

*Install IBM Connections 4.5 Cognos on
RedHat using Oracle Database
step-by-step Guide
part 1.*

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Authors

Andrea Fontana
IBM Champion for WebSphere
DeveloperWorks Contributor Author
can be contact ed at : a.fontana@net2action.com

Abstract

In this guide I want to describe all necessary step tp install Cognos on IBM Connections environment on RedHat 6.4 Operating System using Oracle as data store.

Content

How to install and configure Cognos Business Intelligence , in a dedicate server into the same cell of IBM Connections Cluster. This document is picked up after installing Connections from the connections wiki install doc:

http://www-10.lotus.com/ldd/lcwiki.nsf/xpDocViewer.xsp?lookupName=IBM+Connections+4.5+Documentation#action=openDocument&res_title=Installing_Cognos_Business_Intelligence_ic45&content=pdcontent

Prepare Environment to install

IBM Connections requires a customized version of Cognos Business Intelligence, which is installed using the provided script. You cannot use previously deployed Cognos Business Intelligence components with the Metrics application. For best performance, use a separate computer for the customized version of Cognos Business Intelligence.

To install the Cognos Business Intelligence and its supporting software, complete these tasks:

Create WebSphere 8.x profile for Cognos

This step involves setting up a WAS profiles for the Cognos server. If you were installing this on its own machine, you would install WebSphere, choosing the Application Server environment.

Form your <Was_Home>/bin tun manageprofile to create it.

```
./manageprofiles.sh -create -templatepath /opt/ibm/WebSphere/AppServer/profileTemplates/default  
-adminUserName <wasAdmin> -adminPassword <Password> -profileName <ProfilesName>  
-nodeName <nodeName>
```

```
[root@... bin]# ./manageprofiles.sh -create -templatepath /opt/.../WebSphere/AppServer/profileTemplates/default -admin  
serName ... -adminPassword ... -profileName AppCognos -nodeName ... Cognos  
INSTCONFSUCCESS: Success: Profile AppCognos now exists. Please consult /opt/.../WebSphere/AppServer/profiles/AppCognos/logs/About  
ThisProfile.txt for more information about this profile.
```

Installing the database client for Cognos Transformer

Install the standard 32-bit database client on the server where you will deploy Cognos Business Intelligence.

Important: Be sure to install the standard 32-bit client rather than the Instant Client, which is not supported by Cognos. If you installed the 64-bit client, you must uninstall it before installing the 32-bit client.

Edit the *Oracle_client_install_path/network/admin/tnsnames.ora* file and add the following TNS settings into the file:

The TNS setting on the Oracle client should look like the example that follows:

```
Local_tns_name =  
(DESCRIPTION =  
(ADDRESS_LIST =  
(ADDRESS = (PROTOCOL = TCP)(HOST = Oracle_database_server_host_name)(PORT = Port))  
)  
(CONNECT_DATA =  
(SERVICE_NAME = Database_service_name)  
)  
)
```

where:

- ◆ *Local_tns_name* is the user -defined TNS alias for the remote Oracle database instance. It needs to match the value of the metrics.db.local setting in the cognos-setup.properties file that will be used during Cognos Business Intelligence installation.
- ◆ *Oracle_database_server_host_name* is the host name of the server hosting the Oracle database server; for example: oradb.example.com.
- ◆ *Port* is port on which the Oracle database server is listening; typically port 1521.

- ◆ *Database_service_name* is the database service name; for example orcl

Set following environment variable:

```
PATH=$PATH:/opt/oracle/client
ORACLE_BASE=/opt/oracle
ORACLE_HOME=/opt/oracle/client
TNS_ADMIN=/opt/oracle/client
LD_LIBRARY_PATH=/opt/oracle/client:/usr/lib:/usr/lib64
```

Verify that the client can connect to the Metrics database.

In bin folder of oracle_home, run sqlplus [db_user]/[password]@[Local_tns_name] where:

- ◆ db_user is the Metrics db user.
- ◆ password is the password of the db_user.
- ◆ Local_tns_name is the TNS alias you just created.

If the setting is correct, you will connect the database successfully.

```
[root@... ~]# sqlplus METRICS/...
SQL*Plus: Release 11.2.0.1.0 Production on Mon Oct 14 05:01:36 2013
Copyright (c) 1982, 2009, Oracle. All rights reserved.
.
Connected to:
Oracle Database 11g Enterprise Edition Release 11.2.0.3.0 - 64bit Production
With the Partitioning, Automatic Storage Management, OLAP, Data Mining
and Real Application Testing options
SQL>
```

Install and configure Cognos Business Intelligence components 10.1.1

In this step we will install and configure Cognos Business Intelligence 10.1.1.

Install IBM Cognos Business Intelligence on the computer where you previously installed IBM WebSphere Application Server Network Deployment and the database client. The Cognos product consists of two components (Cognos BI Server and Cognos Transformer); you must install both components as part of this deployment.

Verify and install Required Patch for OS

Review the IBM [technote](#) for required patches for Cognos BI 10.1.1 Software Environments.

Note: Open Motif libraries are still required (as mentioned in the technote) for headless Linux™ systems.

- ◆ Install the patches specified for your server environment.
- ◆ Restart the server to make sure all patches take effect.

Install Cognos

1) From the IBM `Connections_Install` directory, open the Cognos folder extract appropriate file :

Operating System	Cognos BI Server package name	Cognos Transformer package name
Linux™	IBM Cognos Business Intelligence Server 64-bit 10.1.1 Linux x86 Multilingual	IBM Cognos Business Intelligence Transformer 10.1.1 Linux x86 Multilingual

In our case following files:

`bisrvr_linuxi8664h_10.1.1_ml.tar.gz`

`bitsfrmr_linuxi38632_10.1.1_ml.tar.gz`

Expand it in

`/opt/setup/biserver11` for `bisrvr_linuxi8664h_10.1.1_ml.tar.gz`

and

`/opt/setup/transformer` for `bitsfrmr_linuxi38632_10.1.1_ml.tar.gz`

- 2) Create a shared network folder where Cognos Transformer can publish metrics data (in the form of PowerCubes) for reports to access. The folder will be delegated to Cognos only for storing the PowerCube so it must be either a new folder or an existing empty folder.
- 3) Prepare the Cognos server setup package: `CgnosConfig.tar` can be found in the `/Cognos` folder within the Connections product media. Expand it in a specific Directory (`/opt/setup/setupCognos`)
- 4) Set up the JDBC driver:
 - a. Locate the type 4 JDBC driver provided by your database server product.
 - b. Copy the JDBC driver to the following location: `/CognosSetup/BI-Customization/JDBC`
in our case you must copy `ojdbc6.jar` file.
- 5) Prepare the `cognos-setup.properties` file by filling in a value for each property, `CgnosConfig\cognos-setup.properties` in a text editor and set the following parameters:

Property Name	Value	Description
<code>cognos.db.type</code>	<code>oracle</code>	Indicates the Oracle database

		type.
cognos.db.host	[Oracle_server_hostname] :[Port]	Hostname and Port of the Oracle database server. Port is port where the Oracle database server is listening, typically port 1521.
cognos.db.name	[Database_service_name]	The SID of the database that contains the Cognos database. Note: It must be the SID if the service name and SID are different on this database; otherwise the installation script will fail on DB Connection validation. Run the select instance_name from v\$instance command on the Oracle database to detect the SID of the database.
cognos.db.user	COGNOS	Created by the Connections database installer.
cognos.db.password	[password]	The password of database user COGNOS.
metrics.db.type	oracle	Indicates the Oracle database type.
metrics.db.host	[Oracle_server_hostname] :[Port]	Hostname and Port of the Oracle database server. Port is port where the Oracle database server is listening, typically port 1521.
metrics.db.name	[Database_service_name]	The service name of the database that contains the Metrics database. Note: It should be the service name if the service name and SID are different on this database; otherwise the installation script will fail due to DB Connection validation.
metrics.db.local.name	[Local_tns_name]	The TNS alias created in the early step of Installing the Oracle database client for Cognos Transformer .
metrics.db.user	METRICSUSER	Created by the Connections database installer.
metrics.db.password	[password]	The password of database user METRICSUSER.

In my case

```
was.install.path=/opt/ibm/WebSphere/AppServer
was.profile.name=<profilesName>
was.local.admin.username=localadmin
was.local.admin.password=password
```

```
cognos.was.node.name=<nodeName>
cognos.was.server.name=cognos_server
cognos.biserver.issetup= opt/setup/biserver11/linuxi38664h/issetup
cognos.transformer.issetup=opt/setup/transformer/linuxi38632/issetup
cognos.biserver.install.path=/opt/ibm/CognosBI
cognos.transformer.install.path=/opt/ibm/CognosTR
cognos.locale=EN
cognos.contextroot=cognos
cognos.admin.username=cognosadmin
cognos.admin.password=password
```

NOTE: This username/password must be an ldap user already setup in your LDAP directory

```
cognos.namespace=IBMConnections
```

cognos.cube.path - set this to the location where Cognos Transformer can publish metrics data (in the form of PowerCubes) for reports to access. If you a cluster of multiple Cognos servers, then a network share should be used.

```
cognos.cube.path=/opt/ibm/PowerCubes
```

NOTE: This directory must be created prior to the install.

```
cognos.db.type=oracle
cognos.db.host=dbStore.yourdoamin.com:1521
cognos.db.name=<OracleSID>
cognos.db.user=COGNOS
cognos.db.password=Password
```

```
metrics.db.type=oracle
metrics.db.host=dbStore.yourdoamin.com:1521
metrics.db.name=<OracleSID>
metrics.db.local.name=<OracleSID>
metrics.db.user=METRICS
metrics.db.password=Password
Save and Close the file
```

- 6) On RedHat Linux 6 64-bit systems Run the following command to preload libraries needed for the setup scripts used in the next step
Run `cognos-setup.sh` to execute your setup Any of the properties specified in the `cognos-setup.properties` file can be passed in as parameters when you run this script. In particular, you might want to supply passwords using this method rather than adding them into the properties file because they will be deleted from the file after it runs. For any properties you supply at run time, use the following syntax

7) On my system this took an hour to complete

```
ADMA5016I: Installation of Cognos started.
ADMA5058I: Application and module versions are validated with versions of deployment targets.
ADMA5005I: The application Cognos is configured in the WebSphere Application Server repository.
ADMA5005I: The application Cognos is configured in the WebSphere Application Server repository.
ADMA5081I: The bootstrap address for client module is configured in the WebSphere Application Server repository.
ADMA5053I: The library references for the installed optional package are created.
ADMA5005I: The application Cognos is configured in the WebSphere Application Server repository.
ADMA5001I: The application binaries are saved in /opt/ibm/WebSphere/AppServer/profiles/AppCognos/wstenc
ce/cells/.../applications/Cognos.ear/Cognos.ear
ADMA5005I: The application Cognos is configured in the WebSphere Application Server repository.
SECJ0400I: Successfully updated the application Cognos with the appContextIDForSecurity information.
ADMA5005I: The application Cognos is configured in the WebSphere Application Server repository.
ADMA5005I: The application Cognos is configured in the WebSphere Application Server repository.
ADMA5113I: Activation plan created successfully.
ADMA5011I: The cleanup of the temp directory for application Cognos is complete.
ADMA5013I: Application Cognos installed successfully.
... WebSphere configuration for Cognos completed

Applying customizations to Cognos Transformer ...
mv /opt/ts/ibm/CognosTR/bin/cogconfig.sh /opt/ts/ibm/CognosTR/bin/cogconfig.sh.20131014064223
cp -f /opt/ibm/transformer/setup/cognosSetup/Transformer-Customization/bin/cogconfig.sh /opt/ts/ibm/CognosTR/bin
chmod 550 /opt/ts/ibm/CognosTR/bin/cogconfig.sh
ln -s /opt/ts/ibm/CognosTR/bin/version.xml /opt/ibm/CognosTR/bin64/version.xml
... applying customizations to Cognos Transformer completed

[root@usswvulp055 cognosSetup]#
```

after installation you can look in cognos-setup.log if are present some error, normally you can find:

```
[root]# grep -i error cognos-setup.log
ERROR: ld.so: object '/usr/lib64/libfreebl3.so' from LD_PRELOAD cannot be preloaded: ignored.
#####
#####
#####
#####
#####ERROR: ld.so: object '/usr/lib64/libfreebl3.so' from LD_PRELOAD cannot be preloaded:
ignored.
ERROR: ld.so: object '/usr/lib64/libfreebl3.so' from LD_PRELOAD cannot be preloaded: ignored.
// NOTE: Syntax errors in the policy files will cause the enterprise application FAIL to start.
```

During the installation, you might see the following message in the log file: ERROR: ld.so: object '/usr/lib64/libfreebl3.so' from LD_PRELOAD cannot be preloaded: ignored. You can ignore this message because it will not block installation or cause any issue.

```
[root]# grep -i exception cognos-setup.log
[root]#
```

Note that the only value returned by either grep command can be safely ignored (per the above statement) or is from a comment in the script (indicated by //), so the log looks good!

Configure Cognos

1. Open CognosConfig\cognos-setup.properties in a text editor
2. Make sure all .password settings are set to the correct value
was.local.admin.password=password
cognos.admin.password=password
cognos.db.password=password
metrics.db.password=password
3. Run ./cognos-configure.sh
On my system, this took about 5 minutes to complete

```

Using Cognos setup properties file: /opt/ibm/setup/cognosSetup/cognos-setup.properties
Performing validation check ...
JAR file(s) found in JDBC driver directory:
/opt/ibm/setup/cognosSetup/BI-Customization/JDBC
was.install.path: WebSphere Application Server exists
Using profile: AppCognos
cognos.was.node.name: Found node [IcCognos]
cognos.biserver.issetup: Will use issetup to install Cognos BI Server
/opt/ibm/setup/biserver1011/linuxi38664h/issetup
cognos.transformer.issetup: Will use issetup to install Cognos Transformer
/opt/ibm/setup/trasformer1011/linuxi38632/issetup
Using cognos.locale: EN
All properties provided for Cognos database
All properties provided for Metrics database
/opt/ibm/setup/cognosSetup/lib /opt/ibm/setup/cognosSetup
/opt/ibm/setup/cognosSetup
JDBC Connection Success
Success to verify the JDBC connection to Cognos Content Store database.
JDBC Connection Success
Success to verify the JDBC connection to Metrics database.
... performing validation check completed
Configuring Cognos BI Server ...
/opt/ibm/setup/cognosSetup/bin/configBI.sh -setupProp=/opt/ibm/setup/cognosSetup/cognos-setup.properties
-wasPath=/opt/ibm/WebSphere/AppServer -cognosDBPassword="****" -adminUser=waslocal
-adminPassword="****"
... configuring Cognos BI Server completed

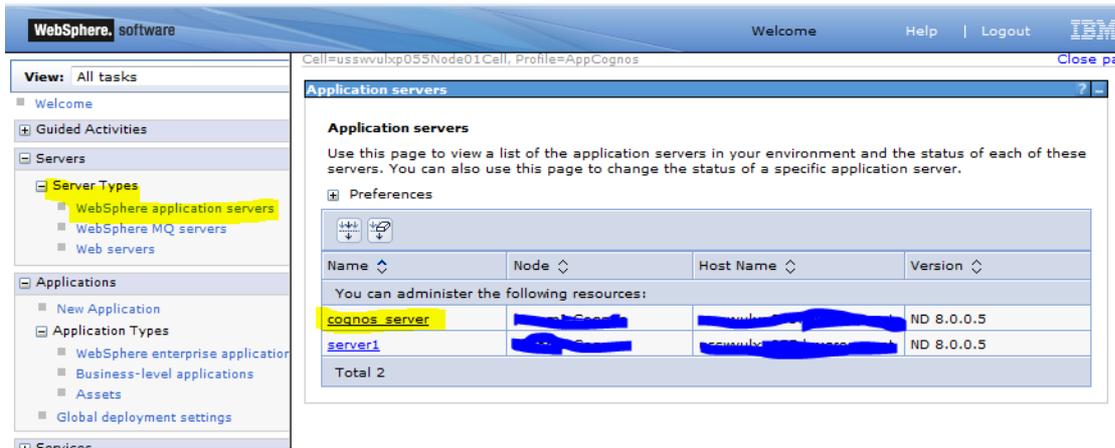
Configuing Cognos Transformer ...
/opt/ibm/setup/cognosSetup/bin/configTransformer.sh -setupProp=/opt/ibm/setup/cognosSetup/cognos-
setup.properties -cognosSrvLink=http://*****:9081/cognos
-cognosCubePath="/opt/ibm/PowerCubes" -metricsDBType=oracle -metricsDBName=xxxxxxx
-metricsDBLocalName=xxxxxxx -metricsDBHost=*****:1521 -metricsDBUser=METRICS
-metricsDBPassword="****" -cognosAdminUserName="wpsadmin" -cognosAdminUserNS=Colloaboration
-cognosAdminUserPW="****"
... configuring Cognos Transformer completed

```

Now you can check Log file to verify if will be ok, as the same, you did in previous step, with the same consideration.

At this point Cognos is installed and configured. Next step is to federate it into the node and test that it's working correctly

4. Set the LD_PRELOAD variable to JVM environment variable list of the Cognos server.



The environment variable LD_PRELOAD needs to be set every time after a Linux system restart. To enable this, add this variable to JVM environment variable list as follows:

- a. Start server1 of the WebSphere Application Server where you deployed the Cognos BI.
- b. Log into the administrative console of the WebSphere Application Server.
- c. Navigate to **Servers -> Server Types -> WebSphere application servers**.
- d. Click the cognos_server link.
- e. Click **JAVA** and then **Process Management -> Process definition -> Environment Entries**.
- f. Click **New** to add the following entry:

LD_PRELOAD = /usr/lib64/libfreebl3.so

repete step f to add folowing variables

ORACLE_BASE=/opt/oracle (where you install Oracle Client)

ORACLE_HOME=/opt/oracle/client

TNS_ADMIN=/opt/oracle/client

add following value to LD_LIBRARY_PATH

:/usr/lib:/usr/lib64

at the end you must have following immagine:

Select	Name	Value	Description
You can administer the following resources:			
<input type="checkbox"/>	LD_LIBRARY_PATH	/usr/lib:/usr/lib64:/usr/lib64:/usr/lib64:/usr/lib64	
<input type="checkbox"/>	LD_PRELOAD	/usr/lib64/libfreebl3.so	needed by RedHat
<input type="checkbox"/>	ORACLE_BASE	/opt/oracle	
<input type="checkbox"/>	ORACLE_HOME	/opt/oracle/client	
<input type="checkbox"/>	TNS_ADMIN	/opt/oracle/client	
Total 5			

Save and Stop the Cognos server and server1 if they are running. You will start the Cognos server after federating it to the Deployment Manager in the next task.

Note: During the installation, you might see the following message: ERROR: The system cannot find the file specified. You can ignore this message because it will not block installation or cause any issue.

Note: During the installation, you might see the following message in the log file: ERROR: ld.so: object '/usr/lib64/libfreebl3.so' from LD_PRELOAD cannot be preloaded: ignored. You can ignore this message because it will not block installation or cause any issue.

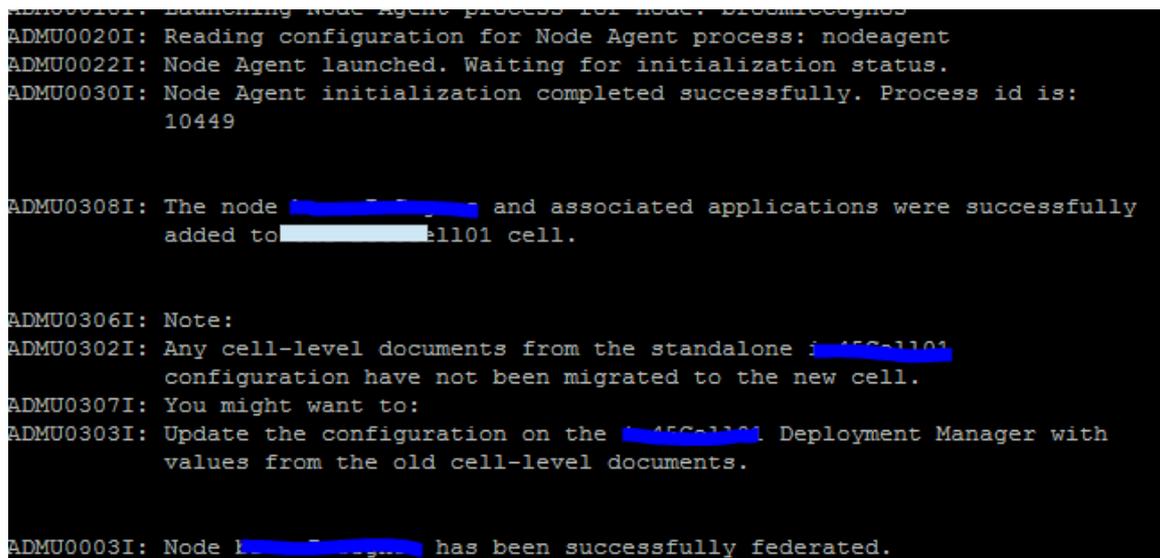
Federate Cognos node into the DMGR

1. Before attempting to federate the Cognos node to the Deployment Manager, make sure that:
 - The Deployment Manager is running.
 - The Cognos server is stopped (if you started it after installation, stop it now by stopping the IBM WebSphere® Application Server hosting it).
 - The system clock on the Cognos server is set to within 1 minute of the time (and time zone) of the system clock on the Deployment Manager.
 - The Deployment Manager and the Cognos server are either both registered in the DNS or are referenced in each other's etc/hosts file.
 - For 64-bit Red Hat only: server1 of the Cognos profile is stopped.
2. If you enabled **Java 2 security to restrict**, disable it on DMGR ICS
3. change directory to <WAS_Home>\bin and run the following command:

```
addNode.sh <dmgrHostName> 8882 -profileName <ProfileName> -includeapps -username <WasAdmin> -password <Password>
```

In our env, the command was:

```
addNode.sh cognos.ondemand.com 8882 -profileName AppCognos -includeapps -username localadmin -password password
```



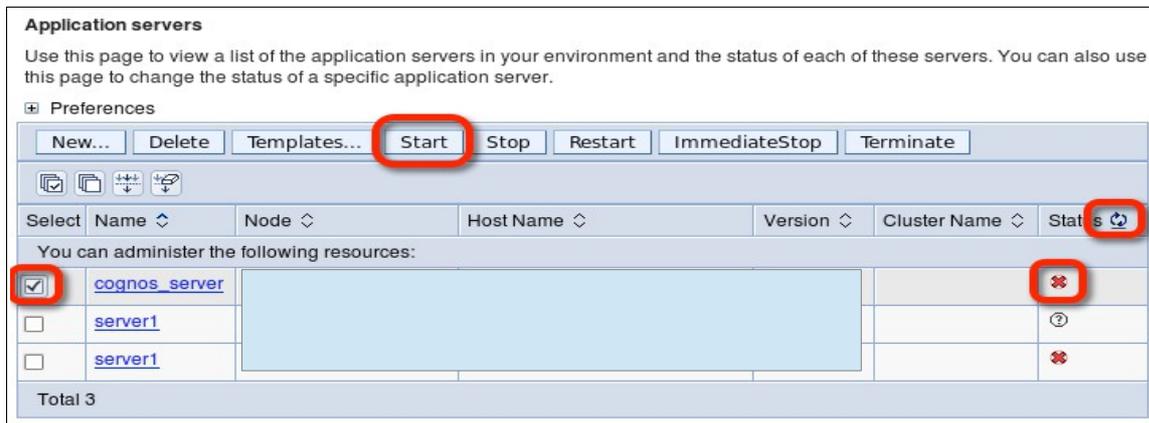
```
ADMU0018I: Launching Node Agent process for node: [redacted]
ADMU0020I: Reading configuration for Node Agent process: nodeagent
ADMU0022I: Node Agent launched. Waiting for initialization status.
ADMU0030I: Node Agent initialization completed successfully. Process id is:
10449

ADMU0308I: The node [redacted] and associated applications were successfully
added to [redacted] cell.

ADMU0306I: Note:
ADMU0302I: Any cell-level documents from the standalone [redacted]
configuration have not been migrated to the new cell.
ADMU0307I: You might want to:
ADMU0303I: Update the configuration on the [redacted] Deployment Manager with
values from the old cell-level documents.

ADMU0003I: Node [redacted] has been successfully federated.
```

4. Once this completes, sync the node:
 - a. Open the browser to the Integrated Solution Console and login (<http://localhost:9060/ibm/console>) and go to System Administration – Nodes, and verify if you new Cognos Node is Synchronized, if not Synchronize it.
5. Start the cognos application server from ICS, Expand “Servers” and “Server Types” and click on “WebSphere application servers”.



Tick the checkbox next to “cognos_server” and click the “Start” button.

- All of the Cognos processes require an additional two minutes or so to finish starting after the application server process is started. In a terminal window, make sure the related Cognos server process is running:

```
ps -ef | grep CGS
```

If you not find it, cleaning ojdbc6.jar from

/opt/ibm/WebSphere/AppServer/profiles/AppCognos/installedApps/<celsnaME>/Cognos.ear/p2pd.war/WEB-INF/lib/, in this case you can find in Cognos Server log following error: *Warning CM-CFG-5063 A Content Manager configuration error was detected while connecting to the content store. sealing violation: package oracle.jdbc is sealed* This error is generated because JVM find two reference od JDBC Drivers in CLASSPATH, and restart Cognos_Server

reference: <http://www-01.ibm.com/support/docview.wss?uid=swg21339429>

if ok executing `ps -ef | grep CGS` Normally answer is:

```
root 25072 25062 3 11:40 pts/2 00:00:05 /opt/ibm/WebSphere/AppServer/java/bin/java -Xmx1g
-DuseNonAsync -classpath ../webapps/p2pd/WEB-INF/lib/p2pd.jar:../webapps/p2pd/WEB-INF/lib/commons-
httpclient-3.1.jar:../webapps/p2pd/WEB-INF/lib/logkit-1.2.jar:../webapps/p2pd/WEB-INF/lib/dom4j-
1.6.1.jar:../webapps/p2pd/WEB-INF/lib/jcam_crypto.jar:../webapps/p2pd/WEB-INF/lib/commons-pool-
1.3.jar:../webapps/p2pd/WEB-INF/lib/commons-logging-1.1.jar:../webapps/p2pd/WEB-INF/lib/commons-codec-
1.3.jar:../webapps/p2pd/WEB-INF/lib/commons-logging-api-1.1.jar:../webapps/p2pd/WEB-INF/lib/commons-
logging-adapters-1.1.jar:../webapps/p2pd/WEB-INF/lib/cognosipf.jar:../webapps/p2pd/WEB-INF/lib/log4j-
1.2.8.jar:../webapps/p2pd/WEB-INF/lib/cclcfgapi.jar:../webapps/p2pd/WEB-
INF/lib/CognosIPF.jar:../webapps/p2pd/WEB-INF/lib/bcprov-jdk14-
145.jar:../bin/jcam_jni.jar:../webapps/p2pd/WEB-INF/lib/./classes:../webapps/p2pd/WEB-
INF/lib/cgsService.jar:cgsJava.jar:openviz2.jar:particles-cognos.jar com.ibm.cgsBus.CGSServer
```

Validating the Cognos server installation

Verify the servlet manager

- Open a browser to `http://Host_Name:Port/Context_Root/servlet` (`http://localhost:9083/cognos/servlet` in our test env)
- This should return the following page

IBM Cognos

Content Manager

Build: 10.1.6235.601

Start time: Monday, October 14, 2013 11:38:34 AM EDT

Current time: Monday, October 14, 2013 11:46:32 AM EDT

State: Running

