Local Undo – The most important New Feature in 12.2 Multitenant

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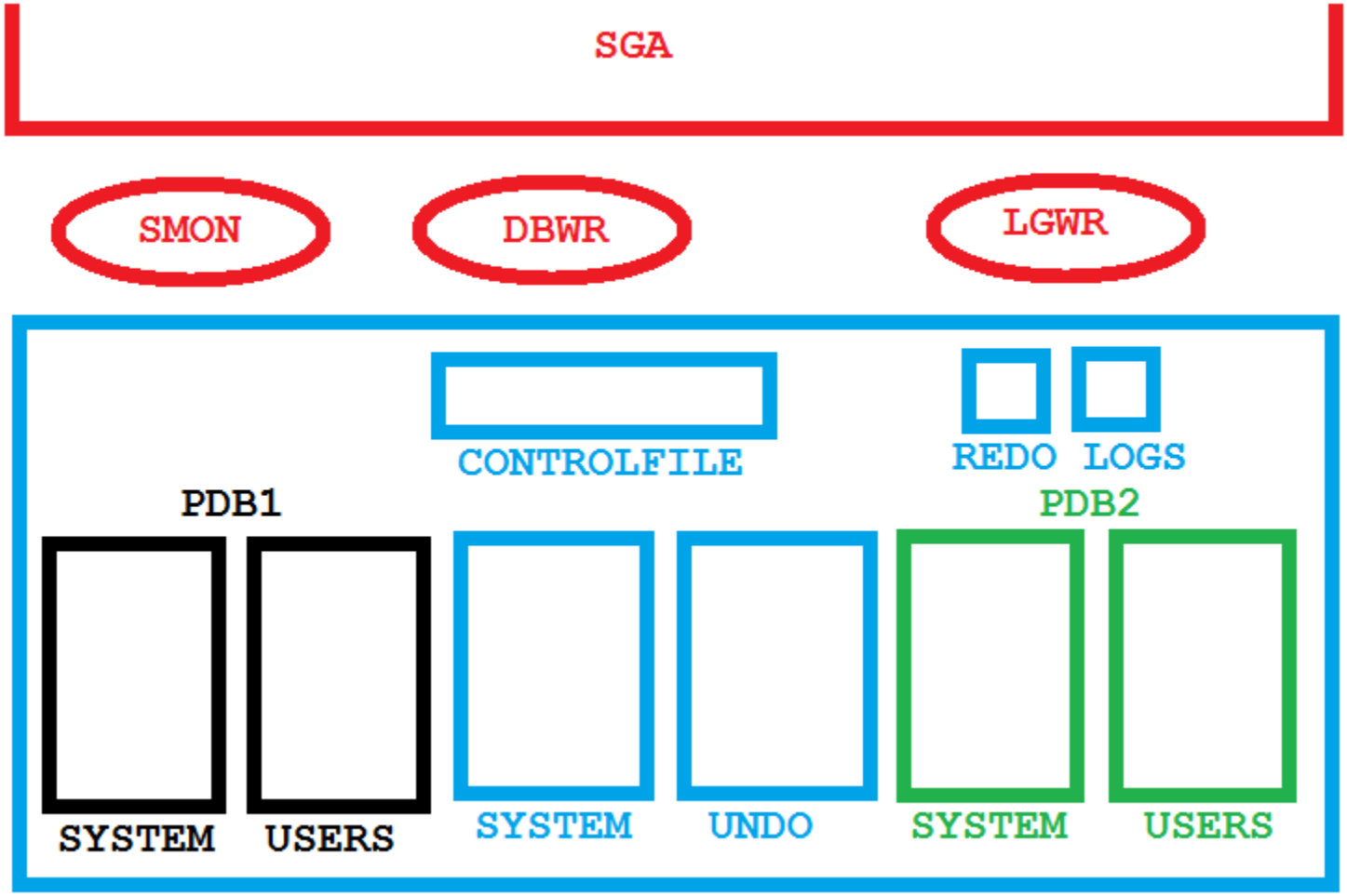
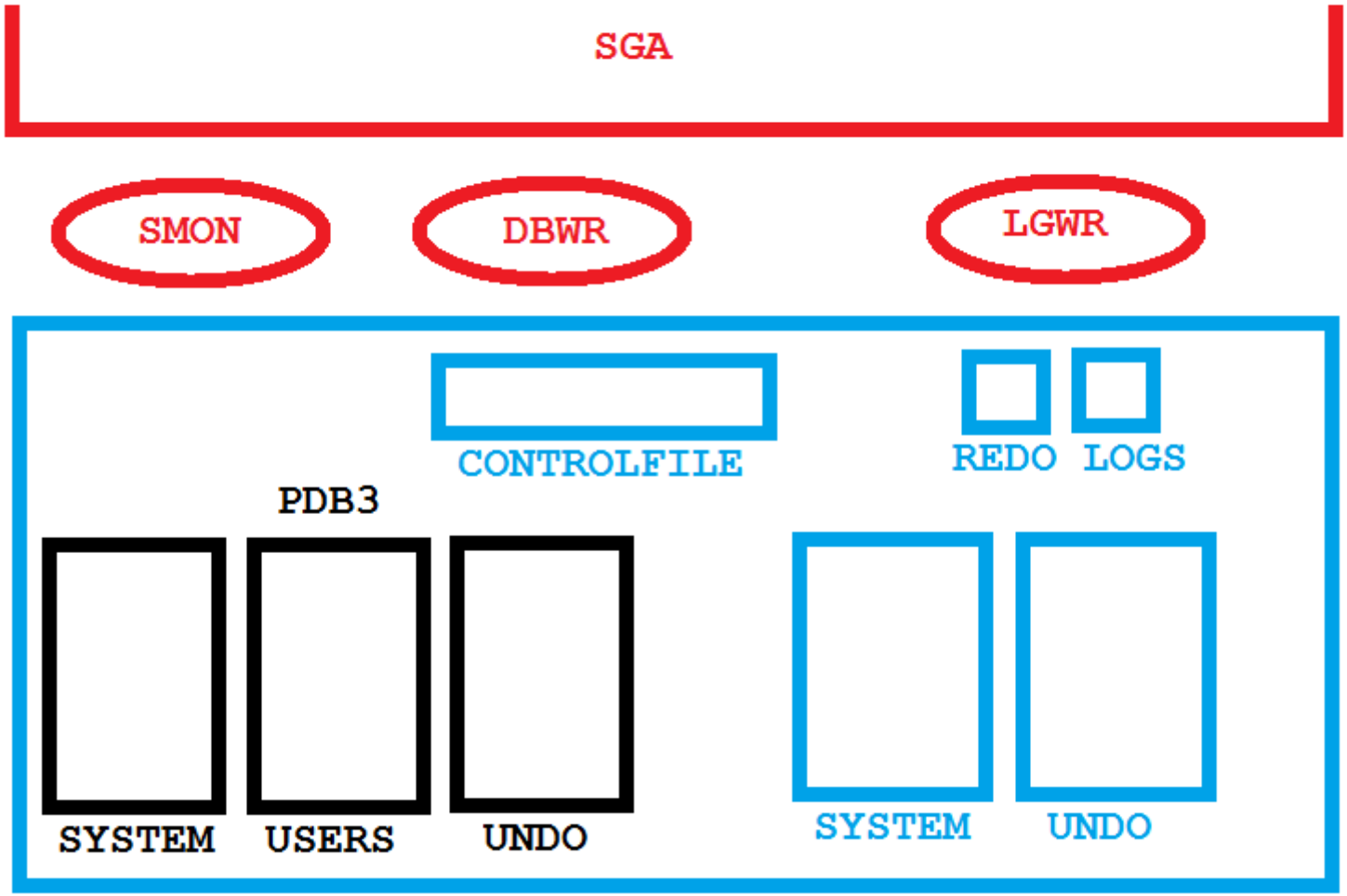
With Local Undo you can:

- Hot Clone PDBs
- Relocate PDBs
- Flashback PDBs

Shared Undo (cdb1)



Local Undo (cdb2)



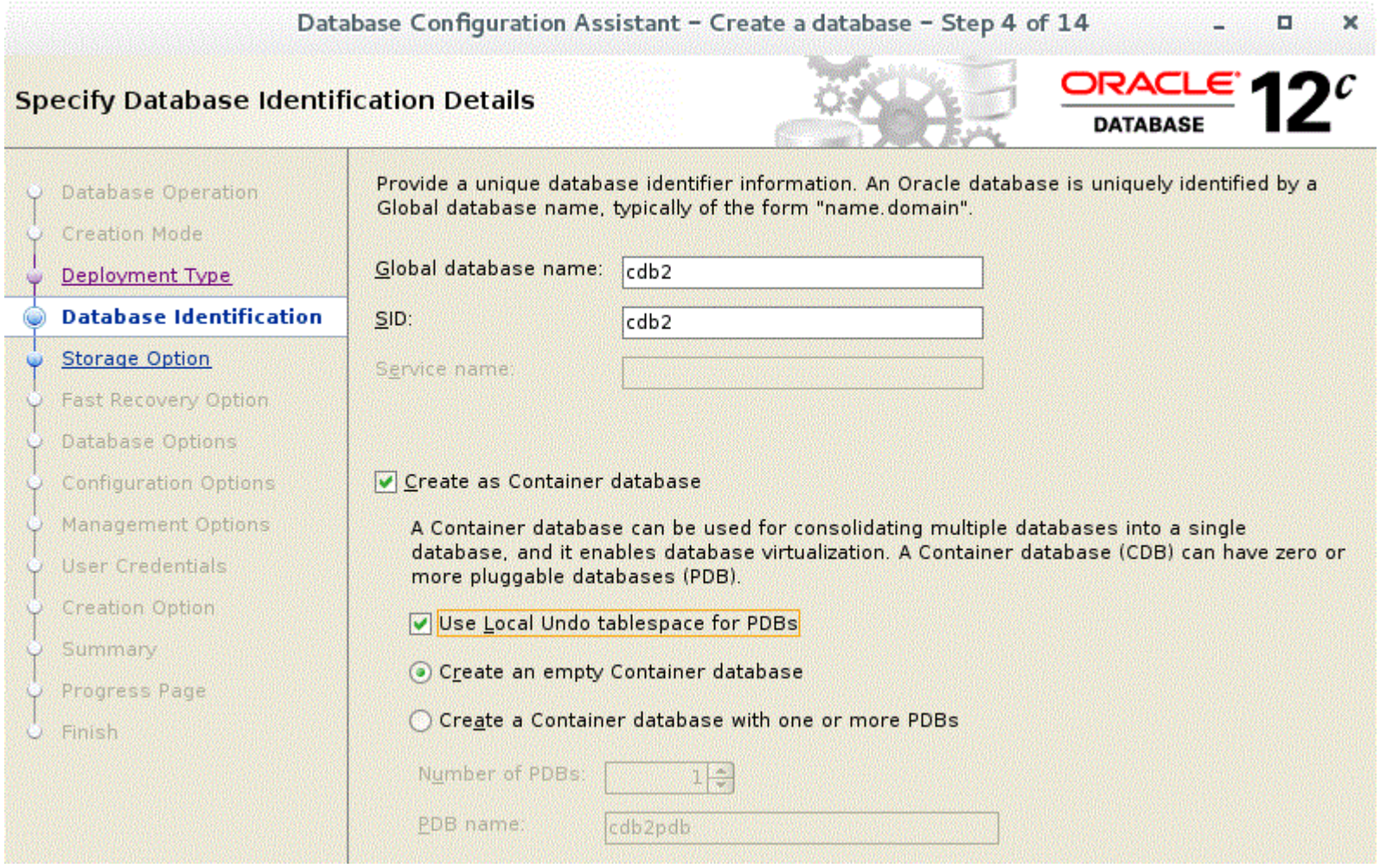
How to get Local Undo?

CREATE DATABASE cdb2 [...]

ENABLE PLUGGABLE DATABASE

LOCAL UNDO ON;

Or DBCA


Database Configuration Assistant – Create a database – Step 4 of 14
Specify Database Identification Details
ORACLE DATABASE 12c
Database Operation
Creation Mode
Deployment Type
Database Identification
Storage Option
Fast Recovery Option
Database Options
Configuration Options
Management Options
User Credentials
Creation Option
Summary
Progress Page
Finish
Provide a unique database identifier information. An Oracle database is uniquely identified by a Global database name, typically of the form "name.domain".
Global database name: cdb2
SID: cdb2
Service name:
Create as Container database
A Container database can be used for consolidating multiple databases into a single database, and it enables database virtualization. A Container database (CDB) can have zero or more pluggable databases (PDB).
Use Local Undo tablespace for PDBs
Create an empty Container database
Create a Container database with one or more PDBs
Number of PDBs: 1
PDB name: cdb2pdb

Hot cloning is easy now

```
create pluggable database pdb4 from pdb3
  file_name_convert=('pdb3','pdb4');
```

When you try hot cloning with shared undo:

```
create pluggable database pdb2 from pdb1
  file_name_convert=('pdb1','pdb2');
*
ERROR at line 1:
ORA-65035: unable to create pluggable database from
  PDB1
// *Cause:  An attempt was made to clone a pluggable
  database that did not have
//          local undo enabled.
// *Action: Enable local undo for the PDB and and
  retry the operation.
```

Flashback Pluggable Database with Local Undo:

```
create restore point pdb3point;
alter pluggable database pdb3 close
  immediate;
flashback pluggable database pdb3 to restore
  point pdb3point;
alter pluggable database pdb3 open
  resetlogs;
```

With shared undo you get

```
flashback pluggable database pdb1 to restore point
  pdb1point
*
ERROR at line 1:
ORA-39883: Restore point PDB1POINT for pluggable
  database 3 is not a clean pluggable database
  restore point.
```

Clean Restore Point?

```
alter pluggable database pdb1 close
  immediate;
connect sys/oracle@pdb1 as sysdba
create clean restore point pdb1point;
```

How to change the Undo Mode?

```
shutdown immediate
startup upgrade
alter database local undo on|off;
shutdown immediate
startup
```

Conclusion

- I expect to see local undo in use a lot
- Unless you want to avoid having many undo tablespaces