

# Exportar e importar datos de Oracle

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## 1 Introducción

## 2 Exportar datos

- Se utiliza el comando `expdp`
  - Ayuda con `expdp help=yes`
  - Es necesario crear antes el `directory` de **Oracle**

Export: Release 12.1.0.2.0 – Production on Fri Dec 16 13:32:15 2016

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The Data Pump export utility provides a mechanism **for** transferring data objects between Oracle databases. The utility is invoked with the following command:

Example: `expdp scott/tiger DIRECTORY=dmpdir DUMPFILE=scott.dmp`

You can control how Export runs by entering the 'expdp' command followed by various parameters. To specify parameters, you use keywords:

Format: `expdp KEYWORD=value` or `KEYWORD=(value1,value2,...,valueN)`

Example: `expdp scott/tiger DUMPFILE=scott.dmp DIRECTORY=dmpdir SCHEMAS=scott`  
or `TABLES=(T1:P1,T1:P2)`, if T1 is partitioned table

---

USERID must be the first parameter on the command line.

---

The available keywords and their descriptions follow. Default values are listed within square brackets.

#### ABORT\_STEP

Stop the job after it is initialized or at the indicated object.

Valid values are -1 or N where N is zero or greater.

N corresponds to the object's process\_order\_number\_in\_the\_master\_table.

#### ACCESS\_METHOD

Instructs Export to use a particular method to unload data.

Valid keyword values are: [AUTOMATIC], DIRECT\_PATH and EXTERNAL\_TABLE.

#### ATTACH

Attach to an existing job.

For example, ATTACH=job\_name.

#### CLUSTER

Utilize cluster resources and distribute workers across the Oracle RAC [YES].

#### COMPRESSION

Reduce the size of a dump file.

Valid keyword values are: ALL, DATA\_ONLY, [METADATA\_ONLY] and NONE.

#### COMPRESSION\_ALGORITHM

Specify the compression algorithm that should be used.

Valid keyword values are: [BASIC], LOW, MEDIUM and HIGH.

#### CONTENT

Specifies data to unload.

Valid keyword values are: [ALL], DATA\_ONLY and METADATA\_ONLY.

#### DATA\_OPTIONS

Data layer option flags.

Valid keyword values are: XML\_CLOBS.

#### DIRECTORY

Directory object to be used for dump and log files.

#### DUMPFIL

Specify list of destination dump file names [expdat.dmp].

For example, DUMPFIL=scott1.dmp, scott2.dmp, dmpdir: scott3.dmp.

#### ENCRYPTION

Encrypt part or all of a dump file.

---

Valid\_keyword\_values\_are: \_ALL, \_DATA\_ONLY, \_ENCRYPTED\_COLUMNS\_ONLY, \_METADATA\_ONLY and \_NONE.

#### ENCRYPTION\_ALGORITHM

Specify\_how\_encryption\_should\_be\_done.

Valid\_keyword\_values\_are: \_[AES128] , \_AES192\_and \_AES256.

#### ENCRYPTION\_MODE

Method\_of\_generating\_encryption\_key.

Valid\_keyword\_values\_are: \_DUAL, \_PASSWORD\_and \_[TRANSPARENT].

#### ENCRYPTION\_PASSWORD

Password\_key\_for\_creating\_encrypted\_data\_within\_a\_dump\_file.

#### ENCRYPTION\_PWD\_PROMPT

Specifies\_whether\_to\_prompt\_for\_the\_encryption\_password\_[NO].

Terminal\_echo\_will\_be\_suppressed\_while\_standard\_input\_is\_read.

#### ESTIMATE

Calculate\_job\_estimates.

Valid\_keyword\_values\_are: \_[BLOCKS] \_and \_STATISTICS.

#### ESTIMATE\_ONLY

Calculate\_job\_estimates\_without\_performing\_the\_export\_[NO].

#### EXCLUDE

Exclude\_specific\_object\_types.

For\_example, \_EXCLUDE=SCHEMA:"='HR' ".

#### FILESIZE

Specify\_the\_size\_of\_each\_dump\_file\_in\_units\_of\_bytes.

#### FLASHBACK\_SCN

SCN\_used\_to\_reset\_session\_snapshot.

#### FLASHBACK\_TIME

Time\_used\_to\_find\_the\_closest\_corresponding\_SCN\_value.

#### FULL

Export\_entire\_database\_[NO].

#### HELP

Display\_Help\_messages\_[NO].

#### INCLUDE

Include\_specific\_object\_types.

For\_example, \_INCLUDE=TABLE\_DATA.

#### JOB\_NAME

---

Name\_of\_export\_job\_to\_create.

**KEEP\_MASTER**

Retain\_the\_master\_table\_after\_an\_export\_job\_that\_completes\_successfully\_[NO].

**LOGFILE**

Specify\_log\_file\_name\_[export.log].

**LOGTIME**

Specifies\_that\_messages\_displayed\_during\_export\_operations\_be\_timestamped.  
Valid\_keyword\_values\_are:\_ALL,\_[NONE],\_LOGFILE\_and\_STATUS.

**METRICS**

Report\_additional\_job\_information\_to\_the\_export\_log\_file\_[NO].

**NETWORK\_LINK**

Name\_of\_remote\_database\_link\_to\_the\_source\_system.

**NOLOGFILE**

Do\_not\_write\_log\_file\_[NO].

**PARALLEL**

Change\_the\_number\_of\_active\_workers\_for\_current\_job.

**PARFILE**

Specify\_parameter\_file\_name.

**QUERY**

Predicate\_clause\_used\_to\_export\_a\_subset\_of\_a\_table.  
For\_example,\_QUERY=employees:"WHERE\_department\_id\_>\_10".

**REMAP\_DATA**

Specify\_a\_data\_conversion\_function.  
For\_example,\_REMAP\_DATA=EMP.EMPNO:REMAPPKG.EMPNO.

**REUSE\_DUMPFILS**

Overwrite\_destination\_dump\_file\_if\_it\_exists\_[NO].

**SAMPLE**

Percentage\_of\_data\_to\_be\_exported.

**SCHEMAS**

List\_of\_schemas\_to\_export\_[login\_schema].

**SERVICE\_NAME**

Name\_of\_an\_active\_Service\_and\_associated\_resource\_group\_to\_constrain\_Oracle\_RAC\_resources.

**SOURCE\_EDITION**

---

Edition to be used for extracting metadata.

#### STATUS

Frequency (secs) job status is to be monitored where the default 0 will show new status when available.

#### TABLES

Identifies a list of tables to export.

For example, TABLES=HR.EMPLOYEES,SH.SALES:SALES\_1995.

#### TABLESPACES

Identifies a list of tablespaces to export.

#### TRANSPORTABLE

Specify whether transportable method can be used.

Valid keyword values are: ALWAYS and [NEVER].

#### TRANSPORT\_FULL\_CHECK

Verify storage segments of all tables [NO].

#### TRANSPORT\_TABLESPACES

List of tablespaces from which metadata will be unloaded.

#### VERSION

Version of objects to export.

Valid keyword values are: [COMPATIBLE], LATEST or any valid database version.

#### VIEWS\_AS\_TABLES

Identifies one or more views to be exported as tables.

For example, VIEWS\_AS\_TABLES=HR.EMP\_DETAILS\_VIEW.

---

The following commands are valid while in interactive mode.

Note: abbreviations are allowed.

#### ADD\_FILE

Add dumpfile to dumpfile set.

#### CONTINUE\_CLIENT

Return to logging mode. Job will be restarted if idle.

#### EXIT\_CLIENT

Quit client session and leave job running.

#### FILESIZE

Default filesize (bytes) for subsequent ADD\_FILE commands.

---

```

HELP
Summarize_interactive_commands.

KILL_JOB
Detach_and_delete_job.

PARALLEL
Change_the_number_of_active_workers_for_current_job.

REUSE_DUMPFILES
Overwrite_destination_dump_file_if_it_exists_[NO].

START_JOB
Start_or_resume_current_job.
Valid_keyword_values_are: _SKIP_CURRENT.

STATUS
Frequency_(secs)_job_status_is_to_be_monitored_where
the_default_[0]_will_show_new_status_when_available.

STOP_JOB
Orderly_shutdown_of_job_execution_and_exits_the_client.
Valid_keyword_values_are: _IMMEDIATE.

```

## 2.1 Ejemplo de exportación

```

[alumno@centos-asgbd ~]$ expdp alumno/alumno directory=mi_directorio_de_backup schemas=alumno
Export: Release 12.1.0.2.0 - Production on Fri Dec 16 13:07:26 2016

Copyright (c) 1982, 2015, Oracle and/or its affiliates. All rights reserved.

Connected to: Oracle Database 12c Standard Edition Release 12.1.0.2.0 - 64bit Production
Starting "ALUMNO"."SYS_EXPORT_SCHEMA_01": alumno/***** directory=mi_directorio_de_backup
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/PROACT_SCHEMA
Processing object type SCHEMA_EXPORT/TABLE/TABLE
Processing object type SCHEMA_EXPORT/TABLE/GRANT/OWNER_GRANT/OBJECT_GRANT
Processing object type SCHEMA_EXPORT/TABLE/COMMENT
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/CONSTRAINT/REF_CONSTRAINT
Processing object type SCHEMA_EXPORT/TABLE/STATISTICS/TABLE_STATISTICS
Processing object type SCHEMA_EXPORT/STATISTICS/MARKER
. . exported "ALUMNO"."MATRICULAS"                6.523 KB          44 rows

```

---

```

. . exported "ALUMNO"."MULTAS"                8.195 KB      35 rows
. . exported "ALUMNO"."PERSONAS"              6.875 KB      47 rows
Master table "ALUMNO"."SYS_EXPORT_SCHEMA_01" successfully loaded/unloaded
*****
Dump file set for ALUMNO.SYS_EXPORT_SCHEMA_01 is :
/home/alumno/backups/alumno.dmp
Job "ALUMNO"."SYS_EXPORT_SCHEMA_01" successfully completed at Fri Dec 16 13:08:00 2016 elapsed time: 00:00:00

```

## 2.2 Definir un directorio

```

grant create any directory to myschema;
create directory mi_directorio_de_backup as '/home/alumno/backups';

```

```

GRANT READ, WRITE ON DIRECTORY mi_directorio_de_backup TO usuario;

```

## 3 Importar datos

- Se utiliza el comando `impdp`
  - Ayuda con `impdp help=yes`

```

Import: Release 12.1.0.2.0 -- Production on Fri Dec 16 13:31:18 2016

```

```

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```

The Data Pump Import utility provides a mechanism **for** transferring data objects between Oracle databases. The utility is invoked with the following command:

```

Example: impdp scott/tiger DIRECTORY=dmpdir DUMPFILE=scott.dmp

```

You can control how Import runs by entering the 'impdp' command followed by various parameters. To specify parameters, you use keywords:

```

Format: impdp KEYWORD=value or KEYWORD=(value1,value2,...,valueN)

```

```

Example: impdp scott/tiger DIRECTORY=dmpdir DUMPFILE=scott.dmp

```

USERID must be the first parameter on the command line.

---

The available keywords and their descriptions follow. Default values are listed within square brackets.

### ABORT\_STEP

Stop the job after it is initialized or at the indicated object.

---

Valid values are -1 or N where N is zero or greater.  
N corresponds to the object's process\_order\_number\_in\_the\_master\_table.

#### ACCESS\_METHOD

Instructs Import to use a particular method to load data.  
Valid keyword values are: [AUTOMATIC], CONVENTIONAL, DIRECT\_PATH  
and EXTERNAL\_TABLE.

#### ATTACH

Attach to an existing job.  
For example, ATTACH=job\_name.

#### CLUSTER

Utilize cluster resources and distribute workers across the Oracle RAC [YES].

#### CONTENT

Specifies data to load.  
Valid keywords are: [ALL], DATA\_ONLY and METADATA\_ONLY.

#### DATA\_OPTIONS

Data layer option flags.  
Valid keywords are: DISABLE\_APPEND\_HINT and SKIP\_CONSTRAINT\_ERRORS.

#### DIRECTORY

Directory object to be used for dump, log and SQL files.

#### DUMPFIL

List of dump files to import from [expdat.dmp].  
For example, DUMPFIL=scott1.dmp, scott2.dmp, dmpdir: scott3.dmp.

#### ENCRYPTION\_PASSWORD

Password key for accessing encrypted data within a dump file.  
Not valid for network import jobs.

#### ENCRYPTION\_PWD\_PROMPT

Specifies whether to prompt for the encryption password [NO].  
Terminal echo will be suppressed while standard input is read.

#### ESTIMATE

Calculate network job estimates.  
Valid keywords are: [BLOCKS] and STATISTICS.

#### EXCLUDE

Exclude specific object types.  
For example, EXCLUDE=SCHEMA:"='HR'".

#### FLASHBACK\_SCN

SCN used to reset session snapshot.



---

#### FLASHBACK\_TIME

Time\_used\_to\_find\_the\_closest\_corresponding\_SCN\_value.

#### FULL

Import\_everything\_from\_source\_[YES].

#### HELP

Display\_help\_messages\_[NO].

#### INCLUDE

Include\_specific\_object\_types.

For\_example,\_INCLUDE=TABLE\_DATA.

#### JOB\_NAME

Name\_of\_import\_job\_to\_create.

#### KEEP\_MASTER

Retain\_the\_master\_table\_after\_an\_import\_job\_that\_completes\_successfully\_[NO].

#### LOGFILE

Log\_file\_name\_[import.log].

#### LOGTIME

Specifies\_that\_messages\_displayed\_during\_import\_operations\_be\_timestamped.

Valid\_keyword\_values\_are:\_ALL,\_[NONE],\_LOGFILE\_and\_STATUS.

#### MASTER\_ONLY

Import\_just\_the\_master\_table\_and\_then\_stop\_the\_job\_[NO].

#### METRICS

Report\_additional\_job\_information\_to\_the\_import\_log\_file\_[NO].

#### NETWORK\_LINK

Name\_of\_remote\_database\_link\_to\_the\_source\_system.

#### NOLOGFILE

Do\_not\_write\_log\_file\_[NO].

#### PARALLEL

Change\_the\_number\_of\_active\_workers\_for\_current\_job.

#### PARFILE

Specify\_parameter\_file.

#### PARTITION\_OPTIONS

Specify\_how\_partitions\_should\_be\_transformed.

Valid\_keywords\_are:\_DEPARTITION,\_MERGE\_and\_[NONE].

---

## QUERY

Predicate clause used to import a subset of a table.  
For example, `QUERY=employees:"WHERE department_id > 10"`.

## REMAP\_DATA

Specify a data conversion function.  
For example, `REMAP_DATA=EMP.EMPNO:REMAPPKG.EMPNO`.

## REMAP\_DATAFILE

Redefine data file references in all DDL statements.

## REMAP\_SCHEMA

Objects from one schema are loaded into another schema.

## REMAP\_TABLE

Table names are remapped to another table.  
For example, `REMAP_TABLE=HR.EMPLOYEES:EMPS`.

## REMAP\_TABLESPACE

Tablespace objects are remapped to another tablespace.

## REUSE\_DATAFILES

Tablespace will be initialized if it already exists [NO].

## SCHEMAS

List of schemas to import.

## SERVICE\_NAME

Name of an active Service and associated resource group to constrain Oracle RAC resources.

## SKIP\_UNUSABLE\_INDEXES

Skip indexes that were set to the Index Unusable state.

## SOURCE\_EDITION

Edition to be used for extracting metadata.

## SQLFILE

Write all the SQL DDL to a specified file.

## STATUS

Frequency (secs) job status is to be monitored where the default [0] will show new status when available.

## STREAMS\_CONFIGURATION

Enable the loading of Streams metadata [YES].

## TABLE\_EXISTS\_ACTION

---

Action\_to\_take\_if\_imported\_object\_already\_exists.  
Valid\_keywords\_are: \_APPEND, \_REPLACE, \_[SKIP] \_and \_TRUNCATE.

#### TABLES

Identifies\_a\_list\_of\_tables\_to\_import.  
For\_example, \_TABLES=HR.EMPLOYEES,SH.SALES:SALES\_1995.

#### TABLESPACES

Identifies\_a\_list\_of\_tablespaces\_to\_import.

#### TARGET\_EDITION

Edition\_to\_be\_used\_for\_loading\_metadata.

#### TRANSFORM

Metadata\_transform\_to\_apply\_to\_applicable\_objects.  
Valid\_keywords\_are: \_DISABLE\_ARCHIVE\_LOGGING, \_INMEMORY, \_INMEMORY\_CLAUSE, LOB\_STORAGE, \_OID, \_PCTSPACE, \_SEGMENT\_ATTRIBUTES, \_STORAGE, \_and TABLE\_COMPRESSION\_CLAUSE.

#### TRANSPORTABLE

Options\_for\_choosing\_transportable\_data\_movement.  
Valid\_keywords\_are: \_ALWAYS\_and\_[NEVER].  
Only\_valid\_in\_NETWORK\_LINK\_mode\_import\_operations.

#### TRANSPORT\_DATAFILES

List\_of\_data\_files\_to\_be\_imported\_by\_transportable\_mode.

#### TRANSPORT\_FULL\_CHECK

Verify\_storage\_segments\_of\_all\_tables\_[NO].  
Only\_valid\_in\_NETWORK\_LINK\_mode\_import\_operations.

#### TRANSPORT\_TABLESPACES

List\_of\_tablespaces\_from\_which\_metadata\_will\_be\_loaded.  
Only\_valid\_in\_NETWORK\_LINK\_mode\_import\_operations.

#### VERSION

Version\_of\_objects\_to\_import.  
Valid\_keywords\_are: \_[COMPATIBLE], \_LATEST, \_or \_any\_valid\_database\_version.  
Only\_valid\_for\_NETWORK\_LINK\_and\_SQLFILE.

#### VIEWS\_AS\_TABLES

Identifies\_one\_or\_more\_views\_to\_be\_imported\_as\_tables.  
For\_example, \_VIEWS\_AS\_TABLES=HR.EMP\_DETAILS\_VIEW.  
Note\_that\_in\_network\_import\_mode, \_a\_table\_name\_may\_be\_appended to\_the\_view\_name.

---

---

The following commands are valid while in interactive mode.  
Note: abbreviations are allowed.

#### CONTINUE\_CLIENT

Return to logging mode. Job will be restarted if idle.

#### EXIT\_CLIENT

Quit client session and leave job running.

#### HELP

Summarize interactive commands.

#### KILL\_JOB

Detach and delete job.

#### PARALLEL

Change the number of active workers for current job.

#### START\_JOB

Start or resume current job.

Valid keywords are: SKIP\_CURRENT.

#### STATUS

Frequency (secs) job status is to be monitored where  
the default [0] will show new status when available.

#### STOP\_JOB

Orderly shutdown of job execution and exits the client.

Valid keywords are: IMMEDIATE.

### 3.1 Importar un schema en otro schema

- Importar un fichero del usuario **profesor** en el usuario **alumno**

```
impdp system/alumno SCHEMAS=alumno remap_schema=alumno:profesor \
        directory=EXPORTDIR \
        dumpfile=profesor.dmp
```

```
[alumno@centos-asgbd backups]$ impdp system/alumno schemas=profesor remap_schema=profesor:
Import: Release 12.1.0.2.0 - Production on Fri Dec 16 13:23:38 2016

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Connected to: Oracle Database 12c Standard Edition Release 12.1.0.2.0 - 64bit Production
Master table "SYSTEM"."SYS_IMPORT_SCHEMA_01" successfully loaded/unloaded
Starting "SYSTEM"."SYS_IMPORT_SCHEMA_01": system/***** schemas=profesor remap_schema=p
```

---

```

p
Processing object type SCHEMA_EXPORT/PRE_SCHEMA/PROCACT_SCHEMA
Processing object type SCHEMA_EXPORT/TABLE/TABLE
Processing object type SCHEMA_EXPORT/TABLE/TABLE_DATA
. . imported "ALUMNO"."MATRICULAS"          6.523 KB          44 rows
. . imported "ALUMNO"."MULTAS"              8.195 KB          35 rows
. . imported "ALUMNO"."PERSONAS"            6.875 KB          47 rows
Processing object type SCHEMA_EXPORT/TABLE/GRANT/OWNER_GRANT/OBJECT_GRANT
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/CONSTRAINT/REF_CONSTRAINT
Processing object type SCHEMA_EXPORT/TABLE/STATISTICS/TABLE_STATISTICS
Processing object type SCHEMA_EXPORT/STATISTICS/MARKER
Job "SYSTEM"."SYS_IMPORT_SCHEMA_01" successfully completed at Fri Dec 16 13:23:58 2016 elapsed

```

## 4 Otras soluciones

- RMAN
- Copias de *tablespaces*

### 4.1 RMAN

- Solución de Oracle para backups
- Ventajas
  - Granularidad del backup
  - En línea
- Desventajas
  - Mayor complejidad

### 4.2 Copias de *tablespaces*

- Los datos están en ficheros `dbf`
- Basta con hacer copias de esos ficheros
- Ventajas
  - Fácil, no se necesitan herramientas especiales
- Desventajas
  - Es necesario parar Oracle para hacer la copia y la restauración

---

## 5 Referencias

- Formatos:
  - [Transparencias](#)
  - [PDF](#)
- Creado con:
  - [Emacs](#)
  - [org-reveal](#)
  - [Latex](#)