**ORACLE 12C PDB 维护基础介绍**

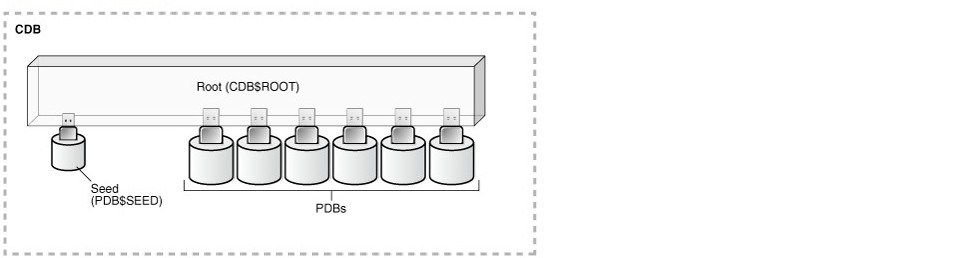
发表于 [2013 年 05 月 23 日](http://www.xifenfei.com/4432.html) 由 [惜分飞](http://www.xifenfei.com/author/xifenfei)

联系：[手机(13429648788) QQ(107644445)](http://www.xifenfei.com/about_xifenfei)

链接：<http://www.xifenfei.com/4432.html>

标题：[ORACLE 12C PDB 维护基础介绍](http://www.xifenfei.com/4432.html)

作者：[惜分飞](http://www.xifenfei.com/about_xifenfei)©版权所有[文章允许转载,但必须以链接方式注明源地址,否则追究法律责任.]

CDB和PDB是ORACLE 12C一个很亮的新特性,由于他们的引入导致传统的ORACLE数据库管理理念不少发生了改变,这里列举了部分最基本的cdb和pdb管理方式  
**cdb和pdb关系图**  
  
**ORACLE 12C版本**

SQL> select \* from v$version;

BANNER                                                                               CON\_ID

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

Oracle Database 12c Enterprise Edition Release 12.1.0.1.0 - 64bit Production              0

PL/SQL Release 12.1.0.1.0 - Production                                                    0

CORE    12.1.0.1.0      Production                                                        0

TNS for Linux: Version 12.1.0.1.0 - Production                                            0

NLSRTL Version 12.1.0.1.0 - Production                                                    0

**启动关闭pdb**

SQL> startup

ORACLE instance started.

Total System Global Area  597098496 bytes

Fixed Size                  2291072 bytes

Variable Size             272632448 bytes

Database Buffers          314572800 bytes

Redo Buffers                7602176 bytes

Database mounted.

Database opened.

SQL> select con\_id,dbid,NAME,OPEN\_MODE from v$pdbs;

    CON\_ID       DBID NAME                           OPEN\_MODE

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

         2 4048821679 PDB$SEED                       READ ONLY

         3 3313918585 PDB1                           MOUNTED

         4 3872456618 PDB2                           MOUNTED

SQL> alter PLUGGABLE database pdb1 open;

Pluggable database altered.

SQL> select con\_id,dbid,NAME,OPEN\_MODE from v$pdbs;

    CON\_ID       DBID NAME                           OPEN\_MODE

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

         2 4048821679 PDB$SEED                       READ ONLY

         3 3313918585 PDB1                           READ WRITE

         4 3872456618 PDB2                           MOUNTED

SQL> alter PLUGGABLE database pdb1 close;

Pluggable database altered.

SQL> select con\_id,dbid,NAME,OPEN\_MODE from v$pdbs;

    CON\_ID       DBID NAME                           OPEN\_MODE

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

         2 4048821679 PDB$SEED                       READ ONLY

         3 3313918585 PDB1                           MOUNTED

         4 3872456618 PDB2                           MOUNTED

SQL> alter PLUGGABLE database all open;

Pluggable database altered.

SQL> select con\_id,dbid,NAME,OPEN\_MODE from v$pdbs;

    CON\_ID       DBID NAME                           OPEN\_MODE

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

         2 4048821679 PDB$SEED                       READ ONLY

         3 3313918585 PDB1                           READ WRITE

         4 3872456618 PDB2                           READ WRITE

SQL> alter PLUGGABLE database all close;

Pluggable database altered.

SQL> select con\_id,dbid,NAME,OPEN\_MODE from v$pdbs;

    CON\_ID       DBID NAME                           OPEN\_MODE

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

         2 4048821679 PDB$SEED                       READ ONLY

         3 3313918585 PDB1                           MOUNTED

         4 3872456618 PDB2                           MOUNTED

SQL> alter session set container=pdb1;

Session altered.

SQL> startup

Pluggable Database opened.

SQL>  select con\_id,dbid,NAME,OPEN\_MODE from v$pdbs;

    CON\_ID       DBID NAME                           OPEN\_MODE

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

         3 3313918585 PDB1                           READ WRITE

pdb的管理可以在cdb中进行也可以在pdb中进行,如果是cdb中进行,需要PLUGGABLE关键字,如果是pdb中直接和普通数据库一样  
  
**登录pdb**

[oracle@xifenfei ~]$ lsnrctl status

LSNRCTL for Linux: Version 12.1.0.1.0 - Production on 12-MAY-2013 08:07:02

Copyright (c) 1991, 2013, Oracle.  All rights reserved.

Connecting to (DESCRIPTION=(ADDRESS=(PROTOCOL=TCP)(HOST=xifenfei)(PORT=1521)))

STATUS of the LISTENER

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

Alias                     LISTENER

Version                   TNSLSNR for Linux: Version 12.1.0.1.0 - Production

Start Date                11-MAY-2013 18:30:54

Uptime                    0 days 13 hr. 36 min. 8 sec

Trace Level               off

Security                  ON: Local OS Authentication

SNMP                      OFF

Listener Parameter File   /u01/app/grid/product/12.1/network/admin/listener.ora

Listener Log File         /u01/app/grid/diag/tnslsnr/xifenfei/listener/alert/log.xml

Listening Endpoints Summary...

  (DESCRIPTION=(ADDRESS=(PROTOCOL=ipc)(KEY=EXTPROC1521)))

  (DESCRIPTION=(ADDRESS=(PROTOCOL=tcp)(HOST=xifenfei)(PORT=1521)))

  (DESCRIPTION=(ADDRESS=(PROTOCOL=tcps)(HOST=xifenfei)(PORT=5500))

(Security=(my\_wallet\_directory=/u01/oracle/12.1/db\_1/admin/cdb/xdb\_wallet))(Presentation=HTTP)(Session=RAW))

Services Summary...

Service "+ASM" has 1 instance(s).

  Instance "+ASM", status READY, has 1 handler(s) for this service...

Service "cdb" has 1 instance(s).

  Instance "cdb", status READY, has 1 handler(s) for this service...

Service "cdbXDB" has 1 instance(s).

  Instance "cdb", status READY, has 1 handler(s) for this service...

Service "pdb1" has 1 instance(s).

  Instance "cdb", status READY, has 1 handler(s) for this service...

Service "pdb2" has 1 instance(s).

  Instance "cdb", status READY, has 1 handler(s) for this service...

The command completed successfully

[oracle@xifenfei ~]$ tnsping pdb1

TNS Ping Utility for Linux: Version 12.1.0.1.0 - Production on 12-MAY-2013 08:07:09

Copyright (c) 1997, 2013, Oracle.  All rights reserved.

Used parameter files:

Used TNSNAMES adapter to resolve the alias

Attempting to contact (DESCRIPTION = (ADDRESS = (PROTOCOL = TCP)(HOST = xifenfei)

(PORT = 1521)) (CONNECT\_DATA = (SERVER = DEDICATED) (SERVICE\_NAME = pdb1)))

OK (20 msec)

[oracle@xifenfei ~]$ sqlplus sys/xifenfei@pdb1 as sysdba

SQL\*Plus: Release 12.1.0.1.0 Production on Sun May 12 08:08:02 2013

Copyright (c) 1982, 2013, Oracle.  All rights reserved.

Connected to:

Oracle Database 12c Enterprise Edition Release 12.1.0.1.0 - 64bit Production

With the Partitioning, Automatic Storage Management, OLAP, Advanced Analytics

and Real Application Testing options

SQL> show con\_name;

CON\_NAME

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

PDB1

[oracle@xifenfei ~]$ sqlplus / as sysdba

SQL\*Plus: Release 12.1.0.1.0 Production on Sun May 12 08:09:14 2013

Copyright (c) 1982, 2013, Oracle.  All rights reserved.

Connected to:

Oracle Database 12c Enterprise Edition Release 12.1.0.1.0 - 64bit Production

With the Partitioning, Automatic Storage Management, OLAP, Advanced Analytics

and Real Application Testing options

SQL> alter session set container=pdb1;

Session altered.

SQL> show con\_name;

CON\_NAME

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

PDB1

pdb可以通过alter session container进入也可以直接通过tns方式登录  
  
**创建用户**

SQL> show con\_name;

CON\_NAME

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

CDB$ROOT

SQL> select con\_id,dbid,NAME,OPEN\_MODE from v$pdbs;

    CON\_ID       DBID NAME                           OPEN\_MODE

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

         2 4048821679 PDB$SEED                       READ ONLY

         3 3313918585 PDB1                           READ WRITE

         4 3872456618 PDB2                           MOUNTED

SQL> create user xff identified by xifenfei;

create user xff identified by xifenfei

            \*

ERROR at line 1:

ORA-65096: invalid common user or role name

SQL> !oerr ora 65096

65096, 00000, "invalid common user or role name"

// \*Cause:  An attempt was made to create a common user or role with a name

//          that wass not valid for common users or roles.  In addition to

//          the usual rules for user and role names, common user and role

//          names must start with C## or c## and consist only of ASCII

//          characters.

// \*Action: Specify a valid common user or role name.

//

SQL> create user c##xff identified by xifenfei;

User created.

SQL> SELECT USERNAME,CON\_ID,USER\_ID FROM CDB\_USERS WHERE USERNAME='C##XFF';

USERNAME       CON\_ID    USER\_ID

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

C##XFF              1        103

C##XFF              3        104

SQL> alter session set container=pdb1;

Session altered.

SQL> show con\_name

CON\_NAME

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

PDB1

SQL> create user xff identified by xifenfei;

User created.

SQL> create user c##abc identified by xifenfei;

create user c##abc identified by xifenfei

            \*

ERROR at line 1:

ORA-65094: invalid local user or role name

创建用户默认的是container=all,在cdb中只能创建全局用户(c##开头),会在cdb和所有的pdb中创建该用户(但是pdb中的全局用户需要另外授权才能够在pdb中访问)。在pdb中只能创建的用户为本地用户  
  
**用户授权**

SQL> grant connect to c##xff;

Grant succeeded.

SQL> select GRANTEE,con\_id from cdb\_ROLE\_PRIVS where GRANTED\_ROLE='CONNECT' AND GRANTEE='C##XFF';

GRANTEE                            CON\_ID

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

C##XFF                                  1

SQL> grant resource to c##xff container=all;

Grant succeeded.

SQL>  select GRANTEE,con\_id from cdb\_ROLE\_PRIVS where GRANTED\_ROLE='RESOURCE' AND  GRANTEE='C##XFF';

GRANTEE                            CON\_ID

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

C##XFF                                  1

C##XFF                                  3

用户授权默认情况下是只会给当前container,在cdb中也可以指定container=all,对所有open的pdb且存在该用户都进行授权  
  
**修改参数**

SQL> alter system set open\_cursors=500 container=all;

System altered.

SQL> conn sys/xifenfei@pdb1 as sysdba

Connected.

SQL> show parameter open\_cursors;

NAME                                 TYPE        VALUE

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

open\_cursors                         integer     500

SQL>  alter system set open\_cursors=100;

alter system set open\_cursors=100

\*

ERROR at line 1:

ORA-01219: database or pluggable database not open: queries allowed on fixed

tables or views only

SQL> alter database open;

Database altered.

SQL> alter system set open\_cursors=100;

System altered.

SQL>  show parameter open\_cursors;

NAME                                 TYPE        VALUE

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

open\_cursors                         integer     100

SQL> conn / as sysdba

Connected.

SQL> show parameter open\_cursors;

NAME                                 TYPE        VALUE

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

open\_cursors                         integer     500

这里可以看到在cdb中修改,pdb会继承进去;如果在pdb中修改会覆盖pdb从cdb中继承的参数含义