

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_DUMPFILES

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

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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: incrementales o totales
 - 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](#)