Local Undo – The most important New Feature in 12.2 Multitenant

Presenter:

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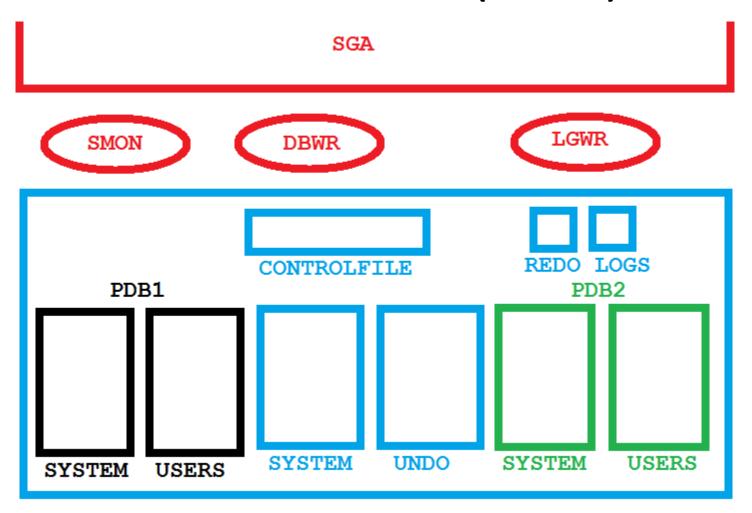


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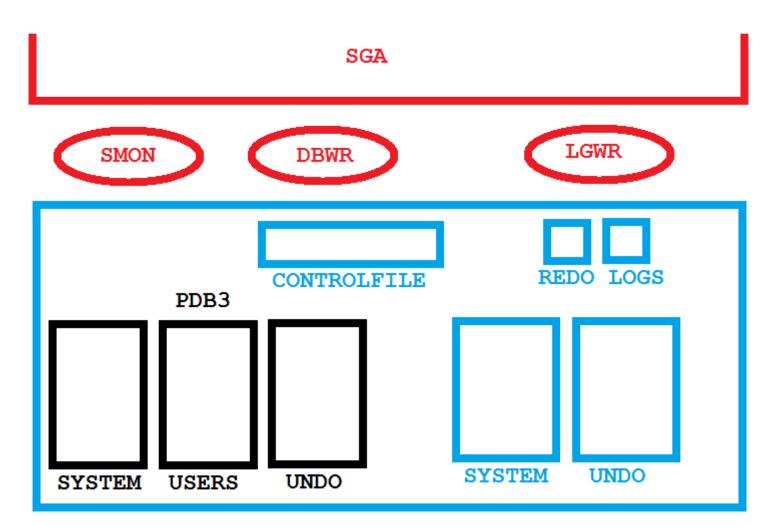
With Local Undo you can:

- 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 Provide a unique database identifier information. An Oracle database is uniquely identified by a Database Operation Global database name, typically of the form "name.domain". Creation Mode Global database name: cdb2 Deployment Type Database Identification SID: cdb2 Storage Option Service name: Fast Recovery Option Database Options Create as Container database Configuration Options Management Options 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 User Credentials more pluggable databases (PDB). Creation Option ✓ Use Local Undo tablespace for PDBs Summary Create an empty Container database Progress Page Create a Container database with one or more PDBs Finish Number of PDBs: PDB name:

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