

Oracle Data Pump(expdp, impdp)

Oracle Database

1. Introduction

Oracle Data Pump is a newer, faster and more flexible alternative to the "exp" and "imp" utilities used in previous Oracle versions. In addition to basic import and export functionality data pump provides a PL/SQL API and support for external tables.

2. Getting Started

For the examples to work we must first unlock the SCOTT account and create a directory object it can access. The directory object is only a pointer to a physical directory, creating it does not actually create the physical directory on the file system of the database server.

Note: Data Pump is a server-based technology, so it typically deals with directory objects pointing to physical directories on the database server. It does not write to the local file system on your client PC.

At first, we are connected as "SYS" as sysdba and created a directory named "exportdp" in "C:\Oracle\exportdp". And we have given SCOTT user grant read and write privileges in the directory.

```
SQL> create or replace directory exportdp as 'c:\oracle\exportdp';
Directory created.
SQL> grant read, write on directory exportdp to scott;
Grant succeeded.
SQL> commit;
Commit complete.
```

Fig 2.1: Created a directory and grant read, write to scott

3. Table export:

In order to backup the tables EMP, DEPT of user scott we use the following script.

```
Expdp      scott/scott      directory=expdp      tables=EMP,DEPT
dumpfile=emp_dept_dump.dmp log=exp_dept_log.log;
```

Note: Make sure we create expdp directory in "C:\Oracle" in local disk too. Otherwise it would result an error.

If everything is good, then above code results following output:

```
C:\Users\Saman Munkar>expdp scott/scott directory=expdp tables=EMP,DEPT dumpfile=emp_dept_dump.dmp log=exp_dept_log.log;
Export: Release 11.2.0.1.0 - Production on Mon Mar 12 14:26:09 2018
Copyright (c) 1982, 2009, Oracle and/or its affiliates. All rights reserved.

Connected to: Oracle Database 11g Enterprise Edition Release 11.2.0.1.0 - 64bit Production
with the Partitioning, OLAP, Data Mining and Real Application Testing options
Legacy Mode Active due to the following parameters:
Legacy Mode Parameter: "log=exp_dept_log.log;" Location: Command Line, Replaced with: "logfile=exp_dept_log.log;"
Legacy Mode has set reuse_dumpfiles=true parameter.
Starting "SCOTT"."SYS_EXPORT_TABLE_01": scott/***** directory=expdp tables=EMP,DEPT dumpfile=emp_dept_dump.dmp logfile=exp_dept_log.log; reuse_dumpfiles=true
Estimate in progress using BLOCKS method...
Processing object type TABLE_EXPORT/TABLE/TABLE_DATA
Total estimation using BLOCKS method: 128 KB
Processing object type TABLE_EXPORT/TABLE/TABLE
Processing object type TABLE_EXPORT/TABLE/INDEX/INDEX
Processing object type TABLE_EXPORT/TABLE/CONSTRAINT/CONSTRAINT
Processing object type TABLE_EXPORT/TABLE/INDEX/STATISTICS/INDEX_STATISTICS
Processing object type TABLE_EXPORT/TABLE/CONSTRAINT/REF_CONSTRAINT
Processing object type TABLE_EXPORT/TABLE/STATISTICS/TABLE_STATISTICS
. . exported "SCOTT"."DEPT"                    5.937 KB         4 rows
. . exported "SCOTT"."EMP"                      8.570 KB        14 rows
Master table "SCOTT"."SYS_EXPORT_TABLE_01" successfully loaded/unloaded
*****
Dump file set for SCOTT.SYS_EXPORT_TABLE_01 is:
C:\ORACLE\EXPORTDP\EMP_DEPT_DUMP.DMP
Job "SCOTT"."SYS_EXPORT_TABLE_01" successfully completed at 14:29:06
```

Fig 3.1: expdp backup tables EMP,DEPT of user SCOTT

4. Schema Export:

The following is the script to export the schema.

```
Expdp scott/scott schemas=scott directory=expdp dumpfile=scott_dump.dmp
logfile=scott_log.log;
```

```

C:\Users\Saman Munikar>expdp scott/scott schemas=scott directory=exportdp dumpfile=scott_dump.dmp logfile=scott_log.log;
Export: Release 11.2.0.1.0 - Production on Mon Mar 12 14:50:06 2018
Copyright (c) 1982, 2009, Oracle and/or its affiliates. All rights reserved.
Connected to: Oracle Database 11g Enterprise Edition Release 11.2.0.1.0 - 64bit Production
With the Partitioning, OLAP, Data Mining and Real Application Testing options
Starting "SCOTT"."SYS_EXPORT_SCHEMA_01": scott/***** schemas=scott directory=exportdp dumpfile=scott_dump.dmp logfile=scott_log.log;
Estimate in progress using BLOCKS method...
Processing object type SCHEMA_EXPORT/TABLE/TABLE_DATA
Total estimation using BLOCKS method: 192 KB
Processing object type SCHEMA_EXPORT/PRE_SCHEMA/PROCACT_SCHEMA
Processing object type SCHEMA_EXPORT/TABLE/TABLE
Processing object type SCHEMA_EXPORT/TABLE/INDEX/INDEX
Processing object type SCHEMA_EXPORT/TABLE/CONSTRAINT/CONSTRAINT
Processing object type SCHEMA_EXPORT/TABLE/INDEX/STATISTICS/INDEX_STATISTICS
Processing object type SCHEMA_EXPORT/TABLE/COMMENT
Processing object type SCHEMA_EXPORT/TABLE/CONSTRAINT/REF_CONSTRAINT
Processing object type SCHEMA_EXPORT/TABLE/STATISTICS/TABLE_STATISTICS
. . exported "SCOTT"."DEPT" 5.937 KB 4 rows
. . exported "SCOTT"."EMP" 8.570 KB 14 rows
. . exported "SCOTT"."SALGRADE" 5.867 KB 5 rows
. . exported "SCOTT"."BONUS" 0 KB 0 rows
Master table "SCOTT"."SYS_EXPORT_SCHEMA_01" successfully loaded/unloaded
*****
Dump file set for SCOTT.SYS_EXPORT_SCHEMA_01 is:
C:\ORACLE\EXPORTDP\SCOTT_DUMP.DMP
Job "SCOTT"."SYS_EXPORT_SCHEMA_01" successfully completed at 14:53:01

```

Fig 4.1: expdp to backup schema SCOTT

5. Metadata_only export:

The CONTENT parameter allows you to alter the contents of the export. The following command uses the METADATA_ONLY parameter value to export the contents of the schema without the data.

```

Expdp scott/scott schemas=scott directory=exportdp dumpfile=scott_meta.dmp
logfile=scott_log.log compression=all content='METADATA_ONLY'

```

Note: It is surprising that METADATA_ONLY without quotes(' ') will result an LRM-00121 error like this. Also don't end the script with semicolon(;).

```

C:\Users\Saman Munikar>expdp scott/scott schemas=scott directory=exportdp dumpfile=scott_meta.dmp
logfile=scott_log.log compression=all content=METADATA_ONLY;
LRM-00121: 'METADATA_ONLY;' is not an allowable value for 'content'

```

Fig 5.1: metadata error

Also, you may have noticed an extra keyword COMPRESSION with value ALL, it means we are compression all files in the backup.

```

C:\Users\Saman Munikar>expdp scott/scott schemas=scott directory=exportdp dumpfile=scott_meta.dmp
logfile=scott_log.log compression=all content='METADATA_ONLY'

Export: Release 11.2.0.1.0 - Production on Mon Mar 12 15:10:25 2018

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Connected to: Oracle Database 11g Enterprise Edition Release 11.2.0.1.0 - 64bit Production
With the Partitioning, OLAP, Data Mining and Real Application Testing options
Starting "SCOTT"."SYS_EXPORT_SCHEMA_01": scott/***** schemas=scott directory=exportdp dumpfil
e=scott_meta.dmp logfile=scott_log.log compression=all content='METADATA_ONLY'
Processing object type SCHEMA_EXPORT/PRE_SCHEMA/PROCACT_SCHEMA
Processing object type SCHEMA_EXPORT/TABLE/TABLE
Processing object type SCHEMA_EXPORT/TABLE/INDEX/INDEX
Processing object type SCHEMA_EXPORT/TABLE/CONSTRAINT/CONSTRAINT
Processing object type SCHEMA_EXPORT/TABLE/INDEX/STATISTICS/INDEX_STATISTICS
Processing object type SCHEMA_EXPORT/TABLE/COMMENT
Processing object type SCHEMA_EXPORT/TABLE/CONSTRAINT/REF_CONSTRAINT
Processing object type SCHEMA_EXPORT/TABLE/STATISTICS/TABLE_STATISTICS
Master table "SCOTT"."SYS_EXPORT_SCHEMA_01" successfully loaded/unloaded
*****
Dump file set for SCOTT.SYS_EXPORT_SCHEMA_01 is:
C:\ORACLE\EXPORTDP\SCOTT_META.DMP
Job "SCOTT"."SYS_EXPORT_SCHEMA_01" successfully completed at 15:13:40

```

Fig 5.2: Metadata only Backup

6. Query Backup:

Query parameter allows us to export subset of the table.

query='SCOTT.EMP: "WHERE DEPTNO > 20"' is the query that selects only the records whose value of DEPTNO column is greater than 20.

```

Expdp scott/scott schemas=scott directory=exportdp dumpfile=scott_query.dmp
logfile=scott_query.log query='SCOTT.EMP:\ "WHERE DEPTNO > 10\"';

```

Note: Make sure to escape double quotes(") by using backslash(\).

```

C:\Users\Saman Munikar>Expdp scott/scott schemas=scott directory=exportdp dumpfile=scott_query.dmp
logfile=scott_query.log query=SCOTT.EMP:"WHERE DEPTNO > 10";

Export: Release 11.2.0.1.0 - Production on Mon Mar 12 15:37:24 2018

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Connected to: Oracle Database 11g Enterprise Edition Release 11.2.0.1.0 - 64bit Production
With the Partitioning, OLAP, Data Mining and Real Application Testing options
Starting "SCOTT"."SYS_EXPORT_SCHEMA_01": scott/***** schemas=scott directory=exportdp dumpfile
=scott_query.dmp logfile=scott_query.log query=SCOTT.EMP:"WHERE DEPTNO > 10";
Estimate in progress using BLOCKS method...
Processing object type SCHEMA_EXPORT/TABLE/TABLE_DATA
Total estimation using BLOCKS method: 192 KB
Processing object type SCHEMA_EXPORT/PRE_SCHEMA/PROCACT_SCHEMA
Processing object type SCHEMA_EXPORT/TABLE/TABLE
Processing object type SCHEMA_EXPORT/TABLE/INDEX/INDEX
Processing object type SCHEMA_EXPORT/TABLE/CONSTRAINT/CONSTRAINT
Processing object type SCHEMA_EXPORT/TABLE/INDEX/STATISTICS/INDEX_STATISTICS
Processing object type SCHEMA_EXPORT/TABLE/COMMENT
Processing object type SCHEMA_EXPORT/TABLE/CONSTRAINT/REF_CONSTRAINT
Processing object type SCHEMA_EXPORT/TABLE/STATISTICS/TABLE_STATISTICS
. . exported "SCOTT"."DEPT" 5.937 KB 4 rows
ORA-31693: Table data object "SCOTT"."EMP" failed to load/unload and is being skipped due to error
:
ORA-01740: missing double quote in identifier
. . exported "SCOTT"."SALGRADE" 5.867 KB 5 rows
. . exported "SCOTT"."BONUS" 0 KB 0 rows
Master table "SCOTT"."SYS_EXPORT_SCHEMA_01" successfully loaded/unloaded
*****
Dump file set for SCOTT.SYS_EXPORT_SCHEMA_01 is:
C:\ORACLE\EXPORTDP\SCOTT_QUERY.DMP
Job "SCOTT"."SYS_EXPORT_SCHEMA_01" completed with 1 error(s) at 15:39:47

```

Fig 6.1: Backup Specific Query Only

Reference:

[1]. <https://oracle-base.com/articles/10g/oracle-data-pump-10g>