Preparing the Practice Environment

Practice Overview

This practice guides you to prepare the environment to be used in the course practices. The practices in the course were designed using virtual machines. You will build two Linux-based machines with Oracle database installed on each.

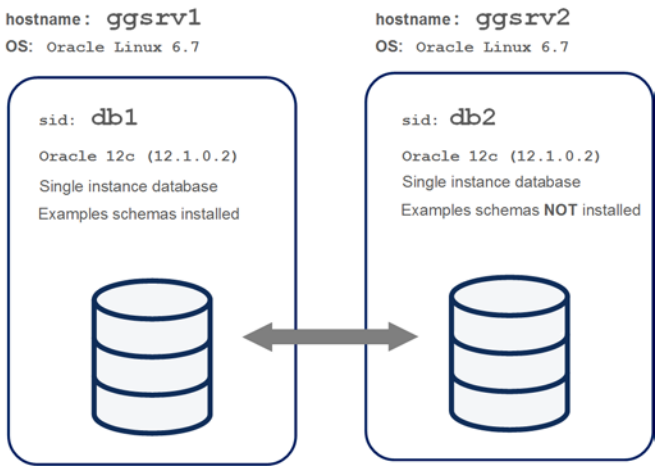
Note: this practice assumes that you have the knowledge to perform the basic tasks on Oracle VirtualBox and on installing Oracle single-instance database on a Linux-based system.

Practice Environment Requirements

Following are the requirements to prepare the practice environment:

Item	Type	Description
PC machine	hardware	A PC with Windows 7 or 10 64-bit installed on it to host the virtual machines. Following are the required specifications: Memory: 16 GB Storage free space: 100 GB
Oracle VirtualBox, release 5.1.x	software	Software to create virtual machines (called virtual appliances)
WinSCP	software	A utility to copy the files to and from an Oracle VBox appliance
Xming (optional)	software	A software to display the GUI windows in your hosting Windows PC. Just look for its download page, download it, and install it using Full Installation option.
Putty	software	A program which provides a command line prompt to connect to a Linux server from Windows

Practice Environment Architecture



Practice Environment Preparation Procedure

A. Install the Software on the Hosting PC

1. Install all the software mentioned in the list above in your PC.

B. Create an Oracle VirtualBox appliance with an Oracle database installed on it

In the following steps, you will create an Oracle VirtualBox appliance with an Oracle single-instance non-CDB database installed on it. The database datafiles will be on the Linux file system, not ASM. The examples data will be installed on the database.

2. Create a Linux-based VirtualBox appliance with the specifications as shown in the table below.

This is an Oracle VirtualBox appliance which has a fresh installation of Oracle Linux 6.7 installed on it.

If you have not created a VirtualBox appliance before, the procedure to create it from scratch is documented here, or can be watched at YouTube here.

Item	Value
Hostname	`ggsrv1`
Memory	4 GB
Operating system	Linux 6.7

Caution:

If you use the pre-built VirtualBox appliance, make sure to disable the **Linux Automatic Update** by performing the following: login as **root** -> **System** -> **Preferences** -> **Software updates**: Check for updates: **Never**, Automatically install: **Nothing**

Linux Automatic Update makes the appliance so slow and may update a library that conflicts with downloaded Oracle software release.

3. Install Oracle database 12c R1 software in the virtual appliance that you created above (`ggsrv1`). Use the following specifications when you install the software:

Caution: Do **not** install Oracle database release **12.2**. It is not supported by GG 12.2.

Note: Oracle Database 12c Release 1 for Linux (link1, link2)

Item	Value
Oracle Home	`/u01/app/oracle/product/12.1.0/db_1`
Software OS user	`Oracle`
Installed Edition	Oracle 12c Database Enterprise Edition, **12.1.0.2**

4. Create a database in the appliance with the following specifications:

Item	Value
Database name	db1
Install Example Schemas?	**YES**
CDB	No
Database Character set	WE8MSWIN1252
National Character set	UTF8

5. Configure the listener in the database and make sure it accepts connections.

```
sqlplus sys/oracle@db1 as sysdba
```

C. Create another Oracle VirtualBox appliance with an Oracle database installed on it

In the following steps, you will create an additional Oracle VirtualBox appliance with an Oracle single-instance non-CDB database installed on it. This database does **not** have the examples schemas installed on it.

6. Create another Linux-based VirtualBiox appliance with the specifications as shown in the table below.

Item	Value
Hostname	ggsrv2
Memory	4 GB
Operating system	Linux 6.7

7. Similar to what you did in ggsrv1, install Oracle database 12c R1 software in the virtual appliance that you created above (ggsrv2). Use the following specifications when you install the software:

Item	Value
Oracle Home	/u01/app/oracle/product/12.1.0/db_1
Software OS user	Oracle
Installed Edition	Oracle 12c Database Enterprise Edition, 12.1.0.2

8. Create a database in the appliance with the following specifications:

Item	Value
Database name	db2
Install Example Schemas?	**No**
CDB	No
Database Character set	WE8MSWIN1252
National Character set	UTF8

9. Configure the listener in the database and make sure it accepts connections.

```
sqlplus sys/oracle@db1 as sysdba
```

10. Configure the /etc/hosts file in both appliances and make sure they can see each other.

```
vi /etc/hosts

127.0.0.1    localhost.localdomain   localhost.localdomain   localhost
192.168.1.77 ggsrv1.localdomain ggsrv1
192.168.1.78 ggsrv2.localdomain ggsrv2
```

```
ping ggsrv1
ping ggsrv2
```

11. Configure the `tnsnames.ora` file in each system so that they can connect to each database.

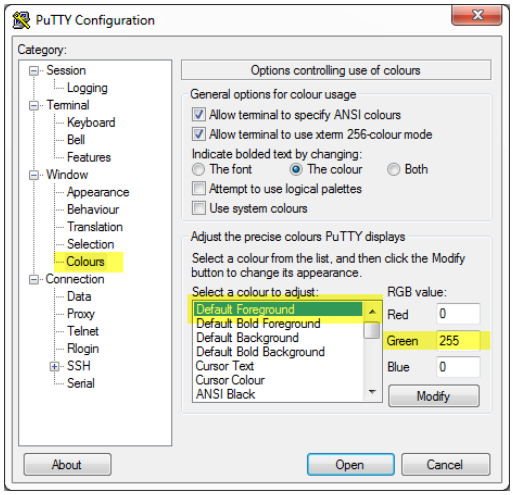
```
vi $TNS_ADMIN/tnsnames.ora

DB1 =
  (DESCRIPTION =
    (ADDRESS = (PROTOCOL = TCP)(HOST = ggsrv1.localdomain)(PORT = 1521))
    (CONNECT_DATA =
      (SERVER = DEDICATED)
      (SERVICE_NAME = db1.localdomain)
    )  )
DB2 =
  (DESCRIPTION =
    (ADDRESS = (PROTOCOL = TCP)(HOST = ggsrv2.localdomain)(PORT = 1521))
    (CONNECT_DATA =
      (SERVER = DEDICATED)
      (SERVICE_NAME = db2.localdomain)
    )  )
```

```
sqlplus system/oracle@db1
sqlplus system/oracle@db2
```

D. Perform more configuration

In the following steps, you will perform more configuration to get your environment ready for the course.

12. Connect to each appliance from your hosting PC using PuTTY. Save the two connections in PuTTY. Configure the session to the `ggsrv2` to have green font. The idea is to make it easy for you to distinguish between the db1 session PuTTY window and the db2 session PuTTY window when you have two sessions opened in the same time. The following screenshot shows you where to click to change the font color in PuTTY:



Summary

By end of this practice, you should have two Linux-based Oracle VirtualBox appliances. Each one has an Oracle 12.1 single-instance non-CDB database installed on it. One of them have the example schemas, but the other does not.

Those appliances will be used throughout all the course practices.