관리/환경설정

Non Partitioned Table을 Partitioned Table로 변경하기(예제)

TMAXTibero

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안내서 정보
안내서 제목: Non Partitioned Table 을 Partitioned Table 로 변경하기(예제)
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제, 개정 이력

안내서 버전	개정일자	개정 사유 및 내용	비고
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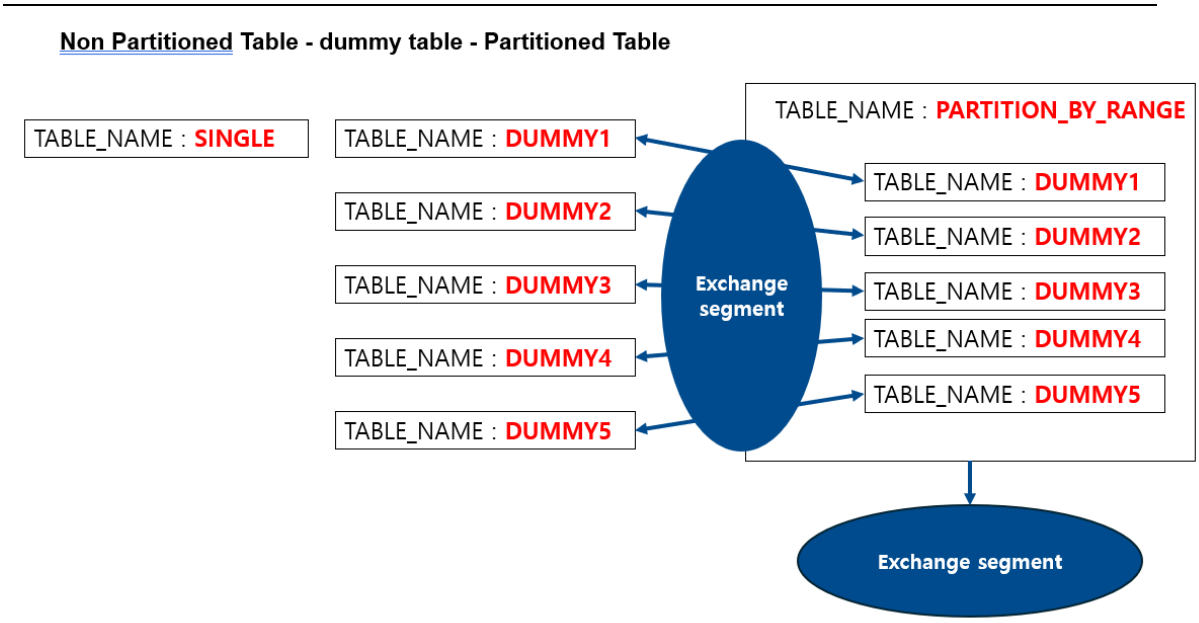
1. 개요

- 기존의 대용량 non-partition table을 partition table로 전환하여 쿼리 성능 향상(Partition Pruning) 및 데이터 관리 효율성을 극대화합니다.
- 본 글은 partition 되어있지 않은 테이블을 파티션 테이블로 변경하는 작성 예제



2. 핵심 전환 방식: EXCHANGE PARTITION

- 데이터를 직접 복사하지 않고, 메타데이터 포인터만 교체하여 대규모 데이터를 즉시 이동시키는 방법입니다. 이 방식은 서비스 다운타임을 극단적으로 최소화할 수 있어 가장 권장됩니다.

3. 예제 스크립트 내용

```
set linesize 150
set echo on
--------------------------------------------------------------------------
--CONNECT
--------------------------------------------------------------------------
disconn;
conn sys/tibero;

--------------------------------------------------------------------------
--drop user
--------------------------------------------------------------------------
drop user test_ts_01 cascade;

--------------------------------------------------------------------------
--drop tablespace for single table
--------------------------------------------------------------------------
```

```
drop tablespace single including contents and datafiles;

------------------------------------------------------------------------
--Create Tablespace for single table
------------------------------------------------------------------------
create tablespace single datafile 'single.dtf' size 1m autoextend on next 100m maxsize 1g;

------------------------------------------------------------------------
--create user
------------------------------------------------------------------------
create user test_ts_01 identified by tibero;
grant dba to test_ts_01;

------------------------------------------------------------------------
--connect user
------------------------------------------------------------------------
conn test_ts_01/tibero;

------------------------------------------------------------------------
--Create Single Table
------------------------------------------------------------------------
CREATE TABLE single (
CUSTNAME VARCHAR2(20) ,
BIRTHDT VARCHAR2(8) ,
HEIGHT NUMBER)
TABLESPACE single;
INSERT INTO single VALUES ('FRED1', '19690920',178);
INSERT INTO single VALUES ('FRED2', '19700920',182);
INSERT INTO single VALUES ('FRED3', '19710920',190);
INSERT INTO single VALUES ('FRED4', '19720920',167);
INSERT INTO single VALUES ('FRED5', '19730920',165);
INSERT INTO single VALUES ('FRED6', '19740920',192);
INSERT INTO single VALUES ('FRED7', '19750920',171);
INSERT INTO single VALUES ('FRED8', '19760920',168);
INSERT INTO single
SELECT 'TIBERO'||LEVEL CUSTNAME
 ,TO_CHAR(TO_DATE('19740101','YYYYMMDD')+MOD(LEVEL,364),'YYYYMMDD') BIRTHDT
 ,ROUND(DBMS_RANDOM.VALUE(165,200),0) HEIGHT
FROM DUAL CONNECT BY LEVEL <= 300000 ;
COMMIT;

------------------------------------------------------------------------
--CREATE INDEX for single table
------------------------------------------------------------------------
ALTER TABLE SINGLE ADD CONSTRAINT SINGLE_PK PRIMARY KEY(CUSTNAME,BIRTHDT);
CREATE INDEX HEIGHT_IDX ON SINGLE(HEIGHT) tablespace single;

------------------------------------------------------------------------
--Check sigle table's row_count
------------------------------------------------------------------------
select count(1) row_count from single;

------------------------------------------------------------------------
--drop tablespace for dummy table
------------------------------------------------------------------------
drop tablespace ts01 including contents and datafiles;
drop tablespace ts02 including contents and datafiles;
drop tablespace ts03 including contents and datafiles;
drop tablespace ts04 including contents and datafiles;
drop tablespace ts05 including contents and datafiles;

------------------------------------------------------------------------
--Create Tablespace for dummy table
------------------------------------------------------------------------
create tablespace ts01 datafile 'ts01.dtf' size 1m autoextend on next 1m maxsize 1g;
create tablespace ts02 datafile 'ts02.dtf' size 1m autoextend on next 1m maxsize 1g;
create tablespace ts03 datafile 'ts03.dtf' size 1m autoextend on next 1m maxsize 1g;
create tablespace ts04 datafile 'ts04.dtf' size 1m autoextend on next 1m maxsize 1g;
create tablespace ts05 datafile 'ts05.dtf' size 1m autoextend on next 1m maxsize 1g;

------------------------------------------------------------------------
--create dummy table
------------------------------------------------------------------------
```

```
CREATE TABLE dummy1 TABLESPACE ts01 as select * from single where BIRTHDT < '19720101' ;
CREATE TABLE dummy2 TABLESPACE ts02 as select * from single where BIRTHDT >= '19720101' AND BIRTHDT
< '19730101' ;
CREATE TABLE dummy3 TABLESPACE ts03 as select * from single where BIRTHDT >= '19730101' AND BIRTHDT
< '19740101' ;
CREATE TABLE dummy4 TABLESPACE ts04 as select * from single where BIRTHDT >= '19740101' AND BIRTHDT
< '19750101' ;
CREATE TABLE dummy5 TABLESPACE ts05 as select * from single where BIRTHDT >= '19750101' ;

--------------------------------------------------------------------------
--check dummy table row_count
--------------------------------------------------------------------------
SELECT TB_NAME,ROW_COUNT FROM (
select 'DUMMY1' TB_NAME,count(1) row_count from dummy1 UNION ALL
select 'DUMMY2' TB_NAME,count(1) row_count from dummy2 UNION ALL
select 'DUMMY3' TB_NAME,count(1) row_count from dummy3 UNION ALL
select 'DUMMY4' TB_NAME,count(1) row_count from dummy4 UNION ALL
select 'DUMMY5' TB_NAME,count(1) row_count from dummy5
);


--------------------------------------------------------------------------
--DUMMY 테이블에 NOT NULL 제약 조건 추가
--------------------------------------------------------------------------
ALTER TABLE DUMMY1 MODIFY CUSTNAME NOT NULL;
ALTER TABLE DUMMY1 MODIFY BIRTHDT NOT NULL;

ALTER TABLE DUMMY2 MODIFY CUSTNAME NOT NULL;
ALTER TABLE DUMMY2 MODIFY BIRTHDT NOT NULL;

ALTER TABLE DUMMY3 MODIFY CUSTNAME NOT NULL;
ALTER TABLE DUMMY3 MODIFY BIRTHDT NOT NULL;

ALTER TABLE DUMMY4 MODIFY CUSTNAME NOT NULL;
ALTER TABLE DUMMY4 MODIFY BIRTHDT NOT NULL;

ALTER TABLE DUMMY5 MODIFY CUSTNAME NOT NULL;
ALTER TABLE DUMMY5 MODIFY BIRTHDT NOT NULL;

--------------------------------------------------------------------------
--drop tablespace for partition table
--------------------------------------------------------------------------
drop tablespace dm01 including contents and datafiles;
drop tablespace dm02 including contents and datafiles;
drop tablespace dm03 including contents and datafiles;
drop tablespace dm04 including contents and datafiles;
drop tablespace dm05 including contents and datafiles;
drop tablespace ix01 including contents and datafiles;
drop tablespace ix02 including contents and datafiles;
drop tablespace ix03 including contents and datafiles;
drop tablespace ix04 including contents and datafiles;
drop tablespace ix05 including contents and datafiles;

--------------------------------------------------------------------------
--Create Tablespace for partition table
--------------------------------------------------------------------------
create tablespace dm01 datafile 'dm01.dtf' size 1m autoextend on next 1m maxsize 1g;
create tablespace dm02 datafile 'dm02.dtf' size 1m autoextend on next 1m maxsize 1g;
create tablespace dm03 datafile 'dm03.dtf' size 1m autoextend on next 1m maxsize 1g;
create tablespace dm04 datafile 'dm04.dtf' size 1m autoextend on next 1m maxsize 1g;
create tablespace dm05 datafile 'dm05.dtf' size 1m autoextend on next 1m maxsize 1g;
create tablespace ix01 datafile 'ix01.dtf' size 1m autoextend on next 1m maxsize 1g;
create tablespace ix02 datafile 'ix02.dtf' size 1m autoextend on next 1m maxsize 1g;
create tablespace ix03 datafile 'ix03.dtf' size 1m autoextend on next 1m maxsize 1g;
create tablespace ix04 datafile 'ix04.dtf' size 1m autoextend on next 1m maxsize 1g;
create tablespace ix05 datafile 'ix05.dtf' size 1m autoextend on next 1m maxsize 1g;

--------------------------------------------------------------------------
--Create Partitioned Table
--------------------------------------------------------------------------
CREATE TABLE PARTITION_BY_RANGE (
CUSTNAME VARCHAR2(20) not null,
```

```
BIRTHDT VARCHAR2(8) not null,
HEIGHT NUMBER )
tablespace ts01
PARTITION BY RANGE (BIRTHDT)
(PARTITION DOBS_IN_1971_OR_BEFORE VALUES LESS THAN ('19720101') TABLESPACE dm01,
PARTITION DOBS_IN_1972 VALUES LESS THAN ('19730101') TABLESPACE dm02,
PARTITION DOBS_IN_1973 VALUES LESS THAN ('19740101') TABLESPACE dm03,
PARTITION DOBS_IN_1974 VALUES LESS THAN ('19750101') TABLESPACE dm04,
PARTITION DOBS_IN_1975_OR_LATER VALUES LESS THAN (MAXVALUE) TABLESPACE dm05)
ENABLE ROW MOVEMENT;



--------------------------------------------------------------------------
--check segment
--------------------------------------------------------------------------
COL segment_name for a25;
COL tablespace_name for a25;
select segment_name,segment_type,header_block,blocks,tablespace_name
from user_segments
order by segment_name,segment_type;

--------------------------------------------------------------------------
--Exchange Segment
--------------------------------------------------------------------------
alter table PARTITION_BY_RANGE exchange partition DOBS_IN_1971_OR_BEFORE with table dummy1 WITH
VALIDATION;
alter table PARTITION_BY_RANGE exchange partition DOBS_IN_1971_OR_BEFORE with table dummy1 WITH
VALIDATION;
alter table PARTITION_BY_RANGE exchange partition DOBS_IN_1972 with table dummy2 WITH VALIDATION;
alter table PARTITION_BY_RANGE exchange partition DOBS_IN_1973 with table dummy3 WITH VALIDATION;
alter table PARTITION_BY_RANGE exchange partition DOBS_IN_1974 with table dummy4 WITH VALIDATION;
alter table PARTITION_BY_RANGE exchange partition DOBS_IN_1975_OR_LATER with table dummy5 WITH
VALIDATION;

--------------------------------------------------------------------------
--Check row_count from Partition
--------------------------------------------------------------------------
col part_name for a25
SELECT '-SUM-' part_name, count(1) row_count FROM PARTITION_BY_RANGE UNION ALL
SELECT 'DOBS_IN_1971_OR_BEFORE' part_name, count(1) row_count FROM PARTITION_BY_RANGE PARTITION
(DOBS_IN_1971_OR_BEFORE) UNION ALL
SELECT 'DOBS_IN_1972' part_name, count(1) row_count FROM PARTITION_BY_RANGE PARTITION (DOBS_IN_1972)
UNION ALL
SELECT 'DOBS_IN_1973' part_name, count(1) row_count FROM PARTITION_BY_RANGE PARTITION (DOBS_IN_1973)
UNION ALL
SELECT 'DOBS_IN_1974' part_name, count(1) row_count FROM PARTITION_BY_RANGE PARTITION (DOBS_IN_1974)
UNION ALL
SELECT 'DOBS_IN_1975_OR_LATER' part_name, count(1) row_count FROM PARTITION_BY_RANGE PARTITION
(DOBS_IN_1975_OR_LATER);

--------------------------------------------------------------------------
--create index
--------------------------------------------------------------------------
CREATE INDEX IDX_PARTITION_BY_RANGE ON PARTITION_BY_RANGE(CUSTNAME,BIRTHDT) LOCAL(
PARTITION LOCAL_IDX01 TABLESPACE ix01,
PARTITION LOCAL_IDX02 TABLESPACE ix02,
PARTITION LOCAL_IDX03 TABLESPACE ix03,
PARTITION LOCAL_IDX04 TABLESPACE ix04,
PARTITION LOCAL_IDX05 TABLESPACE ix05
);

ALTER TABLE PARTITION_BY_RANGE ADD CONSTRAINT PARTITION_BY_RANGE_PK PRIMARY
KEY(CUSTNAME,BIRTHDT);

create index partition_idx2 on PARTITION_BY_RANGE(HEIGHT) LOCAL(
PARTITION LOCAL_IDX01 TABLESPACE ix01,
PARTITION LOCAL_IDX02 TABLESPACE ix02,
PARTITION LOCAL_IDX03 TABLESPACE ix03,
PARTITION LOCAL_IDX04 TABLESPACE ix04,
PARTITION LOCAL_IDX05 TABLESPACE ix05
);
```

```
--------------------------------------------------------------------------
--check segment
--------------------------------------------------------------------------
COL segment_name for a25;
COL tablespace_name for a25;
select segment_name,segment_type,header_block,blocks,tablespace_name
from user_segments
order by segment_name,segment_type;

--------------------------------------------------------------------------
--gather stat.
--------------------------------------------------------------------------
exec
dbms_stats.gather_table_stats(ownname=>'TEST_TS_01',tabname=>'PARTITION_BY_RANGE',estimate_percent=>
100);

--------------------------------------------------------------------------
--check stat.
--------------------------------------------------------------------------
COL TABLE_NAME FOR A20
COL PARTITION_NAME FOR A25
COL tablespace_name for a25;
SELECT TABLE_NAME,PARTITION_NAME,NUM_ROWS,tablespace_name FROM USER_TAB_PARTITIONS;
```

4. 예제 스크립트 결과

```
@partition.sql
--------------------------------------------------------------------------
--CONNECT
--------------------------------------------------------------------------
disconn;
Disconnected.
conn sys/tibero;
Connected to Tibero.


--------------------------------------------------------------------------
--drop user
--------------------------------------------------------------------------
drop user test_ts_01 cascade;
TBR-7165: Unable to drop a user that is currently connected.


--------------------------------------------------------------------------
--drop tablespace for single table
--------------------------------------------------------------------------
drop tablespace single including contents and datafiles;

Tablespace 'SINGLE' dropped.


--------------------------------------------------------------------------
--Create Tablespace for single table
--------------------------------------------------------------------------
create tablespace single datafile 'single.dtf' size 1m autoextend on next 100m maxsize 1g;

Tablespace 'SINGLE' created.


--------------------------------------------------------------------------
--create user
--------------------------------------------------------------------------
create user test_ts_01 identified by tibero;
TBR-7100: Username 'TEST_TS_01' conflicts with another user or role name.

grant dba to test_ts_01;

Granted.
```

```
------------------------------------------------------------------------
--connect user
------------------------------------------------------------------------
conn test_ts_01/tibero;
Connected to Tibero.


------------------------------------------------------------------------
--Create Single Table
------------------------------------------------------------------------
CREATE TABLE single (
   2 CUSTNAME VARCHAR2(20) ,
   3 BIRTHDT VARCHAR2(8) ,
   4 HEIGHT NUMBER)
   5 TABLESPACE single;

Table 'SINGLE' created.

INSERT INTO single VALUES ('FRED1', '19690920',178);

1 row inserted.

INSERT INTO single VALUES ('FRED2', '19700920',182);

1 row inserted.

INSERT INTO single VALUES ('FRED3', '19710920',190);

1 row inserted.

INSERT INTO single VALUES ('FRED4', '19720920',167);

1 row inserted.

INSERT INTO single VALUES ('FRED5', '19730920',165);

1 row inserted.

INSERT INTO single VALUES ('FRED6', '19740920',192);

1 row inserted.

INSERT INTO single VALUES ('FRED7', '19750920',171);

1 row inserted.

INSERT INTO single VALUES ('FRED8', '19760920',168);

1 row inserted.

INSERT INTO single
   2 SELECT 'TIBERO'||LEVEL CUSTNAME
   3  ,TO_CHAR(TO_DATE('19740101','YYYYMMDD')+MOD(LEVEL,364),'YYYYMMDD') BIRTHDT
   4  ,ROUND(DBMS_RANDOM.VALUE(165,200),0) HEIGHT
   5 FROM DUAL CONNECT BY LEVEL <= 300000 ;

300000 rows inserted.

COMMIT;

Commit completed.


------------------------------------------------------------------------
--CREATE INDEX for single table
------------------------------------------------------------------------
ALTER TABLE SINGLE ADD CONSTRAINT SINGLE_PK PRIMARY KEY(CUSTNAME,BIRTHDT);

Table 'SINGLE' altered.

CREATE INDEX HEIGHT_IDX ON SINGLE(HEIGHT) tablespace single;

Index 'HEIGHT_IDX' created.
```

```
--------------------------------------------------------------------------
--Check sigle table's row_count
--------------------------------------------------------------------------
select count(1) row_count from single;

 ROW_COUNT
----------
    300008

1 row selected.


--------------------------------------------------------------------------
--drop tablespace for dummy table
--------------------------------------------------------------------------
drop tablespace ts01 including contents and datafiles;

Tablespace 'TS01' dropped.

drop tablespace ts02 including contents and datafiles;

Tablespace 'TS02' dropped.

drop tablespace ts03 including contents and datafiles;

Tablespace 'TS03' dropped.

drop tablespace ts04 including contents and datafiles;

Tablespace 'TS04' dropped.

drop tablespace ts05 including contents and datafiles;

Tablespace 'TS05' dropped.


--------------------------------------------------------------------------
--Create Tablespace for dummy table
--------------------------------------------------------------------------
create tablespace ts01 datafile 'ts01.dtf' size 1m autoextend on next 1m maxsize 1g;

Tablespace 'TS01' created.

create tablespace ts02 datafile 'ts02.dtf' size 1m autoextend on next 1m maxsize 1g;

Tablespace 'TS02' created.

create tablespace ts03 datafile 'ts03.dtf' size 1m autoextend on next 1m maxsize 1g;

Tablespace 'TS03' created.

create tablespace ts04 datafile 'ts04.dtf' size 1m autoextend on next 1m maxsize 1g;

Tablespace 'TS04' created.

create tablespace ts05 datafile 'ts05.dtf' size 1m autoextend on next 1m maxsize 1g;

Tablespace 'TS05' created.


--------------------------------------------------------------------------
--create dummy table
--------------------------------------------------------------------------
CREATE TABLE dummy1 TABLESPACE ts01 as select * from single where BIRTHDT < '19720101' ;

Table 'DUMMY1' created.

CREATE TABLE dummy2 TABLESPACE ts02 as select * from single where BIRTHDT >= '19720101' AND BIRTHDT
< '19730101' ;

Table 'DUMMY2' created.
```

```
CREATE TABLE dummy3 TABLESPACE ts03 as select * from single where BIRTHDT >= '19730101' AND BIRTHDT
< '19740101' ;

Table 'DUMMY3' created.

CREATE TABLE dummy4 TABLESPACE ts04 as select * from single where BIRTHDT >= '19740101' AND BIRTHDT
< '19750101' ;

Table 'DUMMY4' created.

CREATE TABLE dummy5 TABLESPACE ts05 as select * from single where BIRTHDT >= '19750101' ;

Table 'DUMMY5' created.


------------------------------------------------------------------------
--check dummy table row_count
------------------------------------------------------------------------
SELECT TB_NAME,ROW_COUNT FROM (
   2 select 'DUMMY1' TB_NAME,count(1) row_count from dummy1 UNION ALL
   3 select 'DUMMY2' TB_NAME,count(1) row_count from dummy2 UNION ALL
   4 select 'DUMMY3' TB_NAME,count(1) row_count from dummy3 UNION ALL
   5 select 'DUMMY4' TB_NAME,count(1) row_count from dummy4 UNION ALL
   6 select 'DUMMY5' TB_NAME,count(1) row_count from dummy5
   7 );

TB_NAME  ROW_COUNT
------- ----------
DUMMY1           3
DUMMY2           1
DUMMY3           1
DUMMY4      300001
DUMMY5           2

5 rows selected.



------------------------------------------------------------------------
--DUMMY 테이블에 NOT NULL 제약 조건 추가
------------------------------------------------------------------------
ALTER TABLE DUMMY1 MODIFY CUSTNAME NOT NULL;

Table 'DUMMY1' altered.

ALTER TABLE DUMMY1 MODIFY BIRTHDT NOT NULL;

Table 'DUMMY1' altered.


ALTER TABLE DUMMY2 MODIFY CUSTNAME NOT NULL;

Table 'DUMMY2' altered.

ALTER TABLE DUMMY2 MODIFY BIRTHDT NOT NULL;

Table 'DUMMY2' altered.


ALTER TABLE DUMMY3 MODIFY CUSTNAME NOT NULL;

Table 'DUMMY3' altered.

ALTER TABLE DUMMY3 MODIFY BIRTHDT NOT NULL;

Table 'DUMMY3' altered.


ALTER TABLE DUMMY4 MODIFY CUSTNAME NOT NULL;

Table 'DUMMY4' altered.
```

```
ALTER TABLE DUMMY4 MODIFY BIRTHDT NOT NULL;

Table 'DUMMY4' altered.


ALTER TABLE DUMMY5 MODIFY CUSTNAME NOT NULL;

Table 'DUMMY5' altered.

ALTER TABLE DUMMY5 MODIFY BIRTHDT NOT NULL;

Table 'DUMMY5' altered.


------------------------------------------------------------------------
--drop tablespace for partition table
------------------------------------------------------------------------
drop tablespace dm01 including contents and datafiles;
TBR-7649:    Unable    to    drop    (sub)partition    'DOBS_IN_1971_OR_BEFORE':    its    table
'TEST_TS_01.PARTITION_BY_RANGE' is in a different tablespace.

drop tablespace dm02 including contents and datafiles;
TBR-7649: Unable to drop (sub)partition 'DOBS_IN_1972': its table 'TEST_TS_01.PARTITION_BY_RANGE' is
in a different tablespace.

drop tablespace dm03 including contents and datafiles;
TBR-7649: Unable to drop (sub)partition 'DOBS_IN_1973': its table 'TEST_TS_01.PARTITION_BY_RANGE' is
in a different tablespace.

drop tablespace dm04 including contents and datafiles;
TBR-7649: Unable to drop (sub)partition 'DOBS_IN_1974': its table 'TEST_TS_01.PARTITION_BY_RANGE' is
in a different tablespace.

drop tablespace dm05 including contents and datafiles;
TBR-7649:    Unable    to    drop    (sub)partition    'DOBS_IN_1975_OR_LATER':    its    table
'TEST_TS_01.PARTITION_BY_RANGE' is in a different tablespace.

drop tablespace ix01 including contents and datafiles;

Tablespace 'IX01' dropped.

drop tablespace ix02 including contents and datafiles;

Tablespace 'IX02' dropped.

drop tablespace ix03 including contents and datafiles;

Tablespace 'IX03' dropped.

drop tablespace ix04 including contents and datafiles;

Tablespace 'IX04' dropped.

drop tablespace ix05 including contents and datafiles;

Tablespace 'IX05' dropped.


------------------------------------------------------------------------
--Create Tablespace for partition table
------------------------------------------------------------------------
create tablespace dm01 datafile 'dm01.dtf' size 1m autoextend on next 1m maxsize 1g;
TBR-7098: Duplicate tablespace 'DM01' exists.

create tablespace dm02 datafile 'dm02.dtf' size 1m autoextend on next 1m maxsize 1g;
TBR-7098: Duplicate tablespace 'DM02' exists.

create tablespace dm03 datafile 'dm03.dtf' size 1m autoextend on next 1m maxsize 1g;
TBR-7098: Duplicate tablespace 'DM03' exists.

create tablespace dm04 datafile 'dm04.dtf' size 1m autoextend on next 1m maxsize 1g;
TBR-7098: Duplicate tablespace 'DM04' exists.
```

```
create tablespace dm05 datafile 'dm05.dtf' size 1m autoextend on next 1m maxsize 1g;
TBR-7098: Duplicate tablespace 'DM05' exists.

create tablespace ix01 datafile 'ix01.dtf' size 1m autoextend on next 1m maxsize 1g;

Tablespace 'IX01' created.

create tablespace ix02 datafile 'ix02.dtf' size 1m autoextend on next 1m maxsize 1g;

Tablespace 'IX02' created.

create tablespace ix03 datafile 'ix03.dtf' size 1m autoextend on next 1m maxsize 1g;

Tablespace 'IX03' created.

create tablespace ix04 datafile 'ix04.dtf' size 1m autoextend on next 1m maxsize 1g;

Tablespace 'IX04' created.

create tablespace ix05 datafile 'ix05.dtf' size 1m autoextend on next 1m maxsize 1g;

Tablespace 'IX05' created.


--------------------------------------------------------------------------
--Create Partitioned Table
--------------------------------------------------------------------------
CREATE TABLE PARTITION_BY_RANGE (
   2 CUSTNAME VARCHAR2(20) not null,
   3 BIRTHDT VARCHAR2(8) not null,
   4 HEIGHT NUMBER )
   5 tablespace ts01
   6 PARTITION BY RANGE (BIRTHDT)
   7 (PARTITION DOBS_IN_1971_OR_BEFORE VALUES LESS THAN ('19720101') TABLESPACE dm01,
   8 PARTITION DOBS_IN_1972 VALUES LESS THAN ('19730101') TABLESPACE dm02,
   9 PARTITION DOBS_IN_1973 VALUES LESS THAN ('19740101') TABLESPACE dm03,
  10 PARTITION DOBS_IN_1974 VALUES LESS THAN ('19750101') TABLESPACE dm04,
  11 PARTITION DOBS_IN_1975_OR_LATER VALUES LESS THAN (MAXVALUE) TABLESPACE dm05)
  12 ENABLE ROW MOVEMENT;
TBR-7102: Duplicate schema object 'TEST_TS_01.PARTITION_BY_RANGE' exists.




--------------------------------------------------------------------------
--check segment
--------------------------------------------------------------------------
COL segment_name for a25;
COL tablespace_name for a25;
select segment_name,segment_type,header_block,blocks,tablespace_name
   2 from user_segments
   3 order by segment_name,segment_type;

SEGMENT_NAME              SEGMENT_TYPE       HEADER_BLOCK     BLOCKS TABLESPACE_NAME
------------------------- ------------------ ------------ ---------- -------------------------
DUMMY1                    TABLE                         9         16 TS01
DUMMY2                    TABLE                         9         16 TS02
DUMMY3                    TABLE                         9         16 TS03
DUMMY4                    TABLE                         9       1392 TS04
DUMMY5                    TABLE                         9         16 TS05
HEIGHT_IDX                INDEX                      2825        768 SINGLE
PARTITION_BY_RANGE         TABLE PARTITION              9         16 DM01
PARTITION_BY_RANGE         TABLE PARTITION              9         16 DM02
PARTITION_BY_RANGE         TABLE PARTITION              9         16 DM03
PARTITION_BY_RANGE         TABLE PARTITION              9         16 DM04
PARTITION_BY_RANGE         TABLE PARTITION              9         16 DM05
SINGLE                    TABLE                        9       1408 SINGLE
SINGLE_PK                 INDEX                     1417       1408 SINGLE

13 rows selected.
```

```
--------------------------------------------------------------------------
--Exchange Segment
--------------------------------------------------------------------------
alter table PARTITION_BY_RANGE exchange partition DOBS_IN_1971_OR_BEFORE with table dummy1 WITH
VALIDATION;

Table 'PARTITION_BY_RANGE' altered.

alter table PARTITION_BY_RANGE exchange partition DOBS_IN_1971_OR_BEFORE with table dummy1 WITH
VALIDATION;

Table 'PARTITION_BY_RANGE' altered.

alter table PARTITION_BY_RANGE exchange partition DOBS_IN_1972 with table dummy2 WITH VALIDATION;

Table 'PARTITION_BY_RANGE' altered.

alter table PARTITION_BY_RANGE exchange partition DOBS_IN_1973 with table dummy3 WITH VALIDATION;

Table 'PARTITION_BY_RANGE' altered.

alter table PARTITION_BY_RANGE exchange partition DOBS_IN_1974 with table dummy4 WITH VALIDATION;

Table 'PARTITION_BY_RANGE' altered.

alter table PARTITION_BY_RANGE exchange partition DOBS_IN_1975_OR_LATER with table dummy5 WITH
VALIDATION;

Table 'PARTITION_BY_RANGE' altered.


--------------------------------------------------------------------------
--Check row_count from Partition
--------------------------------------------------------------------------
col part_name for a25
SELECT '-SUM-' part_name, count(1) row_count FROM PARTITION_BY_RANGE UNION ALL
   2 SELECT 'DOBS_IN_1971_OR_BEFORE' part_name, count(1) row_count FROM PARTITION_BY_RANGE PARTITION
(DOBS_IN_1971_OR_BEFORE) UNION ALL
   3  SELECT  'DOBS_IN_1972'  part_name,  count(1)  row_count  FROM  PARTITION_BY_RANGE  PARTITION
(DOBS_IN_1972) UNION ALL
   4  SELECT  'DOBS_IN_1973'  part_name,  count(1)  row_count  FROM  PARTITION_BY_RANGE  PARTITION
(DOBS_IN_1973) UNION ALL
   5  SELECT  'DOBS_IN_1974'  part_name,  count(1)  row_count  FROM  PARTITION_BY_RANGE  PARTITION
(DOBS_IN_1974) UNION ALL
   6 SELECT 'DOBS_IN_1975_OR_LATER' part_name, count(1) row_count FROM PARTITION_BY_RANGE PARTITION
(DOBS_IN_1975_OR_LATER);

PART_NAME                ROW_COUNT
------------------------ ----------
-SUM-                        300005
DOBS_IN_1971_OR_BEFORE            0
DOBS_IN_1972                      1
DOBS_IN_1973                      1
DOBS_IN_1974                 300001
DOBS_IN_1975_OR_LATER             2

6 rows selected.


--------------------------------------------------------------------------
--create index
--------------------------------------------------------------------------
CREATE INDEX IDX_PARTITION_BY_RANGE ON PARTITION_BY_RANGE(CUSTNAME,BIRTHDT) LOCAL(
   2 PARTITION LOCAL_IDX01 TABLESPACE ix01,
   3 PARTITION LOCAL_IDX02 TABLESPACE ix02,
   4 PARTITION LOCAL_IDX03 TABLESPACE ix03,
   5 PARTITION LOCAL_IDX04 TABLESPACE ix04,
   6 PARTITION LOCAL_IDX05 TABLESPACE ix05
   7 );

Index 'IDX_PARTITION_BY_RANGE' created.
```

```
ALTER TABLE PARTITION_BY_RANGE ADD CONSTRAINT PARTITION_BY_RANGE_PK PRIMARY
   2 KEY(CUSTNAME,BIRTHDT);

Table 'PARTITION_BY_RANGE' altered.


create index partition_idx2 on PARTITION_BY_RANGE(HEIGHT) LOCAL(
   2 PARTITION LOCAL_IDX01 TABLESPACE ix01,
   3 PARTITION LOCAL_IDX02 TABLESPACE ix02,
   4 PARTITION LOCAL_IDX03 TABLESPACE ix03,
   5 PARTITION LOCAL_IDX04 TABLESPACE ix04,
   6 PARTITION LOCAL_IDX05 TABLESPACE ix05
   7 );

Index 'PARTITION_IDX2' created.


------------------------------------------------------------------------
--check segment
------------------------------------------------------------------------
COL segment_name for a25;
COL tablespace_name for a25;
select segment_name,segment_type,header_block,blocks,tablespace_name
   2 from user_segments
   3 order by segment_name,segment_type;

SEGMENT_NAME              SEGMENT_TYPE       HEADER_BLOCK     BLOCKS TABLESPACE_NAME
------------------------- ------------------ ------------ ---------- -------------------------
DUMMY1                    TABLE                         9         16 TS01
DUMMY2                    TABLE                         9         16 DM02
DUMMY3                    TABLE                         9         16 DM03
DUMMY4                    TABLE                         9         16 DM04
DUMMY5                    TABLE                         9         16 DM05
HEIGHT_IDX                INDEX                      2825        768 SINGLE
IDX_PARTITION_BY_RANGE    INDEX PARTITION               9         16 IX02
IDX_PARTITION_BY_RANGE    INDEX PARTITION               9       1424 IX04
IDX_PARTITION_BY_RANGE    INDEX PARTITION               9         16 IX01
IDX_PARTITION_BY_RANGE    INDEX PARTITION               9         16 IX03
IDX_PARTITION_BY_RANGE    INDEX PARTITION               9         16 IX05
PARTITION_BY_RANGE        TABLE PARTITION               9         16 TS05
PARTITION_BY_RANGE        TABLE PARTITION               9       1392 TS04
PARTITION_BY_RANGE        TABLE PARTITION               9         16 TS03
PARTITION_BY_RANGE        TABLE PARTITION               9         16 TS02
PARTITION_BY_RANGE        TABLE PARTITION               9         16 DM01
PARTITION_IDX2            INDEX PARTITION            1433        656 IX04
PARTITION_IDX2            INDEX PARTITION              25         16 IX03
PARTITION_IDX2            INDEX PARTITION              25         16 IX02
PARTITION_IDX2            INDEX PARTITION              25         16 IX01
PARTITION_IDX2            INDEX PARTITION              25         16 IX05
SINGLE                    TABLE                         9       1408 SINGLE

SEGMENT_NAME              SEGMENT_TYPE       HEADER_BLOCK     BLOCKS TABLESPACE_NAME
------------------------- ------------------ ------------ ---------- -------------------------
SINGLE_PK                 INDEX                      1417       1408 SINGLE

23 rows selected.


------------------------------------------------------------------------
--gather stat.
------------------------------------------------------------------------
exec
dbms_stats.gather_table_stats(ownname=>'TEST_TS_01',tabname=>'PARTITION_BY_RANGE',estimate_percent=>
100);

PSM completed.


------------------------------------------------------------------------
--check stat.
------------------------------------------------------------------------
COL TABLE_NAME FOR A20
COL PARTITION_NAME FOR A25
```

```
COL tablespace_name for a25;
SELECT TABLE_NAME,PARTITION_NAME,NUM_ROWS,tablespace_name FROM USER_TAB_PARTITIONS;

TABLE_NAME          PARTITION_NAME             NUM_ROWS TABLESPACE_NAME
------------------- ------------------------- ---------- -------------------------
PARTITION_BY_RANGE   DOBS_IN_1972                      1 TS02
PARTITION_BY_RANGE   DOBS_IN_1973                      1 TS03
PARTITION_BY_RANGE   DOBS_IN_1974                 300001 TS04
PARTITION_BY_RANGE   DOBS_IN_1975_OR_LATER              2 TS05
PARTITION_BY_RANGE   DOBS_IN_1971_OR_BEFORE             0 DM01

5 rows selected.
```