Search Text Titles

Oracle Database 12c Installation on CentOS 7

Contents

1. Introduction
2. Prerequisites
3. Installation Steps
4. Oracle Installer Screens
5. Post Installation Tasks
    1. Firewall
    2. Oracle Environment
    3. Login to the database

1. Introduction

This guide presents how to deploy Oracle Database 12c (12.1.0.2.0) on CentOS 7.1 (64-bit) using quick installation features.

Reference System:

```
[root@centos7 ~]# hostnamectl
   Static hostname: centos7.example.com
         Icon name: computer
           Chassis: n/a
        Machine ID: 583b4d69eaea465ea4bb96ac3b891e15
           Boot ID: 931ed1af622046ebbde071a87844a7d5
    Virtualization: kvm
  Operating System: CentOS Linux 7 (Core)
       CPE OS Name: cpe:/o:centos:centos:7
            Kernel: Linux 3.10.0-229.11.1.el7.x86_64
      Architecture: x86_64
```

2. Prerequisites

After a successful OS installation, verify the hostname and register it in your DNS. Alternatively add your hostname/IP to the */etc/hosts*.

```
[root@centos7 ~]# cat /etc/hostname
centos7.example.com
```

Leave the SELinux in enforcing mode as well as the firewall enabled

```
[root@centos7 ~]# sestatus
SELinux status:                 enabled
SELinuxfs mount:                /sys/fs/selinux
SELinux root directory:         /etc/selinux
Loaded policy name:             targeted
Current mode:                   enforcing
Mode from config file:          enforcing
Policy MLS status:              enabled
Policy deny_unknown status:     allowed
Max kernel policy version:      28


[root@centos7 ~]# firewall-cmd --state
running
```

Update the CentOS system with the latest packages

```
[root@centos7 ~]# yum update -y
```

Download the Oracle Database 12c for Linux x86-64 software:

http://www.oracle.com/technetwork/database/enterprise-edition/downloads/index.html

3. Installation Steps

Create required OS users and groups for Oracle Database.

```
[root@centos7 ~]# groupadd oinstall
[root@centos7 ~]# groupadd dba
[root@centos7 ~]# useradd -g oinstall -G dba oracle
[root@centos7 ~]# passwd oracle
```

Add the following kernel parameters to the */etc/sysctl.conf*

```
fs.aio-max-nr = 1048576
fs.file-max = 6815744
kernel.shmall = 2097152
kernel.shmmax = 1987162112
kernel.shmmni = 4096
kernel.sem = 250 32000 100 128
net.ipv4.ip_local_port_range = 9000 65500
net.core.rmem_default = 262144
net.core.rmem_max = 4194304
net.core.wmem_default = 262144
net.core.wmem_max = 1048586
```

Check and apply the new values.

```
[root@centos7 ~]# sysctl -p
[root@centos7 ~]# sysctl -a
```

Specify limits for oracle user in the */etc/security/limits.conf*

```
oracle soft nproc 2047
oracle hard nproc 16384
oracle soft nofile 1024
oracle hard nofile 65536
```

Extract the zipped Oracle Database Software archives (linuxamd64_12102_database_1of2.zip, linuxamd64_12102_database_2of2.zip) to the */stage* folder.

```
[root@centos7 ~]# yum install -y zip unzip
[root@centos7 ~]# unzip linuxamd64_12102_database_1of2.zip -d /stage/
[root@centos7 ~]# unzip linuxamd64_12102_database_2of2.zip -d /stage/
```

Modify permissions on */stage*

```
[root@centos7 ~]# chown -R oracle:oinstall /stage/
```

Create */u01* directory for Oracle software and */u02* for database files.

```
[root@centos7 ~]# mkdir /u01
[root@centos7 ~]# mkdir /u02
[root@centos7 ~]# chown -R oracle:oinstall /u01
[root@centos7 ~]# chown -R oracle:oinstall /u02
[root@centos7 ~]# chmod -R 775 /u01
[root@centos7 ~]# chmod -R 775 /u02
[root@centos7 ~]# chmod g+s /u01
[root@centos7 ~]# chmod g+s /u02
```

Install required packages:

```
[root@centos7 ~]# yum install -y binutils.x86_64 compat-libcap1.x86_64
gcc.x86_64 gcc-c++.x86_64 glibc.i686 glibc.x86_64 \
glibc-devel.i686 glibc-devel.x86_64 ksh compat-libstdc++-33 libaio.i686
libaio.x86_64 libaio-devel.i686 libaio-devel.x86_64 \
libgcc.i686 libgcc.x86_64 libstdc++.i686 libstdc++.x86_64 libstdc++-
devel.i686 libstdc++-devel.x86_64 libXi.i686 libXi.x86_64 \
libXtst.i686 libXtst.x86_64 make.x86_64 sysstat.x86_64
```

Also install the *"X Window System"* package group.

```
[root@centos7 ~]# yum groupinstall -y "X Window System"
```

Because the Oracle installation requires GUI, there are two simple ways how to provide it.

Solution 1.

Login remotely from a graphical Linux machine via SSH.

```
ssh -X oracle@centos7.example.com
```

Solution 2.

Use a Microsoft Windows desktop with an SSH Client (PuTTY) and an X-Windows terminal emulator (Xming).

The following article describes how to install Xming on Windows systems.

* Xming X-Windows terminal emulator for Microsoft Windows computers

Use a solution above to login as "oracle" user and run the Oracle Installer:

```
[oracle@centos7 ~]$ /stage/database/runInstaller
Starting Oracle Universal Installer...
```

4. Oracle Installer Screens

STEP 1 - Security Updates

If you don't wish to receive emails from Oracle Support then deselect the check box and click **Next**.

Another window opens click YES on it.

STEP 2 - Installation Option

Select **Create and configure a database** and click **Next**

STEP 3 - System Class

Select **Desktop Class** for a simple default installation of the Oracle Database.

STEP 4 - Typical Installation

On the Typical Install Configuration screen, specify the key features.

Oracle base	/u01/app/oracle
Software location	/u01/app/oracle/product/12.1.0/dbhome_1
Database file location	/u02
Global database name	orcl.example.com

Also specify the suitable **Database edition** as well as the **Character set**. Provide a strong **password** for database administration and finally deselect the **Create as Container database** option.

STEP 5 - Create Inventory

Accept the default **/u01/app/oraInventory** and click **Next**.

STEP 6 - Prerequisite Checks

The Installer automatically verifies all required OS packages and OS kernel settings.

STEP 7 - Summary

Final chance to edit any installation features. Click **Install**.

STEP 8 - Execute Configuration Scripts

When a request window appears, login as root and execute two scripts:

```
[root@centos7 ~]# /u01/app/oraInventory/orainstRoot.sh
Changing permissions of /u01/app/oraInventory.
Adding read,write permissions for group.
Removing read,write,execute permissions for world.
Changing groupname of /u01/app/oraInventory to oinstall.
The execution of the script is complete.


[root@centos7 ~]# /u01/app/oracle/product/12.1.0/dbhome_1/root.sh
Performing root user operation.
The following environment variables are set as:
    ORACLE_OWNER= oracle
    ORACLE_HOME=  /u01/app/oracle/product/12.1.0/dbhome_1
Enter the full pathname of the local bin directory: [/usr/local/bin]:
<PRESS ENTER>
   Copying dbhome to /usr/local/bin ...
   Copying oraenv to /usr/local/bin ...
   Copying coraenv to /usr/local/bin ...
Creating /etc/oratab file...
Entries will be added to the /etc/oratab file as needed by
Database Configuration Assistant when a database is created
Finished running generic part of root script.
Now product-specific root actions will be performed.
You can follow the installation in a separated window.
```

Both scripts must run as root.

STEP 9 - Installation progress

Another window opens to show you the installation progress. Do not close this window.

STEP 10 - Installation completed successfully

The last screen inform that the installation is done and displays the Oracle Enterprise Manager

URL.

https://localhost:5500/em

Click OK to close the Installer.

5. Post Installation Tasks

5.1. Firewall

Login as root and verify the active zones

```
[root@centos7 ~]# firewall-cmd --get-active-zones
public
  interfaces: eth0
```

Open the related ports

```
[root@centos7 ~]# firewall-cmd --zone=public --add-port=1521/tcp --add-
port=5500/tcp --add-port=5520/tcp --add-port=3938/tcp \
--permanent
success


[root@centos7 ~]# firewall-cmd --reload
success


[root@centos7 ~]# firewall-cmd --list-ports
1521/tcp 3938/tcp 5500/tcp 5520/tcp
```

5.2. Oracle Environment

Login as oracle user and add the following values to the */home/oracle/.bash_profile*

```
TMPDIR=$TMP; export TMPDIR
ORACLE_BASE=/u01/app/oracle; export ORACLE_BASE
ORACLE_HOME=$ORACLE_BASE/product/12.1.0/dbhome_1; export ORACLE_HOME
ORACLE_SID=orcl; export ORACLE_SID
PATH=$ORACLE_HOME/bin:$PATH; export PATH
LD_LIBRARY_PATH=$ORACLE_HOME/lib:/lib:/usr/lib:/usr/lib64; export
LD_LIBRARY_PATH
CLASSPATH=$ORACLE_HOME/jlib:$ORACLE_HOME/rdbms/jlib; export CLASSPATH
```

Reload the bash_profile to apply the new settings:

```
[oracle@centos7 ~]$ . .bash_profile
```

5.3. Login to the database

Finally login to the database:

```
[oracle@centos7 ~]$ sqlplus system@orcl
... output omitted ...
Oracle Database 12c Enterprise Edition Release 12.1.0.2.0 - 64bit
Production
With the Partitioning, OLAP, Advanced Analytics and Real Application
Testing options
SQL>
```

Manage database with Oracle Enterprise Manager:

https://<hostname>:5500/em

HowTos/Oracle12onCentos7 (last edited 2015-08-24 15:21:40 by ZoltanPorkolab)