Creating a database on the National DRI

Gemma Hoad ghoad@sfu.ca

Research Computing Group, Simon Fraser University

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Agenda

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2. Getting a database account

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4. DBaaS

Database types available

- Cedar supports **MySQL/MariaDB** (v10.4) and **PostgreSQL** (v10.1) with various Postgres extensions available (including postGIS, postGIS topology, pgrouting, pgcrypto)

- Graham supports **MySQL/MariaDB** (v10.2)

Details can be found on
https://docs.alliancecan.ca/wiki/Database_servers#Database_servers_available_for_researchers

Getting a database account

Currently , you can request access by sending these details to support@tech.alliancecan.ca:

• your CCDB username (e.g. jsmith)

• type of database i.e. one of the following:

       - Cedar and MySQL

       - Cedar and Postgres

       - Graham and MySQL

• amount of storage space needed ** Let us know if you have 100's GB data

• for postgres requests, indicate whether you want PostGIS extensions (with version)

Access constraints

The MySQL and PostgreSQL database instances are only accessible from *inside* the cluster.

This is due to them having only internal IP addresses.

If you have a requirement to access the database from *outside* the cluster, let us know at support@tech.alliancecan.ca

MySQL setup

Access your database instance: **MySQL**

For MySQL /home/yourusername/.my.cnf is created for you on Cedar or Graham when you request access.

```
# load the mysql client
$ module load mariadb

# check the mysql client version
$ mysql --version
mysql  Ver 15.1 Distrib 10.4.11-MariaDB, for Linux (x86_64) using
EditLine wrapper

# open up the mysql client
# (connection details are stored in /home/yourusername/.my.cnf)
$ mysql
MariaDB [(none)]> show databases;
MariaDB [(none)]> quit
```

Share your database: **MySQL** …slide 1

Tables can only be shared with others with CCDB mysql accounts.

```
$ mysql
$ create database jsmith_staffinfo;
$ use jsmith_staffinfo;
$ create table employees(
  emp_id int auto_increment,
  emp_name varchar(255) not null,
  start_date date,
  end_date date,
  primary key(emp_id) );
```

Share your database: **MySQL** …slide 2

Tables can only be shared with others with CCDB mysql accounts.

```
$ use jsmith_staffinfo;

$ GRANT SELECT, INSERT, UPDATE on employees to 'fjones'@'172.%';
```

Hint: If this gives an error make sure the single quotes in your grant statement are not backticks.

```
$ use jsmith_staffinfo;

$ REVOKE INSERT, UPDATE on employees from 'fjones'@'172.%';
```

PostgreSQL setup

Access your database instance: **PostgreSQL**

For Postgres, IDENT authentication is set up to allow access.

From the command line in Cedar:

```
# load the postgres client
$ module load postgresql

# check the mysql client version
$ psql --version
psql (PostgreSQL) 14.2

# open up the psql client
# -h <host> is required when using postgres
$ psql -h cedar-pgsql-vm -d jsmith_db
jsmith_mydb> \dt    # show tables
jsmith_mydb> \q     # quit psql client
```

How to share your database: **PostgreSQL**

Tables can only be shared with others with postgres accounts.

```
# log into the database
$ psql -h cedar-pgsql-vm -d jsmith_db


$ create table employees (
  emp_id INT PRIMARY KEY,
  emp_name varchar(255),
  start_date date,
  end_date date);
```

How to share your database: **PostgreSQL**

Tables can only be shared with others who also have postgres accounts.

```
# log into the database
$ psql -h cedar-pgsql-vm -d jsmith_db

# allow another user to connect to your database
$ grant connect on database jsmith_db to fjones;

# allow select-only access to another user
$ grant select on mytable to fjones;
```

```
# the other user can now connect to this database
$ \c jsmith_mydb
$ select * from mytable;
```

Database as a Service

If the amount of storage required is large, we may suggest creating a separate database instance. This will be stored on the cloud.

We are moving towards a self service model allowing database deployment of managed databases in the cloud.

For further information contact **support@tech.alliancecan.ca**

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This is a slimmed down guide of the more comprehensive documentation found at https://docs.alliancecan.ca/wiki/Database_servers