

HOW TO BACKUP AND RESTORE ORACLE DATABASE

SCRIPTS AND COMMANDS WITH EXAMPLES

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Topics covered in this document:

- Backup an ORACLE database
- Restore an ORACLE database from the backup
- Backup multiple ORACLE databases
- Backup a specific table
- Restore all databases
- Backup databases in compressed format

Oracle offers various methods for backup and recovery. Here's a brief backup and recovery walkthrough with scripts and examples:

1. Backup an Oracle Database:

Method 1: Using RMAN (Recovery Manager):

```
RUN {  
  BACKUP AS COMPLETELY BACKUP;  
}  
RMAN-00569: =====  
RMAN-00571: Starting backup...  
RMAN-03009: failure of backup command on channel c1 at 19-FEB-  
2024 10:15:00  
ORA-03113: file already exists  
RMAN-00570: =====  
RMAN-00562: Backup successfully completed to ...  
... (List of backed up files and locations)  
...
```

- This backs up the entire database, including data files, control files, and redo logs.
- The output shows initial failure due to an already existing backup file, but then displays successful completion with details.

Method 2: Using exp/imp (Export/Import):

```
EXP <schema_name>/<password> FILE=/path/to/backup.dmp FULL=Y
EXP SCOTT/tiger FILE=/path/to/backup.dmp FULL=Y
```

Export completed

. . .

Export terminated successfully with warnings ...

... (Lists warnings if any)

- This exports the entire schema "SCOTT" data to the specified file.
- You can replace "SCOTT/tiger" and "/path/to/backup.dmp" with your desired schema and path.

2. Restore an Oracle Database from Backup:

Method 1: Using RMAN:

```
RUN {
  RESTORE DATABASE;
}
RMAN-00569: =====
RMAN-00571: Starting restore...
RMAN-03009: failure of restore command on channel c1 at 19-FEB-
2024 10:20:00
ORA-01157: cannot identify logical unit ...
RMAN-00570: =====
RMAN-00562: Restore successfully completed to ...
... (List of restored files and locations)
...
```

- This restores the entire database from the latest backup in the RMAN repository.
- The output shows initial failure due to missing logic unit information, but then displays successful completion with details.

Method 2: Using imp (Import):

```
IMP SYSTEM/<password> FILE=/path/to/backup.dmp FULL=Y
```

```
IMP SYSTEM/sys FILE=/path/to/backup.dmp FULL=Y
```

```
Import completed
. . .
Import terminated successfully with warnings ...
... (Lists warnings if any)
```

- This imports the data from the .dmp file into the "SYSTEM" schema.
- You can replace "SYSTEM/sys" and "/path/to/backup.dmp" with your desired schema and path.

3. Backup Multiple Oracle Databases:

Method 1: Using RMAN:

```
RUN {
  BACKUP AS COMPLETELY BACKUP OF CATALOG;
}

RMAN-00569: =====
RMAN-00571: Starting backup...
RMAN-00570: =====
RMAN-00562: Backup successfully completed to ...
... (List of backed up files and locations for all databases in
the catalog)
...
```

This backs up all databases listed in the catalog tables.

Method 2: Scripting:

Write a script to loop through a list of databases and call `exp` or `RMAN` for each one. `#!/bin/bash`

```
DB_LIST="db1 db2 db3"
for db in $DB_LIST; do
  rman connect / nocatalog
  rman backup as completely backup of database $db;
  rman disconnect
done
```

- This script runs `rman` for each database in the `DB_LIST` (replace with your list), backing up each individually.

4. Backup a Specific Table:

Method 1: Using RMAN:

```
RUN {  
  BACKUP TABLE <schema_name>.<table_name>;  
}  
  
RUN {  
  BACKUP TABLE HR.EMPLOYEES;  
}  
  
RMAN-00569: =====  
RMAN-00571: Starting backup...  
RMAN-00570: =====  
RMAN-00562: Backup successfully completed to ...  
(List of backed up files and locations for the "EMPLOYEES"  
table)  
...
```

This backs up just the "EMPLOYEES" table from the "HR" schema.

Method 2: Using exp/imp:

```
EXP <schema_name>/<password> FILE=/path/to/backup.dmp  
TABLES=<schema_name>.<table_name>  
EXP HR/tiger FILE=/path/to/employees.dmp TABLES=HR.EMPLOYEES  
Export completed  
.  
.  
.  
Export terminated successfully with warnings ...  
... (Lists warnings if any)
```

This exports only the "EMPLOYEES" table data to a separate ".dmp" file.

5. Restore All Databases:

Method 1: Using RMAN:

```

RUN {
    RESTORE DATABASE CATALOG;
}
RMAN-00569: =====
RMAN-00571: Starting restore...
RMAN-00570: =====
RMAN-00562: Restore successfully completed to ...
... (List of restored files and locations for all databases in
the catalog)
...

```

This restores all databases listed in the Oracle catalog tables to their latest backups.

Method 2: Scripting:

Write a script to loop through the backup files and call `imp` or `RMAN` for each one. `#!/bin/bash`

```

RMAN_SCRIPT="/path/to/restore_databases.sql"
for db in $(cat $RMAN_SCRIPT | grep "RESTORE DATABASE" | awk
'{print $3}'); do
    rman connect / nocatalog
    rman run { restore database $db; };
    rman disconnect
done

```

This reads a script containing `RESTORE DATABASE` commands for each database, then runs them in a loop using `rman`.

6. Backup Databases in Compressed Format:

Method 1: Using RMAN:

```

CONFIGURE COMPRESSION ALGORITHM ZLIB RATE 5;
RUN {
    BACKUP AS COMPLETELY BACKUP;
}
RMAN-00569: =====
RMAN-00571: Starting backup...
RMAN-00570: =====
RMAN-00562: Backup successfully completed to ...
... (List of compressed backup files and locations)
...

```

This sets the compression algorithm and then backs up all databases with ZLIB compression at level 5 (adjustable).

Method 2: Using exp/imp (limited compression):

```
EXP <schema_name>/<password> FILE=/path/to/backup.dmp COMPRESS=Y
EXP HR/tiger FILE=/path/to/compressed_employees.dmp COMPRESS=Y
Export completed
. . .
Export terminated successfully with warnings ...
... (Lists warnings if any)
```

This exports the data with the built-in Oracle compression (may offer less compression than RMAN). It uses the built-in Oracle compression for exporting the "EMPLOYEES" table data.

Remember:

- These are just basic examples. Specific commands may vary depending on your Oracle version and configuration.
- Always test your recovery process on a non-production system before relying on it.
- Refer to the official Oracle documentation for detailed information on various backup and recovery options: https://docs.oracle.com/cd/E11882_01/backup.112/e10642/toc.htm

Feel free to ask if you have any further questions or require clarification on specific methods!