【TTS】AIX 平台数据库迁移到 Linux--基于 RMAN(真实环境)

1.1 BLOG 文档结构图

1.2 前言部分

1.2.1 导读和注意事项

各位技术爱好者，看完本文后，你可以掌握如下的技能，也可以学到一些其它你所不知道的知识，~O(∩_∩)O~：

① 异构平台下传输表空间的实施

② 传输表空间基于表空间的 read only 和 rman2 种方式

③ 平台字节序、自包含概念

④ expdp/impdp 的应用

⑤ 数据库迁移一般情况下应该收集哪些信息及相应的脚本

Tips：

① 若文章代码格式有错乱，推荐使用搜狗或 360 浏览器，也可以下载 pdf 格式的文档来查看，pdf 文档下载地址：http://yunpan.cn/cdEQedhCs2kFz （提取码：ed9b）

② 本篇 BLOG 中命令的输出部分需要特别关注的地方我都用灰色背景和粉红色字体来表示，比如下边的例子中，thread 1 的最大归档日志号为 33，thread 2 的最大归档日志号为 43 是需要特别关注的地方；而命令一般使用黄色背景和红色字体标注；对代码或代码输出部分的注释一般采用蓝色字体表示。

```
  List of Archived Logs in backup set 11
  Thrd Seq     Low SCN    Low Time            Next SCN   Next Time
  ---- ------- ---------- ------------------- ---------- ---------
  1    32      1621589    2015-05-29 11:09:52 1625242    2015-05-29 11:15:48
  1    33      1625242    2015-05-29 11:15:48 1625293    2015-05-29 11:15:58
  2    42      1613951    2015-05-29 10:41:18 1625245    2015-05-29 11:15:49
  2    43      1625245    2015-05-29 11:15:49 1625253    2015-05-29 11:15:53



[ZFXDESKDB1:root]:/>lsvg -o
T_XDESK_APP1_vg
rootvg
[ZFXDESKDB1:root]:/>
00:27:22 SQL> alter tablespace idxtbs read write;


====》2097152*512/1024/1024/1024=1G
```

本文如有错误或不完善的地方请大家多多指正，ITPUB 留言或 QQ 皆可，您的批评指正是我写作的最大动力。

1.2.2 相关参考文章链接

其他异构平台迁移的一些文章参考：

【推荐】 oracle 异构平台迁移之传输表空间一例 http://blog.itpub.net/26736162/viewspace-1391913/

【推荐】 oracle 传输表空间一例 http://blog.itpub.net/26736162/viewspace-1375260/

【推荐】 利用 rman 来实现 linux 平台数据库复制到 windows 平台数据库 http://blog.itpub.net/26736162/viewspace-1352436/

【推荐】 直接复制数据文件实现 linux 平台数据库复制到 windows 平台数据库 http://blog.itpub.net/26736162/viewspace-1352243/

【TTS】传输表空间 Linux asm -> AIX asm http://blog.itpub.net/26736162/viewspace-1987949/

【TTS】传输表空间 Linux asm -> AIX asm 基于 rman http://blog.itpub.net/26736162/viewspace-1987953/

【TTS】传输表空间 AIX asm -> linux asm http://blog.itpub.net/26736162/viewspace-1987957/

【TTS】传输表空间 AIX asm -> linux asm 基于 rman http://blog.itpub.net/26736162/viewspace-1987961/

【TTS】AIX 平台数据库迁移到 Linux--基于 RMAN(真实环境) http://blog.itpub.net/26736162/viewspace-1987971/

【TTS】AIX 平台数据库迁移到 Linux--基于 RMAN(真实环境) 续 http://blog.itpub.net/26736162/viewspace-1987974/

1.3 相关知识点扫盲

可传输表空间的特性主要用于进行库对库的表空间复制，要进行传输的表空间必须置于 read-only 模式。如果生产库不允许表空间置为只读模式，没关系，方法还是有的，通过 RMAN 备份也可以创建可传输表空间集。要使用可传输表空间的特性，oracle 至少是8i 企业版或更高版本。如果是相同操作系统平台相互导入，则8i 及以上版本均可支持，但如果是不同操作系统平台，数据库版本至少10g。被传输的表空间即可以是字典管理，也可以是本地管理。并且自 oracle9i 开始，被传输表空间的 block size 可以与目标数据库的 block size 不同。

可传输表空间(还有个集)最大的优势是其速度比 export/import 或 unload/load 要快的多。因为可传输表空间主要是复制数据文件到目标路径，然后再使用 export/import 或 Data Pump export/import 等应用仅导出/导入表空间对象的元数据到新数据库。

关于可传输表空间，还有个集(Transportable Tablespace Sets)的创建，其中都提到了很重要一点，就是被传输的表空间在传输过程中必须置为 read-only。而在实际操作过程中，对于某些生产数据库，将表空间置为 read-only 是件非常复杂的事情甚至完全不允许，有了 RMAN 的 Transportable Tablespace，这一切都得以避免。RMAN 通过备份创建可传输表空间集，它并不需要存取活动的数据文件，相应也就不需要将表空间置为 read-only。因此，数据库可用性得到提升，尤其对于超大的表空间，因为被传输的表空间在此期间仍可进行读写操作，而且把表空间置为 read-only 模式可能会花费较长时间，

使用 RMAN 创建可传输表空间集，允许你在传输过程中指定目标恢复时间点或 SCN，这样传输的数据可以更灵活，不必完全复制现有表空间，只要备份中存在，你就可以选择性的恢复数据。例如，你的备份策略为保留一周，你希望创建的可传输表空间中数据是截止本月底最后一天的数据，那么你在下个月第一周内任何时候都可以进行传输操作而不需要考虑这期间生产库是否会有写入操作。

1.3.1 注意事项

☞ 注意：

① source 和 target database 的数据库版本最好一致，否则会因为 db time zone 不一致导致报如下错误，但是如果 source 大于等于 target 的话是可以的，向下兼容的

```
ORA-39002: invalid operation
ORA-39322: Cannot use transportabletablespace with timestamp with timezone columns and different timezone version.
```

② source 和 target 端的字符集必须一致，例如如下情况报错：

```
source 为 ZHS16GBK，target 为 AL32UTF8
ORA-39123: Data Pump transportable tablespace job aborted
ORA-29345: cannot plug a tablespace into a database using an incompatible character set

Tartget db char set AL32UTF8 is not a superset of ZHS16GBK.
Failed to plug in a tablespace due to incompatible
  database character set"AL32UTF8" and
  transportable set database character set "ZHS16GBK"
```

③ source 和 target database 的 compatible 参数最好一致，但 source 如果小于等于 target 端的话是可以的，例如 source 为 11.2.0.4.0，target 为 11.2.0.0.0 就不行，impdp 的时候报错：

```
ORA-39123: Data Pump transportable tablespace job aborted
ORA-00721: changes by release 11.2.0.4.0 cannot be used by release 11.2.0.0.0
```

1.4 实验部分

1.4.1 迁移环境介绍

项目	source db	target db

db 类型	单实例	单实例
db version	11.2.0.3	11.2.0.3
db 存储	ASM	ASM
ORACLE_SID	oraSKY	oraSKY
db_name	ORASKY	ORASKY
主机 IP 地址：	22.188.139.33	192.168.59.30
OS 版本及 kernel 版本	AIX 64 位 5.3.0.0	RHEL6.5 64 位， 2.6.32-504.16.2.el6.x86_64
OS hostname	ZDMTRAIN2	rhel6_lhr
platform_name	AIX-Based Systems (64-bit)	Linux x86 64-bit
compatible	11.2.0.0.0	11.2.0.0.0
db time zone	14	14
字符集	AL32UTF8	AL32UTF8
归档模式	Archive Mode	Archive Mode
需迁移的 SCHEMA 个数	3 （T,XPADAD,TEST1）	3 （T,XPADAD,TEST1）
需迁移的 TS 个数	3 （USERS，XPADDATA，TEST_USER1）	3 （USERS，XPADDATA， TEST_USER1）
无效对象个数	0	0
数据文件路径	+DATA1/ora11g/datafile/	+DATA
日志及日志组情况	+DATA1/ora11g/onlinelog/group_3.388.936264969 +DATA1/ora11g/onlinelog/group_3.389.936264969 +DATA1/ora11g/onlinelog/group_2.386.936264967 +DATA1/ora11g/onlinelog/group_2.387.936264967 +DATA1/ora11g/onlinelog/group_1.384.936264967 +DATA1/ora11g/onlinelog/group_1.385.936264967	+DATA
控制文件	+DATA1/ora11g/controlfile/current.381.936264963, +DATA1/ora11g/controlfile/current.383.936264963	+DATA
使用 spfile 还是 pfile	spfile	spfile
需要迁移的库的实际大小	100M	
表空间总大小	14G	
需要 copy 到 target 端的文件大小	450M	

1.4.2 实验目标

在实际的工作过程中，需要将 AIX 上的数据库迁移到 Linux，或者将 Linux 上的数据库迁移到 AIX 上，除了 exp/imp 和 expdp/impdp 外，最常用的就是传输表空间了，若是整个库迁移的话，我们需要做的就是把业务用户和业务表空间的数据迁移过来就行，Undo、temp、system 等等的就不用迁移了，整个处理过程和本文档的处理过程大同小异，需要关注的是业务对象的个数、大小、状态等，本文档要实现将 AIX 上的数据库 oraSKY 从源平台传递到目标平台 Linux 上。

1.4.3 实验过程

第 2 章 AIX 平台数据库迁移到 Linux--基于 RMAN(真实环境)

2.1 源库信息收集

2.1.1 先跑一下健康检查(可选)

根据我自己写的脚本，在源库上跑一下健康检查，主要为了收集一下源库的信息，脚本可以找我私聊，检查后的 html 文件如下：

DB_healthcheck_by_lhr_22.188.139.33_ORASKY_11.2.0.3.0_20170217173935.html

例如：

基本信息

巡检报告文件名称	DB_healthcheck_by_lhr_22.188.139.33_ORASKY_11.2.0.3.0_20170217173935.html
巡检时间	2017-02-17 (Friday) 17:39:12 PM timezone +08:00
当前巡检用户	MDSYS
当前巡检会话	INST_ID: 1, 【1717,23,2064450】
数据库服务器名称及IP地址	ZDMTRAIN2: 22.188.139.33
数据库服务器配置情况	CPUs:4 Cores:2 Sockets: Memory:3G
操作系统信息	AIX-Based Systems (64-bit) / 6
数据库名称	ORASKY
数据库全局名	ORASKY
当前实例名	oraSKY
所有实例名	oraSKY
数据库版本	11.2.0.3.0
数据库ID(DBID)	98202371
是否RAC集群及其节点数	FALSE : 1
数据库创建时间	2027-06-24 12:55:31
实例启动时间	2017-02-17 16:28:36
数据库归档模式	ARCHIVELOG
数据库闪回状态	NO
数据库字符集	AL32UTF8
数据库块大小	8192
强制日志	NO
数据库角色	PRIMARY
是否有DG	NULL
是否有OGG	NULL
db time zone	14
数据库大小	All TS Info:【ts_size: 16.47G , Used_Size: 1.48G , Used_per: 9.01% , MAX_Size: 592G】

2.1.2 表空间及数据文件情况

2.1.2.1 表空间大小

```
WITH wt1 AS
 (SELECT ts.TABLESPACE_NAME,
        df.all_bytes,
        decode(df.TYPE,
               'D',
               nvl(fs.FREESIZ, 0),
               'T',
               df.all_bytes - nvl(fs.FREESIZ, 0)) FREESIZ,
        df.MAXSIZ,
        ts.BLOCK_SIZE,
        ts.LOGGING,
        ts.FORCE_LOGGING,
        ts.CONTENTS,
        ts.EXTENT_MANAGEMENT,
```

```
       ts.SEGMENT_SPACE_MANAGEMENT,
       ts.RETENTION,
       ts.DEF_TAB_COMPRESSION,
       ts.STATUS,
       df.ts_df_count,
       df.FILE_NAME
FROM   dba_tablespaces ts,
       --表空间大小
       (SELECT 'D' TYPE,
               TABLESPACE_NAME,
               COUNT(*) ts_df_count,
               SUM(BYTES) all_bytes,
               SUM(decode(MAXBYTES, 0, BYTES, MAXBYTES)) MAXSIZ,
               to_char(wm_concat(d.FILE_NAME)) FILE_NAME
        FROM   dba_data_files d
        GROUP  BY TABLESPACE_NAME
        UNION ALL
        --临时表空间大小也可以用(SELECT SUM(bytes)  FROM v$tempfile)
        SELECT 'T',
               TABLESPACE_NAME,
               COUNT(*) ts_df_count,
               SUM(BYTES) all_bytes,
               SUM(decode(MAXBYTES, 0, BYTES, MAXBYTES)),
               to_char(wm_concat(d.FILE_NAME)) FILE_NAME
        FROM   dba_temp_files d
        GROUP  BY TABLESPACE_NAME) df,
       --可用空间大小
       (SELECT TABLESPACE_NAME,
               SUM(BYTES) FREESIZ
        FROM   dba_free_space
        GROUP  BY TABLESPACE_NAME
        UNION ALL
        SELECT tablespace_name,
               SUM(d.BLOCK_SIZE * a.BLOCKS) bytes --这里查询出来的是已使用大小
        FROM   gv$sort_usage   a, --或 v$tempseg_usage
               dba_tablespaces d
        WHERE  a.tablespace = d.tablespace_name
        GROUP  BY tablespace_name) fs
 WHERE  ts.TABLESPACE_NAME = df.TABLESPACE_NAME
 AND    ts.TABLESPACE_NAME = fs.TABLESPACE_NAME(+))
SELECT (SELECT A.TS#
      FROM   V$TABLESPACE A
```

```
       WHERE  A.NAME = UPPER(t.TABLESPACE_NAME)) TS#,
      t.TABLESPACE_NAME TS_Name,
      t.contents,
      round(t.all_bytes / 1024 / 1024) ts_size_M,
      round(t.freesiz / 1024 / 1024) Free_Size_M,
      round((t.all_bytes - t.FREESIZ) / 1024 / 1024) Used_Size_M,
      round((t.all_bytes - t.FREESIZ) * 100 / t.all_bytes, 3) Used_per,
      round(MAXSIZ / 1024 / 1024 / 1024, 3) MAX_Size_g,
      round((MAXSIZ - (t.all_bytes - t.FREESIZ)) / 1024 / 1024 / 1024, 3) MAX_Size_free_g,
      round(decode(MAXSIZ, 0, to_number(NULL), (t.all_bytes - FREESIZ)) * 100 /
           MAXSIZ,
           3) USED_per_MAX,
      round(t.BLOCK_SIZE) BLOCK_SIZE,
      t.LOGGING,
      t.STATUS,
      t.ts_df_count,
      t.FILE_NAME data_file_name,
      t.FORCE_LOGGING,
      t.EXTENT_MANAGEMENT,
      t.SEGMENT_SPACE_MANAGEMENT,
      t.RETENTION,
      t.DEF_TAB_COMPRESSION
FROM   wt1 t
UNION ALL
SELECT to_number('') TS#,
      '所有表空间' TS_Name,
      '' contents,
      round(SUM(t.all_bytes) / 1024 / 1024, 3) ts_size_M,
      round(SUM(t.freesiz) / 1024 / 1024) Free_Size_m,
      round(SUM(t.all_bytes - t.FREESIZ) / 1024 / 1024) Used_Size_M,
      round(SUM(t.all_bytes - t.FREESIZ) * 100 / SUM(t.all_bytes), 3) Used_per,
      round(SUM(MAXSIZ) / 1024 / 1024 / 1024) MAX_Size,
      round((SUM(MAXSIZ) - SUM(t.all_bytes - t.FREESIZ)) / 1024 / 1024 / 1024,
           3) MAX_Size_free_g,
      to_number('') "USED,% of MAX Size",
      to_number('') BLOCK_SIZE,
      '' LOGGING,
      '' STATUS,
      to_number('') ts_df_count,
      '' data_file_name,
      '' FORCE_LOGGING,
      '' EXTENT_MANAGEMENT,
      '' SEGMENT_SPACE_MANAGEMENT,
      '' RETENTION,
      '' DEF_TAB_COMPRESSION
FROM   wt1 t
```

```
ORDER  BY TS#;
```

	TS#	TS_NAME	CONTENTS	TS_SIZE_M	FREE_SIZE_M	USED_SIZE_M	USED_PER	MAX_SIZE_G
1	0	SYSTEM	PERMANENT	4096	3376	720	17.581	4
2	1	SYSAUX	PERMANENT	4096	3526	570	13.911	4
3	2	UNDOTBS1	UNDO	4096	4001	95	2.312	4
4	3	TEMP	TEMPORARY	1024	1016	8	0.781	1
5	4	USERS	PERMANENT	300	203	97	32.479	0.293
6	6	XPADDATA	PERMANENT	50	31	19	38	320
7	7	XPADINDEX	PERMANENT	25	20	5	20	160
8	8	XPADTEMP	PERMANENT	10	8	2	20	64
9	9	TEST_USER1	PERMANENT	100	90	10	10.063	32
10		所有表空间		13797	12271	1526	11.061	589

由此可以看出，真正迁移的数据大约为 100M，但是表空间有 14G，就是说本地文件最少需要 14G+100M 的空间才能完成后续的操作。

2.1.2.2 需要传输的数据文件大小

```
SELECT d.FILE_ID,
       d.TABLESPACE_NAME,
       (SELECT (SUM(nb.BYTES/1024/1024))
          FROM dba_data_files nb
         WHERE nb.TABLESPACE_NAME = d.TABLESPACE_NAME) ts_size_m,
       d.FILE_NAME,
       (d.BYTES/1024/1024) file_size_m,
       (d.USER_BYTES/1024/1024) file_use_size_m
  FROM dba_data_files d
   WHERE d.TABLESPACE_NAME  in ('USERS','XPADDATA','TEST_USER1')
ORDER BY  file_id;
```

	FILE_ID	TABLESPACE_NAME	TS_SIZE_M	FILE_NAME	FILE_SIZE_M	FILE_USE_SIZE_M
1	4	USERS	300	+DATA1/orasky/datafile/users.257.1268917057	300	299
2	5	XPADDATA	50	+DATA1/orasky/datafile/xpaddata.258.917189283	5	4
3	6	XPADDATA	50	+DATA1/orasky/datafile/xpaddata.330.917189289	5	4
4	7	XPADDATA	50	+DATA1/orasky/datafile/xpaddata.323.917189295	5	4
5	8	XPADDATA	50	+DATA1/orasky/datafile/xpaddata.320.917189301	5	4
6	9	XPADDATA	50	+DATA1/orasky/datafile/xpaddata.307.917189307	5	4
7	10	XPADDATA	50	+DATA1/orasky/datafile/xpaddata.301.917189313	5	4
8	11	XPADDATA	50	+DATA1/orasky/datafile/xpaddata.298.917189319	5	4
9	12	XPADDATA	50	+DATA1/orasky/datafile/xpaddata.261.917189327	5	4
10	13	XPADDATA	50	+DATA1/orasky/datafile/xpaddata.259.917189333	5	4
11	14	XPADDATA	50	+DATA1/orasky/datafile/xpaddata.262.917189339	5	4
12	22	TEST_USER1	100	+DATA1/orasky/datafile/test_user1.377.921670035	100	99

也就是说最终需要拷贝到 target 端的数据文件大小为 450M。

2.1.3 用户情况（密码、默认表空间、角色和权限，需迁移的 schema 对象大小、个数、列表）

2.1.3.1 需要迁移的用户

```
SELECT d.username,
       d.default_tablespace,
       D.temporary_tablespace,
       d.account_status
  FROM dba_users d
 WHERE d.account_status = 'OPEN'
   and d.username not like '%SYS%';
```

	USERNAME	DEFAULT_TABLESPACE	TEMPORARY_TABLESPACE	ACCOUNT_STATUS
1	T	USERS	TEMP	OPEN
2	XPADAD	XPADDATA	TEMP	OPEN
3	TEST1	TEST_USER1	TEMP	OPEN

2.1.3.2 用户权限

```
drop table t_tmp_user_lhr;
create table   t_tmp_user_lhr( id number, username varchar2(50), exec_sql varchar2(4000),create_type varchar2(20) );
DROP  sequence   s_t_tmp_user_lhr;
create sequence s_t_tmp_user_lhr;

begin

  for cur in (SELECT d.username,
                     d.default_tablespace,
                     d.account_status,
                     'create user ' || d.username || ' identified by ' ||
                     d.username || ' default tablespace ' ||
                     d.default_tablespace || '  TEMPORARY TABLESPACE  ' ||
                     D.temporary_tablespace || ';' CREATE_USER,
                     replace(to_char(DBMS_METADATA.GET_DDL('USER',
                                                           D.username)),
                             chr(10),
                             '') create_USER1
                FROM dba_users d
  WHERE d.username   in  ('T', 'XPADAD', 'TEST1')) loop

    INSERT INTO t_tmp_user_lhr
      (id, username, exec_sql, create_type)
    values
      (s_t_tmp_user_lhr.nextval, cur.username, cur.CREATE_USER, 'USER');

```

```
    INSERT INTO t_tmp_user_lhr
      (id, username, exec_sql, create_type)
      SELECT s_t_tmp_user_lhr.nextval,
             cur.username,
             CASE
               WHEN D.ADMIN_OPTION = 'YES' THEN
                'GRANT ' || d.privilege || ' TO ' || d.GRANTEE ||
                ' WITH GRANT OPTION ;'
               ELSE
                'GRANT ' || d.privilege || ' TO ' || d.GRANTEE || ';'
             END priv,
             'DBA_SYS_PRIVS'
        FROM dba_sys_privs d
       WHERE D.GRANTEE = CUR.USERNAME;

    INSERT INTO t_tmp_user_lhr
      (id, username, exec_sql, create_type)
      SELECT s_t_tmp_user_lhr.nextval,
             cur.username,
             CASE
               WHEN D.ADMIN_OPTION = 'YES' THEN
                'GRANT ' || d.GRANTED_ROLE || ' TO ' || d.GRANTEE ||
                ' WITH GRANT OPTION;'
               ELSE
                'GRANT ' || d.GRANTED_ROLE || ' TO ' || d.GRANTEE || ';'
             END priv,
             'DBA_ROLE_PRIVS'
        FROM DBA_ROLE_PRIVS d
       WHERE D.GRANTEE = CUR.USERNAME;

    INSERT INTO t_tmp_user_lhr
      (id, username, exec_sql, create_type)
      SELECT s_t_tmp_user_lhr.nextval,
             cur.username,
             CASE
               WHEN d.grantable = 'YES' THEN
                'GRANT ' || d.privilege || ' ON ' || d.owner || '.' ||
                d.table_name || ' TO ' || d.GRANTEE ||
                '  WITH GRANT OPTION ;'
               ELSE
                'GRANT ' || d.privilege || ' ON ' || d.owner || '.' ||
                d.table_name || ' TO ' || d.GRANTEE || ';'
             END priv,
             'DBA_TAB_PRIVS'
        FROM DBA_TAB_PRIVS d
       WHERE D.GRANTEE = CUR.USERNAME;
  end loop;
```

```
  COMMIT;
end;
/
 SELECT * FROM t_tmp_user_lhr;
```

ID	USERNAME	EXEC_SQL	CREATE_TYPE
1	TEST1	create user TEST1 identified by TEST1 default tablespace TEST_USER1 TEMP	USER
2	TEST1	GRANT UNLIMITED TABLESPACE TO TEST1;	DBA_SYS_PRIVS
3	TEST1	GRANT CONNECT TO TEST1;	DBA_ROLE_PRIVS
4	TEST1	GRANT RESOURCE TO TEST1;	DBA_ROLE_PRIVS
5	TEST1	GRANT WRITE ON SYS.TEST_DIR TO TEST1;	DBA_TAB_PRIVS
6	TEST1	GRANT READ ON SYS.TEST_DIR TO TEST1;	DBA_TAB_PRIVS
7	TEST1	GRANT WRITE ON SYS.TEST_LOG TO TEST1;	DBA_TAB_PRIVS
8	TEST1	GRANT READ ON SYS.TEST_LOG TO TEST1;	DBA_TAB_PRIVS
9	XPADAD	create user XPADAD identified by XPADAD default tablespace XPADDATA TEM	USER
10	XPADAD	GRANT CREATE VIEW TO XPADAD;	DBA_SYS_PRIVS
11	XPADAD	GRANT UNLIMITED TABLESPACE TO XPADAD;	DBA_SYS_PRIVS
12	XPADAD	GRANT CREATE DATABASE LINK TO XPADAD;	DBA_SYS_PRIVS
13	XPADAD	GRANT DBA TO XPADAD;	DBA_ROLE_PRIVS
14	XPADAD	GRANT CONNECT TO XPADAD;	DBA_ROLE_PRIVS
15	XPADAD	GRANT RESOURCE TO XPADAD;	DBA_ROLE_PRIVS
16	T	create user T identified by T default tablespace USERS TEMPORARY TABLESP	USER
17	T	GRANT UNLIMITED TABLESPACE TO T;	DBA_SYS_PRIVS
18	T	GRANT RESOURCE TO T;	DBA_ROLE_PRIVS
19	T	GRANT CONNECT TO T;	DBA_ROLE_PRIVS
20	T	GRANT WRITE ON SYS.TT TO T;	DBA_TAB_PRIVS
21	T	GRANT READ ON SYS.TT TO T;	DBA_TAB_PRIVS

```
create user TEST1 identified by TEST1 default tablespace TEST_USER1   TEMPORARY TABLESPACE   TEMP;
GRANT UNLIMITED TABLESPACE TO TEST1;
GRANT CONNECT TO TEST1;
GRANT RESOURCE TO TEST1;
GRANT WRITE ON SYS.TEST_DIR TO TEST1;
GRANT READ ON SYS.TEST_DIR TO TEST1;
GRANT WRITE ON SYS.TEST_LOG TO TEST1;
GRANT READ ON SYS.TEST_LOG TO TEST1;
create user XPADAD identified by XPADAD default tablespace XPADDATA   TEMPORARY TABLESPACE   TEMP;
GRANT CREATE VIEW TO XPADAD;
GRANT UNLIMITED TABLESPACE TO XPADAD;
GRANT CREATE DATABASE LINK TO XPADAD;
GRANT DBA TO XPADAD;
GRANT CONNECT TO XPADAD;
GRANT RESOURCE TO XPADAD;
create user T identified by T default tablespace USERS   TEMPORARY TABLESPACE   TEMP;
GRANT UNLIMITED TABLESPACE TO T;
GRANT RESOURCE TO T;
GRANT CONNECT TO T;
GRANT WRITE ON SYS.TT TO T;
GRANT READ ON SYS.TT TO T;
```

2.1.3.3 用户表大小

```
select d.owner, (sum(bytes) / 1024 / 1024) sizes_m
 from dba_segments d
 where d.owner   in ('T', 'XPADAD', 'TEST1')
AND NOT EXISTS (SELECT 1 FROM DBA_RECYCLEBIN B WHERE B.object_name=D.segment_name AND D.OWNER=B.owner)
GROUP BY d.owner
order by sum(bytes) desc;
;
```

	OWNER	SIZES_M
1	T	96.3125
2	TEST1	9.0625
3	XPADAD	9

2.1.3.4 对象个数

```
 SELECT D.OWNER,COUNT(1)
 FROM dba_objects d
WHERE d.OWNER   in ('T', 'XPADAD', 'TEST1')
and d.OWNER not in ('PUBLIC')
AND NOT EXISTS (SELECT 1 FROM DBA_RECYCLEBIN B WHERE B.object_name=D.OBJECT_NAME AND D.OWNER=B.owner)
GROUP BY D.OWNER
ORDER BY D.OWNER ;
```

	OWNER	COUNT(1)
1	T	20
2	TEST1	2
3	XPADAD	1

```
SELECT D.OWNER, D.OBJECT_TYPE, COUNT(1)
  FROM dba_objects d
 WHERE d.OWNER in ('T', 'XPADAD', 'TEST1')
   and d.OWNER not in ('PUBLIC')
   AND NOT EXISTS (SELECT 1
         FROM DBA_RECYCLEBIN B
        WHERE B.object_name = D.OBJECT_NAME
          AND D.OWNER = B.owner)
 GROUP BY D.OWNER, D.OBJECT_TYPE
 ORDER BY D.OWNER;
```

	OWNER	OBJECT_TYPE	COUNT(1)
1	T	INDEX	3
2	T	TABLE	5
3	T	TABLE PARTITION	12
4	TEST1	TABLE	2
5	XPADAD	FUNCTION	1
6	XPADAD	TABLE	1
7	XPADAD	TYPE	1
8	XPADAD	TYPE BODY	1

2.1.3.5 对象详细信息

---- 以下数据导出到 excel 表格备份

```
SELECT d.OWNER, d.OBJECT_NAME, d.SUBOBJECT_NAME, d.OBJECT_TYPE,d.status
 FROM dba_objects d
WHERE d.OWNER   in ('T', 'XPADAD', 'TEST1')
and d.OWNER not in ('PUBLIC')
AND NOT EXISTS (SELECT 1 FROM DBA_RECYCLEBIN B WHERE B.object_name=D.OBJECT_NAME AND D.OWNER=B.owner)
ORDER BY D.OWNER ;
```

	OWNER	OBJECT_NAME	SUBOBJECT_NAME	OBJECT_TYPE	STATUS
1	T	T1_IND		INDEX	VALID
2	T	TTT		TABLE	VALID
3	T	MONTH_PART	SYS_P65	TABLE PARTITION	VALID
4	T	MONTH_PART	SYS_P64	TABLE PARTITION	VALID
5	T	MONTH_PART	SYS_P63	TABLE PARTITION	VALID
6	T	MONTH_PART	SYS_P61	TABLE PARTITION	VALID
7	T	MONTH_PART		TABLE	VALID
8	T	T1		TABLE	VALID
9	T	PT1	PT1_20161001	TABLE PARTITION	VALID
10	T	PT1	PT1_20250918	TABLE PARTITION	VALID
11	T	PT1	PT1_20250620	TABLE PARTITION	VALID
12	T	PT1		TABLE	VALID
13	T	PT1_IND1		INDEX	VALID
14	T	PT2	PT1_20161001	TABLE PARTITION	VALID

15	T	PT2	PT1_20250918	TABLE PARTITION	VALID
16	T	PT2	PT1_20250620	TABLE PARTITION	VALID
17	T	PT2		TABLE	VALID
18	T	PT2_IND1		INDEX	VALID
19	T	MONTH_PART	PART2	TABLE PARTITION	VALID
20	T	MONTH_PART	PART1	TABLE PARTITION	VALID
21	TEST1	TEST		TABLE	VALID
22	TEST1	TEST_TABLE		TABLE	VALID
23	XPADAD	WH_CONCAT_IMPL_LHR		TYPE BODY	VALID
24	XPADAD	WH_CONCAT_IMPL_LHR		TYPE	VALID
25	XPADAD	TEST		TABLE	VALID
26	XPADAD	WH_CONCAT_LHR		FUNCTION	VALID

```
 SELECT d.owner,
      d.segment_name,
      d.partition_name,
      d.segment_type,
      d.tablespace_name,
      d.BYTES
  FROM dba_segments d
WHERE d.OWNER  in ('T', 'XPADAD', 'TEST1')
AND NOT EXISTS (SELECT 1 FROM DBA_RECYCLEBIN B WHERE B.object_name=D.segment_name AND D.OWNER=B.owner)
ORDER BY D.OWNER ;
```

	OWNER	SEGMENT_NAME	PARTITION_NAME	SEGMENT_TYPE	TABLESPACE_NAME	BYTES
1	T	T1		TABLE	USERS	65536
2	T	PT2	PT1_20250918	TABLE PARTITION	USERS	8388608
3	T	PT1_IND1		INDEX	USERS	65536
4	T	PT2_IND1		INDEX	USERS	65536
5	T	TTT		TABLE	USERS	65536
6	T	PT1	PT1_20250620	TABLE PARTITION	USERS	8388608
7	T	PT1	PT1_20250918	TABLE PARTITION	USERS	8388608
8	T	PT1	PT1_20161001	TABLE PARTITION	USERS	8388608
9	T	PT2	PT1_20250620	TABLE PARTITION	USERS	8388608

10	T	T1_IND		INDEX	USERS	65536
11	T	PT2	PT1_20161001	TABLE PARTITION	USERS	8388608
12	T	MONTH_PART	PART1	TABLE PARTITION	USERS	8388608
13	T	MONTH_PART	PART2	TABLE PARTITION	USERS	8388608
14	T	MONTH_PART	SYS_P61	TABLE PARTITION	USERS	8388608
15	T	MONTH_PART	SYS_P63	TABLE PARTITION	USERS	8388608
16	T	MONTH_PART	SYS_P64	TABLE PARTITION	USERS	8388608
17	T	MONTH_PART	SYS_P65	TABLE PARTITION	USERS	8388608
18	TEST1	TEST		TABLE	TEST_USER1	9437184
19	TEST1	TEST_TABLE		TABLE	TEST_USER1	65536
20	XPADAD	TEST		TABLE	XPADDATA	9437184

2.1.4 无效对象情况

```
SELECT owner owner,
     count(1)
 FROM dba_objects   d
WHERE status <> 'VALID'
and  d.OWNER  in ('T', 'XPADAD', 'TEST1')
AND D.OWNER NOT IN ('PUBLIC')
group by d.OWNER
ORDER BY owner;
```

```
SELECT owner owner,
     object_name,
     object_type,
     status,
     'alter ' || decode(object_type,
                        'PACKAGE BODY',
                        'PACKAGE',
                        'TYPE BODY',
```

```
                        'TYPE',
                        object_type) || ' ' || owner || '.' ||
      object_name || ' ' ||
      decode(object_type, 'PACKAGE BODY', 'compile body', 'compile') || ';' hands_on
  FROM dba_objects   d
WHERE status <> 'VALID'
and  d.OWNER in ('T', 'XPADAD', 'TEST1')
ORDER BY owner, object_name;
```

2.1.5 索引情况

```
SELECT D.OWNER,COUNT(1)
  FROM dba_indexes d
WHERE d.OWNER in ('T', 'XPADAD', 'TEST1')
and d.OWNER not in ('PUBLIC')
AND NOT EXISTS (SELECT 1 FROM DBA_RECYCLEBIN B WHERE B.object_name=D.index_name AND D.OWNER=B.owner)
GROUP BY D.OWNER
ORDER BY D.OWNER ;
```

	OWNER	COUNT(1)
1	T	3

2.1.6 确定是否有业务数据、脚本在例如 sys 用户等的默认用户下

跟开放确认是否有业务数据表在 sys 等默认用户下，若有是否需要迁移。

2.2 判断平台支持并确定字节序

如果传输表空间集到不同的平台，则要确定对于源和目标平台这种跨平台表空间被支持，也要确定每个平台的字节序，如果平台具有相同的字节序，则不需要进行转化，否则必须做一个表空间集转化，在源端或目标端都可以进行转换。

```
col platform_name for a40
select d.platform_name,tp.endian_format from v$transportable_platform tp,v$database d
where tp.platform_name=d.platform_name;

col platform_name for a40
select tp.platform_name, tp.endian_format
   from v$transportable_platform tp
  where tp.platform_name in ('Linux x86 64-bit', 'AIX-Based Systems (64-bit)');
```

```
SQL> col platform_name for a40
SQL> select tp.platform_name, tp.endian_format
  2    from v$transportable_platform tp
  3   where tp.platform_name in ('Linux x86 64-bit', 'AIX-Based Systems (64-bit)');

PLATFORM_NAME                            ENDIAN_FORMAT
---------------------------------------- --------------------------
AIX-Based Systems (64-bit)               Big
Linux x86 64-bit                         Little

SQL>
```

可以看到 source 端的字节序为 Big，而 target 端的字节序为 Little，所以需要进行字节序的转换，前边说过在源端或目标端都可以进行转换，这里我们选择在目标端来进行转换。

2.3 判断表空间集是否自包含

Indicates whether a full or partial dependency check is required. If TRUE, treats all IN and OUT pointers(dependencies) and captures them as violations if they are not self-contained in the transportable set.
execute sys.dbms_tts.transport_set_check('TEST_USER1,USERS,XPADDATA',true);
col violations for a70
select * from sys.transport_set_violations;

```
oracle@ZDMTRAIN2:/oracle$ sqlplus / as sysdba

SQL*Plus: Release 11.2.0.3.0 Production on Fri Feb 17 16:59:34 2017

Copyright (c) 1982, 2011, Oracle.  All rights reserved.


Connected to:
Oracle Database 11g Enterprise Edition Release 11.2.0.3.0 - 64bit Production
With the Partitioning, Automatic Storage Management, OLAP, Data Mining
and Real Application Testing options

SYS@oraSKY> exec  sys.dbms_tts.transport_set_check('TEST_USER1,USERS,XPADDATA',true);

PL/SQL procedure successfully completed.

SYS@oraSKY> col violations for a70
SYS@oraSKY> select * from sys.transport_set_violations;

no rows selected

SYS@oraSKY>
```

结论： 此时这个表空间集已经不再违背自包含的条件，可以确定为一个可传输表空间集。在实际生产环境中也是如此检查的，若是全库迁移，得把需要迁移的表空间修改为自包含的。

2.4 产生可传输表空间集

2.4.1 rman 备份 source 库

当然，如果已经有全库备份了就可以省略这个步骤。

```
oracle@ZDMTRAIN2:/oracle$ mkdir -p /lxm/oracle_bk/
oracle@ZDMTRAIN2:/oracle$ rman target /

Recovery Manager: Release 11.2.0.3.0 - Production on Fri Feb 17 17:14:24 2017

Copyright (c) 1982, 2011, Oracle and/or its affiliates.  All rights reserved.

connected to target database: ORASKY (DBID=98202371)

RMAN> backup  as compressed backupset  format  '/lxm/oracle_bk/full_%n_%T_%t_%s.bak' database include current controlfile plus archivelog delete input ;


Starting backup at 2017-02-17 17:14:34
current log archived
using target database control file instead of recovery catalog
allocated channel: ORA_DISK_1
channel ORA_DISK_1: SID=1716 device type=DISK
channel ORA_DISK_1: starting compressed archived log backup set
channel ORA_DISK_1: specifying archived log(s) in backup set
input archived log thread=1 sequence=28 RECID=3 STAMP=936206075
channel ORA_DISK_1: starting piece 1 at 2017-02-17 17:14:36
channel ORA_DISK_1: finished piece 1 at 2017-02-17 17:14:37
piece handle=/lxm/oracle_bk/full_ORASKYxx_20170217_936206076_11.bak tag=TAG20170217T171436 comment=NONE
channel ORA_DISK_1: backup set complete, elapsed time: 00:00:01
channel ORA_DISK_1: deleting archived log(s)
archived log file name=/oracle/app/oracle/product/11.2.0/db/dbs/arch1_28_1268916931.dbf RECID=3 STAMP=936206075
Finished backup at 2017-02-17 17:14:37

Starting backup at 2017-02-17 17:14:37
using channel ORA_DISK_1
channel ORA_DISK_1: starting compressed full datafile backup set
channel ORA_DISK_1: specifying datafile(s) in backup set
input datafile file number=00001 name=+DATA1/orasky/datafile/system.288.1268916951
input datafile file number=00002 name=+DATA1/orasky/datafile/sysaux.271.1268916981
input datafile file number=00003 name=+DATA1/orasky/datafile/undotbs1.270.1268917011
input datafile file number=00004 name=+DATA1/orasky/datafile/users.257.1268917057
input datafile file number=00005 name=+DATA1/orasky/datafile/xpaddata.258.917189283
input datafile file number=00006 name=+DATA1/orasky/datafile/xpaddata.330.917189289
input datafile file number=00007 name=+DATA1/orasky/datafile/xpaddata.323.917189295
input datafile file number=00008 name=+DATA1/orasky/datafile/xpaddata.320.917189301
input datafile file number=00009 name=+DATA1/orasky/datafile/xpaddata.307.917189307
input datafile file number=00010 name=+DATA1/orasky/datafile/xpaddata.301.917189313
input datafile file number=00011 name=+DATA1/orasky/datafile/xpaddata.298.917189319
input datafile file number=00012 name=+DATA1/orasky/datafile/xpaddata.261.917189327
input datafile file number=00013 name=+DATA1/orasky/datafile/xpaddata.259.917189333
input datafile file number=00014 name=+DATA1/orasky/datafile/xpaddata.262.917189339
input datafile file number=00015 name=+DATA1/orasky/datafile/xpadindex.269.917189671
input datafile file number=00016 name=+DATA1/orasky/datafile/xpadindex.263.917189713
input datafile file number=00017 name=+DATA1/orasky/datafile/xpadindex.264.917189751
input datafile file number=00018 name=+DATA1/orasky/datafile/xpadindex.265.917189757
input datafile file number=00019 name=+DATA1/orasky/datafile/xpadindex.266.917189763
input datafile file number=00020 name=+DATA1/orasky/datafile/xpadtemp.375.917189803
input datafile file number=00021 name=+DATA1/orasky/datafile/xpadtemp.376.917189809
input datafile file number=00022 name=+DATA1/orasky/datafile/test_user1.377.921670035
channel ORA_DISK_1: starting piece 1 at 2017-02-17 17:14:39
```

```
channel ORA_DISK_1: finished piece 1 at 2017-02-17 17:15:54
piece handle=/lxm/oracle_bk/full_ORASKYxx_20170217_936206078_12.bak tag=TAG20170217T171438 comment=NONE
channel ORA_DISK_1: backup set complete, elapsed time: 00:01:15
channel ORA_DISK_1: starting compressed full datafile backup set
channel ORA_DISK_1: specifying datafile(s) in backup set
including current control file in backup set
including current SPFILE in backup set
channel ORA_DISK_1: starting piece 1 at 2017-02-17 17:15:55
channel ORA_DISK_1: finished piece 1 at 2017-02-17 17:15:56
piece handle=/lxm/oracle_bk/full_ORASKYxx_20170217_936206154_13.bak tag=TAG20170217T171438 comment=NONE
channel ORA_DISK_1: backup set complete, elapsed time: 00:00:01
Finished backup at 2017-02-17 17:15:56

Starting backup at 2017-02-17 17:15:56
current log archived
using channel ORA_DISK_1
channel ORA_DISK_1: starting compressed archived log backup set
channel ORA_DISK_1: specifying archived log(s) in backup set
input archived log thread=1 sequence=29 RECID=4 STAMP=936206156
channel ORA_DISK_1: starting piece 1 at 2017-02-17 17:15:56
channel ORA_DISK_1: finished piece 1 at 2017-02-17 17:15:57
piece handle=/lxm/oracle_bk/full_ORASKYxx_20170217_936206156_14.bak tag=TAG20170217T171556 comment=NONE
channel ORA_DISK_1: backup set complete, elapsed time: 00:00:01
channel ORA_DISK_1: deleting archived log(s)
archived log file name=/oracle/app/oracle/product/11.2.0/db/dbs/arch1_29_1268916931.dbf RECID=4 STAMP=936206156
Finished backup at 2017-02-17 17:15:57

RMAN> list backupset;


List of Backup Sets
===================


BS Key  Size       Device Type Elapsed Time Completion Time
------- ---------- ----------- ------------ -------------------
6       2.50K      DISK        00:00:00     2017-02-17 17:14:36
        BP Key: 6   Status: AVAILABLE  Compressed: YES  Tag: TAG20170217T171436
        Piece Name: /lxm/oracle_bk/full_ORASKYxx_20170217_936206076_11.bak

  List of Archived Logs in backup set 6
  Thrd Seq     Low SCN    Low Time            Next SCN   Next Time
  ---- ------- ---------- ------------------- ---------- ---------
  1    28      8892357    2017-02-17 17:13:28 8892419    2017-02-17 17:14:34

BS Key  Type LV Size       Device Type Elapsed Time Completion Time
------- ---- -- ---------- ----------- ------------ -------------------
7       Full    266.39M    DISK        00:01:13     2017-02-17 17:15:51
        BP Key: 7   Status: AVAILABLE  Compressed: YES  Tag: TAG20170217T171438
        Piece Name: /lxm/oracle_bk/full_ORASKYxx_20170217_936206078_12.bak
  List of Datafiles in backup set 7
  File LV Type Ckp SCN    Ckp Time            Name
  ---- -- ---- ---------- ------------------- ----
  1       Full 8892431    2017-02-17 17:14:39 +DATA1/orasky/datafile/system.288.1268916951
  2       Full 8892431    2017-02-17 17:14:39 +DATA1/orasky/datafile/sysaux.271.1268916981
  3       Full 8892431    2017-02-17 17:14:39 +DATA1/orasky/datafile/undotbs1.270.1268917011
  4       Full 8892431    2017-02-17 17:14:39 +DATA1/orasky/datafile/users.257.1268917057
  5       Full 8892431    2017-02-17 17:14:39 +DATA1/orasky/datafile/xpaddata.258.917189283
  6       Full 8892431    2017-02-17 17:14:39 +DATA1/orasky/datafile/xpaddata.330.917189289
  7       Full 8892431    2017-02-17 17:14:39 +DATA1/orasky/datafile/xpaddata.323.917189295
  8       Full 8892431    2017-02-17 17:14:39 +DATA1/orasky/datafile/xpaddata.320.917189301
  9       Full 8892431    2017-02-17 17:14:39 +DATA1/orasky/datafile/xpaddata.307.917189307
  10      Full 8892431    2017-02-17 17:14:39 +DATA1/orasky/datafile/xpaddata.301.917189313
  11      Full 8892431    2017-02-17 17:14:39 +DATA1/orasky/datafile/xpaddata.298.917189319
  12      Full 8892431    2017-02-17 17:14:39 +DATA1/orasky/datafile/xpaddata.261.917189327
  13      Full 8892431    2017-02-17 17:14:39 +DATA1/orasky/datafile/xpaddata.259.917189333
  14      Full 8892431    2017-02-17 17:14:39 +DATA1/orasky/datafile/xpaddata.262.917189339
  15      Full 8892431    2017-02-17 17:14:39 +DATA1/orasky/datafile/xpadindex.269.917189671
```

```
  16      Full 8892431    2017-02-17 17:14:39 +DATA1/orasky/datafile/xpadindex.263.917189713
  17      Full 8892431    2017-02-17 17:14:39 +DATA1/orasky/datafile/xpadindex.264.917189751
  18      Full 8892431    2017-02-17 17:14:39 +DATA1/orasky/datafile/xpadindex.265.917189757
  19      Full 8892431    2017-02-17 17:14:39 +DATA1/orasky/datafile/xpadindex.266.917189763
  20      Full 8892431    2017-02-17 17:14:39 +DATA1/orasky/datafile/xpadtemp.375.917189803
  21      Full 8892431    2017-02-17 17:14:39 +DATA1/orasky/datafile/xpadtemp.376.917189809
  22      Full 8892431    2017-02-17 17:14:39 +DATA1/orasky/datafile/test_user1.377.921670035

BS Key  Type LV Size       Device Type Elapsed Time Completion Time
------- ---- -- ---------- ----------- ------------ -------------------
8       Full    1.03M      DISK        00:00:01     2017-02-17 17:15:55
        BP Key: 8   Status: AVAILABLE  Compressed: YES  Tag: TAG20170217T171438
        Piece Name: /lxm/oracle_bk/full_ORASKYxx_20170217_936206154_13.bak
  SPFILE Included: Modification time: 2017-02-17 16:28:52
  SPFILE db_unique_name: ORASKY
  Control File Included: Ckp SCN: 8892462      Ckp time: 2017-02-17 17:15:54

BS Key  Size       Device Type Elapsed Time Completion Time
------- ---------- ----------- ------------ -------------------
9       2.00K      DISK        00:00:00     2017-02-17 17:15:56
        BP Key: 9   Status: AVAILABLE  Compressed: YES  Tag: TAG20170217T171556
        Piece Name: /lxm/oracle_bk/full_ORASKYxx_20170217_936206156_14.bak

  List of Archived Logs in backup set 9
  Thrd Seq     Low SCN    Low Time            Next SCN   Next Time
  ---- ------- ---------- ------------------- ---------- ---------
  1    29      8892419    2017-02-17 17:14:34 8892467    2017-02-17 17:15:56

RMAN> exit


Recovery Manager complete.
oracle@ZDMTRAIN2:/oracle$
```

2.4.2 transport tablespace 生成文件

```
oracle@ZDMTRAIN2:/oracle/transportdest$ df -g
oracle@ZDMTRAIN2:/oracle/transportdest$
oracle@ZDMTRAIN2:/oracle/app$ df -g
Filesystem    GB blocks      Free %Used    Iused %Iused Mounted on
/dev/hd4           6.00      2.29   62%    12356     3% /
《《《《。。。。。。。。篇幅原因，有省略。。。。。。。。》》》》
/dev/Tlv_fta       8.00      7.74    4%     2627     1% /fta
/dev/fslv100       0.12      0.12    1%        9     1% /zling
/dev/lxmlv        20.00     19.73    2%       18     1% /lxm
22.188.189.42:/privatebk   8000.00   7954.59    1%     4381     1% /privatebk
oracle@ZDMTRAIN2:/oracle/app$
```

```
oracle@ZDMTRAIN2:/oracle$ rman target /

Recovery Manager: Release 11.2.0.3.0 - Production on Fri Feb 17 18:07:19 2017

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connected to target database: ORASKY (DBID=98202371)

RMAN> transport tablespace TEST_USER1,USERS,XPADDATA tablespace destination '/lxm/transportdest' auxiliary destination '/lxm/transportdest';

using target database control file instead of recovery catalog
RMAN-05026: WARNING: presuming following set of tablespaces applies to specified point-in-time

List of tablespaces expected to have UNDO segments
```

```
Tablespace SYSTEM
Tablespace UNDOTBS1

Creating automatic instance, with SID='wmch'

initialization parameters used for automatic instance:
db_name=ORASKY
db_unique_name=wmch_tspitr_ORASKY
compatible=11.2.0.0.0
db_block_size=8192
db_files=200
sga_target=280M
processes=50
db_create_file_dest=/lxm/transportdest
log_archive_dest_1='location=/lxm/transportdest'
#No auxiliary parameter file used


starting up automatic instance ORASKY

Oracle instance started

Total System Global Area     292278272 bytes

Fixed Size                     2220880 bytes
Variable Size                100666544 bytes
Database Buffers             184549376 bytes
Redo Buffers                   4841472 bytes
Automatic instance created
Running TRANSPORT_SET_CHECK on recovery set tablespaces
TRANSPORT_SET_CHECK completed successfully

contents of Memory Script:
{
# set requested point in time
set until  scn 8915883;
# restore the controlfile
restore clone controlfile;
# mount the controlfile
sql clone 'alter database mount clone database';
# archive current online log
sql 'alter system archive log current';
}
executing Memory Script

executing command: SET until clause

Starting restore at 2017-02-17 18:07:39
allocated channel: ORA_AUX_DISK_1
channel ORA_AUX_DISK_1: SID=80 device type=DISK

channel ORA_AUX_DISK_1: starting datafile backup set restore
channel ORA_AUX_DISK_1: restoring control file
channel ORA_AUX_DISK_1: reading from backup piece /lxm/oracle_bk/full_ORASKYxx_20170217_936208508_21.bak
channel ORA_AUX_DISK_1: piece handle=/lxm/oracle_bk/full_ORASKYxx_20170217_936208508_21.bak tag=TAG20170217T175351
channel ORA_AUX_DISK_1: restored backup piece 1
channel ORA_AUX_DISK_1: restore complete, elapsed time: 00:00:01
output file name=/lxm/transportdest/ORASKY/controlfile/o1_mf_dbflvdrg_.ctl
Finished restore at 2017-02-17 18:07:41

sql statement: alter database mount clone database

sql statement: alter system archive log current

contents of Memory Script:
{
# set requested point in time
set until  scn 8915883;
```

```
# set destinations for recovery set and auxiliary set datafiles
set newname for clone datafile  1 to new;
set newname for clone datafile  3 to new;
set newname for clone datafile  2 to new;
set newname for clone tempfile  1 to new;
set newname for datafile  22 to
 "/lxm/transportdest/o1_mf_test_use_%u_.dbf";
set newname for datafile  4 to
 "/lxm/transportdest/o1_mf_users_%u_.dbf";
set newname for datafile  5 to
 "/lxm/transportdest/o1_mf_xpaddata_%u_.dbf";
set newname for datafile  6 to
 "/lxm/transportdest/o1_mf_xpaddata_%u_.dbf";
set newname for datafile  7 to
 "/lxm/transportdest/o1_mf_xpaddata_%u_.dbf";
set newname for datafile  8 to
 "/lxm/transportdest/o1_mf_xpaddata_%u_.dbf";
set newname for datafile  9 to
 "/lxm/transportdest/o1_mf_xpaddata_%u_.dbf";
set newname for datafile  10 to
 "/lxm/transportdest/o1_mf_xpaddata_%u_.dbf";
set newname for datafile  11 to
 "/lxm/transportdest/o1_mf_xpaddata_%u_.dbf";
set newname for datafile  12 to
 "/lxm/transportdest/o1_mf_xpaddata_%u_.dbf";
set newname for datafile  13 to
 "/lxm/transportdest/o1_mf_xpaddata_%u_.dbf";
set newname for datafile  14 to
 "/lxm/transportdest/o1_mf_xpaddata_%u_.dbf";
# switch all tempfiles
switch clone tempfile all;
# restore the tablespaces in the recovery set and the auxiliary set
restore clone datafile  1, 3, 2, 22, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14;
switch clone datafile all;
}
executing Memory Script

executing command: SET until clause

executing command: SET NEWNAME

executing command: SET NEWNAME

executing command: SET NEWNAME

executing command: SET NEWNAME

executing command: SET NEWNAME

executing command: SET NEWNAME

executing command: SET NEWNAME

executing command: SET NEWNAME

executing command: SET NEWNAME

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executing command: SET NEWNAME

executing command: SET NEWNAME

executing command: SET NEWNAME

executing command: SET NEWNAME

executing command: SET NEWNAME

executing command: SET NEWNAME

executing command: SET NEWNAME

executing command: SET NEWNAME
```

```
executing command: SET NEWNAME

renamed tempfile 1 to /lxm/transportdest/ORASKY/datafile/o1_mf_temp_%u_.tmp in control file

Starting restore at 2017-02-17 18:07:49
using channel ORA_AUX_DISK_1

channel ORA_AUX_DISK_1: starting datafile backup set restore
channel ORA_AUX_DISK_1: specifying datafile(s) to restore from backup set
channel ORA_AUX_DISK_1: restoring datafile 00001 to /lxm/transportdest/ORASKY/datafile/o1_mf_system_%u_.dbf
channel ORA_AUX_DISK_1: restoring datafile 00003 to /lxm/transportdest/ORASKY/datafile/o1_mf_undotbs1_%u_.dbf
channel ORA_AUX_DISK_1: restoring datafile 00002 to /lxm/transportdest/ORASKY/datafile/o1_mf_sysaux_%u_.dbf
channel ORA_AUX_DISK_1: restoring datafile 00022 to /lxm/transportdest/o1_mf_test_use_%u_.dbf
channel ORA_AUX_DISK_1: restoring datafile 00004 to /lxm/transportdest/o1_mf_users_%u_.dbf
channel ORA_AUX_DISK_1: restoring datafile 00005 to /lxm/transportdest/o1_mf_xpaddata_%u_.dbf
channel ORA_AUX_DISK_1: restoring datafile 00006 to /lxm/transportdest/o1_mf_xpaddata_%u_.dbf
channel ORA_AUX_DISK_1: restoring datafile 00007 to /lxm/transportdest/o1_mf_xpaddata_%u_.dbf
channel ORA_AUX_DISK_1: restoring datafile 00008 to /lxm/transportdest/o1_mf_xpaddata_%u_.dbf
channel ORA_AUX_DISK_1: restoring datafile 00009 to /lxm/transportdest/o1_mf_xpaddata_%u_.dbf
channel ORA_AUX_DISK_1: restoring datafile 00010 to /lxm/transportdest/o1_mf_xpaddata_%u_.dbf
channel ORA_AUX_DISK_1: restoring datafile 00011 to /lxm/transportdest/o1_mf_xpaddata_%u_.dbf
channel ORA_AUX_DISK_1: restoring datafile 00012 to /lxm/transportdest/o1_mf_xpaddata_%u_.dbf
channel ORA_AUX_DISK_1: restoring datafile 00013 to /lxm/transportdest/o1_mf_xpaddata_%u_.dbf
channel ORA_AUX_DISK_1: restoring datafile 00014 to /lxm/transportdest/o1_mf_xpaddata_%u_.dbf
channel ORA_AUX_DISK_1: reading from backup piece /lxm/oracle_bk/full_ORASKYxx_20170217_936208432_20.bak
channel ORA_AUX_DISK_1: piece handle=/lxm/oracle_bk/full_ORASKYxx_20170217_936208432_20.bak tag=TAG20170217T175351
channel ORA_AUX_DISK_1: restored backup piece 1
channel ORA_AUX_DISK_1: restore complete, elapsed time: 00:03:09
Finished restore at 2017-02-17 18:11:04

datafile 1 switched to datafile copy
input datafile copy RECID=16 STAMP=936209464 file name=/lxm/transportdest/ORASKY/datafile/o1_mf_system_dbflvvqx_.dbf
datafile 3 switched to datafile copy
input datafile copy RECID=17 STAMP=936209464 file name=/lxm/transportdest/ORASKY/datafile/o1_mf_undotbs1_dbflvvr9_.dbf
datafile 2 switched to datafile copy
input datafile copy RECID=18 STAMP=936209464 file name=/lxm/transportdest/ORASKY/datafile/o1_mf_sysaux_dbflvvr1_.dbf
datafile 22 switched to datafile copy
input datafile copy RECID=19 STAMP=936209464 file name=/lxm/transportdest/o1_mf_test_use_dbflvw0f_.dbf
datafile 4 switched to datafile copy
input datafile copy RECID=20 STAMP=936209464 file name=/lxm/transportdest/o1_mf_users_dbflvvv1_.dbf
datafile 5 switched to datafile copy
input datafile copy RECID=21 STAMP=936209464 file name=/lxm/transportdest/o1_mf_xpaddata_dbflvw2j_.dbf
datafile 6 switched to datafile copy
input datafile copy RECID=22 STAMP=936209464 file name=/lxm/transportdest/o1_mf_xpaddata_dbflvw2s_.dbf
datafile 7 switched to datafile copy
input datafile copy RECID=23 STAMP=936209464 file name=/lxm/transportdest/o1_mf_xpaddata_dbflvw3p_.dbf
datafile 8 switched to datafile copy
input datafile copy RECID=24 STAMP=936209464 file name=/lxm/transportdest/o1_mf_xpaddata_dbflvwhy_.dbf
datafile 9 switched to datafile copy
input datafile copy RECID=25 STAMP=936209464 file name=/lxm/transportdest/o1_mf_xpaddata_dbflvwpy_.dbf
datafile 10 switched to datafile copy
input datafile copy RECID=26 STAMP=936209464 file name=/lxm/transportdest/o1_mf_xpaddata_dbflvwrv_.dbf
datafile 11 switched to datafile copy
input datafile copy RECID=27 STAMP=936209464 file name=/lxm/transportdest/o1_mf_xpaddata_dbflvx6o_.dbf
datafile 12 switched to datafile copy
input datafile copy RECID=28 STAMP=936209464 file name=/lxm/transportdest/o1_mf_xpaddata_dbflvxgk_.dbf
datafile 13 switched to datafile copy
input datafile copy RECID=29 STAMP=936209464 file name=/lxm/transportdest/o1_mf_xpaddata_dbflvxjw_.dbf
datafile 14 switched to datafile copy
input datafile copy RECID=30 STAMP=936209464 file name=/lxm/transportdest/o1_mf_xpaddata_dbflvy06_.dbf

contents of Memory Script:
{
# set requested point in time
set until  scn 8915883;
# online the datafiles restored or switched
sql clone "alter database datafile  1 online";
```

```
sql clone "alter database datafile  3 online";
sql clone "alter database datafile  2 online";
sql clone "alter database datafile  22 online";
sql clone "alter database datafile  4 online";
sql clone "alter database datafile  5 online";
sql clone "alter database datafile  6 online";
sql clone "alter database datafile  7 online";
sql clone "alter database datafile  8 online";
sql clone "alter database datafile  9 online";
sql clone "alter database datafile  10 online";
sql clone "alter database datafile  11 online";
sql clone "alter database datafile  12 online";
sql clone "alter database datafile  13 online";
sql clone "alter database datafile  14 online";
# recover and open resetlogs
recover clone database tablespace  "TEST_USER1", "USERS", "XPADDATA", "SYSTEM", "UNDOTBS1", "SYSAUX" delete archivelog;
alter clone database open resetlogs;
}
executing Memory Script

executing command: SET until clause

sql statement: alter database datafile  1 online

sql statement: alter database datafile  3 online

sql statement: alter database datafile  2 online

sql statement: alter database datafile  22 online

sql statement: alter database datafile  4 online

sql statement: alter database datafile  5 online

sql statement: alter database datafile  6 online

sql statement: alter database datafile  7 online

sql statement: alter database datafile  8 online

sql statement: alter database datafile  9 online

sql statement: alter database datafile  10 online

sql statement: alter database datafile  11 online

sql statement: alter database datafile  12 online

sql statement: alter database datafile  13 online

sql statement: alter database datafile  14 online

Starting recover at 2017-02-17 18:11:06
using channel ORA_AUX_DISK_1

starting media recovery

channel ORA_AUX_DISK_1: starting archived log restore to default destination
channel ORA_AUX_DISK_1: restoring archived log
archived log thread=1 sequence=36
channel ORA_AUX_DISK_1: reading from backup piece /lxm/oracle_bk/full_ORASKYxx_20170217_936208510_22.bak
channel ORA_AUX_DISK_1: piece handle=/lxm/oracle_bk/full_ORASKYxx_20170217_936208510_22.bak tag=TAG20170217T175510
channel ORA_AUX_DISK_1: restored backup piece 1
channel ORA_AUX_DISK_1: restore complete, elapsed time: 00:00:01
archived log file name=/lxm/transportdest/1_36_1268916931.dbf thread=1 sequence=36
channel clone_default: deleting archived log(s)
archived log file name=/lxm/transportdest/1_36_1268916931.dbf RECID=11 STAMP=936209471
media recovery complete, elapsed time: 00:00:00
```

```
Finished recover at 2017-02-17 18:11:12

database opened

contents of Memory Script:
{
# make read only the tablespace that will be exported
sql clone 'alter tablespace  TEST_USER1 read only';
sql clone 'alter tablespace  USERS read only';
sql clone 'alter tablespace  XPADDATA read only';
# create directory for datapump export
sql clone "create or replace directory STREAMS_DIROBJ_DPDIR as ''
/lxm/transportdest''";
}
executing Memory Script

sql statement: alter tablespace  TEST_USER1 read only

sql statement: alter tablespace  USERS read only

sql statement: alter tablespace  XPADDATA read only

sql statement: create or replace directory STREAMS_DIROBJ_DPDIR as ''/lxm/transportdest''

Performing export of metadata...
   EXPDP> Starting "SYS"."TSPITR_EXP_wmch":
   EXPDP> Processing object type TRANSPORTABLE_EXPORT/PLUGTS_BLK
   EXPDP> Processing object type TRANSPORTABLE_EXPORT/TABLE
   EXPDP> Processing object type TRANSPORTABLE_EXPORT/INDEX/INDEX
   EXPDP> Processing object type TRANSPORTABLE_EXPORT/INDEX_STATISTICS
   EXPDP> Processing object type TRANSPORTABLE_EXPORT/POST_INSTANCE/PLUGTS_BLK
   EXPDP> Master table "SYS"."TSPITR_EXP_wmch" successfully loaded/unloaded
   EXPDP> ******************************************************************************
   EXPDP> Dump file set for SYS.TSPITR_EXP_wmch is:
   EXPDP>   /lxm/transportdest/dmpfile.dmp
   EXPDP> ******************************************************************************
   EXPDP> Datafiles required for transportable tablespace TEST_USER1:
   EXPDP>   /lxm/transportdest/o1_mf_test_use_dbflvw0f_.dbf
   EXPDP> Datafiles required for transportable tablespace USERS:
   EXPDP>   /lxm/transportdest/o1_mf_users_dbflvvv1_.dbf
   EXPDP> Datafiles required for transportable tablespace XPADDATA:
   EXPDP>   /lxm/transportdest/o1_mf_xpaddata_dbflvw2j_.dbf
   EXPDP>   /lxm/transportdest/o1_mf_xpaddata_dbflvw2s_.dbf
   EXPDP>   /lxm/transportdest/o1_mf_xpaddata_dbflvw3p_.dbf
   EXPDP>   /lxm/transportdest/o1_mf_xpaddata_dbflvwhy_.dbf
   EXPDP>   /lxm/transportdest/o1_mf_xpaddata_dbflvwpy_.dbf
   EXPDP>   /lxm/transportdest/o1_mf_xpaddata_dbflvwrv_.dbf
   EXPDP>   /lxm/transportdest/o1_mf_xpaddata_dbflvx6o_.dbf
   EXPDP>   /lxm/transportdest/o1_mf_xpaddata_dbflvxgk_.dbf
   EXPDP>   /lxm/transportdest/o1_mf_xpaddata_dbflvxjw_.dbf
   EXPDP>   /lxm/transportdest/o1_mf_xpaddata_dbflvy06_.dbf
   EXPDP> Job "SYS"."TSPITR_EXP_wmch" successfully completed at 18:13:03
Export completed

/*
   The following command may be used to import the tablespaces.
   Substitute values for <logon> and <directory>.
   impdp <logon> directory=<directory> dumpfile= 'dmpfile.dmp' transport_datafiles= /lxm/transportdest/o1_mf_test_use_dbflvw0f_.dbf, /lxm/transportdest/o1_mf_users_dbflvvv1_.dbf,
/lxm/transportdest/o1_mf_xpaddata_dbflvw2j_.dbf, /lxm/transportdest/o1_mf_xpaddata_dbflvw2s_.dbf, /lxm/transportdest/o1_mf_xpaddata_dbflvw3p_.dbf, /lxm/transportdest/o1_mf_xpaddata_dbflvwhy_.dbf,
/lxm/transportdest/o1_mf_xpaddata_dbflvwpy_.dbf, /lxm/transportdest/o1_mf_xpaddata_dbflvwrv_.dbf, /lxm/transportdest/o1_mf_xpaddata_dbflvx6o_.dbf, /lxm/transportdest/o1_mf_xpaddata_dbflvxgk_.dbf,
/lxm/transportdest/o1_mf_xpaddata_dbflvxjw_.dbf, /lxm/transportdest/o1_mf_xpaddata_dbflvy06_.dbf
*/
-------------------------------------------------------------
-- Start of sample PL/SQL script for importing the tablespaces
-------------------------------------------------------------
-- creating directory objects
CREATE DIRECTORY STREAMS$DIROBJ$1 AS  '/lxm/transportdest/';
CREATE DIRECTORY STREAMS$DIROBJ$DPDIR AS  '/lxm/transportdest';
```

```
/* PL/SQL Script to import the exported tablespaces */
DECLARE
  -- the datafiles
  tbs_files     dbms_streams_tablespace_adm.file_set;
  cvt_files     dbms_streams_tablespace_adm.file_set;
  -- the dumpfile to import
  dump_file     dbms_streams_tablespace_adm.file;
  dp_job_name   VARCHAR2(30) := NULL;
  -- names of tablespaces that were imported
  ts_names       dbms_streams_tablespace_adm.tablespace_set;
BEGIN
  -- dump file name and location
  dump_file.file_name := 'dmpfile.dmp';
  dump_file.directory_object := 'STREAMS$DIROBJ$DPDIR';
  -- forming list of datafiles for import
  tbs_files( 1).file_name := 'o1_mf_test_use_dbflvw0f_.dbf';
  tbs_files( 1).directory_object := 'STREAMS$DIROBJ$1';
  tbs_files( 2).file_name := 'o1_mf_users_dbflvvv1_.dbf';
  tbs_files( 2).directory_object := 'STREAMS$DIROBJ$1';
  tbs_files( 3).file_name := 'o1_mf_xpaddata_dbflvw2j_.dbf';
  tbs_files( 3).directory_object := 'STREAMS$DIROBJ$1';
  tbs_files( 4).file_name := 'o1_mf_xpaddata_dbflvw2s_.dbf';
  tbs_files( 4).directory_object := 'STREAMS$DIROBJ$1';
  tbs_files( 5).file_name := 'o1_mf_xpaddata_dbflvw3p_.dbf';
  tbs_files( 5).directory_object := 'STREAMS$DIROBJ$1';
  tbs_files( 6).file_name := 'o1_mf_xpaddata_dbflvwhy_.dbf';
  tbs_files( 6).directory_object := 'STREAMS$DIROBJ$1';
  tbs_files( 7).file_name := 'o1_mf_xpaddata_dbflvwpy_.dbf';
  tbs_files( 7).directory_object := 'STREAMS$DIROBJ$1';
  tbs_files( 8).file_name := 'o1_mf_xpaddata_dbflvwrv_.dbf';
  tbs_files( 8).directory_object := 'STREAMS$DIROBJ$1';
  tbs_files( 9).file_name := 'o1_mf_xpaddata_dbflvx6o_.dbf';
  tbs_files( 9).directory_object := 'STREAMS$DIROBJ$1';
  tbs_files( 10).file_name := 'o1_mf_xpaddata_dbflvxgk_.dbf';
  tbs_files( 10).directory_object := 'STREAMS$DIROBJ$1';
  tbs_files( 11).file_name := 'o1_mf_xpaddata_dbflvxjw_.dbf';
  tbs_files( 11).directory_object := 'STREAMS$DIROBJ$1';
  tbs_files( 12).file_name := 'o1_mf_xpaddata_dbflvy06_.dbf';
  tbs_files( 12).directory_object := 'STREAMS$DIROBJ$1';
  -- import tablespaces
  dbms_streams_tablespace_adm.attach_tablespaces(
    datapump_job_name      => dp_job_name,
    dump_file              => dump_file,
    tablespace_files       => tbs_files,
    converted_files        => cvt_files,
    tablespace_names       => ts_names);
  -- output names of imported tablespaces
  IF ts_names IS NOT NULL AND ts_names.first IS NOT NULL THEN
    FOR i IN ts_names.first .. ts_names.last LOOP
      dbms_output.put_line('imported tablespace '|| ts_names(i));
    END LOOP;
  END IF;
END;
/
-- dropping directory objects
DROP DIRECTORY STREAMS$DIROBJ$1;
DROP DIRECTORY STREAMS$DIROBJ$DPDIR;
-------------------------------------------------------------
-- End of sample PL/SQL script
-------------------------------------------------------------

Removing automatic instance
shutting down automatic instance
database closed
database dismounted
Oracle instance shut down
Automatic instance removed
auxiliary instance file /lxm/transportdest/ORASKY/datafile/o1_mf_temp_dbfm2j8n_.tmp deleted
```

```
auxiliary instance file /lxm/transportdest/ORASKY/onlinelog/o1_mf_3_dbfm29jx_.log deleted
auxiliary instance file /lxm/transportdest/ORASKY/onlinelog/o1_mf_2_dbfm258v_.log deleted
auxiliary instance file /lxm/transportdest/ORASKY/onlinelog/o1_mf_1_dbfm20wr_.log deleted
auxiliary instance file /lxm/transportdest/ORASKY/datafile/o1_mf_sysaux_dbflvvr1_.dbf deleted
auxiliary instance file /lxm/transportdest/ORASKY/datafile/o1_mf_undotbs1_dbflvvr9_.dbf deleted
auxiliary instance file /lxm/transportdest/ORASKY/datafile/o1_mf_system_dbflvvqx_.dbf deleted
auxiliary instance file /lxm/transportdest/ORASKY/controlfile/o1_mf_dbflvdrg_.ctl deleted

RMAN>
```

---------执行过程查看文件的大小

```
root@ZDMTRAIN2:/# df -g
Filesystem    GB blocks      Free %Used    Iused %Iused Mounted on
《《《《。。。。。。。。篇幅原因，有省略。。。。。。。。》》》》
/dev/fslv100       0.12      0.12    1%        9     1% /zling
/dev/lxmlv        20.00      5.78   72%       43     1% /lxm
22.188.189.42:/privatebk    8000.00   7954.59    1%     4381     1% /privatebk
22.188.189.42:/publicbk    8000.00    186.82   98% 21670216    34% /publicbk
ZTDNETAP3:/nfs    1240.00     25.15   98%   509154     8% /nfs
22.188.129.202:/nfs    1240.00     25.15   98%   509154     8% /nfs
root@ZDMTRAIN2:/#
```

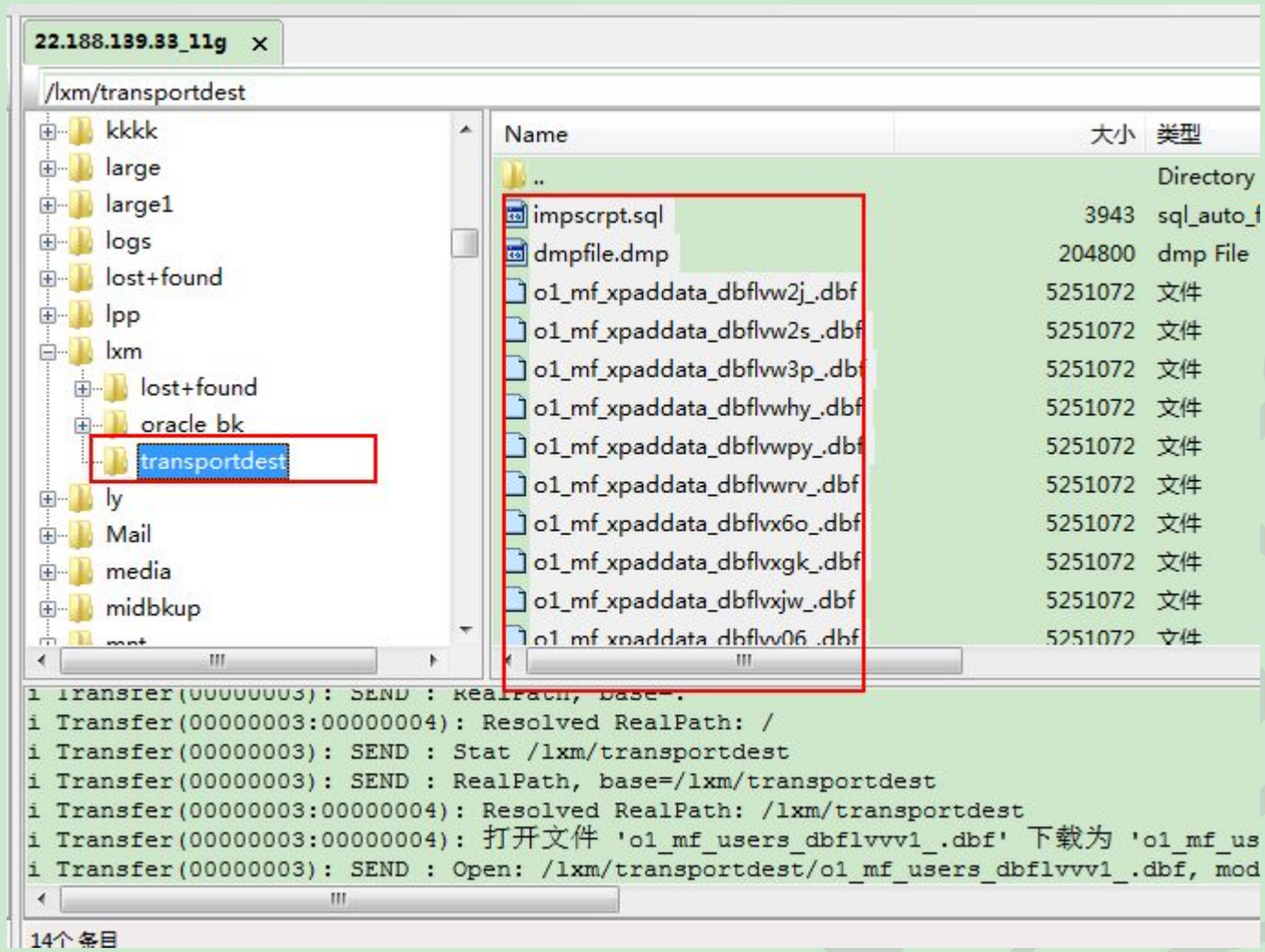
完成后文件大小：

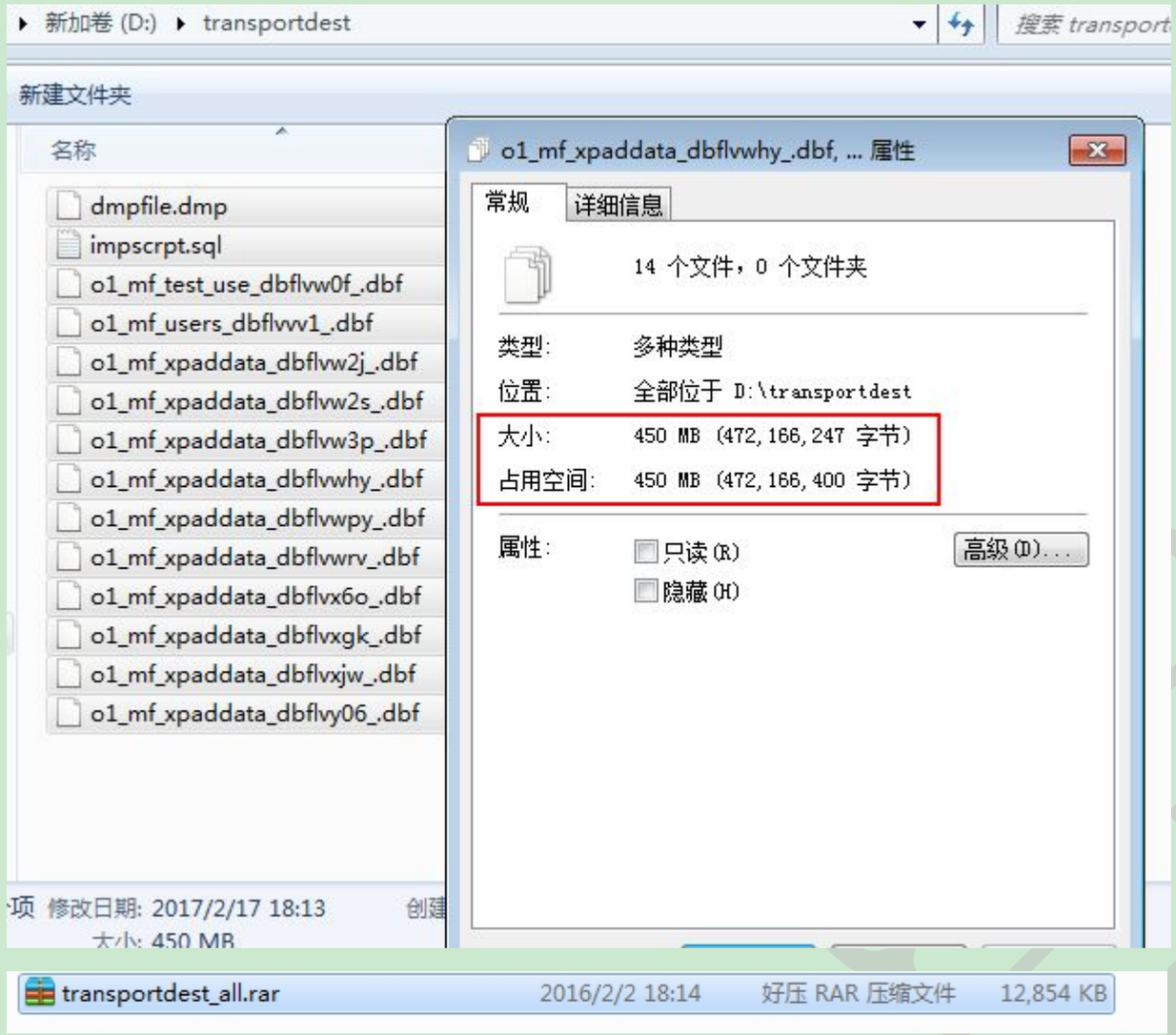
```
root@ZDMTRAIN2:/lxm/transportdest# df -g
Filesystem    GB blocks      Free %Used    Iused %Iused Mounted on
《《《《。。。。。。。。篇幅原因，有省略。。。。。。。。》》》》
/dev/Tlv_fta       8.00      7.74    4%     2627     1% /fta
/dev/fslv100       0.12      0.12    1%        9     1% /zling
/dev/lxmlv        20.00     19.29    4%       36     1% /lxm
22.188.189.42:/privatebk    8000.00   7954.59    1%     4381     1% /privatebk
22.188.189.42:/publicbk    8000.00    186.82   98% 21670216    34% /publicbk
/dev/Tlv_zca       4.00      4.00    1%       17     1% /zca
/dev/Tlv_tt       10.00      9.05   10%       18     1% /tt
ZTINIMSERVER:/sharebkup    5500.00   1629.20   71%  2455829     1% /sharebkup
ZTDNETAP3:/nfs    1240.00     25.15   98%   509154     8% /nfs
22.188.129.202:/nfs    1240.00     25.15   98%   509154     8% /nfs
root@ZDMTRAIN2:/lxm/transportdest#
```

至此，已和源库没有任何关系。

2.5 传输数据文件和元数据到 target 端

这里需要传输转储元文件和数据文件到目标库


22.188.139.33_11g
/lxm/transportdest
kkkk
large
large1
logs
lost+found
lpp
lxm
lost+found
oracle_bk
transportdest
ly
Mail
media
midbkup
Name
大小
类型
..
Directory
impscrpt.sql
3943
sql_auto_f
dmpfile.dmp
204800
dmp File
o1_mf_xpaddata_dbflvw2j_.dbf
o1_mf_xpaddata_dbflvw2s_.dbf
o1_mf_xpaddata_dbflvw3p_.dbf
o1_mf_xpaddata_dbflvwhy_.dbf
o1_mf_xpaddata_dbflvwpy_.dbf
o1_mf_xpaddata_dbflvwrv_.dbf
o1_mf_xpaddata_dbflvx6o_.dbf
o1_mf_xpaddata_dbflvxgk_.dbf
o1_mf_xpaddata_dbflvxjw_.dbf
5251072
文件
i Transfer(00000003): SEND : RealPath, base=.
i Transfer(00000003:00000004): Resolved RealPath: /
i Transfer(00000003): SEND : Stat /lxm/transportdest
i Transfer(00000003): SEND : RealPath, base=/lxm/transportdest
i Transfer(00000003:00000004): Resolved RealPath: /lxm/transportdest
i Transfer(00000003:00000004): 打开文件 'o1_mf_users_dbflvvv1_.dbf' 下载为 'o1_mf_us
i Transfer(00000003): SEND : Open: /lxm/transportdest/o1_mf_users_dbflvvv1_.dbf, mod
14个 条目



2.5.1 dbca 创建 target 库

```
[oracle@rhel6_lhr dbca]$ dbca -silent -createDatabase -templateName General_Purpose.dbc -gdbname oraSKY -sid oraSKY -sysPassword lhr -systemPassword lhr -responseFile NO_VALUE
-datafileDestination 'DATA/' -redoLogFileSize 50 -recoveryAreaDestination 'FRA/' -storageType ASM -asmsnmpPassword lhr  -diskGroupName 'DATA'  -characterSet AL32UTF8
-nationalCharacterSet AL16UTF16 -sampleSchema true -memoryPercentage 20 -totalMemory 200 -databaseType OLTP -emConfiguration NONE -automaticMemoryManagement true
Copying database files
1% complete
3% complete
35% complete
Creating and starting Oracle instance
37% complete
42% complete
47% complete
52% complete
53% complete
56% complete
58% complete
Registering database with Oracle Restart
64% complete
Completing Database Creation
68% complete
71% complete
75% complete
```

```
85% complete
96% complete
100% complete
Look at the log file "/u01/app/oracle/cfgtoollogs/dbca/oraSKY/oraSKY.log" for further details.
[oracle@rhel6_lhr dbca]$ ORACLE_SID=oraSKY
[oracle@rhel6_lhr dbca]$ sqlplus / as sysdba

SQL*Plus: Release 11.2.0.3.0 Production on 星期三 2月 3 00:14:49 2016

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连接到:
Oracle Database 11g Enterprise Edition Release 11.2.0.3.0 - 64bit Production
With the Partitioning, Automatic Storage Management, OLAP, Data Mining
and Real Application Testing options

00:14:49 SYS@oraSKY > archive log list;
数据库日志模式            存档模式
自动存档              启用
存档终点              USE_DB_RECOVERY_FILE_DEST
最早的联机日志序列     3
下一个存档日志序列   5
当前日志序列           5
00:14:53 SYS@oraSKY >
```

2.5.2 查看目标库数据文件位置和导入目录

```
[oracle@rhel6_lhr dbs]$ echo $ORACLE_SID
oraSKY
[oracle@rhel6_lhr dbs]$ sqlplus / as sysdba

SQL*Plus: Release 11.2.0.3.0 Production on 星期二 2月 2 22:58:34 2016

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and Real Application Testing options

00:14:53 SYS@oraSKY >  select name from v$datafile;

NAME
--------------------------------------------
+DATA/orasky/datafile/system.295.902793257
+DATA/orasky/datafile/sysaux.294.902793261
+DATA/orasky/datafile/undotbs1.293.902793263
+DATA/orasky/datafile/users.292.902793265
+DATA/orasky/datafile/example.274.902793775

已用时间:  00: 00: 00.03
00:15:31 SYS@oraSKY >

SYS@oraSKY >  select directory_name,directory_path from dba_directories;

DIRECTORY_NAME                 DIRECTORY_PATH
------------------------------ ------------------------------------------------------------------------------
SUBDIR                         /u01/app/oracle/product/11.2.0/dbhome_1/demo/schema/order_entry//2002/Sep
SS_OE_XMLDIR                   /u01/app/oracle/product/11.2.0/dbhome_1/demo/schema/order_entry/
LOG_FILE_DIR                   /u01/app/oracle/product/11.2.0/dbhome_1/demo/schema/log/
MEDIA_DIR                      /u01/app/oracle/product/11.2.0/dbhome_1/demo/schema/product_media/
```
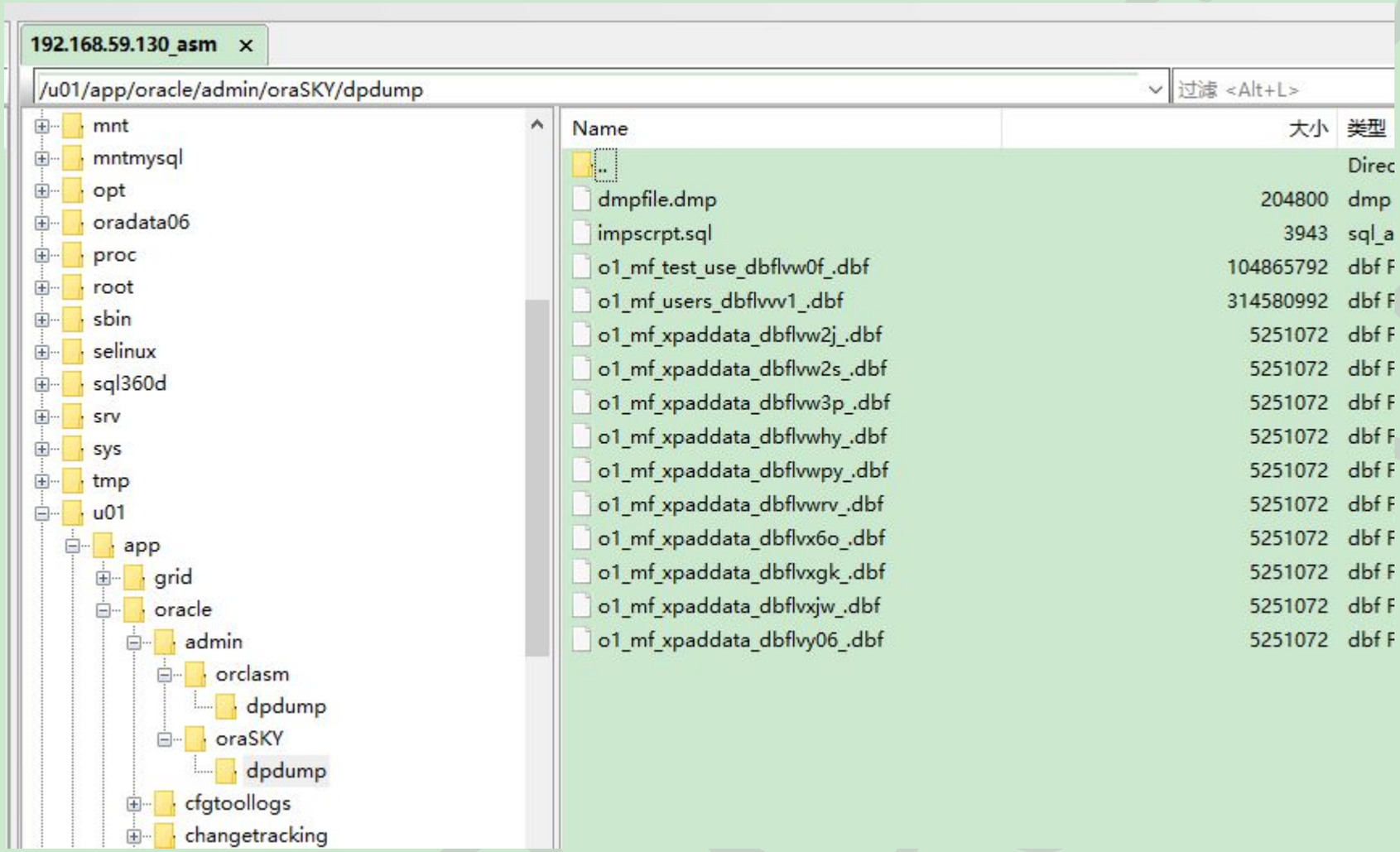

```
XMLDIR                         /u01/app/oracle/product/11.2.0/dbhome_1/rdbms/xml
DATA_FILE_DIR                  /u01/app/oracle/product/11.2.0/dbhome_1/demo/schema/sales_history/
DATA_PUMP_DIR                  /u01/app/oracle/admin/oraSKY/dpdump/
ORACLE_OCM_CONFIG_DIR          /u01/app/oracle/product/11.2.0/dbhome_1/ccr/state
已选择 8 行。
```

2.5.3 利用 ftp 工具传输转储元文件到目标库



2.5.4 拷贝文件到目标库相应位置并修改文件权限

```
[root@rhel6_lhr ~]# cd /u01/app/oracle/admin/oraSKY/dpdump
[root@rhel6_lhr dpdump]# ll
total 461108
-rw-r--r-- 1 root root    204800 Feb 17  2017 dmpfile.dmp
-rw-r--r-- 1 root root      3943 Feb 17  2017 impscrpt.sql
-rw-r--r-- 1 root root 104865792 Feb 17  2017 o1_mf_test_use_dbflvw0f_.dbf
-rw-r--r-- 1 root root 314580992 Feb 17  2017 o1_mf_users_dbflvvv1_.dbf
-rw-r--r-- 1 root root   5251072 Feb 17  2017 o1_mf_xpaddata_dbflvw2j_.dbf
-rw-r--r-- 1 root root   5251072 Feb 17  2017 o1_mf_xpaddata_dbflvw2s_.dbf
-rw-r--r-- 1 root root   5251072 Feb 17  2017 o1_mf_xpaddata_dbflvw3p_.dbf
-rw-r--r-- 1 root root   5251072 Feb 17  2017 o1_mf_xpaddata_dbflvwhy_.dbf
-rw-r--r-- 1 root root   5251072 Feb 17  2017 o1_mf_xpaddata_dbflvwpy_.dbf
```

```
-rw-r--r-- 1 root root   5251072 Feb 17  2017 o1_mf_xpaddata_dbflvwrv_.dbf
-rw-r--r-- 1 root root   5251072 Feb 17  2017 o1_mf_xpaddata_dbflvx6o_.dbf
-rw-r--r-- 1 root root   5251072 Feb 17  2017 o1_mf_xpaddata_dbflvxgk_.dbf
-rw-r--r-- 1 root root   5251072 Feb 17  2017 o1_mf_xpaddata_dbflvxjw_.dbf
-rw-r--r-- 1 root root   5251072 Feb 17  2017 o1_mf_xpaddata_dbflvy06_.dbf
[root@rhel6_lhr dpdump]# chown oracle:dba *
[root@rhel6_lhr dpdump]# ll
total 461108
-rw-r--r-- 1 oracle dba    204800 Feb 17  2017 dmpfile.dmp
-rw-r--r-- 1 oracle dba      3943 Feb 17  2017 impscrpt.sql
-rw-r--r-- 1 oracle dba 104865792 Feb 17  2017 o1_mf_test_use_dbflvw0f_.dbf
-rw-r--r-- 1 oracle dba 314580992 Feb 17  2017 o1_mf_users_dbflvvv1_.dbf
-rw-r--r-- 1 oracle dba   5251072 Feb 17  2017 o1_mf_xpaddata_dbflvw2j_.dbf
-rw-r--r-- 1 oracle dba   5251072 Feb 17  2017 o1_mf_xpaddata_dbflvw2s_.dbf
-rw-r--r-- 1 oracle dba   5251072 Feb 17  2017 o1_mf_xpaddata_dbflvw3p_.dbf
-rw-r--r-- 1 oracle dba   5251072 Feb 17  2017 o1_mf_xpaddata_dbflvwhy_.dbf
-rw-r--r-- 1 oracle dba   5251072 Feb 17  2017 o1_mf_xpaddata_dbflvwpy_.dbf
-rw-r--r-- 1 oracle dba   5251072 Feb 17  2017 o1_mf_xpaddata_dbflvwrv_.dbf
-rw-r--r-- 1 oracle dba   5251072 Feb 17  2017 o1_mf_xpaddata_dbflvx6o_.dbf
-rw-r--r-- 1 oracle dba   5251072 Feb 17  2017 o1_mf_xpaddata_dbflvxgk_.dbf
-rw-r--r-- 1 oracle dba   5251072 Feb 17  2017 o1_mf_xpaddata_dbflvxjw_.dbf
-rw-r--r-- 1 oracle dba   5251072 Feb 17  2017 o1_mf_xpaddata_dbflvy06_.dbf
[root@rhel6_lhr dpdump]#
```

2.6 target 端转换字节序

```
[oracle@rhel6_lhr dbca]$ rman target /

恢复管理器: Release 11.2.0.3.0 - Production on 星期三 2月 3 00:24:06 2016

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已连接到目标数据库: ORASKY (DBID=4027046368)

RMAN> CONVERT DATAFILE
2> "/u01/app/oracle/admin/oraSKY/dpdump/o1_mf_test_use_dbflvw0f_.dbf",
3> "/u01/app/oracle/admin/oraSKY/dpdump/o1_mf_users_dbflvvv1_.dbf",
4> "/u01/app/oracle/admin/oraSKY/dpdump/o1_mf_xpaddata_dbflvw2j_.dbf",
5> "/u01/app/oracle/admin/oraSKY/dpdump/o1_mf_xpaddata_dbflvw2s_.dbf",
6> "/u01/app/oracle/admin/oraSKY/dpdump/o1_mf_xpaddata_dbflvw3p_.dbf",
7> "/u01/app/oracle/admin/oraSKY/dpdump/o1_mf_xpaddata_dbflvwhy_.dbf",
8> "/u01/app/oracle/admin/oraSKY/dpdump/o1_mf_xpaddata_dbflvwpy_.dbf",
9> "/u01/app/oracle/admin/oraSKY/dpdump/o1_mf_xpaddata_dbflvwrv_.dbf",
10> "/u01/app/oracle/admin/oraSKY/dpdump/o1_mf_xpaddata_dbflvx6o_.dbf",
11> "/u01/app/oracle/admin/oraSKY/dpdump/o1_mf_xpaddata_dbflvxgk_.dbf",
12> "/u01/app/oracle/admin/oraSKY/dpdump/o1_mf_xpaddata_dbflvxjw_.dbf",
13> "/u01/app/oracle/admin/oraSKY/dpdump/o1_mf_xpaddata_dbflvy06_.dbf"
14> TO PLATFORM="Linux x86 64-bit"
15> FROM PLATFORM="AIX-Based Systems (64-bit)"
16> FORMAT '+DATA';

启动 conversion at target 于 2016-02-03 00:24:09
使用目标数据库控制文件替代恢复目录
分配的通道: ORA_DISK_1
通道 ORA_DISK_1: SID=147 设备类型=DISK
通道 ORA_DISK_1: 启动数据文件转换
输入文件名=/u01/app/oracle/admin/oraSKY/dpdump/o1_mf_users_dbflvvv1_.dbf
已转换的数据文件 = +DATA/orasky/datafile/users.280.902795051
通道 ORA_DISK_1: 数据文件转换完毕, 经过时间: 00:00:45
通道 ORA_DISK_1: 启动数据文件转换
输入文件名=/u01/app/oracle/admin/oraSKY/dpdump/o1_mf_test_use_dbflvw0f_.dbf
```

```
已转换的数据文件 = +DATA/orasky/datafile/test_user1.278.902795095
通道 ORA_DISK_1: 数据文件转换完毕, 经过时间: 00:00:25
通道 ORA_DISK_1: 启动数据文件转换
输入文件名=/u01/app/oracle/admin/oraSKY/dpdump/o1_mf_xpaddata_dbflvw2j_.dbf
已转换的数据文件 = +DATA/orasky/datafile/xpaddata.277.902795121
通道 ORA_DISK_1: 数据文件转换完毕, 经过时间: 00:00:01
通道 ORA_DISK_1: 启动数据文件转换
输入文件名=/u01/app/oracle/admin/oraSKY/dpdump/o1_mf_xpaddata_dbflvw2s_.dbf
已转换的数据文件 = +DATA/orasky/datafile/xpaddata.276.902795121
通道 ORA_DISK_1: 数据文件转换完毕, 经过时间: 00:00:01
通道 ORA_DISK_1: 启动数据文件转换
输入文件名=/u01/app/oracle/admin/oraSKY/dpdump/o1_mf_xpaddata_dbflvw3p_.dbf
已转换的数据文件 = +DATA/orasky/datafile/xpaddata.275.902795123
通道 ORA_DISK_1: 数据文件转换完毕, 经过时间: 00:00:02
通道 ORA_DISK_1: 启动数据文件转换
输入文件名=/u01/app/oracle/admin/oraSKY/dpdump/o1_mf_xpaddata_dbflvwhy_.dbf
已转换的数据文件 = +DATA/orasky/datafile/xpaddata.270.902795125
通道 ORA_DISK_1: 数据文件转换完毕, 经过时间: 00:00:01
通道 ORA_DISK_1: 启动数据文件转换
输入文件名=/u01/app/oracle/admin/oraSKY/dpdump/o1_mf_xpaddata_dbflvwpy_.dbf
已转换的数据文件 = +DATA/orasky/datafile/xpaddata.267.902795125
通道 ORA_DISK_1: 数据文件转换完毕, 经过时间: 00:00:01
通道 ORA_DISK_1: 启动数据文件转换
输入文件名=/u01/app/oracle/admin/oraSKY/dpdump/o1_mf_xpaddata_dbflvwrv_.dbf
已转换的数据文件 = +DATA/orasky/datafile/xpaddata.268.902795127
通道 ORA_DISK_1: 数据文件转换完毕, 经过时间: 00:00:01
通道 ORA_DISK_1: 启动数据文件转换
输入文件名=/u01/app/oracle/admin/oraSKY/dpdump/o1_mf_xpaddata_dbflvx6o_.dbf
已转换的数据文件 = +DATA/orasky/datafile/xpaddata.281.902795127
通道 ORA_DISK_1: 数据文件转换完毕, 经过时间: 00:00:01
通道 ORA_DISK_1: 启动数据文件转换
输入文件名=/u01/app/oracle/admin/oraSKY/dpdump/o1_mf_xpaddata_dbflvxgk_.dbf
已转换的数据文件 = +DATA/orasky/datafile/xpaddata.296.902795129
通道 ORA_DISK_1: 数据文件转换完毕, 经过时间: 00:00:04
通道 ORA_DISK_1: 启动数据文件转换
输入文件名=/u01/app/oracle/admin/oraSKY/dpdump/o1_mf_xpaddata_dbflvxjw_.dbf
已转换的数据文件 = +DATA/orasky/datafile/xpaddata.297.902795133
通道 ORA_DISK_1: 数据文件转换完毕, 经过时间: 00:00:01
通道 ORA_DISK_1: 启动数据文件转换
输入文件名=/u01/app/oracle/admin/oraSKY/dpdump/o1_mf_xpaddata_dbflvy06_.dbf
已转换的数据文件 = +DATA/orasky/datafile/xpaddata.298.902795133
通道 ORA_DISK_1: 数据文件转换完毕, 经过时间: 00:00:01
完成 conversion at target 于 2016-02-03 00:25:34

RMAN>



[grid@rhel6_lhr ~]$ asmcmd
[grid@rhel6_lhr asmdisk]$ cd
[grid@rhel6_lhr ~]$ asmcmd
ASMCMD> cd +data/ORASKY/datafile
ASMCMD> ls -lt
Type      Redund  Striped  Time             Sys  Name
DATAFILE  MIRROR  COARSE   FEB 03 00:00:00  Y    XPADDATA.298.902795133
DATAFILE  MIRROR  COARSE   FEB 03 00:00:00  Y    XPADDATA.297.902795133
DATAFILE  MIRROR  COARSE   FEB 03 00:00:00  Y    XPADDATA.296.902795129
DATAFILE  MIRROR  COARSE   FEB 03 00:00:00  Y    XPADDATA.281.902795127
DATAFILE  MIRROR  COARSE   FEB 03 00:00:00  Y    XPADDATA.277.902795121
DATAFILE  MIRROR  COARSE   FEB 03 00:00:00  Y    XPADDATA.276.902795121
DATAFILE  MIRROR  COARSE   FEB 03 00:00:00  Y    XPADDATA.275.902795123
DATAFILE  MIRROR  COARSE   FEB 03 00:00:00  Y    XPADDATA.270.902795125
DATAFILE  MIRROR  COARSE   FEB 03 00:00:00  Y    XPADDATA.268.902795127
DATAFILE  MIRROR  COARSE   FEB 03 00:00:00  Y    XPADDATA.267.902795125
DATAFILE  MIRROR  COARSE   FEB 03 00:00:00  Y    USERS.292.902793265
DATAFILE  MIRROR  COARSE   FEB 03 00:00:00  Y    USERS.280.902795051
DATAFILE  MIRROR  COARSE   FEB 03 00:00:00  Y    UNDOTBS1.293.902793263
DATAFILE  MIRROR  COARSE   FEB 03 00:00:00  Y    TEST_USER1.278.902795095
```

```
DATAFILE  MIRROR  COARSE   FEB 03 00:00:00  Y    SYSTEM.295.902793257
DATAFILE  MIRROR  COARSE   FEB 03 00:00:00  Y    SYSAUX.294.902793261
DATAFILE  MIRROR  COARSE   FEB 03 00:00:00  Y    EXAMPLE.274.902793775
ASMCMD>

ASMCMD>
```

2.7 开始导入

2.7.1 创建 source 库的需要迁移的 3 个用户并赋权限(前边的脚本已经生成，直接拿过来执行)

如果不创建用户会报如下的错误：

ORA-39123: Data Pump transportable tablespace job aborted
ORA-29342: user USER_APP1 does not exist in the database

```
create user TEST1 identified by TEST1  TEMPORARY TABLESPACE  TEMP;
GRANT UNLIMITED TABLESPACE TO TEST1;
GRANT CONNECT TO TEST1;
GRANT RESOURCE TO TEST1;
GRANT WRITE ON SYS.TEST_DIR TO TEST1;
GRANT READ ON SYS.TEST_DIR TO TEST1;
GRANT WRITE ON SYS.TEST_LOG TO TEST1;
GRANT READ ON SYS.TEST_LOG TO TEST1;
create user XPADAD identified by XPADAD TEMPORARY TABLESPACE  TEMP;
GRANT CREATE VIEW TO XPADAD;
GRANT UNLIMITED TABLESPACE TO XPADAD;
GRANT CREATE DATABASE LINK TO XPADAD;
GRANT DBA TO XPADAD;
GRANT CONNECT TO XPADAD;
GRANT RESOURCE TO XPADAD;
create user T identified by T default TEMPORARY TABLESPACE  TEMP;
GRANT UNLIMITED TABLESPACE TO T;
GRANT RESOURCE TO T;
GRANT CONNECT TO T;
GRANT WRITE ON SYS.TT TO T;
GRANT READ ON SYS.TT TO T;
```

2.7.2 开始导入

```
[oracle@rhel6_lhr dbca]$ impdp \'/ as sysdba \' DUMPFILE=dmpfile.dmp DIRECTORY=DATA_PUMP_DIR
TRANSPORT_DATAFILES='+data/ORASKY/datafile/XPADDATA.298.902795133','+data/ORASKY/datafile/XPADDATA.297.902795133','+data/ORASKY/datafile/XPADDATA.296.902795129','+data/ORASKY/datafile/XPADDATA.281.902795127','+data/ORASKY/datafile/XPADDATA.277.902795121','+data/ORASKY/datafile/XPADDATA.276.902795121','+data/ORASKY/datafile/XPADDATA.275.902795123','+data/ORASKY/datafile/XPADDATA.270.902795125','+data/ORASKY/datafile/XPADDATA.268.902795127','+data/ORASKY/datafile/XPADDATA.267.902795125','+data/ORASKY/datafile/USERS.292.902793265','+data/ORASKY/datafile/TEST_USER1.278.902795095' LOGFILE=impdp_tts_20160202.log

Import: Release 11.2.0.3.0 - Production on 星期三 2月 3 00:35:45 2016

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```

```
已成功加载/卸载了主表 "SYS"."SYS_IMPORT_TRANSPORTABLE_01"
启动 "SYS"."SYS_IMPORT_TRANSPORTABLE_01":  "/******** AS SYSDBA" DUMPFILE=dmpfile.dmp DIRECTORY=DATA_PUMP_DIR
TRANSPORT_DATAFILES=+data/ORASKY/datafile/XPADDATA.298.902795133,+data/ORASKY/datafile/XPADDATA.297.902795133,+data/ORASKY/datafile/XPADDATA.296.902795129,+data/ORASKY/datafile/XPADDATA.281.902795127,+data/ORASKY/datafile/XPADDATA.277.902795121,+data/ORASKY/datafile/XPADDATA.276.902795121,+data/ORASKY/datafile/XPADDATA.275.902795123,+data/ORASKY/datafile/XPADDATA.270.902795125,+data/ORASKY/datafile/XPADDATA.268.902795127,+data/ORASKY/datafile/XPADDATA.267.902795125,+data/ORASKY/datafile/USERS.292.902793265,+data/ORASKY/datafile/TEST_USER1.278.902795095 LOGFILE=impdp_tts_20160202.log
处理对象类型 TRANSPORTABLE_EXPORT/PLUGTS_BLK
ORA-39123: 数据泵可传输的表空间作业中止
ORA-29349: 表空间 'USERS' 已存在

作业 "SYS"."SYS_IMPORT_TRANSPORTABLE_01" 因致命错误于 00:35:50 停止
```

users 表空间已经存在了，这里把 target 端的 users 表空间重命名一下就可以了：

```
[oracle@rhel6_lhr dbca]$ sqlplus / as sysdba

SQL*Plus: Release 11.2.0.3.0 Production on 星期三 2月 3 00:36:26 2016

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and Real Application Testing options


SYS@oraSKY > alter tablespace users rename to users01;

表空间已更改。

SYS@oraSKY > exit
从 Oracle Database 11g Enterprise Edition Release 11.2.0.3.0 - 64bit Production
With the Partitioning, Automatic Storage Management, OLAP, Data Mining
and Real Application Testing options 断开

[oracle@rhel6_lhr dbca]$ impdp \'/ as sysdba \' DUMPFILE=dmpfile.dmp DIRECTORY=DATA_PUMP_DIR
TRANSPORT_DATAFILES='+data/ORASKY/datafile/XPADDATA.298.902795133','+data/ORASKY/datafile/XPADDATA.297.902795133','+data/ORASKY/datafile/XPADDATA.296.902795129','+data/ORASKY/datafile/XPADDATA.281.902795127','+data/ORASKY/datafile/XPADDATA.277.902795121','+data/ORASKY/datafile/XPADDATA.276.902795121','+data/ORASKY/datafile/XPADDATA.275.902795123','+data/ORASKY/datafile/XPADDATA.270.902795125','+data/ORASKY/datafile/XPADDATA.268.902795127','+data/ORASKY/datafile/XPADDATA.267.902795125','+data/ORASKY/datafile/USERS.280.902795051','+data/ORASKY/datafile/TEST_USER1.278.902795095' LOGFILE=impdp_tts_20160202.log

Import: Release 11.2.0.3.0 - Production on 星期三 2月 3 00:40:46 2016

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With the Partitioning, Automatic Storage Management, OLAP, Data Mining
and Real Application Testing options
已成功加载/卸载了主表 "SYS"."SYS_IMPORT_TRANSPORTABLE_01"
启动 "SYS"."SYS_IMPORT_TRANSPORTABLE_01":  "/******** AS SYSDBA" DUMPFILE=dmpfile.dmp DIRECTORY=DATA_PUMP_DIR
TRANSPORT_DATAFILES=+data/ORASKY/datafile/XPADDATA.298.902795133,+data/ORASKY/datafile/XPADDATA.297.902795133,+data/ORASKY/datafile/XPADDATA.296.902795129,+data/ORASKY/datafile/XPADDATA.281.902795127,+data/ORASKY/datafile/XPADDATA.277.902795121,+data/ORASKY/datafile/XPADDATA.276.902795121,+data/ORASKY/datafile/XPADDATA.275.902795123,+data/ORASKY/datafile/XPADDATA.270.902795125,+data/ORASKY/datafile/XPADDATA.268.902795127,+data/ORASKY/datafile/XPADDATA.267.902795125,+data/ORASKY/datafile/USERS.280.902795051,+data/ORASKY/datafile/TEST_USER1.278.902795095 LOGFILE=impdp_tts_20160202.log
处理对象类型 TRANSPORTABLE_EXPORT/PLUGTS_BLK
处理对象类型 TRANSPORTABLE_EXPORT/TABLE
ORA-39151: 表 "SCOTT"."EMP" 已存在。由于跳过了 table_exists_action, 将跳过所有相关元数据和数据。
处理对象类型 TRANSPORTABLE_EXPORT/INDEX/INDEX
处理对象类型 TRANSPORTABLE_EXPORT/INDEX_STATISTICS
处理对象类型 TRANSPORTABLE_EXPORT/POST_INSTANCE/PLUGTS_BLK
作业 "SYS"."SYS_IMPORT_TRANSPORTABLE_01" 已经完成, 但是有 1 个错误 (于 00:40:51 完成)

[oracle@rhel6_lhr dbca]$
[oracle@rhel6_lhr dbca]$
```

```
[ZFXDESKDB2:oracle]:/oracle>
```

2.7.2.1 报错：source 和 target 的 compatible 参数不同引起 ora-00721 错误

```
[oracle@rhel6_lhr dbs]$ impdp \'/ as sysdba \' DUMPFILE=dmpfile.dmp DIRECTORY=DATA_PUMP_DIR
TRANSPORT_DATAFILES='+DATA/orclasm/datafile/appltbs.271.90278175','+DATA/orclasm/datafile/APP2TBS.276.902781757','+DATA/orclasm/datafile/IDXTBS.279.902781761' LOGFILE=impdp_tts_20160202.log  version=latest

Import: Release 11.2.0.3.0 - Production on 星期二 2月 2 21:04:29 2016

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连接到: Oracle Database 11g Enterprise Edition Release 11.2.0.3.0 - 64bit Production
With the Partitioning, Automatic Storage Management, OLAP, Data Mining
and Real Application Testing options
已成功加载/卸载了主表 "SYS"."SYS_IMPORT_TRANSPORTABLE_01"
启动 "SYS"."SYS_IMPORT_TRANSPORTABLE_01":  "/******** AS SYSDBA" DUMPFILE=dmpfile.dmp DIRECTORY=DATA_PUMP_DIR
TRANSPORT_DATAFILES=+DATA/orclasm/datafile/appltbs.271.90278175,+DATA/orclasm/datafile/APP2TBS.276.902781757,+DATA/orclasm/datafile/IDXTBS.279.902781761 LOGFILE=impdp_tts_20160202.log version=latest
处理对象类型 TRANSPORTABLE_EXPORT/PLUGTS_BLK
ORA-39123: 数据泵可传输的表空间作业中止
ORA-00721: 发行版 11.2.0.4.0 中的更改无法用于发行版 11.2.0.3.0

作业 "SYS"."SYS_IMPORT_TRANSPORTABLE_01" 因致命错误于 21:04:37 停止

[oracle@rhel6_lhr dbs]$ sqlplus / as sysdba

SQL*Plus: Release 11.2.0.3.0 Production on 星期二 2月 2 21:04:58 2016

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连接到:
Oracle Database 11g Enterprise Edition Release 11.2.0.3.0 - 64bit Production
With the Partitioning, Automatic Storage Management, OLAP, Data Mining
and Real Application Testing options

21:04:58 SYS@orclasm > show parameter com

NAME                                 TYPE        VALUE
------------------------------------ ----------- ------------------------------
cell_offload_compaction              string      ADAPTIVE
commit_logging                       string
commit_point_strength                integer     1
commit_wait                          string
commit_write                         string
compatible                           string      11.2.0.3.0
nls_comp                             string      BINARY
plsql_v2_compatibility               boolean     FALSE
21:05:03 SYS@orclasm >
```

解决办法：保持 source 和 target 的版本一致，或 source 端小于等于 target 端，若版本一致，则修改 target 端的 compatible 参数和 source 端一致。

2.7.3 查看目标平台信息

```
[oracle@rhel6_lhr dbca]$ sqlplus / as sysdba

SQL*Plus: Release 11.2.0.3.0 Production on 星期三 2月 3 00:42:23 2016
```

```
Copyright (c) 1982, 2011, Oracle.  All rights reserved.


连接到:
Oracle Database 11g Enterprise Edition Release 11.2.0.3.0 - 64bit Production
With the Partitioning, Automatic Storage Management, OLAP, Data Mining
and Real Application Testing options

SYS@oraSKY > select tablespace_name,status from dba_tablespaces;

TABLESPACE_NAME                                                  STATUS
---------------------------------------------------------------- ---------------
SYSTEM                                                           ONLINE
SYSAUX                                                           ONLINE
UNDOTBS1                                                         ONLINE
TEMP                                                             ONLINE
USERS01                                                          ONLINE
EXAMPLE                                                          ONLINE
TEST_USER1                                                       READ ONLY
USERS                                                            READ ONLY
XPADDATA                                                         READ ONLY

已选择 9 行。

SYS@oraSKY > alter tablespace  TEST_USER1 read write;

表空间已更改。

SYS@oraSKY > alter tablespace  USERS read write;

表空间已更改。

SYS@oraSKY > alter tablespace  XPADDATA read write;

表空间已更改。

SYS@oraSKY > select tablespace_name,status from dba_tablespaces;

TABLESPACE_NAME                                                  STATUS
---------------------------------------------------------------- ---------------
SYSTEM                                                           ONLINE
SYSAUX                                                           ONLINE
UNDOTBS1                                                         ONLINE
TEMP                                                             ONLINE
USERS01                                                          ONLINE
EXAMPLE                                                          ONLINE
TEST_USER1                                                       ONLINE
USERS                                                            ONLINE
XPADDATA                                                         ONLINE

已选择 9 行。
```

2.8 导入完成后的结果校验

2.8.1 校验用户情况（密码、默认表空间、角色和权限，需迁移的 schema 对象大小、个数、列表）

2.8.1.1 校验用户

```
SELECT d.username,
       d.default_tablespace,
       D.temporary_tablespace,
       d.account_status
  FROM dba_users d
 WHERE d.account_status = 'OPEN'
   and d.username in ('T','TEST1','XPADAD');
```

	USERNAME	DEFAULT_TABLESPACE	TEMPORARY_TABLESPACE	ACCOUNT_STATUS
1	XPADAD	USERS01	TEMP	OPEN
2	T	USERS01	TEMP	OPEN
3	TEST1	USERS01	TEMP	OPEN

```
SQL> alter user T default tablespace users;

User altered.

SQL> alter user XPADAD default tablespace XPADDATA;

User altered.

SQL> alter user TEST1 default tablespace TEST_USER1;

User altered.

SQL>
```

	USERNAME	DEFAULT_TABLESPACE	TEMPORARY_TABLESPACE	ACCOUNT_STATUS
1	XPADAD	XPADDATA	TEMP	OPEN
2	T	USERS	TEMP	OPEN
3	TEST1	TEST_USER1	TEMP	OPEN

2.8.1.2 用户对象个数

```
SELECT D.OWNER,COUNT(1)
  FROM dba_objects d
 WHERE d.OWNER   in ('T', 'XPADAD', 'TEST1')
 and d.OWNER not in ('PUBLIC')
 AND NOT EXISTS (SELECT 1 FROM DBA_RECYCLEBIN B WHERE B.object_name=D.OBJECT_NAME AND D.OWNER=B.owner)
 GROUP BY D.OWNER
 ORDER BY D.OWNER ;
```

	OWNER	COUNT(1)
1	T	20
2	TEST1	2
3	XPADAD	1

```
SELECT D.OWNER, D.OBJECT_TYPE, COUNT(1)
  FROM dba_objects d
 WHERE d.OWNER in ('T', 'XPADAD', 'TEST1')
   and d.OWNER not in ('PUBLIC')
   AND NOT EXISTS (SELECT 1
          FROM DBA_RECYCLEBIN B
         WHERE B.object_name = D.OBJECT_NAME
           AND D.OWNER = B.owner)
 GROUP BY D.OWNER, D.OBJECT_TYPE
 ORDER BY D.OWNER;
```

	OWNER	OBJECT_TYPE	COUNT(1)
1	T	INDEX	3
2	T	TABLE	5
3	T	TABLE PARTITION	12
4	TEST1	TABLE	2
5	XPADAD	FUNCTION	1
6	XPADAD	TABLE	1
7	XPADAD	TYPE	1
8	XPADAD	TYPE BODY	1

2.8.1.3 对象详细信息

---- 以下数据导出到 excel 表格备份

```
SELECT d.OWNER, d.OBJECT_NAME, d.SUBOBJECT_NAME, d.OBJECT_TYPE,d.status
  FROM dba_objects d
 WHERE d.OWNER   in ('T', 'XPADAD', 'TEST1')
 and d.OWNER not in ('PUBLIC')
 AND NOT EXISTS (SELECT 1 FROM DBA_RECYCLEBIN B WHERE B.object_name=D.OBJECT_NAME AND D.OWNER=B.owner)
 ORDER BY D.OWNER ;
```

	OWNER	OBJECT_NAME	SUBOBJECT_NAME	OBJECT_TYPE	STATUS
1	T	T1_IND		INDEX	VALID
2	T	TTT		TABLE	VALID
3	T	MONTH_PART	SYS_P65	TABLE PARTITION	VALID
4	T	MONTH_PART	SYS_P64	TABLE PARTITION	VALID
5	T	MONTH_PART	SYS_P63	TABLE PARTITION	VALID
6	T	MONTH_PART	SYS_P61	TABLE PARTITION	VALID

7	T	MONTH_PART		TABLE	VALID
8	T	T1		TABLE	VALID
9	T	PT1	PT1_20161001	TABLE PARTITION	VALID
10	T	PT1	PT1_20250918	TABLE PARTITION	VALID
11	T	PT1	PT1_20250620	TABLE PARTITION	VALID
12	T	PT1		TABLE	VALID
13	T	PT1_IND1		INDEX	VALID
14	T	PT2	PT1_20161001	TABLE PARTITION	VALID
15	T	PT2	PT1_20250918	TABLE PARTITION	VALID
16	T	PT2	PT1_20250620	TABLE PARTITION	VALID
17	T	PT2		TABLE	VALID
18	T	PT2_IND1		INDEX	VALID
19	T	MONTH_PART	PART2	TABLE PARTITION	VALID
20	T	MONTH_PART	PART1	TABLE PARTITION	VALID
21	TEST1	TEST		TABLE	VALID
22	TEST1	TEST_TABLE		TABLE	VALID
23	XPADAD	WH_CONCAT_IMPL_LHR		TYPE BODY	VALID
24	XPADAD	WH_CONCAT_IMPL_LHR		TYPE	VALID
25	XPADAD	TEST		TABLE	VALID
26	XPADAD	WH_CONCAT_LHR		FUNCTION	VALID

```
 SELECT d.owner,
      d.segment_name,
      d.partition_name,
      d.segment_type,
      d.tablespace_name,
      d.BYTES
  FROM dba_segments d
WHERE d.OWNER  in ('T', 'XPADAD', 'TEST1')
AND NOT EXISTS (SELECT 1 FROM DBA_RECYCLEBIN B WHERE B.object_name=D.segment_name AND D.OWNER=B.owner)
ORDER BY D.OWNER ;
```

	OWNER	SEGMENT_NAME	PARTITION_NAME	SEGMENT_TYPE	TABLESPACE_NAME	BYTES
1	T	T1		TABLE	USERS	65536
2	T	PT2	PT1_20250918	TABLE PARTITION	USERS	8388608
3	T	PT1_IND1		INDEX	USERS	65536
4	T	PT2_IND1		INDEX	USERS	65536
5	T	TTT		TABLE	USERS	65536
6	T	PT1	PT1_20250620	TABLE PARTITION	USERS	8388608
7	T	PT1	PT1_20250918	TABLE PARTITION	USERS	8388608
8	T	PT1	PT1_20161001	TABLE PARTITION	USERS	8388608
9	T	PT2	PT1_20250620	TABLE PARTITION	USERS	8388608

10	T	T1_IND		INDEX	USERS	65536
11	T	PT2	PT1_20161001	TABLE PARTITION	USERS	8388608
12	T	MONTH_PART	PART1	TABLE PARTITION	USERS	8388608
13	T	MONTH_PART	PART2	TABLE PARTITION	USERS	8388608
14	T	MONTH_PART	SYS_P61	TABLE PARTITION	USERS	8388608
15	T	MONTH_PART	SYS_P63	TABLE PARTITION	USERS	8388608
16	T	MONTH_PART	SYS_P64	TABLE PARTITION	USERS	8388608
17	T	MONTH_PART	SYS_P65	TABLE PARTITION	USERS	8388608
18	TEST1	TEST		TABLE	TEST_USER1	9437184
19	TEST1	TEST_TABLE		TABLE	TEST_USER1	65536
20	XPADAD	TEST		TABLE	XPADDATA	9437184

2.8.2 无效对象情况

```
SELECT owner owner,
       count(1)
  FROM dba_objects   d
WHERE status <> 'VALID'
and  d.OWNER  in ('T', 'XPADAD', 'TEST1')
AND D.OWNER NOT IN ('PUBLIC')
group by d.OWNER
ORDER BY owner;
```

```
SELECT owner owner,
      object_name,
      object_type,
      status,
      'alter ' || decode(object_type,
                         'PACKAGE BODY',
                         'PACKAGE',
                         'TYPE BODY',
                         'TYPE',
                         object_type) || ' ' || owner || '.' ||
      object_name || ' ' ||
      decode(object_type, 'PACKAGE BODY', 'compile body', 'compile') || ';' hands_on
  FROM dba_objects   d
WHERE status <> 'VALID'
and  d.OWNER in ('T', 'XPADAD', 'TEST1')
```

```
ORDER BY owner, object_name;
```

2.8.3 索引情况

```
SELECT D.OWNER,COUNT(1)
 FROM dba_indexes d
WHERE d.OWNER in ('T', 'XPADAD', 'TEST1')
and d.OWNER not in ('PUBLIC')
AND NOT EXISTS (SELECT 1 FROM DBA_RECYCLEBIN B WHERE B.object_name=D.index_name AND D.OWNER=B.owner)
GROUP BY D.OWNER
ORDER BY D.OWNER ;
```

	OWNER	COUNT(1)
1	T	3

2.9 迁移后续收尾工作

确保数据已经完全迁移到新的主机上后，接下来就是一些琐碎的收尾工作，包括 sys 密码，监听，job，crontab 等等工作。

2.10 总结

到此所有的处理算是基本完毕，过程很简单，但是不同的场景处理方式有很多种，我们应该学会灵活变通。

2.11 About Me

.....

本文作者：小麦苗，只专注于数据库的技术，更注重技术的运用

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