differently.

For a NUMA attribute with a "null" value, the assignation of resources will try to assign without any restriction, it will harvest the number of cores needed making no exception until the amount is reached, if the value of the NUMA attributes is "0" or "1", the assignation will try to assign from a specific set of servers, or only the servers of one type of architecture.

To avoid this error in the future will be enough by selecting as template for our components a standard Virtual Machine, "VNFC-D-vm-basic-palette", that has no limitation in its Cores in the moment of the resources assignation.

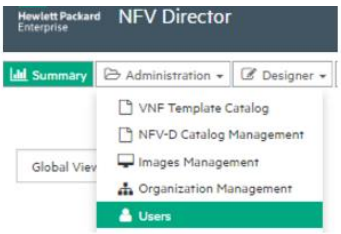
We recommend to use the standard VM template for your operations, even if you are using a HCG environment, the configuration needed for a HCG platform is not trivial.

2.6 Troubleshooting Auto-generated passwords.

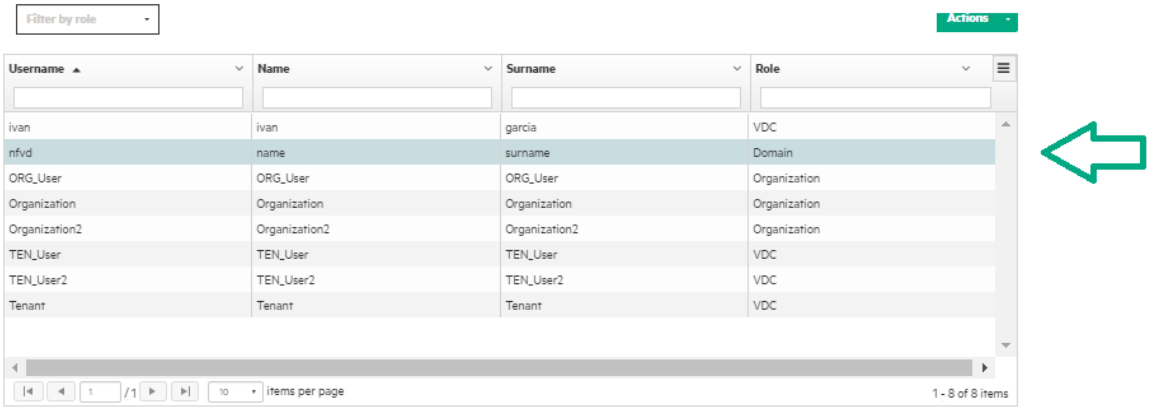
The passwords of the users created in the solution will be generated and sent it to the email given by the user during the creation of a new user, a user of a higher level can create users of lower levels, this could be a security issue, and we recommend the change of the user's password after the first login.

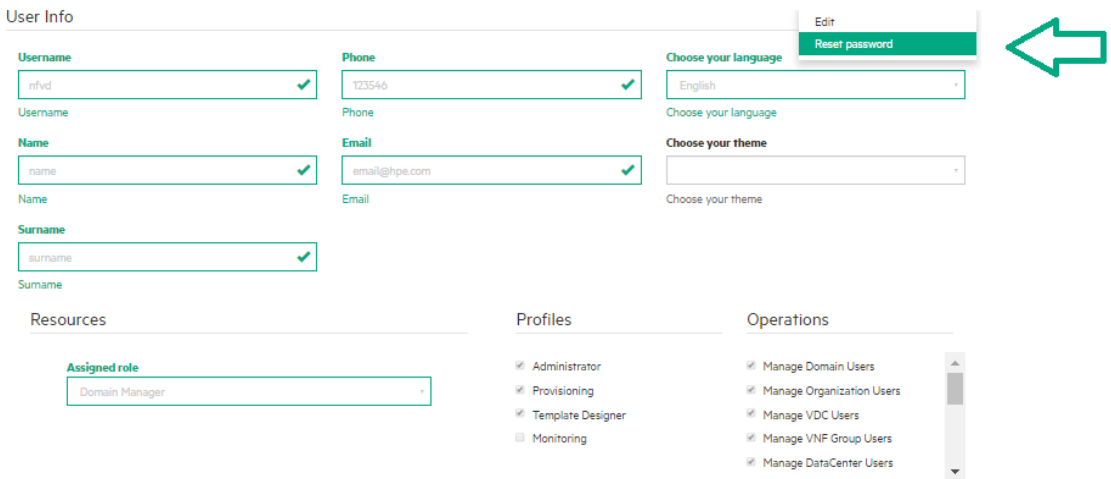
In order to change our user password in the solution we will follow the following steps.

We will left-click in the tab "Administration" of the NFV Director top menu, from the list that has been displayed, we will choose the option "Users", the section "Administration" is present in all levels and users, the limitation exists when we like to access to a higher element, user or component from a lower level.



Once we are in the "Users" menu, we will see to parts, the list of users and the User info, we will choose the user that we like to edit and we will left-click in the lower "Action" button , from the list displayed we will choose "Reset Password".





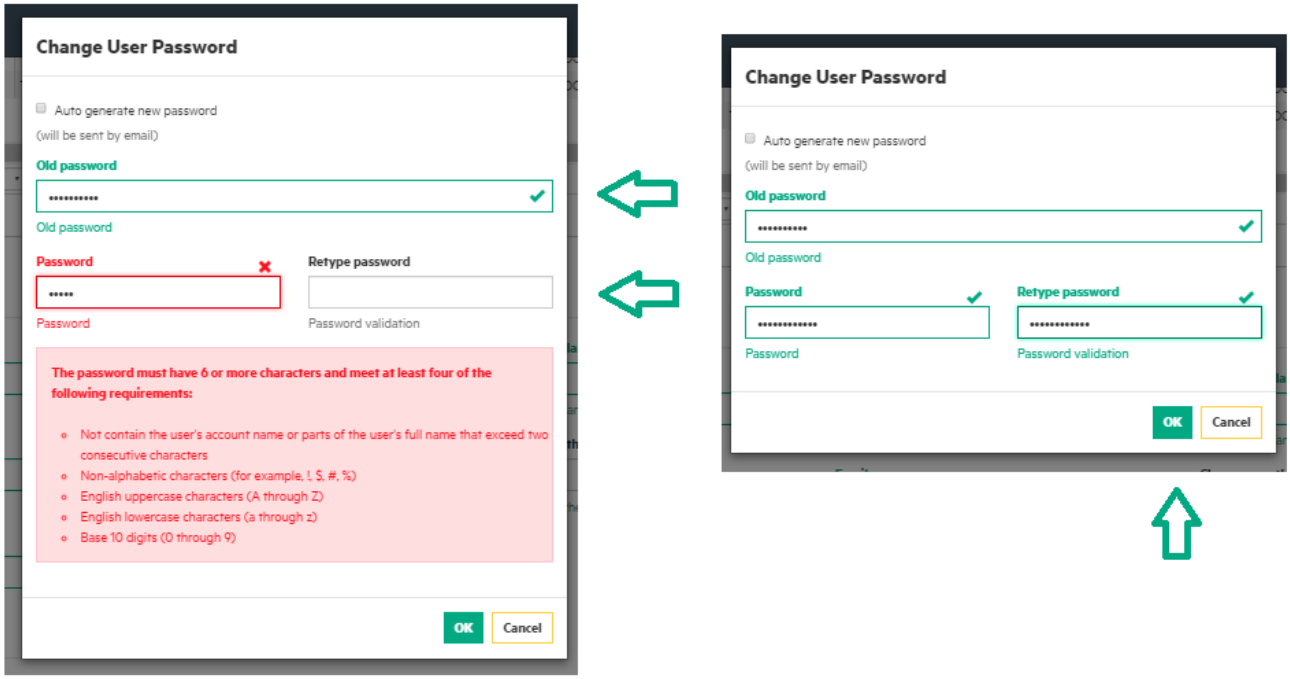
A new window will be displayed, in this window we can re-generate again the password, or change our password using the old one. Notice that the new password should fulfill certain requirements:

The password must have 6 or more characters and meet at least four of the following requirements:

- Not contain the user's account name or parts of the user's full name that exceed two consecutive characters.
- Non-alphabetic characters (for example, !, $, #, %).
- English uppercase characters (A through Z).
- English lowercase characters (a through z).
- Base 10 digits (0 through 9).

If we follow these rules and the old password matches with the user's old password, we will be able to change our password, once all the fileds are properly filled we will left-click in the "Ok" button, a new emerging window will confirm the change of the user's password.

The image above shows the process in the window "Change User Password".



Chapter 3 Discovery issues

Since resource discovery process has many phases, there can be few configuration issues during this process.

3.1 Best practices

1. Make sure all the required “Channel Adapters” are in deployed state in “NOM” container
    a. fulfillment-ca-10
    b. openstack-ca-10
    c. cmdb-ca-10 (In case OMi in integrated with NFVD)

```
# /opt/openmediation-70/bin/nom_admin --list-ip-in-container
DEPLOYED      fulfillment-ca-10
DEPLOYED      generic-snmp-ca-V20
DEPLOYED      nom-basic-smx-components
DEPLOYED      openstack-ca-10
DEPLOYED      smx-basic-components
DEPLOYED      snmp-customization-sitescope-V20
DEPLOYED      snmp-customization-vmware-V20
DEPLOYED      uca-autoconsole-ca-20
DEPLOYED      uca-ebc-ca-3.1
DEPLOYED      uca-hpsa-ca-20
```

2. Make sure to configure “Fulfillment” host details in “Fulfillment CA”

```
/var/opt/openmediation-70/ips/fulfillment-ca-10/etc/config/reconciliation-endpoints.properties
```

3. Make sure to Upload “Virtualized Infrastructure Manager” details by uploading VIM and AUTHENTICATION artifacts in NFVD Fulfillment

```
Check Discovery Guide for the following command:
/opt/HPE/nfvd/discovery/scripts/nfvd_createVIM.sh
```

4. Make sure Discovery is in “Enabled” state

```
Check Discovery Guide for following command:
/opt/HPE/nfvd/discovery/scripts/enable_discovery.sh
```

5. Make sure NFVD fulfillment and VIM are reachable from server where Discovery is running

```
Ping the fulfillment and the server where VIM is installed.
Open a browser from the server where discovery is running, and open the VIM URL (e.g. http://<VIM IP> or https://<VIM IP>)
```

6. Make sure the VIM user has “admin” privileges on VIM, which can access underlying resources information like Server, CPU, Memory details
7. Make sure you are using out of the box scripts for initiating discovery

```
Check Discovery Guide for discovery utilities.
```

3.2 Troubleshooting cases

Symptom	Possible cause	Possible Solution

Cannot trigger discovery Error message " Discovery" is disabled	Discovery may be disabled	Make sure discovery is in enabled state, by executing /opt/HPE/nfvd/discovery/scripts/enable_discovery.sh
Trigger discovery scripts fails	Channel adapters not deployed in NOM Container	Run /opt/openmediation-70/bin/nom_admin --list-ip-in-container 0 Make sure all discovery related CA like fulfillment-ca-10 , openstack-ca-10 , cmdb-ca 10(In case available) are in deployed state If not then deploy then using below commands Note: A CA must be INSTALLED and then DEPLPOYED nom_admin --install-ip-in-container 0 openstack-ca-10 nom_admin --deploy-ip-in-container 0 openstack-ca-10 nom_admin --install-ip-in-container 0 fulfillment-ca-10 nom_admin --deploy-ip-in-container 0 fulfillment-ca-10nom_admin --install-ip-in-container 0 cmdb-ca-10 nom_admin --deploy-ip-in-container 0 cmdb-ca-10 Note: Replace default NOM instance as per configuration
Discovery process fails with log message like "FF Health check failed"	Fulfillment IP address misconfiguration Fulfillment server down	Check if fulfillment IP and port are properly configured in /var/opt/openmediation-70/containers/instance-0/ips/fulfillment-ca-10/etc/config/reconciliation-endpoints.properties Check if Fulfillment Server and API are up and running

Discovery process stop with message like “Quota calculation is going on in fulfillment”	Quota calculation is going on in fulfillment post discovery process	Check the NFVD GUI summary page for updated quota. Also check the fulfillment logs, nfvd-stats.log, nfvd.log for the message “Finish discovering Datacenter” If error message appears in the log, modify entry in below file to make it 1. This resets the discovery status, so that next discovery run can be initiated if required. /var/opt/openmediation-70/containers/instance-0/ips/fulfillment-ca-10/etc/tmp/discovery-status-token.txt
Discovery fails with “Connection timeout” error	VIM credential may be incorrect Specified VIM user may not have sufficient privilege for resource queries	Check the details in AUTHENTICATION artifact loaded in FF via NFVD GUI
Post discovery data center artifact missing in FF	Data center with same name may exist in LDAP	Make sure your clean up the existing Datacenter entry from LDAP

Chapter 4 GUI issues

Symptom	**Possible cause**	**Possible Solution**
Unable to connect to UI	Couchdb is not started	check uoc logs on the VM $cd /opt/uoc2/logs $cat stderr.log Document database (protocol:http, host:127.0.0.1, port:5984) is not running. Start couchdb to resolve the problem $/opt/HPE/nfvd/bin/nfv-director.sh -c couchdb restart Apache CouchDB : [Stopped] Apache CouchDB : [Started]
Jboss starting issue	Ip address inconsistenc e	Check logs `15:54:05,233 ERROR [org.jboss.msc.service.fail] (MSC service thread 1-7) MSC000001: Failed to start service jboss.network.public: org.jboss.msc.service.StartException in service jboss.network.public: JBAS015810: failed to resolve interface public` The ip address given in the jboss launch command is not the private ip of the server where jboss is launched Djboss.bind.address="<nfvd_ui_private_ip>"

NFV-D UI Logging issue	Jboss ip_address missing or mismatching	Check logs
		`14:52:51,538 ERROR [org.picketlink.common] (http-/16.17.100.71:18080-2) Exception in processing request:: org.picketlink.common.exceptions.ProcessingException: org.picketlink.common.exceptions.fed.IssuerNotTrustedException: org.picketlink.common.exceptions.fed.IssuerNotTrustedException: Issuer not Trusted: <URL>`
		
		<ip_address> is not set in the jboss launch parameter -Didp.trust.domains
		
		15:02:20,222 ERROR [org.picketlink.common] (http-/16.17.100.71:18080-4) Exception in processing request:: org.picketlink.common.exceptions.ProcessingException: Invalid destination [http://<ip_address1>:18080/idp/]. Expected [http://<ip_address2>:18080/idp].
		
		<ip_address1> set in the jboss launch parameter -Didp.url does not match the one defined for saml entryPoint in the configuration file /var/opt/uoc2/server/public/conf/config.json
		
		and/or
		
		port defined in the configuration file /var/opt/uoc2/server/public/conf/config.json for saml entryPoint is not 18080
		
		"saml": {
		"idp": {
		"entryPoint": "http://<address_ip2>:**18080**/idp/",

NFV-D UI Logout issue	Issuer configuration issue	Logout does not come back to login page
		⇨ Issuer parameter in the “sp” section for “saml” configuration in the configuration file /var/opt/uoc2/server/public/conf/config.json is not set to the url of login page of the NFVD-UI server
		"saml": {
		"sp": {
		"issuer": "http://**<nfvd_ui_server_ip>**:**3000**/",
		"privateKey": "nodekey.pem"
		},
		⇨ IP Address defined in the url of the issuer parameter in the “sp” section for “saml” configuration in the configuration file /var/opt/uoc2/server/public/conf/config.json is not added to the trust domain parameter in the launch command for jboss
		• Jboss console log shows an error
		14:52:51,538 ERROR [org.picketlink.common] (http-/16.17.100.71:18080-2) Exception in processing request:: org.picketlink.common.exceptions.ProcessingException: org.picketlink.common.exceptions.fed.IssuerNotTrustedException: org.picketlink.common.exceptions.fed.IssuerNotTrustedException: Issuer not Trusted: http://<ip_address>:3000/
		"saml": {
		"sp": {
		"issuer": "http://**<nfvd_ui_server_ip>**:**3000**/",
		"privateKey": "nodekey.pem"
		},
		➢ -Didp.trust.domains=”localhost,hp, **<nfvd_ui_server_ip>**”

Chapter 5 Performance issues

Symptom	Possible cause	Possible Solution
SiteScope: Failed to acquire a permit within 5 MINUTES , for 20 Monitors in Parallel calls for start monitor calls	In Assurance's Standalone.xml, "max-pool-size" value of property "slsb-strict-max-pool" is set to 20.	In Assurance's Standalone.xml, look for the attribute "strict-max-pool" and set the "max-pool-size" of property "slsb-strict-max-pool" to 100. E.g. <strict-max-pool name="slsb-strict-max-pool" max-pool-size="100" … >

Chapter 6 Installation issues

6.1 Introducing Ansible

Automatic installation steps are performed through scripting using a framework tool named Ansible (http://docs.ansible.com/ansible/).

Typically, *nfvd-install.sh* scripts invokes in sequence commands like:

```
ansible-playbook -i /var/opt/HPE/nfvd/install/repo_ansible/hosts /var/opt/HPE/nfvd/install/repo_ansible/propagateInstaller.yml -vv
```

Where:

- The "yml" file describes a set of tasks to perform on target hosts.
- The '-i' option specifies path of target hosts file
- The '-vv' option defines the verbose level.

In order to troubleshoot scripts, the following options can be used:

- *--start-at-task="<TASK_NAME>"* : resumes installation at specific task

```
ansible-playbook -i /var/opt/HPE/nfvd/install/repo_ansible/hosts /var/opt/HPE/nfvd/install/repo_ansible/propagateInstaller.yml -vv --start-at-task="check if installed rpm"
```

- *–l <COMPONENT_NAME>[:<COMPONENT_NAME>]* : limits the execution of script at one or more components which are in file /var/opt/HPE/nfvd/install/repo_ansible/hosts. For example, following command runs the script on target FF and AA:

```
ansible-playbook -i /var/opt/HPE/nfvd/install/repo_ansible/hosts /var/opt/HPE/nfvd/install/repo_ansible/propagateInstaller.yml -vv -l FF:AA
```

6.2 Troubleshooting approach

In case of automatic installation failure, a red message is displayed, displaying the content of the log of the last step that was run by the nfvd-install.sh script.

At the end of this output you should find the command that failed (look for the 'fatal' keyword).

There are 3 kinds of log files:

- **/tmp/nfvd_install.log**: The full log of the last execution of nfvd-install.sh
- **/tmp/nfvd_install_last.log**: The log of the very last step executed by nfvd-install.sh
- **/tmp/nfvd_install.log.<xxxx>**: Logs of previous executions of nfvd-install.sh

Once the problem is fixed, you can re-launch the nfvd-install.sh script. If you choose to resume the installation, then it will skip all steps executed successfully and retry the last failing step.

6.3 List NFV Director packages

List the NFV D RPM packages by running the following command:

```
rpm -qa |grep nfvd
```

You can expect output in following form:

```
nfvd-assur-gw-tpp-<Version>.el6.noarch
nfvd-gui-auth-<Version>.noarch
nfvd-monitors-<Version>.el6.noarch
nfvd-alarms-omi-<Version>.el6.noarch
nfvd-correlation-<Version>..el6.noarch
nfvd-assur-gw-core-<Version>.el6.noarch
nfvd-discovery-cmdb-<Version>.el6.noarch
nfvd-fulfillment-<Version>.el6.noarch
nfvd-discovery-common-<Version>.el6.noarch
nfvd-assur-gw-base-<Version>.el6.noarch
nfvd-gui-<Version>.x86_64
```

If NFV D patches are installed, the output will also have the following form:

```
nfvd-assur-gw-core-patch-<Version>.el6.noarch
nfvd-discovery-common-patch-<Version>.el6.noarch
```

6.4 Verify NFV Director packages

NFV Director package details can be verified by running the following command:

```
for pkg in `rpm -qa | egrep '(nfvd|uoc)'`; do echo; echo "----------"; rpm -qi $pkg; echo; done
```

You can expect output in the following form for each package installed on the system:

```
**************************************
******** Dump RPM for <Package Name> *******
**************************************
Name        : <Package Name>                    Relocations: /
Version     : <Package Version>                 Vendor: Hewlett Packard Enterprise Company
Release     : 1.el6                             Build Date: <Package Build Date>
Install Date: <Package Install Date>            Build Host: <Build host>
Group       : Applications                      Source RPM: <Package RPM File Name>
Size        : <Package Size>                    License: Hewlett Packard Enterprise Development LP
Signature   : (none)
Packager    : Custom RPM Builder
Summary     : <Package Summary>
Description :
<Package Description>.
**************************************
```

6.5 Verify Assurance component configurations

On: <AA_HOST>

On <AA_HOST>, run the following tool to verify the various configurations of Assurance components.

1. Assurance status
2. JDBC jar availability
3. Assurance Gateway standalone.xml file validation
    1. Jar_file entry
    2. DB_connection
    3. Protocol validation
4. UCA for EBC Valuepacks status check
5. KPI REST Service check
6. Fulfillment reachability status

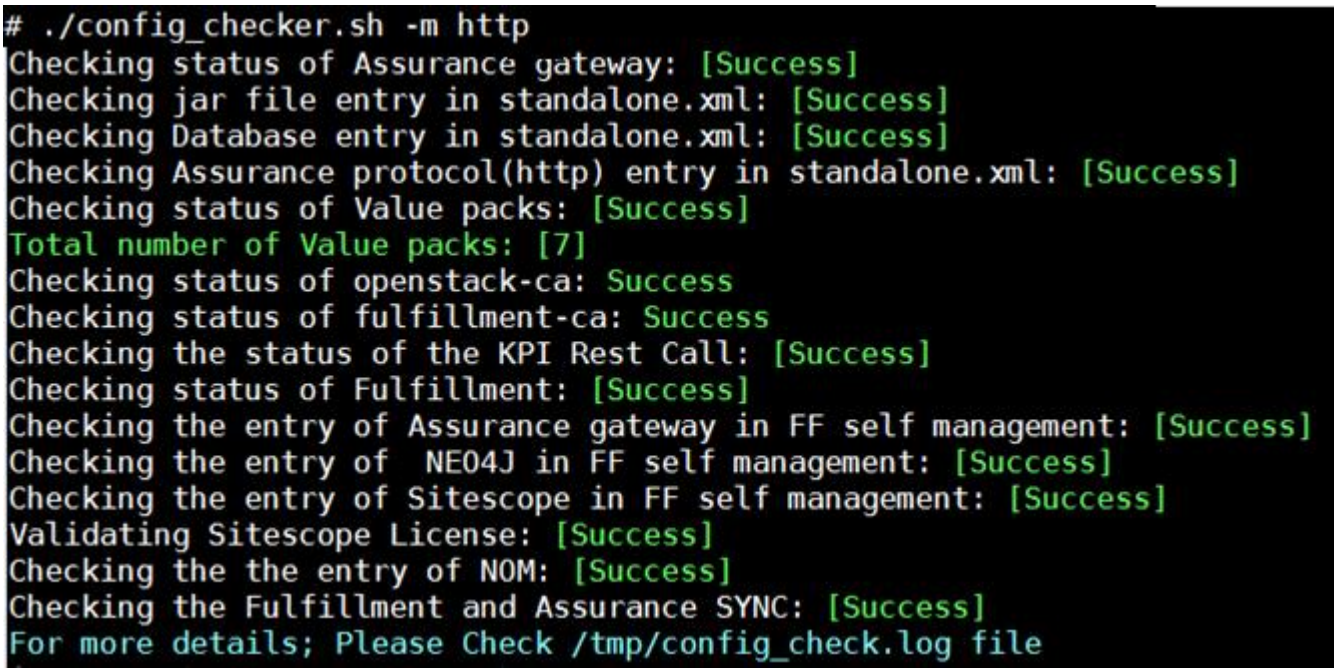
7. AA – FF Synchronization
   a. Checking Fulfilment logs
   b. VNF_COMPONENT Assurance
   c. VNF_COMPONENT Neo4j
   d. VNF_COMPONENT Site scope & Site scope license sync
   e. VNF_COMPONENT NOM

```
Login to GUI as a user with access permissions to the VNF:NFVD. Eg: a domain user/NFVD Admin user.
Access VNFC_<NFVD-EndPoint> and edit the required details
```

8. Open Mediation Openstack-ca, Fulfilment-ca status check
9. SiteScope license validation

/opt/HPE/nfvd/bin/config_checker.sh -m <Assurance_protocol _name>

E.g. /opt/HPE/nfvd/bin/config_checker.sh -m http



If there is a wrong configuration on certain component, same will be marked as 'Failure'.

Details of the tool log can be obtained from /tmp/config_check.log file.

```
# cat /tmp/config_check.log
Checking status of Assurance gateway: [Success]
Assurance_Gateway started
Checking jar file entry in standalone.xml: [Success]
Jar file under /opt/HPE/nfvd/tpp/jboss/standalone/deployments/ is matching with standalone.xml$ configuration
Checking Database entry in standalone.xml: [Success]
Created DB Connection successfully
Table ALARM exists in NFVALARM Schema
Checking Assurance protocol(http) entry in standalone.xml: [Success]
http entry configured in standalone.xml file is correct
Checking status of Value packs: [Success]
Total number of Value packs: [7]
Value pack: UCA_NFVD_ProblemDetection_Valuepack-4.1 [Running] All Scenarios are running. Flow is disabled.
Value pack: UCA_NFVD_StatePropagation-4.1 [Running] All Scenarios are running. Flow is disabled.
Value pack: UCA_Automation_Foundation_UCA-V1.2.1-1A [Running] All Scenarios are running. Flow is disabled.
Value pack: UCA_NFVD_Migration_Valuepack-4.1 [Running] All Scenarios are running. Flow is disabled.
Value pack: UCA_NFVD_PublishToNomBus-4.1 [Running] All Scenarios are running. Flow is disabled.
Value pack: UCA_NFVD_Evaluate_Valuepack-4.1 [Running] All Scenarios are running. Flow is disabled.
Value pack: UCA_NFVD_Persistence_Valuepack-4.1 [Running] All Scenarios are running. Flow is disabled.
Checking status of openstack-ca: [Success]
Checking status of fulfillment-ca: [Success]
Checking the status of the KPI Rest Call: [Success]
FF host(nfvd-ffui-analytics.gre.hpecorp.net) is reachable
Checking status of Fulfillment: [Success]
Checking the entry of Assurance gateway in FF self management: [Success]
Assurance IP/HOST(16.17.97.9)/PORT(18080) configured in VNF_COMPONENT:ASSURANCE_GATEWAY is correct
Checking the entry of  NEO4J in FF self management: [Success]
NEO4J URL http://16.17.97.9:7474/db/data configured in VNF_COMPONENT:NEO4J is reachable
Checking the entry of Sitescope in FF self management: [Success]
SIS URL(http://16.17.97.9:18888/SiteScope) configured in VNF_COMPONENT:SITESCOPE is reachable
Validating Sitescope License: [Success]
Sitescope license is valid
Checking the the entry of NOM: [Success]
NOM host(16.17.97.9) configured in VNF_COMPONENT:OPEN_MEDIATION is reachable
Checking the Fulfillment and Assurance SYNC: [Success]
Fulfillment & Assurance are in SYNC
```

Chapter 7 Troubleshooting topology

This section describes possible problems that occur when creating the topology.

7.1 Best practices

Make sure that the HP UCA EBC component is up and running by executing the following command on AA system:

```
# /opt/HPE/nfvd/bin/nfv-director.sh –c uca-ebc status
```

7.2 Troubleshooting cases

Symptom	Possible cause	Possible Solution
Error appears when creating a component.	Assurance gateway is down.	Check if the Assurance Gateway is up and running. Run the `/opt/HPE/nfvd/bin/nfv-director.sh status` command. You should get the following output `Assurance Gateway application server is running`.
	Could not create topology.	Check whether the configuration is correct in the `VNFC:Neo4J instance`. Verify the above by logging into the GUI. Check for errors in the `server.log`.
Cannot create relationship.	Parent component might not be available.	Check whether the child component already exists in the topology DB.
		If the problem persists and if you see a mismatch of data between fulfillment and topology, manually perform re-sync topology operation as mentioned in the `Synchronize NFVD Assurance and Fulfillment` section of the `Installation Guide`.
Delete component fails.	Component may not exist at topology.	Check if the desired component exists in topology.
Connection refused.	HP UCA-EBC configuration is missing.	Verify if the VNFC:UCA instance is properly configured Verify the above by logging into the GUI.

7.3 Browsing Neo4J DB for Topology (Cypher queries)

To check whether artifacts are present in the neo4j DB. Find the name or artifact ID of the artifact. Then execute the cypher.

e.g. Access Neo4J using a browser, then

1. Query using name as:

```
start n=node(*) where has(n.`GENERAL.Name`) and n.`GENERAL.Name`=
"<OME Name>" return n
```

2. Query using artifactId as:

```
start n=node(*) where has(n.artifactId) and artifactId= "<artifact
Id>" return n
```

NOTE: *neo4j has a standard interface for querying data.* *<vm_address>:7474/*

In case of alarms. Look for complete alarm details in `/var/opt/UCA-EBC/instances/default/logs/uca-ebc-collector.log` file. Find the Entity ID on which alarm is raised. Then same ID can be checked for availability in neo4j using cypher queries.

Chapter 8 Troubleshooting Assurance Server

8.1 In Assurance log, we get “No route to host”

Problem:

On Assurance startup, attempt is made to fetch the assurance gateway related artifacts from Fullfillement. In case Fullfillment is down, below error message is reported in Assurance logs:

```
15:56:36,428 ERROR [stderr] (Timer-3) java.net.NoRouteToHostException: No route to host
15:56:36,429 ERROR [stderr] (Timer-3)   at java.net.PlainSocketImpl.socketConnect(Native Method)
15:56:36,429 ERROR [stderr] (Timer-3)   at
java.net.AbstractPlainSocketImpl.doConnect(AbstractPlainSocketImpl.java:339)
15:56:36,430 ERROR [stderr] (Timer-3)   at
java.net.AbstractPlainSocketImpl.connectToAddress(AbstractPlainSocketImpl.java:200)
15:56:36,430 ERROR [stderr] (Timer-3)   at
java.net.AbstractPlainSocketImpl.connect(AbstractPlainSocketImpl.java:182)
15:56:36,431 ERROR [stderr] (Timer-3)   at java.net.SocksSocketImpl.connect(SocksSocketImpl.java:392)
15:56:36,431 ERROR [stderr] (Timer-3)   at java.net.Socket.connect(Socket.java:579)
```

Solution:

Check Fulfillment VM is up and running. Try to ping from the Assurance VM to Fulfillment VM and make sure the connection is fine. If not up, then rectify connectivity issue.

8.2 Assurance is not starting up

1. Verify entry of VNFC: ASSURANCE_GATEWAY

```
- Login to GUI as a user with access permissions to the VNF:NFVD. Eg: a domain user/NFVD Admin user.
- Access VNFC_<NFVD-EndPoint>, verify and edit the required details
```

2. Check availability of jdbc.jar in Assurance jboss deployment.

   (Path : /opt/HPE/nfvd/tpp/jboss/standalone/deployments)

3. nfvAlarm table is not present in Oracle DB.
4. If started in SSH mode, verify Keystore details in standalone.xml
5. Check the Fulfillment IP address configured in nfvd.properties

   (/var/opt/HPE/nfvd/conf/nfvd.properties)

Chapter 9 Troubleshooting monitor deployment

9.1 Best practices

- Make sure that the SiteScope component is up and running by executing the following on the SiteScope server:

```
# /opt/HPE/nfvd/bin/nfv-director.sh -c sitescope status
```

- For custom monitors, make sure that the actual template path is available in the SiteScope server.

9.2 Troubleshooting cases

Symptom	Possible cause	Possible solution
Cannot deploy monitor.	SiteScope is not running.	Check if SiteScope is active by running the following command: `/opt/HPE/nfvd/bin/nfv-director.sh status`. You should see the following message: `SiteScope is running`.
	Assurance gateway is down.	Check the status of Assurance Gateway by running the following script: `/opt/HPE/nfvd/bin/nfv-director.sh status` The output must contain `Assurance Gateway application server is running` along with the other components as mentioned in the `Installation Guide`.
	Incorrect sequence of ACTION.	During the deployment of a monitor follow this sequence: a. The component must be present at infrastructure. b. Deploy monitor action must be sent. c. Start monitor action must be sent.
	Incorrect SiteScope configuration.	Check if the SiteScope details like host, port, and user details are configured correctly in the VNFC:SiteScope Verify the above by logging into the GUI
		Check if the configured host is accessible via deployed server.

Monitor deployment failure due to certificate error.	Certificate is not configured properly.	1. Log in to SiteScope. 2. Select **Preferences context** > **Certificate Management**. 3. To add certificates, click the **Import Certificates** button. The **Import Certificates** dialog box opens. 4. Select **File** or **Host** and enter the details of the source server. 5. From the **Loaded Certificates** table, select the server certificates to import and click **Import**. The imported certificates are listed on the **Certificate Management** page. 6. To view certificate details, double-click a certificate. To view the **Certificate Management** page, you must be an administrator in SiteScope or a user granted with View certificates list permissions.
Cannot deploy monitor via vCenter	Cannot fetch real-time counter from respective VM via vCenter server.	Make sure that the real-time counters are available on respective VM.
Monitor deployment fails displaying the `RemoteException` message.	SiteScope is not reachable.	Make sure that the SiteScope server is reachable for the NFVD server.
Monitor deployment fails displaying the `No actual counter` error message.	Does not conform to proper KPI naming convention.	Refer to the KPIs and counters supported matrix for various hypervisors .

9.3 Various monitor states in Assurance

Lifecycle of a monitor:

DEPLOY >> STARTED >> STOPPED >> DELETED

Operation	Current State [Success]	Previous possible state/s	Next Possible State/s	On Error
DEPLOY	DEPLOYED	Not Available	STARTED, DELETED	Not Available
START	STARTED	DEPLOYED, STOPPED	STOPPED, DELETED	DEPLOYED
STOP	STOPPED	STOPPED	STARTED, DELETED	DEPLOYED
DELETE	Not Available	DEPLOYED, STARTED, STOPPED	Not Available	DEPLOYED

9.4 Getting Hypervisor name from nova show command

While Orchestrating a VM through Hypervisor, if monitor deployment fails on SiS with log printing the following information:

```
Mandatory Variables :isvCenter : false, user : admin, password : exists, vCenterIP : 10.85.84.51, VIM_NAME : Name, VIM_HOST :
openstack, VIM_USER : demotest, VIM_PASSWORD : exists, VIM_URL : http://10.85.50.62:5000/v2.0/tokens/, HYPERVISOR_NAME :
Devstack_HYPERVISOR, HYPERVISOR_HOST : 10.85.84.51, HYPERVISOR_USER : admin, HYPERVISOR_PASSWORD : exists,
HYPERVISOR_TYPE : KVM, tenantName : clearwater, VIRTUAL_MACHINE_NAME : Clearwater_test,
VIRTUAL_MACHINE_HYPERVISOR_HOSTNAME : null, VIRTUAL_MACHINE_HYPERVISOR_NAME : null,
VIRTUAL_MACHINE_HYPERVISOR_ID : 282bd621-43db-42b3-95be-05d58e17954d, VIRTUAL_MACHINE_VIM_ID : 282bd621-43db-42b3-
95be-05d58e17954d, frequency : 20, vm : null, host : null,
Threshold Variables :error_scenario : <<Virttop Management/Domains Information/null/Performance/%CPU>> > 10, warning_scenario :
<<Virttop Management/Domains Information/null/Performance/%CPU>> > 9999999999, good_scenario : <<Virttop
Management/Domains Information/null/Performance/%CPU>> < 0,
```

The reason for the failure is VIRTUAL_MACHINE_HYPERVISOR_NAME and VIRTUAL_MACHINE_HYPERVISOR_HOSTNAME are set to null.

Run the command: nova show <VIRTUAL_MACHINE_HYPERVISOR_ID> and see if it prints VIRTUAL_MACHINE_HYPERVISOR_NAME and VIRTUAL_MACHINE_HYPERVISOR_HOSTNAME

```
+------------------------------+----------------------------------------------------------+
| Property                     | Value                                                    |
+------------------------------+----------------------------------------------------------+
| OS-EXT-AZ:availability_zone | nova                                                      |
| OS-EXT-STS:power_state      | 1                                                         |
| OS-EXT-STS:task_state       | -                                                         |
| OS-EXT-STS:vm_state         | active                                                    |
| accessIPv4                  |                                                           |
| accessIPv6                  |                                                           |
| clearwater-network network  | 10.0.0.114                                                |
| config_drive                |                                                           |
| created                     | 2015-02-23T09:53:34Z                                      |
| flavor                      | m1.medium (3)                                             |
| hostId                      | d780927c4426a2f89ae9d369534909e78d5f0a08ff06cc8c8c03dab4 |
| id                          | 282bd621-43db-42b3-95be-05d58e17954d                      |
| image                       | Clearwater_D (7ffe9b74-fa05-4756-9d3a-af43595f5627)       |
| key_name                    | -                                                         |
| metadata                    | {}                                                        |
| name                        | Clearwater_test                                           |
| progress                    | 0                                                         |
| security_groups             | default, default                                          |
| status                      | ACTIVE                                                    |
| tenant_id                   | 24833bcee09e4164afca7057f678c1cd                          |
| updated                     | 2015-02-23T09:57:15Z                                      |
| user_id                     | d9507a79563e413c84df83619ab0c503                          |
+------------------------------+----------------------------------------------------------+
```

If not (since OS-EXT-SRV-ATTR are usually only visible to admins.), edit the file /etc/nova/policy.json and replace the following line

```
"compute_extension:extended_server_attributes": "rule:admin_api",
```

with

```
"compute_extension:extended_server_attributes": "",
```

Now the command will show:

```
+-------------------------------------+--------------------------------------------------------------+
| Property                            | Value                                                        |
+-------------------------------------+--------------------------------------------------------------+
| OS-EXT-AZ:availability_zone         | nova                                                         |
| OS-EXT-SRV-ATTR:host                | overcloud-ce-novacompute4-novacompute4-rki2bokayxse          |
| OS-EXT-SRV-ATTR:hypervisor_hostname | overcloud-ce-novacompute4-novacompute4-rki2bokayxse.novalocal |
| OS-EXT-SRV-ATTR:instance_name       | instance-00000b6d                                            |
| OS-EXT-STS:power_state              | 1                                                            |
| OS-EXT-STS:task_state               | -                                                            |
| OS-EXT-STS:vm_state                 | active                                                       |
| accessIPv4                          |                                                              |
| accessIPv6                          |                                                              |
| clearwater-network network          | 10.0.0.114                                                   |
| config_drive                        |                                                              |
| created                             | 2015-02-23T09:53:34Z                                         |
| flavor                              | m1.medium (3)                                                |
| hostId                              | d780927c4426a2f89ae9d369534909e78d5f0a08ff06cc8c8c03dab4     |
| id                                  | 282bd621-43db-42b3-95be-05d58e17954d                         |
| image                               | Clearwater_D (7ffe9b74-fa05-4756-9d3a-af43595f5627)          |
| key_name                            | -                                                            |
| metadata                            | {}                                                           |
| name                                | Clearwater_test                                              |
| progress                            | 0                                                            |
| security_groups                     | default, default                                             |
| status                              | ACTIVE                                                       |
| tenant_id                           | 24833bcee09e4164afca7057f678c1cd                             |
| updated                             | 2015-02-23T09:57:15Z                                         |
| user_id                             | d9507a79563e413c84df83619ab0c503                             |
+-------------------------------------+--------------------------------------------------------------+
```

Now the log output will be like this:

```
Mandatory Variables :isvCenter : false, user : admin, password : exists, vCenterIP : 10.85.84.51, VIM_NAME : Name, VIM_HOST :
openstack, VIM_USER : demotest, VIM_PASSWORD : exists, VIM_URL : http://10.85.50.62:5000/v2.0/tokens/, HYPERVISOR_NAME :
Devstack_HYPERVISOR, HYPERVISOR_HOST : 10.85.84.51, HYPERVISOR_USER : admin, HYPERVISOR_PASSWORD : exists,
HYPERVISOR_TYPE : KVM, tenantName : clearwater, VIRTUAL_MACHINE_NAME : Clearwater_test,
VIRTUAL_MACHINE_HYPERVISOR_HOSTNAME : overcloud-ce-novacompute3-novacompute3-agvu2g3jzz4z.novalocal,
VIRTUAL_MACHINE_HYPERVISOR_NAME : instance-00000baf, VIRTUAL_MACHINE_HYPERVISOR_ID : ecadd600-f264-4bd4-a875-
349f4b300e51, VIRTUAL_MACHINE_VIM_ID : ecadd600-f264-4bd4-a875-349f4b300e51, frequency : 20, vm : instance-00000baf, host :
overcloud-ce-novacompute3-novacompute3-agvu2g3jzz4z.novalocal,
Threshold Variables :error_scenario : <<Virttop Management/Domains Information/instance-00000baf/Performance/%CPU>> > 10,
warning_scenario : <<Virttop Management/Domains Information/instance-00000baf/Performance/%CPU>> > 9999999999,
good_scenario : <<Virttop Management/Domains Information/instance-00000baf/Performance/%CPU>> < 0,
```

Also ensure that SiS system /etc/hosts have entry for the Hypervisor Hostname in order to resolve the IP address.

9.5 SiteScope unable to resolve hostname for deploying monitor

Even when IP Address is given as VIRTUAL_MACHINE.HYPERVISOR_HOSTNAME, AGW sends hostname as input to the SiteScope to deploy the monitor. In case SiS is unable to resolve the hostname to an IP, since /etc/hosts does not have IP to host mapping, the monitor deployment fails. The workaround is to edit /etc/hosts to add IP address.

```
Mandatory Variables :isvCenter : false, user : admin, password : exists, URI : http://10.85.81.10:5000/v2.0/tokens/, HYPERVISOR_NAME
: Devstack_HYPERVISOR, HYPERVISOR_HOST : 10.85.81.10, HYPERVISOR_USER : stack, HYPERVISOR_PASSWORD : exists,
HYPERVISOR_TYPE : KVM, tenantName : admin, VIRTUAL_MACHINE_NAME : VM, VIRTUAL_MACHINE_HYPERVISOR_HOSTNAME :
openstack, VIRTUAL_MACHINE_HYPERVISOR_NAME : instance-00000011, VIRTUAL_MACHINE_HYPERVISOR_ID : 4a895d28-3d93-4058-
9a67-0a54efa1044e, VIRTUAL_MACHINE_VIM_ID : 4a895d28-3d93-4058-9a67-0a54efa1044e, frequency : 20, vm : 4a895d28-3d93-
4058-9a67-0a54efa1044e,
Threshold Variables :error_scenario : 0.2, warning_scenario : 9999999999, good_scenario : 0,
```

9.6 Renewing SiteScope license

If the existing SiteScope license has expired, follow the below process to apply a new license:

1. Import new SiteScope license

* Click on Preferences > General Preferences > Licenses.
* Click on the ‘Select …’ option for License file, point to the correct license, and click on 'Import’ button

2. Restart SiteScope

* Click on Preferences > Infrastructure Preferences
* Click on the ‘Restart SiteScope’ button

Chapter 10 Troubleshooting alarms

10.1 Best practices

- Make sure that the following components are up and running by executing the command:
  - UCA EBC

```
# /opt/HPE/nfvd/bin/nfv-director.sh –c uca-ebc status
```

  - OpenMediation

```
# /opt/HPE/nfvd/bin/nfv-director.sh –c openmediation status
```

  - Assurance Gateway

```
# /opt/HPE/nfvd/bin/nfv-director.sh –c nfvd-agw status
```

  - SiteScope

```
# /opt/HPE/nfvd/bin/nfv-director.sh –c sitescope status
```

10.2 Troubleshooting cases

Symptom	Possible cause	Possible Solution
Generating alarms fails.	Correlation engine is down.	Check if all the required components are up and running. Run the `/opt/HPE/nfvd/bin/nfv-director.sh status` command. For a list of components, refer to the *HP NFVD Install Guide*.
UCA-EBC is not generating alarms.	UCA-EBC details are not configured properly in the SiteScope.	Use the following procedure: 1. Check the reports in SiteScope. 2. Go to the **Preferences** in the SiteSope and check whether the UCA-EBC host and port are configured correctly. 3. Check if the same port is configured in the `/var/opt/openmediation-V70/containers/instance-0/ips/generic-snmp-ca-V20/etc/config.properties` file. 4. Enable the `collector.log` by setting the `collector.logger.enabled=true` in the `/var/opt/UCA-EBC/instances/default/conf/uca-ebc.properties` file. 5. Check the respective alarm information in the logs at `/var/opt/UCA-EBC/instances/default/logs /uca-ebc-collector.log` file.
		Restart the UCA-EBC. 1. Log in as `su –uca`. 2. Stop UCA-EBC by running the `/opt/UCA-EBC/bin/uca-ebc stop` command. 3. Start UCA-EBC by running the `/opt/UCA-EBC/bin/uca-ebc start` command.
Fails to take auto action on alarms.	Action registry is missing.	Check if the Action registry is properly configured in the `/var/opt/UCA-EBC/instances/default/conf/ActionRegistry.xml` file.
		Check if all value packs are up and running. For more details, refer to the *HP NFVD Install Guide*.

		1. Enable the logs for uca-ebc value packs. 2. Check if alarms related to topologies are present in the Neo4J DB. For more details, see Browsing Neo4J DB for Topology.
UCA-ACB is not processing alarms.	SNMP OID prefix-flag in the SiteScope.	In the SiteScope, the **Add System OID as a prefix to SNMP Trap** flag must be disabled using the following menu options: **Preferences** > **SNMP Preferences** > **Send SNMP Trap Preference** > **Advance Settings** > **SNMP Object**.

10.3 Alarm handling cases

10.3.1 Persistence Value Pack having issue handling OMi alarm

Problem:

In case, you come across the following exception in uca-ebc.log

```
Exception while initializing Action: Unacknowledgement Alarm [operation context .uca network
alarm_object 281]
com.hp.uca.mediation.action.exception.UcaActionInitializationException: Cannot find
actionReference :OMi_Action_localhost
        at com.hp.uca.mediation.action.client.Action.<init>(Action.java:251)
        at
com.hp.uca.expert.vp.pd.services.PD Service Action.unacknowledgeAlarm(PD Service Action.java
:424)
        at
com.hp.uca.expert.vp.pd.core.ProblemDefault.whatToDoWhenProblemAlarmIsNoMoreEligible(Problem
Default.java:2487)
        at
com.hp.uca.expert.vp.pd.core.PD Lifecycle.forAlarmRetraction(PD Lifecycle.java:348)
        at
com.hp.uca.expert.vp.pd.core.ProblemDetection.alarmRetractedManageLifecycle(ProblemDetection
.java:641)
```

Solution:

It is because of configuration issue; in ActionRegistry entry for OMi factory needs to be added as per OMi document

10.3.2 Alarm failing at UCA Automation layer

Problem:

On performing autonomous actions, alarms start failing in UCA Automation layer with below mentioned error:

```
[2016-04-29 08:42:33,316][INFO ][][1181144440@qtp-1220572878-
65][com.sun.xml.ws.transport.http.HttpAdapter][  19]Received WS-I BP non-conformant Unquoted
SoapAction HTTP header:
[2016-04-29 08:42:33,956][ERROR][][1181144440@qtp-1220572878-
65][com.hp.ucaautomation.action.framework.impl.ServiceActivatorAction][
92]ServiceActivatorAction IOException when starting Task
```

```
java.io.IOException: Server returned HTTP response code: 500 for URL:
http://10.3.235.46:12500/UCAAutomationConsoleService/UCAAutomationConsoleService
        at
sun.net.www.protocol.http.HttpURLConnection.getInputStream(HttpURLConnection.java:1626)
[2016-04-29 08:42:34,095][INFO ][][1181144440@qtp-1220572878-
65][com.hp.ucaautomation.shared.InjectResponse][ 244]Sent AVC message to UCA-EBC alarm topic
[2016-04-29 08:42:34,105][ERROR][UCA Automation Foundation UCA-V1.2.1-1A][T-Scenario-
UCA_Automation_Foundation_UCA.requestresponse][com.hp.ucaautomation.action.framework.service
.ActionService][ 331]Exception while executing console Actions [Initiate]:
java.io.IOException: Server returned HTTP response code: 500 for URL:
http://10.3.235.46:8090/UCA_Automation_Foundation_UCA-V1.2.1-1A-UCAAutomation/UCAService
        at
sun.net.www.protocol.http.HttpURLConnection.getInputStream(HttpURLConnection.java:1626)
```

For same issue error can be seen in servicemix logs. It will suggest memory of data file in SYSTEM table space is insufficient".

```
<soap:Envelope xmlns:ws="http://ws.activator.ov.hp.com/"
               xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/">
   <soap:Body>
      <soap:Fault>
         <faultcode>soap:Server</faultcode>
         <faultstring> Exception in Task processing Unrecognized response message or soap
error:
                                                    ( Envelope ( Body ( Fault ( faultcode:
soap:Server, faultstring: Error: Unable to store data in the database : ORA-01653: unable to
extend table NFV.DATABASE_MESSAGE by 128 in tablespace SYSTEM, detail ( WFConfigException:
) ) ) ) )</faultstring>
         <detail/>
      </soap:Fault>
   </soap:Body>
</soap:Envelope>
```

Solution:

Look for data file in path '/u01/app/oracle/oradata/XE' and check for the file associated with SYSTEM table space and run below command:

```
ALTER TABLESPACE SYSTEM ADD DATAFILE '/u01/app/oracle/oradata/XE/system.dbf' SIZE 1M
AUTOEXTEND ON MAXSIZE UNLIMITED;
```

NOTE: Similar errors can appear in HPSA server logs as well.

Observation is that if debug logs are added to bus-conector.xml in openmediation channel adapters traversal fails and this can even cause issues.

This issue can be caused even because of misconfiguration in uca-hpsa-ca /etc/config.properties file. File should contain proper configurations of HPSA (userId, password, ipAdress).

10.3.3 Event flow issue between AA and OMi hosts

Check the configuration of omi-ca properties in below mentioned file:

```
var/opt/openmediation-70/containers/instance-0/ips/omi-ca-10/etc/omi-nfvd.properties
```

Edit:

```
#OMI Webservice Endpoint to be configured.
omi.rest.endpoint=http://<machine_IP>:17870
```

Case1: Both Components are sitting on same machine.

```
Machine_IP = 0.0.0.0  (localhost or 127.0.0.1 not to be used)
```

Case2: Components are in distributed systems

```
Machine_IP = Remote machine IP
```

Chapter 11 Troubleshooting with logs

Various components have their respective log places under respective component directories. If problems are not addressed using troubleshooting cases sections, the user can collect and provide the respective logs for further debugging.

11.1 NFV D Assurance

Logs related to monitoring, components, and topology are available here.

1. Enable logs using the following command:

```
$JBOSS_HOME/standalone/configuration/logging.properties
```

2. Change the value of the `logger.level`.
   The possible values are the following:

   FINE
   WARN
   INFO
   DEBUG
   SEVERE
   ERROR

   Where, SEVERE and ERROR log levels are the same.

Logs are available at `$JBOSS_HOME/standalone/log/server.log`.

Assurance Gateway logger level can be changed by running the following script:

```
# cd /opt/HPE/nfvd/bin
# ./setAGWLogLevel.sh -l <FATAL|ERROR|SEVERE|FINEST|FINER|FINE|TRACE|CONFIG|DEBUG|WARN|INFO> [optionals]
 where optionals include:
  -h <ip-address | localhost>      localhost is default host.
  -p <port number>                 19999 is default port.
                                   Note: SEVERE level is internally ERROR level
```

Example: To turn logger level to INFO, run:

```
/opt/HPE/nfvd/bin/setAGWLogLevel.sh -l INFO
```

11.2 SiteScope

SiteScope related logs, such as the logs for monitoring deployment, KPI, and so on are available in the locations mentioned in this section.

Logs are available at the following locations:

```
/opt/HP/nfvd/tpp/jboss/standalone/configuration
```

```
/opt/HP/SiteScope/logs
```

11.3 UCA EBC

All alarm-related logs are available in the UCA-EBC logs.

To enable/disable logs, set the collector.logger.enabled=true in the /var/opt/UCA-EBC/instances/default/conf/uca-ebc.properties.

Logs are available at `/var/opt/UCA-EBC/instances/default/logs/uca-ebc-collector.log`.

11.4 NFV D Fulfillment

NFV Director Fulfillment logs are distributed in the following directories:

```
/opt/HP/jboss/standalone/log
/var/opt/OV/ServiceActivator/log/<hostname>
/opt/OV/ServiceActivator/EP/SOSA/log
/opt/OV/ServiceActivator/EP/LockManager/log
/opt/OV/ServiceActivator/EP/ECP/log
```

Chapter 12 General tips

- Firewall commands

```
service iptables [stop | start | status]
chkconfig iptables --list
```

- To increase the number of open files

```
cat /proc/sys/fs/file-max
# To increase max number of open files,
vi /etc/sysctl.conf
fs.file-max = 100000
```

- External Platform Unreachable while activating

```
* Check if all components are running
* Check if VIM/Hypervisor is reachable from SiS
```

- Unable to deploy monitor

```
* Check if VIM artifactFamily, Relationships, MONITOR Deployment.Type are appropriate
* Check if SiteScope has valid license
* From the SiS system, check if HYPERVISOR/VIM system are reachable by using hostname. If not, add /etc/hosts entry for the same
```

- UCA EBC collector is not receiving alarm

```
Check if UCA EBC CA is deployed
```

- Unable to open the SiteScope GUI - 'Applet failed to load; for details see Java Console'

```
Change the security settings for browser as explained in the link below
https://www.java.com/en/download/help/java_blocked.xml
```

- Ensure that Virt-Top is installed in the Compute nodes, for KVM based hypervisors. SiS uses counters provided by Virt-Top to fetch KPI details.
- Ensure IP connectivity to every resource (VIM, hypervisor). You may have to add entry in /etc/hosts for name resolution
- Flavors are not managed by NFVD and the flavors are expected to exist
- Images must be preexisting in the target infrastructure (VIM or Hypervisor)
- Tenant must be preexisting in the target infrastructure (VIM or Hypervisor)

Chapter 13 Verifying various product versions

13.1 Verify RHEL version

```
cat /etc/redhat-release
```

13.2 Verify NFVD Solution versions

```
# rpm -qa |grep nfvd
nfvd-assur-gw-base-<Version>.el6.noarch
nfvd-discovery-common-<Version>.el6.noarch
nfvd-alarms-omi-<Version>.el6.noarch
nfvd-discovery-cmdb-<Version>.el6.noarch
nfvd-assur-gw-core-<Version>.el6.noarch
nfvd-assur-gw-tpp-<Version>.el6.noarch
nfvd-fulfillment-<Version>.el6.noarch
uoc-nfvd-addon-<Version>.x86_64
nfvd-monitors-<Version>.el6.noarch
```

13.3 Verify UCA EBC versions

```
# /opt/UCA-EBC/bin/uca-ebc-inventory
-----------------------------------------------------

    UCA For Event Based Correlation

       Components Inventory

     on nfvdvm36 system

-----------------------------------------------------


Installed UCA-EBC components:

UCA-EBCCA          V3.1-00A              HP UCA EBC Channel Adapter Version V3.1 Level 00 Rev A
UCA-EBCSERVER      V3.1-00B              HP UCA EBC Server Version V3.1 Level 00 Rev B
UCA-EBCTOPO_Patch  V3.1-00001A           HP UCA EBC Topology features Patch V3.1 Level 00001 Rev A
UCA-EBCSERVER_Patch V3.1-00007A          HP UCA EBC Server Patch V3.1 Level 00007 Rev A
UCA-EBCTOPO        V3.1-00B              HP UCA EBC Topology features Version V3.1 Level 00 Rev B

Installed Mediation components:

ngossuca-hpsa-ca    2.0.0-RHEL5          HP CMS Open Mediation channel adapter for TeMIP Version 2.0.0
ngossopenmediation  7.0.0-RHEL5          HP CMS Open Mediation Version 7.0.0
ngossuca-autoconsole-ca 2.0.0-RHEL5      HP Open Mediation channel adapter for UCA Autoconsole Version 2.0.0

---------- END of UCA INVENTORY ----------
```

13.4 Verify UCA Automation versions

```
rpm -qa | grep -i 'ebcatm\|Automation'
EBCATM-12LIN-00003.noarch
UCA_Automation-V1.2-REV_A.noarch
```

13.5 Verify UCA EBC Value Packs

```
# /opt/UCA-EBC/bin/uca-ebc-admin -l
```

```
INFO  - Running Java HotSpot(TM) 64-Bit Server VM Version 1.7.0_71 (from Java(TM) SE Runtime Environment, Oracle Corporation)
INFO  - Logging to org.slf4j.impl.Log4jLoggerAdapter(org.mortbay.log) via org.mortbay.log.Slf4jLog
INFO  -
===========================================
===========================================
======= Value Pack : name=UCA_NFVD_ProblemDetection_Valuepack , version=4.1 , status=Running
-------------------------------------------
------- Scenario: com.hp.uca.expert.vp.pd.ProblemDetection
Rule File: file:./deploy/UCA_NFVD_ProblemDetection_Valuepack-4.1/pd/ProblemDetection_Rules.pkg
===========================================
===========================================
======= Value Pack : name=UCA_NFVD_StatePropagation , version=4.1 , status=Running
-------------------------------------------
------- Scenario: UCA_NFVD_StatePropagation.StatePropagationScenario
Rule File: file:./deploy/UCA_NFVD_StatePropagation-4.1/StatePropagationScenario/rules.drl
===========================================
===========================================
======= Value Pack : name=UCA_NFVD_Migration_Valuepack , version=4.1 , status=Running
-------------------------------------------
------- Scenario: UCA_NFVD_Migration_Valuepack.migration
Rule File: file:./deploy/UCA_NFVD_Migration_Valuepack-4.1/migration/rules.drl
===========================================
===========================================
======= Value Pack : name=UCA_NFVD_PublishToNomBus , version=4.1 , status=Running
-------------------------------------------
------- Scenario: UCA_NFVD_PublishToNomBus.publishToNomBus
Rule File: file:./deploy/UCA_NFVD_PublishToNomBus-4.1/publishToNomBus/rules.drl
===========================================
===========================================
======= Value Pack : name=UCA_Automation_Foundation_UCA , version=V1.2.1-1A , status=Running
-------------------------------------------
------- Scenario: UCA_Automation_Foundation_UCA.requestresponse
Rule File: file:./deploy/UCA_Automation_Foundation_UCA-V1.2.1-1A/requestresponse/request_response.drl
===========================================
===========================================
======= Value Pack : name=UCA_NFVD_Evaluate_Valuepack , version=4.1 , status=Running
-------------------------------------------
------- Scenario: UCA_NFVD_Evaluate_Valuepack.NfvdEvaluateScenario
Rule File: file:./deploy/UCA_NFVD_Evaluate_Valuepack-4.1/NfvdEvaluateScenario/rules.drl
===========================================
===========================================
======= Value Pack : name=UCA_NFVD_Persistence_Valuepack , version=4.1 , status=Running
-------------------------------------------
------- Scenario: com.hp.uca.expert.vp.pd.ProblemDetection
Rule File: file:./deploy/UCA_NFVD_Persistence_Valuepack-4.1/pd/ProblemDetection_Rules.pkg
===========================================
===========================================
======= Value Pack : name=UCA_NFVD_Migration_Valuepack , version=4.1.1 , status=NotDeployed
======= Value Pack : name=UCA_NFVD_ProblemDetection_Valuepack , version=4.1.1 , status=NotDeployed
======= Value Pack : name=UCA_NFVD_StatePropagation , version=4.1.1 , status=NotDeployed
======= Value Pack : name=UCA_NFVD_Evaluate_Valuepack , version=4.1.1 , status=NotDeployed
======= Value Pack : name=UCA_NFVD_Persistence_Valuepack , version=4.1.1 , status=NotDeployed
======= Value Pack : name=UCA_NFVD_PublishToNomBus , version=4.1.1 , status=NotDeployed
===========================================
```

13.6 Verify Open Mediation version

```
# rpm -qa |grep openmediation
ngossopenmediation-7.0.0-RHEL5.noarch
```

13.7 Verify Open Mediation Channel Adapters

```
# /opt/openmediation-70/bin/nom_admin --list-ip-in-container
DEPLOYED       cmdb-ca-10
DEPLOYED       fulfillment-ca-10
```

```
DEPLOYED      generic-snmp-ca-V20
DEPLOYED      nom-basic-smx-components
INSTALLED IN INSTANCE   omi-ca-10
DEPLOYED      openstack-ca-10
DEPLOYED      smx-basic-components
DEPLOYED      snmp-customization-sitescope-V20
DEPLOYED      snmp-customization-vmware-V20
DEPLOYED      uca-autoconsole-ca-20
DEPLOYED      uca-ebc-ca-3.1
DEPLOYED      uca-hpsa-ca-20
```

13.8 Verify HP Service Activator version

```
# cat /etc/opt/OV/ServiceActivator/config/version.cnf
V62-1A
```

13.9 Verify HP Service Activator patch version

```
# cat /etc/opt/OV/ServiceActivator/config/version_hotfix.cnf
V62-1A-5
```

13.10 Verify SiteScope version

```
# rpm -qa |grep SiteScope
SiteScopeOATools-11.30.330-1.x86_64
SiteScopeMain1-11.20.000-1.i386
SiteScope-11.30.461-1.x86_64
SiteScope3-11.30.461-1.x86_64
SiteScopeJRE64-11.30.111-1.x86_64
SiteScope1-11.30.461-1.x86_64
SiteScope4-11.30.461-1.x86_64
SiteScopeInstall-11.30.461-1.x86_64
SiteScopeImages-11.30.111-1.x86_64
SiteScopeOLH-11.30.311-1.x86_64
SiteScopeJRE-11.24.061-1.i386
SiteScope2-11.30.461-1.x86_64
```

13.11 Verify UOC version

```
# rpm -qa |grep uoc
uoc-addon-ossa-1.1.0-MP.x86_64
uoc-2.2.9-MP.x86_64
uoc-nfvd-addon-4.0.0-GA.x86_64
```

Chapter 14 Contacting customer support

If problems persist even after going through all troubleshooting cases, collect the logs as mentioned in the troubleshooting sections and contact the customer care.

Data of interest for troubleshooting include:

1. VNF Templates – download from UI
2. Artifact instances – download from UI
3. Definitions – download from UI
4. Logs of all the components
5. Configuration files
6. NFVD network system/ Deployment Architecture
7. Database details
8. All details of any custom modifications