Consolidated Database Replay Procedures

Consolidated Replay Steps

1. Create captures in separate directories.
2. Place all capture workloads in the same directory.
3. Process capture workloads for target.
4. Set replay directory.
5. Create replay schedule.
    - Add capture workloads.
    - Specify replay order of capture workloads.
6. The replay CDB is restored to start of capture state.
7. Initialize Consolidated Replay.
8. Remap Connections.
9. Prepare Consolidated Replay.
10. Calibrate and Start Workload Replay Clients (WRC).
11. Start Consolidated Replay.

Procedures for Steps 4 and 5

4. Set replay directory.
5. Create replay schedule.
    - Add capture workloads.
    - Specify replay order of capture workload.

```
DECLARE
         capture1 NUMBER;
         capture2          NUMBER;
BEGIN
  DBMS_WORKLOAD_REPLAY.SET_REPLAY_DIRECTORY('cap_root');
  DBMS_WORKLOAD_REPLAY.BEGIN_REPLAY_SCHEDULE('CONS_SCHEDULE');
  select DBMS_WORKLOAD_REPLAY.ADD_CAPTURE('CRM') into capture1   from dual;
  select DBMS_WORKLOAD_REPLAY.ADD_CAPTURE('SALES') into capture2 from dual;
  select DBMS_WORKLOAD_REPLAY.ADD_SCHEDULE_ORDERING(
          schedule_capture_id => capture2, waitfor_capture_id => capture1)
                                                                 from dual;
  DBMS_WORKLOAD_REPLAY.END_REPLAY_SCHEDULE;
END;
```

Procedures for Steps 6 and 7

6. Restore replay database.
7. Initialize the replay.

```
DBMS_WORKLOAD_REPLAY.INITIALIZE_CONSOLIDATED_REPLAY(REPLAY_NAME => 'CONS_REPLAY',
                                                    SCHEDULE_NAME => 'CONS_SCHEDULE');
```

- This procedure loads the connection information in the capture subsets into the `DBA_WORKLOAD_CONNECTION_MAP` view.
- Use the connection identifiers (`conn_id`) from this table to remap connections.

Procedure to Remap Connections with PDBs

8.Remap connections.

- For each capture in a schedule, map the service names for the connection.
- Each capture can have different connections even if they are identical captures.

```
DBMS_WORKLOAD_REPLAY.REMAP_CONNECTION(
        schedule_cap_id => 1
        connection_id   => 2,
        replay_connection => "oe/oe@pdb_oe.example.com")
```

Procedure to Prepare the Replay

9.Prepare Consolidated Replay.

- Specific type of synchronization

```
DBMS_WORKLOAD_REPLAY.PREPARE_CONSOLIDATED_REPLAY(
                        synchronization  => 'OBJECT_ID')
```

Modes of Synchronization

- For single replays
  - SCN synchronization is the default
  - Recorded SCNs
    - Determine object dependencies
    - Replay call ordering
- For Consolidated replay:
  - Object ID synchronization:
    - It is recommended (SCN synchronization not supported).
    - It enables fine grain synchronization, providing more replay concurrency.
    - OBJECT_IDs are tracked by user call to minimize object collision on replay.
    - If collision happens, then replay orders calls. Otherwise, replay lets it run to get more concurrency.

Procedure to Start Replay

10. Calibrate and start the workload replay clients.

```
$ wrc REPLAYDIR=/home/oracle/solutions/dbreplay MODE = calibrate
```

```
$ wrc REPLAYDIR=/home/oracle/solutions/dbreplay MODE=replay USERID=system
                                                PASSWORD=<password>
 Workload Replay Client  …
 Wait for the replay to start (21:47:01)
```

11. Execute the START_CONSOLIDATED_REPLAY procedure.

```
SQL> EXEC DBMS_WORKLOAD_REPLAY.START_CONSOLIDATED_REPLAY
```

Views

- DBA_WORKLOAD_REPLAY_SCHEDULES
- DBA_WORKLOAD_SCHEDULE_ORDERING