

## **HPE Operations Bridge Reporter**

Software Version: 10.00

Windows® and Linux operating systems

High Availability Guide

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## **Chapter 1: Introduction**

This guide provides instructions on how to configure HPE OBR in a high availability environment using the cluster software. Configuring HPE Operations Bridge Reporter in high availability environment improves its availability when used as a mission critical application.

**Note:** Ensure that the cluster software is installed and configured on the systems before you begin installing HPE Operations Bridge Reporter in a High Availability (HA) environment. HPE Software Support does not provide any assistance in installing and configuring the cluster software.

See HPE Operations Bridge Reporter Support Matrix for a list of cluster software programs supported by HPE Operations Bridge Reporter.

## HPE Operations Bridge Reporter in High Availability Environment

This guide covers the configuration of a two-node cluster using a shared disk with HPE Operations Bridge Reporter installed on both the clusters. However, this setup can be implemented using multiple nodes.

Figure 1 shows the HPE Operations Bridge Reporter configuration in a high availability setup.

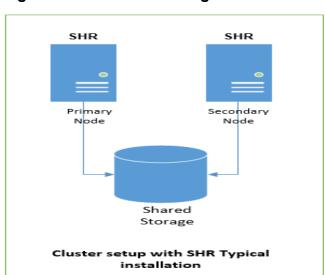


Figure 1: SHR in HA Configuration

## As shown in figure 1:

- Install HPE Operations Bridge Reporter on both the nodes of the cluster. See HPE
   Operations Bridge Reporter Interactive Installation Guide for more information.
   One node acts as a primary (active) node, and the other acts as a secondary
   (passive) node. HPE OBR installation is supported in an active-passive setup of
   nodes only.
- 2. Configure a shared storage for both the nodes.

**Note:** For all system and storage requirements information see the *HPE Operations* Bridge Reporter Performance, Sizing, and Tuning Guide.

## **Chapter 2: Getting Started**

The primary requirement for cluster implementation is that in case of a fail-over, all the designated processes are initiated seamlessly on the secondary (fail-over) node.

You must ensure that the following requirements are met before moving ahead:

## Hostname and IP Address

For a simple system failover implementation, there must be two or more servers that are each capable of hosting a unique "floating" hostname and associated IP address (wherever applicable) that are not associated with a physical node (that is a "logical" hostname and IP address).

Only one of the failover nodes hosts this name and IP address at any given time. During a system failover, the hostname and IP is "transferred" from the failed server to the failover node. The applications, however, will always access the same hostname and IP.

HPE Operations Bridge Reporter stores the values of hostname and IP during installation for use at run time.

Register only the public IP address of HPE OBR in DNS.

## Licensing

Type the Logical IP address to generate the license for the High Availability environment. For information on licensing in High Availability environment, see HPE Operations Bridge Reporter *Configuration Guide*.

## **Setting Failover Nodes**

To set failover machines, follow these steps:

1. In a two-node cluster, set one system to function as the primary node and one system to function as secondary node and install the cluster software on both.

Ensure that both the primary and secondary nodes have similar system resources.

This is because when you install the database and HPE Operations Bridge Reporter; the database tuning parameters are set based on the system resources available on the machine on which it is installed. In case there is a failover and the secondary node has significantly less resources than the primary node, the parameters used to initialize and tune the database might not only be sub-optimal, but could also prevent the database from being started.

- 2. Set up a shared storage.
- 3. Ensure that the cluster software is running. To verify, run the following command on both the nodes:

hastatus -sum

## Verifying System Resources and Node Patch Levels

Verify that each failover node has similar resources (for example, RAM, swap) and patch levels for the operating system before installing HPE Operations Bridge Reporter.

## Synchronizing System Clocks

HPE Operations Bridge Reporter has many time-dependent and time-critical processes. Therefore, it is important that each node in the cluster uses the same source for time synchronization to keep data collection, aggregation, reporting, and logging correct and consistent.

Ensure that both the primary and secondary nodes have the same system time.

## **Cluster Environment Agents**

The cluster environment uses "agents" for monitoring the status and health of various resources, bringing them online and shutting them down in normal and emergency situations. It includes the agents required to handle common resources such as:

- Network Interface Cards
- IP addresses
- Physical Disk drives
- Logical Disk drives

- Ensure that nslookup with the hostname and with IP address should give the same output. Both the cases should display the same hostname and IP address.
- Ensure that the shared disk space is sufficient for installing HPE Operations Bridge Reporter components.
- For all system requirements and configuration information, see the HPE Operations Bridge Reporter Interactive Installation Guide.

# Chapter 3: Installing HPE Operations Bridge Reporter on Cluster Setup

Before configuring HPE Operations Bridge Reporter on cluster setup, ensure that all the nodes in the cluster can access the shared storage for HPE Operations Bridge Reporter through the Cluster software Admin Console.

**Note:** Install HPE Operations Bridge Reporter on the primary node first and then on the secondary node. Avoid parallel installations.

## SAP BusinessObjects

This section of the guide helps you to install and configure SAP BusinessObjects in a high availability environment.

## For Windows

Follow these steps to install and configure SAP BusinessObjects in high availability environment:

#### Terminologies used:

BO Server1 – SAP BusinessObjects Installed.

BO Server2 – Cluster Node.

Common File Server - Cluster Node.

#### **Prerequisites:**

- 1. Install HPE OBR as a domain account user. For steps to install HPE OBR, see HPE Operations Bridge Reporter Interactive Installation Guide.
- 2. To share *BO File store* files on a common server, a file server access is required along with Domain account user.
- 3. The same domain account user must have access and same privileges on the three servers BO Server1, BO Server2 and Common File Server.
- Add Host details of BO Server2 and File Server on BO Server1 in \*\etc\hosts files.
- 5. Add Host details of BO Server1 and File Server on BO Server2 in \*\etc\hosts

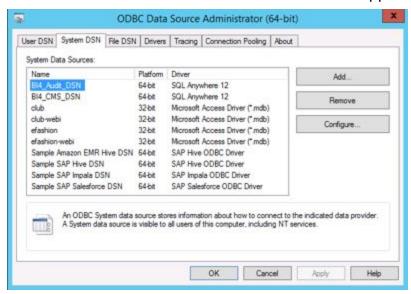
files.

- Add Host details of BO Server1 and Server2 on Common File Server in \*\etc\hosts files.
- 7. Change the SQLAnywhere Database Password on BO Server1 and BO Server2. Ensure that you give the same password on both servers SQLAnywhere Database. For steps to change the SQLAnywhere Database Password, see *Changing Default Passwords* chapter in *HPE Operations Bridge Reporter Administration Guide*.

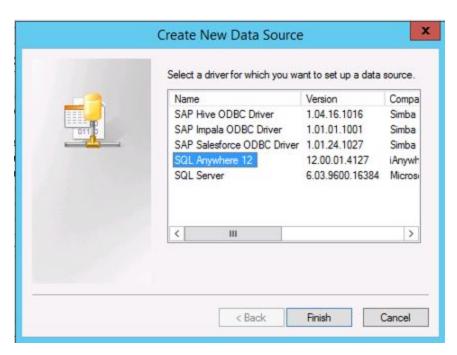
## Configuring SAP BusinessObjects in high availability environment

To create BI4\_Audit\_DSN\_<Server1NAME> connection under ODBC Data Source Administrator (64-Bit) pointing to BO Server1 SQLAnywhere Database on BO Server2, follow these steps:

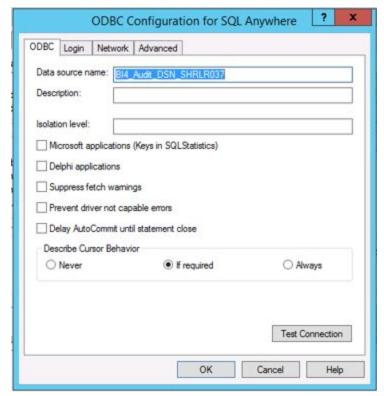
- 1. From the start menu, double-click on ODBC Data Source Administrator (64-bit).
- 2. Select the **System DSN** tab.
- 3. Click **Add**. The Create New Data Source window appears.



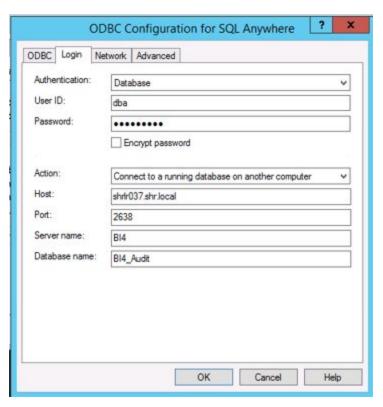
4. Select SQL Anywhere 12 and click Finish.



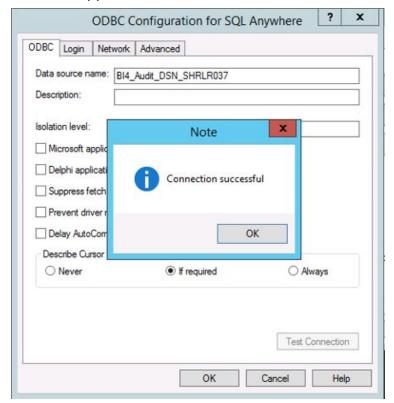
5. Enter Data Source name as BI4\_Audit\_DSN\_<Server1NAME>.



6. Click **Login** tab, type the details as shown in the following image. You must type the changed SQLAnywhere Database Password. In the Host filed, type the Serverhost name.

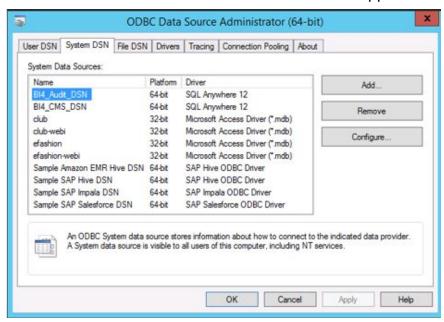


7. Click **ODBC** tab. Click **Test Connection** to verify the connection. The note appears. Click **OK**.

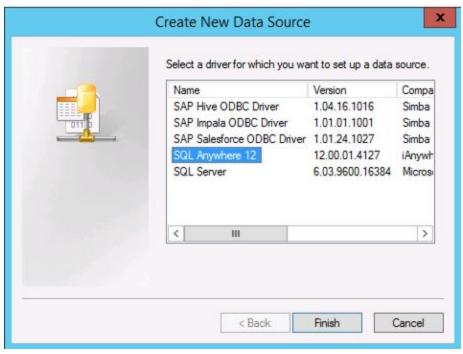


To create BI4\_CMS\_DSN\_<Server1NAME> connection under ODBC Data Source Administrator (64-Bit) pointing to BO Server1 SQLAnywhere Database on BO Server2, follow these steps:

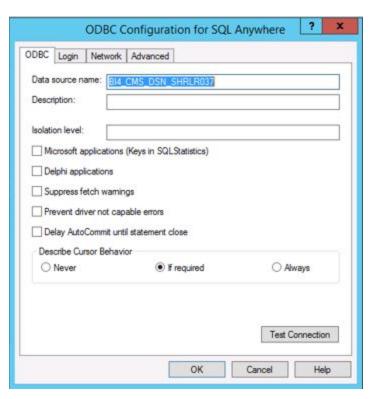
- 1. From the start menu, double-click on ODBC Data Source Administrator (64-bit).
- 2. Select the **System DSN** tab.
- 3. Click Add. The Create New Data Source window appears.



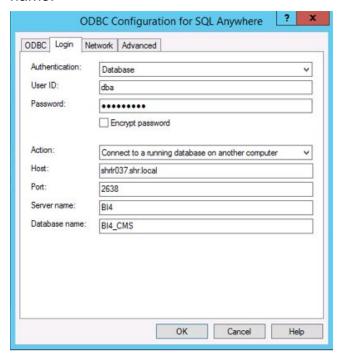
4. Select **SQL Anywhere 12** and click **Finish**.



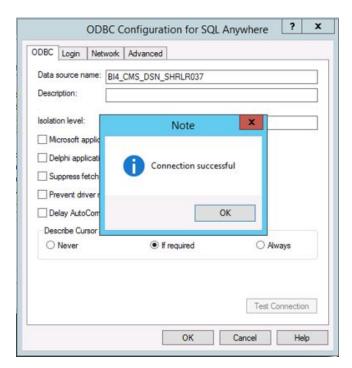
5. Enter Data Source Name as BI4\_CMS\_DSN\_<Server1NAME>.



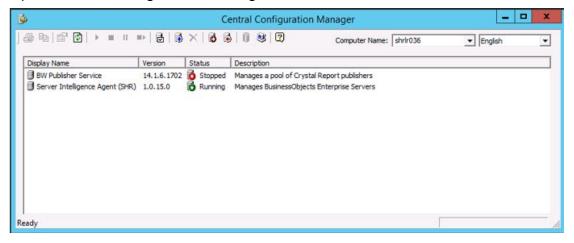
6. Click **Login** tab, type the details as shown in the following image. You must type the changed SQLAnywhere Database Password. In the Host filed, type the Serverhost name.



7. Click **ODBC** tab. Click **Test Connection** to verify the connection. The note appears, click **OK**.



8. In the start menu on BO Server2, type Central Configuration Manager in search. Open Central Configuration Manager.



- 9. Click Add Node icon on the top ...
- 10. Click **Next**. The Add Node Wizard appears.
- 11. Type as follows:
  - a. Node Name: <SIA unique name>.

Example: Server1Name\_HA

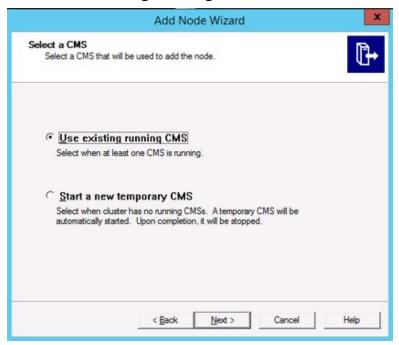
b. SIA Port: 7410

c. Select Add node with default servers

Click Next.

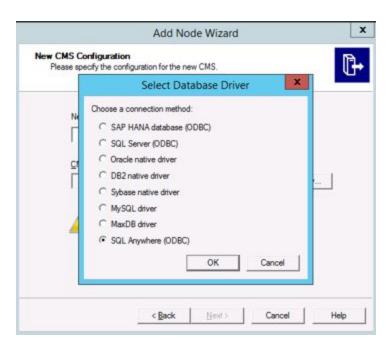


12. Select Use existing running CMS and click Next.

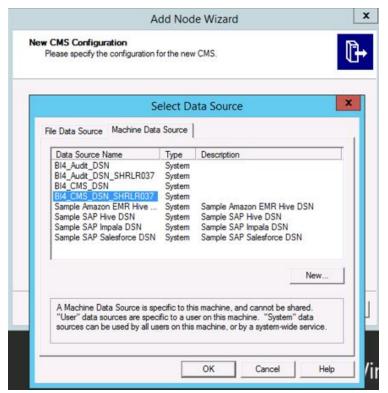


- 13. Follow these steps:
  - a. New CMS Port: 7400
  - b. Click **Specify**. The Select Database Driver appears.
  - c. Select SQL Anywhere (ODBC).

Click **OK**. The Select Data Source window appears.

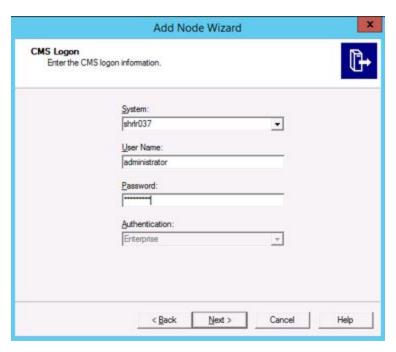


14. In the Machine Data Source tab, select the new Data Source Name and click OK.

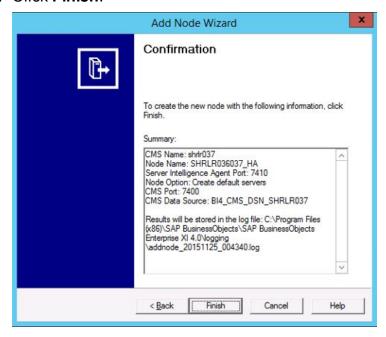


- 15. Type the Cluster Key as 1ShrAdmin and then click on Next.
- 16. In the Add Node Wizard for CMS Logon, type as follows:
  - a. User Name: administrator
  - b. Password: <CMS password>

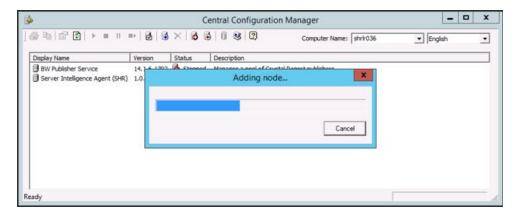
Click Next.



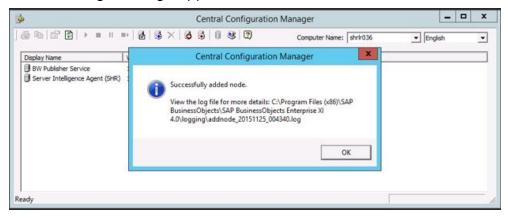
#### 17. Click Finish.



The SAP BusinessObjects Cluster will be in progress as shown in the following image:



18. The following message appears on successful addition of the node:



19. Copy the BO Server1 File Store directory from the following path to a shared drive location where Domain Account user of BO Server1 and BO Server2 has access to it:

<BOE\_Drive>:\Program Files (x86)\SAP BusinessObjects\SAP
BusinessObjects Enterprise XI 4.0\FileStore

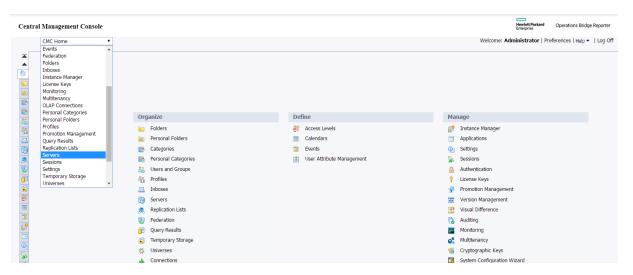
20. After copying the File Store to shared drive, map the shared drive on both BO Server1 and BO Server2 with the same Drive letter.

Ensure that File Store is accessible by both servers seamlessly.

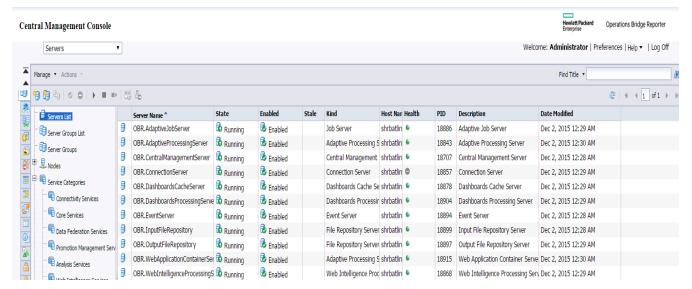
21. Log on to BO Server1 CMC page using the link: https://<Server1\_ Name>:8443/BOE/CMC

Note: For http use the link http://<Server1\_Name>:8080/BOE/CMC

22. From the drop-down list select Servers.



23. Select Servers List from the left pane.



- 24. Select the InputFileRepository and right-click on Properties.
- 25. Now copy the path of Input File Store Share Drive.

For example: If the shared drive letter given as E:\ on both BO Server1 and BO Server2 then the path will be E:\FileStore\Input & E:\FileStore\Input\temp



- 26. Click on Save and Close.
- 27. Select the OutputFileRepository and right-click on Properties.
- 28. Copy the path of Output File Store Share Drive.
- 29. Click on Save and Close.

Above mentioned path changes steps need to be done for all Input & Output File Repository Servers.

- 30. From the services window, stop the SQL Anywhere Database Service on BO Server1.
- 31. Copy the SQLAnywhere Database files from the following path on BO Server1 to the Share drive into a different directory:

```
<BOE_Install Drive>:\Program Files (x86)\SAP
BusinessObjects\sqlanywhere\database
```

- 32. After copying, rename the <BOE\_Install Drive>:\Program Files (x86)\SAP
   BusinessObjects\sqlanywhere\database to <BOE\_Install
   Drive>:\Program Files (x86)\SAP
   BusinessObjects\sqlanywhere\database\_backup
- 33. Run the following command to create a link to the database files on shared file location from the default location on BO Server1.

```
mklink /d <BOE_Install Drive>:\Program Files (x86)\SAP BusinessObjects\sqlanywhere\database <Shared Drive>:\database The Shared SQLAnywhere database files will be accessible on BO Server2 also as the drive is already mapped.
```

- 34. From the services window, stop the SQL Anywhere Database Service on BO Server2.
- 35. On BO Server2, rename the <BOE\_Install Drive>:\Program Files (x86) \SAP BusinessObjects\sqlanywhere\database to <BOE\_Install Drive>:\Program Files (x86)\SAP BusinessObjects\sqlanywhere\database backup
- 36. Create a link to the database files on shared file location from the default location on BO Server2.

```
mklink /d <BOE_Install Drive>:\Program Files (x86)\SAP
BusinessObjects\sqlanywhere\database <Shared Drive>:\database
```

37. From the services window, start the SQL Anywhere Database Service on BO Server1 and BO Server2.

## **Linux - SAP BOE 4.1 Clustering**

Follow these steps to install and configure SAP BusinessObjects in high availability environment:

### Terminologies used:

BO Server1 – SAP BusinessObjects Installed.

BO Server2 - Cluster Node.

Common File Server - Cluster Node.

### Prerequisites:

- 1. To share BO File store files on a common Server, a file server access is required where the drive can be mounted using NFS.
- 2. Add a Host details of BO Server2 and File Server on BO Server1 in /etc/hosts files
- 3. Add a Host details of BO Server1 and File Server on BO Server2 in /etc/hosts files.
- 4. Add Host details of BO Server1 and Server2 on Common File Server in /etc/hosts files.
- 5. Change the SQLAnywhere Database Password on BO Server1 and BO Server2. Ensure that you give the same password on both servers SQLAnywhere Database. For steps to change the SQLAnywhere Database Password, see *Changing Default Passwords* chapter in *HPE Operations Bridge Reporter Administration Guide*.

## Configuring SAP BusinessObjects in high availability environment

 On BO Server1, copy ODBC Data sources information from /opt/HP/BSM/B0E4/sap\_bobj/enterprise\_xi40/odbc.ini

```
BI4_CMS_DSN_1444387736=SQLAnywhere 12.0
BI4_Audit_DSN_1444387736]
UID=dba
DatabaseName=BI4_CMS
ServerName=BI4_1444387736
Host=localhost:2638
Driver=/opt/HP/BSM/B0E4/sqlanywhere/lib64/libdbodbc12.so

[BI4_Audit_DSN_1444387736]
UID=dba
DatabaseName=BI4_Audit
ServerName=BI4_1444387736
Host=localhost:2638
Driver=/opt/HP/BSM/B0E4/sqlanywhere/lib64/libdbodbc12.so
```

2. Type the BO Server1 Name in the Host as shown in the following image:

```
[BI4_CMS_DSN_1444387736]
UID=dba
DatabaseName=BI4_CMS
ServerName=BI4_1444387736
Host=shrdev9.ind.hp.com:2638
Driver=/opt/HP/BSM/BOE4/sqlanywhere/lib64/libdbodbc12.so

[BI4_Audit_DSN_1444387736]
UID=dba
DatabaseName=BI4_Audit
ServerName=BI4_1444387736
Host=shrdev9.ind.hp.com:2638
Driver=/opt/HP/BSM/BOE4/sqlanywhere/lib64/libdbodbc12.so
```

3. Type the BO Server1 ODBC Data source information to BO Server2 in the following path:

/opt/HP/BSM/B0E4/sap\_bobj/enterprise\_xi40/odbc.ini

```
ODBC Data Sources]
BI4_CMS_DSN_1444387756=SQLAnywhere 12.0
BI4_Audit DSN_1444207755-SQLAnywhere 12.0
BI4_CMS_DSN_1444387736=SQLAnywhere 12.0
614 Audit_DSN_1444387736=SQLAnywhere 12.0
[BI4_CMS_DSN_1444387756]
DatabaseName=BI4 CMS
ServerName=BI4_1444387756
Host=localhost:2638
Driver=/opt/HP/BSM/BOE4/sqlanywhere/lib64/libdbodbc12.so
[BI4_Audit_DSN_1444387756]
UID=dba
DatabaseName=BI4_Audit
ServerName=BI4_1444387756
Host=localhost:2638
Driver=/opt/HP/BSM/BOE4/sqlanywhere/lib64/libdbodbc12.so
[BI4_CMS_DSN_1444387736]
UID=dba
Datab:seName=BI4_CMS
ServerName=BI4_1444387736
Hist=shrdev9.ind.hp.com:2638
Priver=/opt/HP/BSM/BOE4/sqlanywhere/lib64/libdbodbc12.so
[BI4_Audit_DSN_1444387736]
DatabaseName=BI4_Audit
ServorName=BI4_1444387736
Host=shrdev9.ind.hp.com:2638
Driver=/opt/HP/BSM/BOE4/sqlanywhere/lib64/libdbsdoc12.so
"/opt/HP/BSM/B0E4/sap_bobj/enterprise_xi40/odbc.ini" 34L, 843C
```

4. On BO Server2 go to the following path:

cd /opt/HP/BSM/BOE4/sap bobj

5. Run the following command to start adding node for Cluster: sh serverconfig.sh

Type any unique name for new node.

```
SAP BusinessObjects

Mhat do you want to do?

1 - Add node

2 - Delete node

3 - Modify node

4 - Move node

5 - Back up server configuration

6 - Restore server configuration

7 - Modify web tier configuration

8 - List all nodes

[quit(0)]

[8]1

SAP BusinessObjects

* Node Configuration *

Enter the name of the new node.

[back(1)/quit(0)]
```

6. Type 7410 as new port number for Server Intelligence Agent. Press Enter.

```
SAP BusinessObjects

* Node Configuration *

Enter the port of the new Server Intelligence Agent.

[back(1)/quit(0)]
```

7. Select 3 for default servers. Press Enter.

```
SAP BusinessObjects

* Node Configuration *

Select one of the following:

no servers (Add node with no servers)

cms (Add node with ONS)

default servers (Add node with default servers)

recreate (Recreate node)

[no servers(5)/cms(4)/default servers(3)/recreate(2)/back(1)/quit(0)]

[no servers]3
```

8. Select existing CMS. Press Enter.

```
* Select a CMS *

Select a CMS that will be used to add the mode.

existing

(Select when at least one CMS is running.)

temporary

(Select when cluster has no running CMSs. A temporary CMS will be automatically started. Upon completion, it will be stapped.)

[existing(3)/temporary(2)/back(1)/quit(0)]
```

9. Enter 7400 as CMS Port Number. Press Enter.

```
SAP BusinessObjects

* New ONS Configuration *

Enter the port of the new ONS.

Abrning: The new ONS will start using the configuration specified here.

[back(1)/quit(0)]

[default (6400)]7400
```

10. Type 2 to select SQLAnywhere as CMS Database. Press Enter.

```
* New CMS Configuration *

Specify new CMS database connection information.

Select the type of database connection from the following:

[SAPH#NA(8)/Oracle(7)/DB2(6)/Sybase(5)/MySQL(4)/MaxDB(3)/SQLAnywhere(2)/back(1)/quit(0)]

[SAPH#NA]2
```

11. Enter the BI4\_CMS\_DSN name that you have copied from BO Server1. Press Enter.

```
SAP BusinessObjects

* New CNS Configuration *

Specify new CNS database connection information.

Enter the CDBC data source name (DSN) for connecting to your SQL Anywhere database.

[back(1)/quit(0)]

[BI4_CNS]BI4_CNS_DSN_1444387736
```

12. Type dba as username or just click enter if is already as default. Press Enter.

```
SAP BusinessObjects

* New OMS Configuration *

Specify new OMS database connection information.

Enter the user name for connecting to your SQLAnywhere database.

[back(1)/quit(0)]

[dba]
```

13. Type the SQLAnywhere password. Press Enter.

```
SAP BusinessObjects

" ONG Lagan "
Enter the password to connect to this ONS.

[back(1)/quit(0)]
```

14. Type 1ShrAdmin as cluster key. Press Enter.

```
SAF BusinessObjects

* New ONS Configuration *
Enter the cluster key.

[back(1)/quit(0)]
```

15. Type the BO Server1 Name. Press Enter.

```
SAP BusinessObjects

* ONS Logon *
Enter the name of the ONS that this node will connect to.

[back(1)/quit(0)]

[shrdev10]shrdev9
```

16. Type the port number as 6400. Press Enter.

```
SAP BusinessObjects

* ONS Logon *

Enter the port number for this node to use when connecting to the ONS.

Or press BNTER to use the default.

[back(1)/quit(0)]

[default (6400)]6400
```

17. Type the user name as Administrator. Press Enter.

```
SAP BusinessObjects

* OMS Logon *

Enter the user name to connect to this OMS.

Note that only Enterprise authentication is supported.

[back(1)/quit(0)]

[Administrator]
```

18. Type the BO Server1 CMS Password. Press Enter.

```
SAP BusinessObjects

* OMS Logon *
Enter the password to connect to this OMS.

[back(1)/quit(0)]
```

19. Type Yes to confirm. Press Enter.

```
* Confirmation *

The following information will be used to create the new node.

ONS Nome: shrdev9:6400
Node Name: ShR_HA

Server Intelligence Agent Port: 7410
Node Option: Create default servers

ONS Port: 7400
ONS port: 7400
ONS botts Source: BI4_ONS_DSN_1444387736

Results will be stored in the log file: /opt/HP/BSN/BOE4/sap_bobj//logging/addnode_20151028_155442.log

Do you want to create the node?

[yes(3)/no(2)/back(1)/quit(0)]

[yes]
```

## The following message appears:

```
SAP BusinessObjects

* Confirmation *

The following information will be used to create the new node.

ONS Name: shrdev9:6400
Nade Name: shrR-MA

Server Intelligence Agent Port: 7410
Nade Option: Create default servers

ONS Port: 7400
ONS Port: 7400
ONS bate Source: BI4_ONS_DSN_1444387736

Results will be stored in the log file: /opt/HP/BSM/BCE4/sap_bobj//logging/addnede_20151028_155442.log

bo you want to create the node?

[yes(3)/no(2)/hack(1)/quit(0)]

[yes]

Adding node...
```

#### 20. Press Enter to continue.

21. Type 8 to verify the list of nodes or 0 to guit.

```
SAP BusinessObjects

Ahat do you want to do?

1 - Add node

2 - Delete node

3 - Modify node

4 - Move node

5 - Back up server configuration

6 - Restore server configuration

7 - Modify web tier configuration

8 - List all nodes

[quit(0)]
```

22. Type1 to guit. Press Enter.



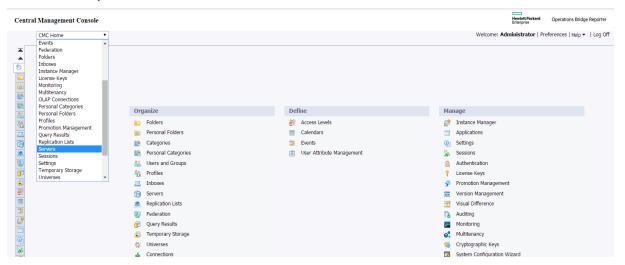
23. Copy BO Server1 File Store directory from the following path to another Shared Linux Server location where BO Server1 and BO Server2 can access to these directories:

```
$PMDB_HOME/../BOE4/sap_bobj/data/frsinput
$PMDB_HOME/../BOE4/sap_bobj/data/frsoutput
```

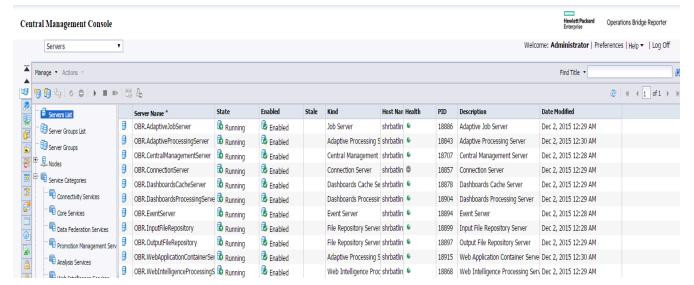
- 24. After copying the frsinput and frsoutput directories, ensure that SAP BusinessObjects user shrboadmin has access to frsinput and frsoutput directories on the Shared Linux Server.
- 25. After copying the File Store to shared drive, map the shared linux drive location on both BO Server1 and BO Server2 using NFS File Share.
  - Ensure that File Store is accessible from Shared linux Server by both servers seamlessly.
- 26. Log on to BO Server1 CMC page using the link: https://<Server1\_ Name>:8443/BOE/CMC

```
Note: For http use the link http://<Server1_Name>:8080/BOE/CMC
```

## 27. From the drop-down list select Servers.



28. Select Servers List from the left pane.



- 29. Select the InputFileRepository and right-click on Properties.
- 30. Now copy the path of Input File Store Share Drive.

For example: If the shared drive letter given as E:\ on both BO Server1 and BO Server2 then the path will be E:\FileStore\Input & E:\FileStore\Input\temp

Use Configuration Template	
File Store Directory:	%DefaultInputFRSDir% ×
Temporary Directory:	%DefaultInputFRSDir%/temp
Maximum Idle Time (minutes):	10
Maximum Retries for File Access:	1
Restore System Defaults	
☐ Set Configuration Template	

- 31. Click on Save and Close.
- 32. Select the OutputFileRepository and right-click on Properties.
- 33. Copy the path of Output File Store Share Drive.
- 34. Click on Save and Close.

Above mentioned path changes steps need to be done for all Input & Output File Repository Servers.

35. Run the following command to stop the SQL Anywhere Database Service on BO Server1:

```
sh $PMDB_HOME/../BOE4/sap_bobj/sqlanywhere_shutdown.sh
```

36. Copy the SQLAnywhere Database files from the following path on BO Server1 to the Shared Linux Server into a different directory

```
$PMDB_HOME/../B0E4/sqlanywhere/database/
```

- 37. After copying, rename the \$PMDB\_HOME/../B0E4/sqlanywhere/database to \$PMDB\_HOME/../B0E4/sqlanywhere/database\_backup.
- 38. Run the following command to create a link to the database files on shared file location from the default location on BO Server1:

```
ln -s <Linux Shared Drive Path>/database $PMDB_
HOME/../BOE4/sqlanywhere/database
```

The Shared SQLAnywhere database files will be accessible on BO Server2 also as the drive is already mapped.

39. Run the following command to stop the SQL Anywhere Database Service on BO Server2:

```
sh $PMDB_HOME/../BOE4/sap_bobj/sqlanywhere_shutdown.sh
```

- 40. On BO Server2, rename the \$PMDB\_HOME/../BOE4/sqlanywhere/database to \$PMDB\_HOME/../BOE4/sqlanywhere/database\_backup.
- 41. Run the following command to create a link to the database files on shared file location from the default location on BO Server2:

```
In -s <Linux Shared Drive Path>/database $PMDB_
HOME/../BOE4/sqlanywhere/database
```

42. Run the follwoing command to start the SQL Anywhere Database Service by executing below command on BO Server1 and BO Server2:

```
sh $PMDB_HOME/../BOE4/sap_bobj/sqlanywhere_startup.sh
```

## Vertica

Typical Installation of HPE Operations Bridge Reporter is supported only on Linux operating system. This is because Vertica can be installed only on Linux operating system.

## Terminology used:

**Note:** HP Vertica clustering uses 2 + 1 Nodes.

Host1 – Vertica Installed.

Host2 - Cluster Node.

Host3 – Cluster Node.

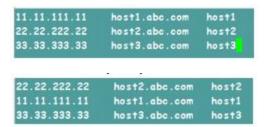
- 1. HPE OBR media should be available on Host1 disk that will be used for Vertica clustering.
- 2. Install Vertica on Host1. For information, refer *HPE Operations Bridge Reporter Interactive Installation Guide*.
- 3. After installing Vertica run Database creation command as mentioned in *HPE Operations Bridge Reporter Interactive Installation Guide*.

The command to create Vertica Database is as follows:

\$PMDB\_HOME/bin/CreateVerticaDatabase.sh <VerticaDBUsername>
<VerticaDBPassword> <VerticaDBFileLocation> <CatalogFileLocation>

The output will be displayed on successful Vertica database creation

- 4. The Date & Time must synchronize on all three Host1, Host2, and Host3.
- 5. The Host1, Host2, and Host3 should have entries for IP, FQDN, Hostname in the same order for rest of nodes in /etc/hosts file as shown in the following images:





6. Run the following command on Host1 to verify the entries:

hostname

The output is *host1* 

hostname -I

The output is 11.11.111.11

hostname -f

The output is host1.abc.com

Perform the same commands on the Host2 and Host3.

7. Ensure if Host1, Host2, and Host3 are able to ping from each other.

All the IP table rules must in accept mode as shown below on Host1, Host2 and Host3.



8. Run the following commands to disable firewall on Host1, Host2 and Host3.

```
chkconfig iptables off
chkconfig ip6tables off
/etc/init.d/iptables stop
/etc/init.d/ip6tables stop
```

9. You must disable SELinux to proceed with Vertica cluster installation on all Host1, Host2, Host3.

To disable SELinux, from the location /etc/sysconfig/selinux file, set the parameter SELINUX = disabled & SELINUXTYPE=disabled.

10. NTP server and client installation and configuration

NTP (Network Time Protocol) – Time server should be configured to adopt local date and time on all hosts. Follow these steps on Host1,Host2, Host3.

- chkconfig ntpd on
- service ntpd start
- cp /etc/ntp.conf /etc/ntp.conf.org
- 11. Remove the existing configuration contents in the /etc/ntp.conf and Insert the following entries on Host1, Host2, Host3.

```
driftfile /var/lib/ntp/drift
server <NTP Server IP>
fudge <NTP Server IP> stratum 10
includefile /etc/ntp/crypto/pw
```

12. Ensure the ntp services are on by running below commands on Host1, Host2, Host3:

```
service ntpd restart
service ntpd status
```

13. Create Vertica Database Administrator User by running below mentioned command on Run the below steps on Host2, Host3.

```
useradd < VerticaDBUsername>
```

**Note:** <*VerticaDBUsername>* should be same as given while creating createverticadb.sh command.

14. Create Vertica Database Administrator User Password by running below mentioned command on Run the below steps on Host2, Host3.

```
passwd <VerticaDBUsername>
```

specify <VerticaDBPassword> and confirm

**Note:** *<VerticaDBPassword>* should be same as given while creating createverticadb.sh command.

15. SSH Password less Authentication to root user

Run the following commands on Host1, Host2, Host3 for SSH Key generation for user root:

- a. cd ~
- b. ssh-keygen -t rsa

Ensure you perform these steps:

- a. Enter file in which to save the key (/root/.ssh/id rsa):<empty>
- b. Enter passphrase (empty for no passphrase):<empty>
- c. Enter same passphrase again:<empty>
- d. Your identification has been saved in /root/.ssh/id\_rsa.
- e. Your public key has been saved in /root/.ssh/id rsa.pub.
- 16. Run the following command to change the permissions to .ssh directory: chmod 700 ~/.ssh
- 17. Change to the .ssh directory as follows:

```
cd ~/.ssh
```

18. Copy the file id\_rsa.pub onto the file authorized\_keys2 as follows:

```
cp id_rsa.pub authorized_keys2
```

19. Run the following command to change the permissions to .ssh directory:

```
chmod 600 ~/.ssh/*
```

- 20. Copy the generated rsa keys to all the hosts from all the hosts as follows:
  - a. Run the following command on all Vertica Cluster Hosts (Host1, Host2, Host3):vi /root/.ssh/authorized\_keys2
  - b. Enter the generated rsa key's from Host1 "/root/.ssh/authorized\_keys2" file to Host2, Host3 "/root/.ssh/authorized keys2" files.
  - c. Enter the generated rsa key's from Host2 "/root/.ssh/authorized\_keys2" file to Host1, Host3 "/root/.ssh/authorized\_keys2" files.
  - d. Enter the generated rsa key's from Host3 "/root/.ssh/authorized\_keys2" file to Host1, Host2 "/root/.ssh/authorized\_keys2" files.
    - After making changes to /root/.ssh/authorized\_keys2 file on Host1, Host2,

### Host3 the output appears as in the following image:



- 21. SSH Password less Authentication to <VerticaDBUsername> user
  Run the following commands on Host1, Host2, Host3 for SSH Key generation for user <VerticaDBUsername>:
  - a. su <VerticaDBUsername>

**Note:** <VerticaDBUsername> should be same as given while creating createverticadb.sh command.

- b. cd ~
- c. ssh-keygen -t rsa

Ensure the below

- a. Enter file in which to save the key (/home/<VerticaDBUsername>/.ssh/id\_rsa):<empty>
- b. Enter passphrase (empty for no passphrase):<empty>
- c. Enter same passphrase again:<empty>
- d. Your identification has been saved in /home/<VerticaDBUsername>/.ssh/id\_rsa.

- e. Your public key has been saved in /home/<VerticaDBUsername>/.ssh/id
- 22. Run the following command to change the permissions to .ssh directory:

```
chmod 700 ~/.ssh
```

rsa.pub.

23. Change to the .ssh directory as follows:

```
cd ~/.ssh
```

24. Copy the file id\_rsa.pub to the file authorized\_keys2 as follows:

```
cp id_rsa.pub authorized_keys2
```

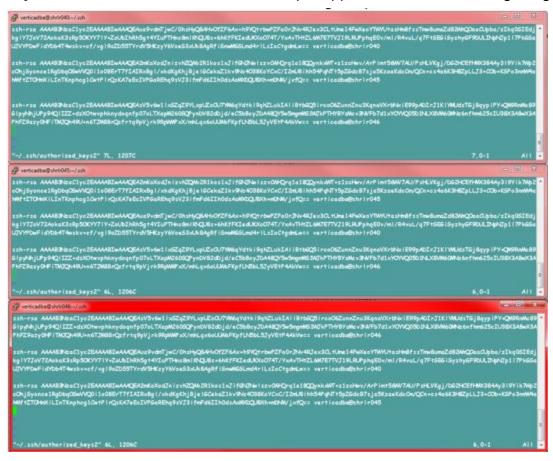
25. Run the following command to change the permissions to .ssh directory:

```
chmod 600 ~/.ssh/*
```

- 26. Copy the generated rsa keys to all the hosts from all the hosts as mentioned below:
  - a. Run the following command on all Vertica Cluster Hosts (Host1, Host2, Host3):

```
vi /home/<VerticaDBUsername>/.ssh/authorized_keys2
```

- b. Enter the generated rsa key's from Host1
  - "/home/<VerticaDBUsername>/.ssh/authorized\_keys2" file to Host2, Host3 "/home/<VerticaDBUsername>/.ssh/authorized\_keys2" files.
- c. Enter the generated rsa key's from Host2
  - "/home/<VerticaDBUsername>/.ssh/authorized\_keys2" file to Host1, Host3 "/home/<VerticaDBUsername>/.ssh/authorized\_keys2" files.
- d. Enter the generated rsa key's from Host3
  - "/home/<VerticaDBUsername>/.ssh/authorized\_keys2" file to Host1, Host2 "/home/<VerticaDBUsername>/.ssh/authorized\_keys2" files.
  - After making changes to /home/<VerticaDBUsername>/.ssh/authorized\_



#### keys2 file on Host1, Host2, Host3 the output appears as in the following image:

27. Create the <VerticaDBFileLocation> <CatalogFileLocation> on Host2 & Host3.

Example: \$PMDB\_HOME/bin/CreateVerticaDatabase.sh
<VerticaDBUsername> <VerticaDBPassword> <VerticaDBFileLocation>

If <VerticaDBFileLocation> is /opt/db/d

If <CatalogFileLocation> is /opt/db/c

#### Run below command on Host2 & Host3

- mkdir -p /opt/db/d
- mkdir -p /opt/db/c
- cd /opt
- chown -R <VerticaDBUsername>:<VerticaDBUsername> db (Recursively adding permissions for <VerticaDBUsername> for all Vertica Data & Catalog directories)

28. Copy the path of 'vertica-7.1.2-0.x86\_64.RHEL5.rpm' from HOST1 SHR Extracted BITS inside packages directory or you may run below command to locate the path if RHEL Supports.

locate vertica-7.1.2-0.x86\_64.RHEL5.rpm

29. To install Vertica remotely on HOST2 & HOST3, run the following command on HOST1 as a root user:

/opt/vertica/sbin/update\_vertica --add-hosts <HOST2\_IP>,<HOST3\_IP>
--rpm <SHR10.0\_BitsExtractedPath>/packages/vertica-7.1.2-0.x86\_
64.RHEL5.rpm -u <VerticaDBUsername> -g <VerticaDBUsername> -failure-threshold NONE --accept-eula --license CE

```
Prerequisites not fully met during local (OS) configuration for verify-16.184.47.245.xml:

HNN (98036): https://my.vertica.com/docs/7.1.x/HTML/index.htm#cshid=50305

T2 is unset for verticaba. Consider updating .profile or .bashrc

FAIL (50150): https://my.vertica.com/docs/7.1.x/HTML/index.htm#cshid=50305

These disks do not have 'deadline' or 'noop' 10 scheduling: 'dev/sda2'
    ('sda') = 'cfq', '/dev/sda1' ('sda') = 'cfq', 'dev/sda5' ('sda') = 'cfq'

FAIL (50020): https://my.vertica.com/docs/7.1.x/HTML/index.htm#cshid=50020

Readshead size of sda (/dev/sda2.//dev/sda5) is too low for typical systems: 256 < 2048

FAIL (50310): https://my.vertica.com/docs/7.1.x/HTML/index.htm#cshid=50310

Transparent hugepages is set to 'always'. Must be 'never' or 'madvise'.

Prerequisites not fully met during local (OS) configuration for verify-16.184.47.246.xml:

HNN (50305): https://my.vertica.com/docs/7.1.x/HTML/index.htm#cshid=50305

T2 is unset for verticadba. Consider updating .profile or .bashrc

FAIL (50150): https://my.vertica.com/docs/7.1.x/HTML/index.htm#cshid=50305

These disks do not have 'deadline' or 'noop' 10 scheduling: 'dev/sda2' ('sda') = 'cfq', '/dev/sda1' ('sda') = 'cfq', 'dev/sda3' ('sda') = 'cfq', 'dev/sda5' ('sda') = 'cfq'

FAIL (50020): https://my.vertica.com/docs/7.1.x/HTML/index.htm#cshid=50020

Readshead size of sda (/dev/sda2./dev/sda1./dev/sda5) is too low for typical systems: 256 < 2048

FAIL (50303): https://my.vertica.com/docs/7.1.x/HTML/index.htm#cshid=50305

T7 is unset for verticadba. Consider updating .profile or .bashrc

Prerequisites not fully met during local (OS) configuration for verify-16.184.47.246.xml:

HNN (50305): https://my.vertica.com/docs/7.1.x/HTML/index.htm#cshid=50305

T7 is unset for verticadba. Consider updating .profile or .bashrc

FAIL (50020): https://my.vertica.com/docs/7.1.x/HTML/index.htm#cshid=50305

T7 is unset for verticadba. Consider updating .profile or .bashrc

FAIL (50020): https://my.vertica.com/docs/7.1.x/HTML/index.htm#cshid=50305

T7 is unset for verticad
```

30. On successful installation of Vertica on HOST2 and HOST3 the below message is displayed:

```
>>> Completing installation...
Running upgrade logic
No spread upgrade required: /opt/vertica/config/vspread.conf not found on any node
Installation complete.

Please evaluate your hardware using Vertica's validation tools:
    https://my.vertica.com/docs/7.1.x/HTML/index.htm#cshid=VALSCRIPT

To create a database:
    1. Logout and login as verticadba. (see note below)
    2. Run /opt/vertica/bin/adminTools as verticadba
    3. Select Create Database from the Configuration Menu

Note: Installation may have made configuration changes to verticadba
    that do not take effect until the next session (logout and login).

To add or remove hosts, select Cluster Management from the Advanced Menu.
```

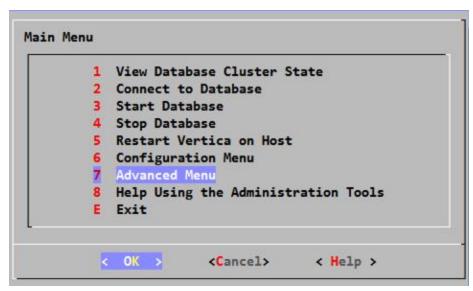
Task 3: Add Nodes to Cluster

1. Run the following commands:

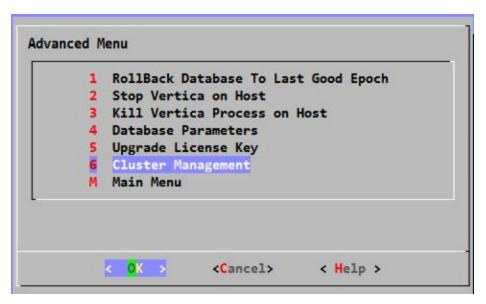
```
su - verticadba
admintools
```

The menu appers.

2. Select Advance Menu and click OK.



3. In Advanced Menu, select Cluster Management and click OK.

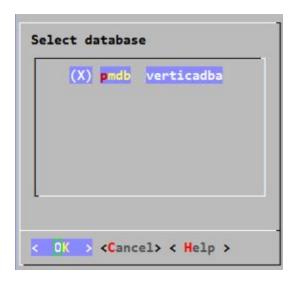


4. In Cluster Management, select Add Host(s) and click OK.

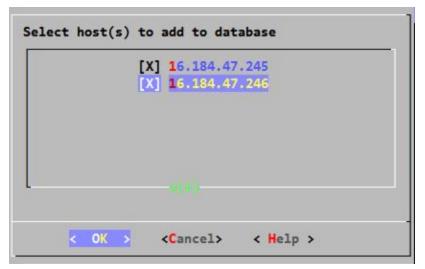
```
Cluster Management

1 Add Host(s)
2 Re-balance Data
3 Replace Host
4 Remove Host(s)
M Main Menu
```

5. In Select database, select **pmdb** and click **OK**.



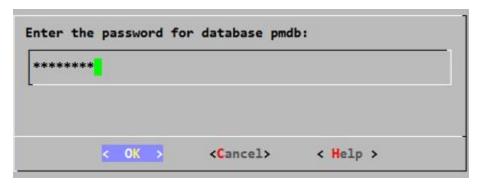
6. Ensure that HOST2 & HOST3 IP's are appearing to add to database and select each IP by clicking SPACE BAR & Click Enter



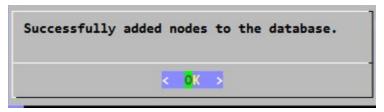
7. Click Yes to add HOST2 & HOST3 IP's to the Vertica Database.



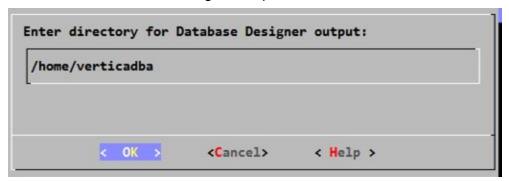
8. Enter <VerticaDBPassword> to log on to Database.



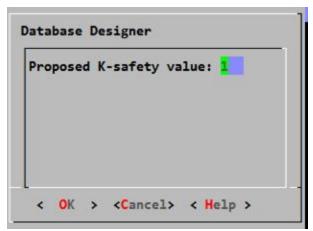
The following message appears on successful Vertica Clustering:



- 9. Click OK.
- 10. Click **OK** for Database Designer output.



11. Ensure that k-safety value is set to 1 and click ok and press Enter.



12. Select Proceed and press Enter.

```
The Database Designer is ready to modify your projections in order to re-balance data across all nodes in the database.

Review the options you selected:

-The data will be automatically re-balanced with a k-safety value of 1.

Rebalance will take place using elastic cluster methodology.

Re-balancing data could take a long time; allow it to complete uninterrupted.

Use Ctrl+C if you must cancel the session.

To change any of the options press <Cancel> to return to the Cluster Management menu.

**Cancel>**Cancel>**
```

13. Once Rebalance is successful press Enter.

```
Starting Data Rebalancing tasks. Please wait....
This process could take a long time; allow it to complete uninterrupted.
Use Ctrl+C if you must cancel the session.

Data Rebalance completed successfully.
Press <Enter> to return to the Administration Tools menu.
```

14. Press Ctrl+C to exit Admintools.

The 3 Node Cluster Setup is successfully done.

- 15. Run the following command to check if three nodes are added to cluster
  - Vsql -h <Enter any one IP of HOST1, HOST2, HOST3>
  - Type the <VerticaDBPassword>
  - Type the following command and press Enter:

```
Select * from nodes;
```

The three rows of data with clustered IP's are displayed.

## Postinstall steps

## **BOE JDBC Connection Changes for Vertica 3 Node Clustering**

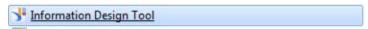
Follow these steps after successful completion of Vertica Three Node Clustering & Content Pack Deployment.

SAP BusinessObjects Client Tools need to be installed on either HPE OBR Windows Server or any local Windows Operating system. SAP BusinessObjects Client Tools is available in the following location:

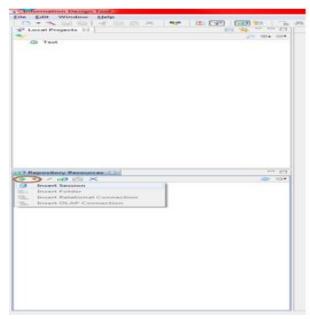
<HPSHR-10.00.000-\*.tar Extracted location>/packages/BusinessObjects\_
Client\_tools.ZIP

After successful installation of SAP BusinessObjects Client Tools perform these steps:

1. From the Start menu, open Information Design Tool.



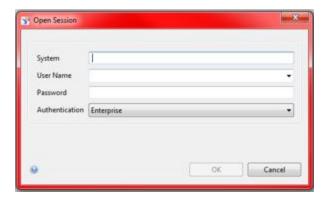
2. Under Repository Resources pane, select **Insert Session**.



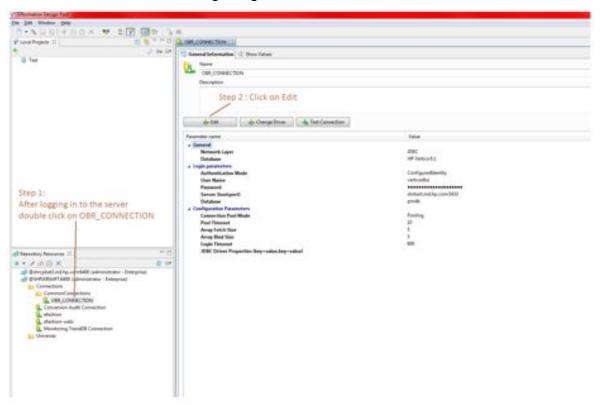
The Open Session tab appears.

- 3. Type as follows:
  - System: <SAP BusinessObjects Server name>
  - User Name: <SAP BusinessObjects User name>
  - Password: <SAP BusinessObjects password>

#### Click OK.



4. After log in, double-click on **OBR\_CONNECTION** on the left pane and then click **Edit** as shown in the following image:



5. Click **Test Connection** to verify the connection as shown in the following image:



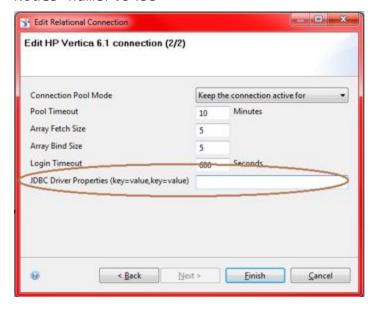
The message appears. Click Close.

6. Click Next.



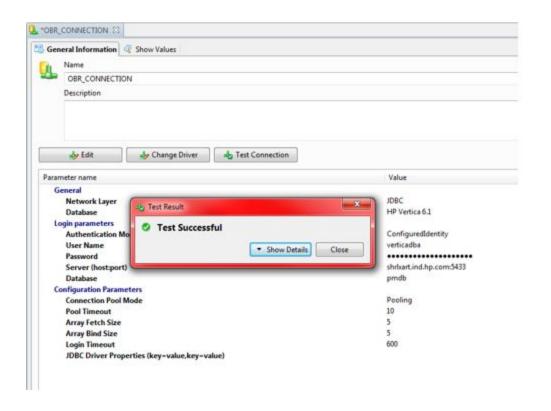
7. Under JDBC Driver Properties type the following:

user=<VerticaDBUserName>,ConnectionLoadBalance=1,BackupServerNode=
<full Vertica Node2 name>:5433,BackupServerNode=< full Vertica
Node3 name>:5433



Click Finish.

8. Click **Test Connection** after making changes to ensure that the connection is successfully updated.



# Appendix A: Appendix

This appendix provides you with additional information relevant to HPE Operations Bridge Reporter.

# Deploying Content Packs when HPE Operations Bridge Reporter is running

Follow these steps to deploy the Content Packs if HPE Operations Bridge Reporter is already running:

- 1. Open ha\_config.prp from the %PMDB\_HOME%\HA\common\config\ folder.
- 2. Remove '#' from the #maintenance mode=true parameter.
- Save the file and exit.
- 4. Deploy the Content Packs from the Deployment Manager page in the Administration Console. For more information, see *Selecting and Installing the Content Packs* of the *HP Operations Bridge Reporter Configuration Guide*.
- 5. After you deploy the Content Packs, open ha\_config.prp.
- 6. Add '#' to the maintenance mode=true parameter.
- 7. Save the file and exit.

# Changing the Startup Type of the Services

Follow these steps to change the startup type of the services to manual:

- 1. On the HPE Operations Bridge Reporter system, click **Start > Run**. The Run dialog box opens.
- 2. In the **Open** field, type services.msc. The Services window opens.
- 3. On the right pane, right-click the service which you want to start manually, and then click **Properties**.
- 4. Under the General tab, from the Startup type drop-down list, select Manual.
- 5. Click OK.
- 6. Close the Services window.

## Send Documentation Feedback

If you have comments about this document, you can contact the documentation team by email. If an email client is configured on this system, click the link above and an email window opens with the following information in the subject line:

## Feedback on High Availability Guide (Operations Bridge Reporter 10.00)

Just add your feedback to the email and click send.

If no email client is available, copy the information above to a new message in a web mail client, and send your feedback to docfeedback@hp.com.

We appreciate your feedback!