How to Backup and Restore PostgreSQL Databases on Ubuntu 16.04

https://www.vultr.com/docs/how-to-backup-and-restore-postgresql-databases-on-ubuntu-16-04

Introduction

PostgreSQL is a free and open source database management system that can be used to store information related to websites. It is also known as Postgres. The software itself features a high performance object-relational database that is well suited for large databases and web applications.

That being said, one of the most important tasks of the any database administrator is to backup their databases regularly. Here, you will learn how to backup and restore a PostgreSQL database on Ubuntu 16.04.

Prerequisites

- A server running Ubuntu 16.04.
- A non-root user with sudo privileges.

Step 1: Update system packages

Before starting, update the packages on your server.

```
sudo apt-get update -y
sudo apt-get upgrade -y
```

Step 2: Install PostgreSQL

Fortunately, PostgreSQL is available in the Ubuntu 16.04 repository. You can install it easily with the following command.

```
sudo apt-get install postgresql postgresql-contrib
```

Once the installation has completed, it will create a user named `postgres` with the role `postgres`. A system account named `postgres` will also be created.

Start the `postgresql` service and enable it to run on boot.

```
sudo systemctl start postgresql
sudo systemctl enable postgresql
```

Step 3: Backup instructions

PostgreSQL comes with a utility called `pg_dump` to backup database information to a file.

You can run this utility from a command line interface. For example, if you want to backup a single database, run the following command:

```
sudo pg_dump -U user_name database_name > backup_file
```

Note: The command must be run as the superuser.

You can also backup a database by logging in as the `postgres` user.

```
sudo su - postgres
pg_dump postgres > postgres.bak
```

The above command will take a backup of the default database called `postgres`.

You can also take a backup of a remote database.

```
pg_dump -U user_name -h remote_ip_address -p remote_port database_name >
backup_file
```

If you want to backup all of the databases on your system, then `pg_dumpall` is used.

```
sudo pg_dumpall -U user_name > backup_file
```

Step 4: Restore instructions

You can restore a database created by `pg_dump` command using the `psql` command.

First, create an empty database with `name new_database`.

```
sudo -u postgres psql
createdb -T template0 new_database
```

Next, redirect a database dump called `backup_file` with the following command:

```
psql new_database < backup_file
```

If you want to stop the restoration process immediately when an error is encountered, run the following command:

```
psql --set ON_ERROR_STOP=on new_database < backup_file
```

You can restore the databases created by the `pg_dumpall` command by passing the file to `psql`.

```
psql -U user_name -f backup_file
```

Conclusion

You have now enough knowledge to backup and restore PostgreSQL databases. It is important to keep regular backups, as they are useful in recovering a system.