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Course: PGDACC (ESDS)

Subject: DBA

Assignment No.5

**Title**: Understanding Database Backup and Restore

**Aim**: To perform database backup and restore

* Multiple database creation with some tables
* Backup all the databases
* Backup all the databases in compress format
* Backup specific single database
* Backup multiple databases but not all
* Restored backup of all backed up databases on new VM
* Check data integrity like all users, databases and tables coming on restored VM or not.
* Restore compress backup of all backed up databases on new VM
* Check data integrity like all users, databases and tables coming on restored VM or not.

**Theory:**

1. **Backup**

A backup is a copy of data from your database that can be used to reconstruct that data. Backups can be divided into physical backups and logical backups. Physical backups are backups of the physical files used in storing and recovering your database, such as datafiles, control files, and archived redo logs. Logical backups contain logical data (for example, tables or stored procedures) exported from a database with an export utility and stored in a binary file, for later re-importing into a database using the corresponding import utility.

1. **mysqldump utility**

The mysqldump client is a backup program originally written by Igor Romanenko. It can be used to dump a database or a collection of databases for backup or transfer to another database server (not necessarily MariaDB or MySQL). The dump typically contains SQL statements to create the table, populate it, or both. However, mysqldump can also be used to generate files in CSV, other delimited text, or XML format.

**Mysqldump Command Syntax**

* *mysqldump [options] > file.sql*

1. **Backup a Single MySQL Database**

The most common use case of the mysqldump tool is to backup a single database.

For example, to create a backup of the database named database\_name using the user root and save it to a file named database\_name.sql you would run the following command:

* *mysqldump -u root -p database\_name > database\_name.sql*

You will be prompted to enter the root password. After successful authentication, the dump process will start. Depending on the database size, the process can take some time.

If you are logged in as the same user that you are using to perform the export and that the user does not require a password, you can omit the -u and -p options:

* *mysqldump database\_name > database\_name.sql*

1. **Backup Multiple MySQL Databases**

To backup multiple MySQL databases with one command you need to use the --database option followed by the list of databases you want to backup. Each database name must be separated by space.

* *mysqldump -u root -p --databases database\_name\_a database\_name\_b > databases\_a\_b.sql*

The command above will create a dump file containing both databases.

1. **Backup All MySQL Databases**

Use the --all-databases option to back up all the MySQL databases:

* *mysqldump -u root -p --all-databases > all\_databases.sql*

Same as with the previous the command above will create a single dump file containing all the databases.

1. **Create a Compressed MySQL Database Backup**

If the database size is very large it is a good idea to compress the output. To do that simply pipe the output to the gzip utility, and redirect it to a file as shown below:

* *mysqldump database\_name | gzip > database\_name.sql.gz*

1. **Restoring a MySQL dump**

You can restore a MySQL dump using the mysql tool. The command general syntax is as follows:

* *mysql database\_name < file.sql*

In most cases you’ll need to create a database to import into. If the database already exists, first you need to delete it.

In the following example the first command will create a database named database\_name and then it will import the dump database\_name.sql into it:

* *mysql -u root -p -e "create database database\_name";*
* *mysql -u root -p database\_name < database\_name.sql*

1. **Restore a Single MySQL Database from a Full MySQL Dump**

If you backed up all your databases using the -all-databases option and you want to restore a single database from a backup file which contains multiple databases use the --one-database option as shown below:

* *mysql --one-database database\_name < all\_databases.sql*

**Conclusion:**

Hence, we understood how to take backup of database and restore it using mysqldump and mysql utilities.

**OUTPUT:**









