Install Greenplum on Docker and Connect via SqlWorkbench

Client	N/A
Task Definition	How to install and run GreenPlum database on Docker
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Date	24.08.2017
Checked By	

Note:

- This was done on Mac OS Sierra v: 10.12.5
- Docker v: 17.06.1-ce-mac24 (18950)
- Follow the below steps sequentially

Install Docker

https://docs.docker.com/engine/installation/

If you are not familiar with Docker, then here's a great tutorial that will help you to understand - what docker is, how it works and use cases.

http://takacsmark.com/getting-started-with-docker-in-your-project-step-by-step-tutorial/

Install GreenPlum

Source of Docker image for this installation: https://hub.docker.com/r/pivotaldata/gpdb-base/

Open up your Terminal and execute below commands -

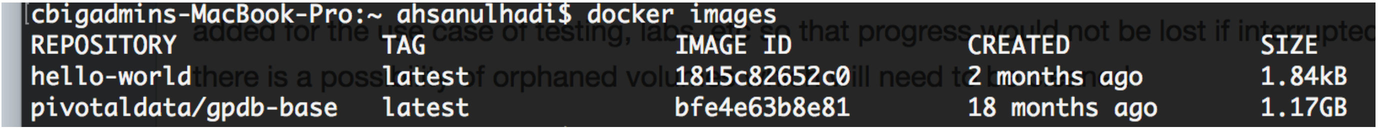
Code block

```
$ cd ~
$ docker pull pivotaldata/gpdb-base
```

# Check list of installed images

```
$ docker images
```

Output:



```
cbigadmins-MacBook-Pro:~ ahsanulhadi$ docker images
REPOSITORY             TAG        IMAGE ID         CREATED          SIZE
hello-world            latest     1815c82652c0     2 months ago     1.84kB
pivotaldata/gpdb-base  latest     bfe4e63b8e81     18 months ago    1.17GB
```

Run the Docker image

Syntax: docker run -i -d -p 5432:5432 <image>

Arguments: **-p** = port (First port is for Host and the second one is for the container where it will be pointed to / **-d** = run as daemon / **-i** = interactive mode / **--name** = add name

For detail explanation on these parameters, check here: https://docs.docker.com/engine/reference/commandline/run/

```
$ docker run --name gpdb_dev -i -d -p 5432:5432 bfe4e63b8e81
```

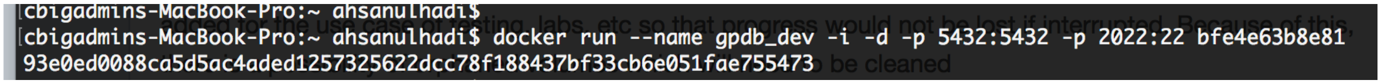
# output will be a similar id: ed1830a37eded65687d6d3fed2f745041989040a4749890e45aa6d250c81050d

But if we **want to ssh into the container then run this below command**. (Add -p 2022:22)

Important: if you have already ran it then Stop the container first and remove it. (see last section)

```
$ docker run --name gpdb_dev -i -d -p 5432:5432 -p 2022:22 bfe4e63b8e81
```

Output:

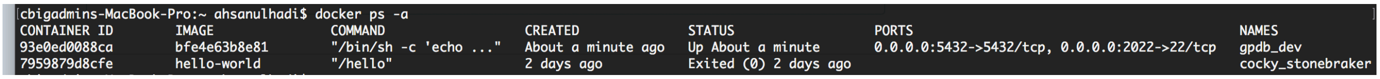


```
cbigadmins-MacBook-Pro:~ ahsanulhadi$
cbigadmins-MacBook-Pro:~ ahsanulhadi$ docker run --name gpdb_dev -i -d -p 5432:5432 -p 2022:22 bfe4e63b8e81
93e0ed0088ca5d5ac4aded1257325622dcc78f188437bf33cb6e051fae755473
```

You can check with 'docker ps' command to see whether the container is running or not.

```
$ docker ps -a
```

Output:



```
cbigadmins-MacBook-Pro:~ ahsanulhadi$ docker ps -a
CONTAINER ID        IMAGE               COMMAND                  CREATED              STATUS                  PORTS                                          NAMES
93e0ed0088ca        bfe4e63b8e81        "/bin/sh -c 'echo ..."   About a minute ago   Up About a minute       0.0.0.0:5432->5432/tcp, 0.0.0.0:2022->22/tcp   gpdb_dev
7959879d8cfe        hello-world         "/hello"                 2 days ago           Exited (0) 2 days ago                                                  cocky_stonebraker
```

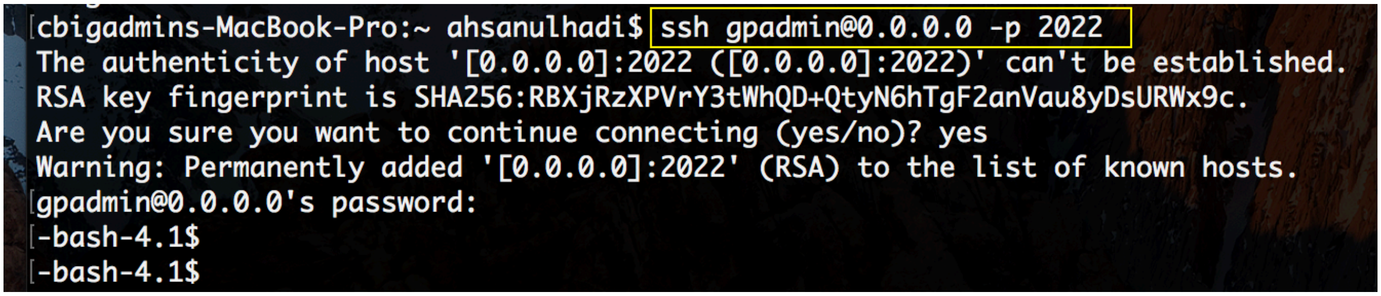
SSH into GreenPlum Container

By now we have the GreenPlum database container running on 0.0.0.0:5432. Now log in via SSH and connect to psql (local version) or pgadmin works as well.

User: **gpadmin** Password: **pivotal** OR **root**/pivotal

```
$ ssh gpadmin@0.0.0.0 -p 2022
```

Output:



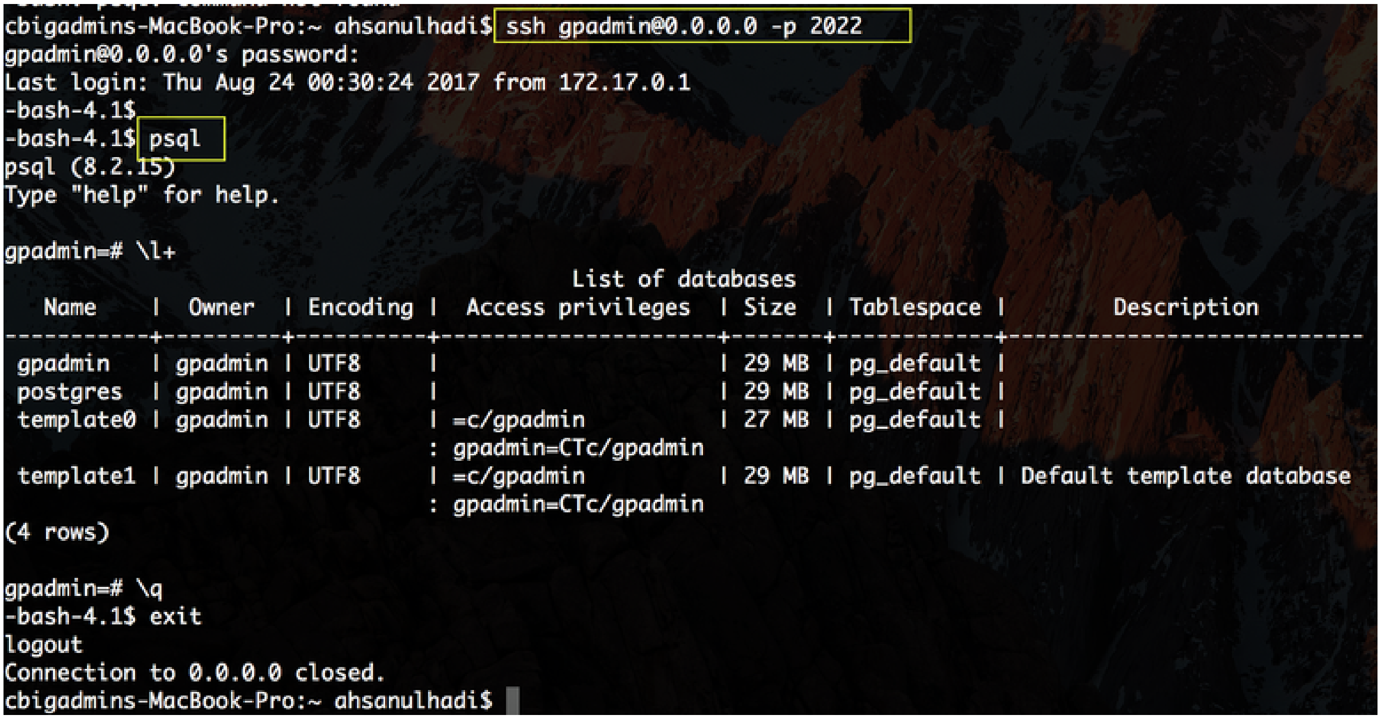
```
cbigadmins-MacBook-Pro:~ ahsanulhadi$ ssh gpadmin@0.0.0.0 -p 2022
The authenticity of host '[0.0.0.0]:2022 ([0.0.0.0]:2022)' can't be established.
RSA key fingerprint is SHA256:RBXjRzXPVrY3tWhQD+QtyN6hTgF2anVau8yDsURWx9c.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added '[0.0.0.0]:2022' (RSA) to the list of known hosts.
gpadmin@0.0.0.0's password:
-bash-4.1$
-bash-4.1$
```

Copy files to GreenPlum Server/Container

If you need to copy files into Greenplum server from your local machine, here is the command:

```
$ scp -P 2022 my_local_data_file.csv
gpadmin@0.0.0.0:/home/gpadmin/destination_dir/
```

Connect via psql

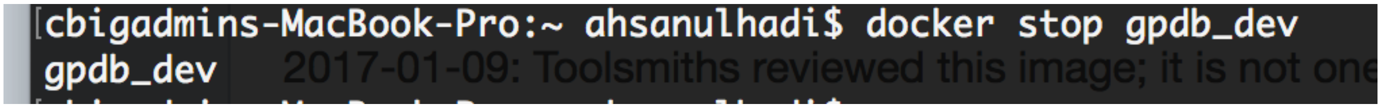


```
cbigadmins-MacBook-Pro:~ ahsanulhadi$ ssh gpadmin@0.0.0.0 -p 2022
gpadmin@0.0.0.0's password:
Last login: Thu Aug 24 00:30:24 2017 from 172.17.0.1
-bash-4.1$
-bash-4.1$ psql
psql (8.2.15)
Type "help" for help.

gpadmin=# \l+
                                          List of databases
   Name    |  Owner  | Encoding |  Access privileges  | Size  | Tablespace |        Description
-----------+---------+----------+---------------------+-------+------------+---------------------------
 gpadmin   | gpadmin | UTF8     |                     | 29 MB | pg_default |
 postgres  | gpadmin | UTF8     |                     | 29 MB | pg_default |
 template0 | gpadmin | UTF8     | =c/gpadmin          | 27 MB | pg_default |
                                : gpadmin=CTc/gpadmin
 template1 | gpadmin | UTF8     | =c/gpadmin          | 29 MB | pg_default | Default template database
                                : gpadmin=CTc/gpadmin
(4 rows)

gpadmin=# \q
-bash-4.1$ exit
logout
Connection to 0.0.0.0 closed.
cbigadmins-MacBook-Pro:~ ahsanulhadi$
```

Stop the container

```
$ docker stop gpdb_dev
$ docker start gpdb_dev # if required
```

Output:

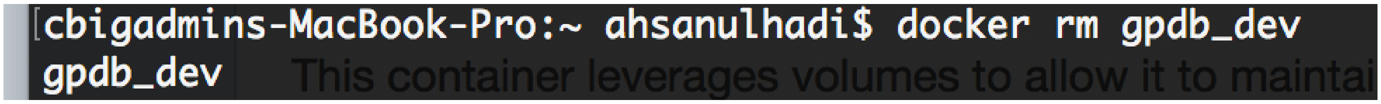


```
[cbigadmins-MacBook-Pro:~ ahsanulhadi$ docker stop gpdb_dev
gpdb_dev    2017-01-09: Toolsmiths reviewed this image; it is not one
[cbigadmins-MacBook-Pro:~ ahsanulhadi$
```

Remove the container

```
$ docker rm gpdb_dev
```

Output:



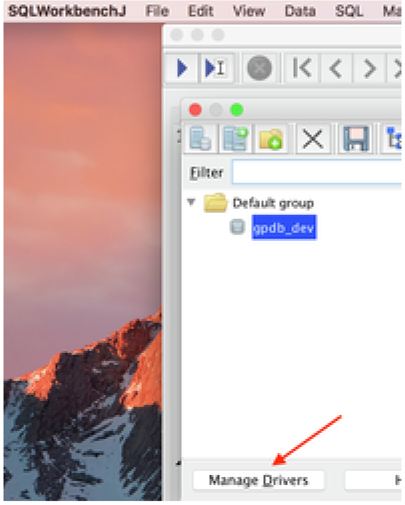
```
[cbigadmins-MacBook-Pro:~ ahsanulhadi$ docker rm gpdb_dev
gpdb_dev    This container leverages volumes to allow it to maintai
```

Download and configure SQL Workbench

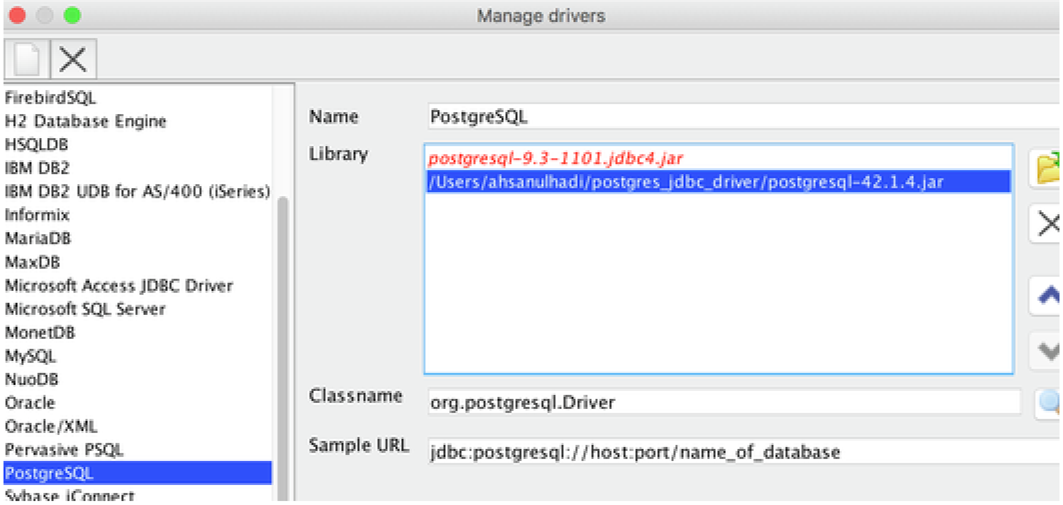
Prerequisite:

- Go to http://www.sql-workbench.net/ . and download .dmg file.
- Go to https://jdbc.postgresql.org/download.html . and download appropriate JDBC driver. (check your Java version. Command: $ **java -version**)
- If you don't have Java installed then go to https://www.java.com/en/download/help/index_installing.xml

Install SQL Workbench and configure the driver. Open the application and go to 'manage driver'. Or you can go from 'File Manage Drivers'. See image below:



Update the driver file location for Postgres Driver. Select the driver that we have downloaded in previous step.


Manage drivers

FirebirdSQL
H2 Database Engine
HSQLDB
IBM DB2
IBM DB2 UDB for AS/400 (iSeries)
Informix
MariaDB
MaxDB
Microsoft Access JDBC Driver
Microsoft SQL Server
MonetDB
MySQL
NuoDB
Oracle
Oracle/XML
Pervasive PSQL
PostgreSQL
Sybase jConnect

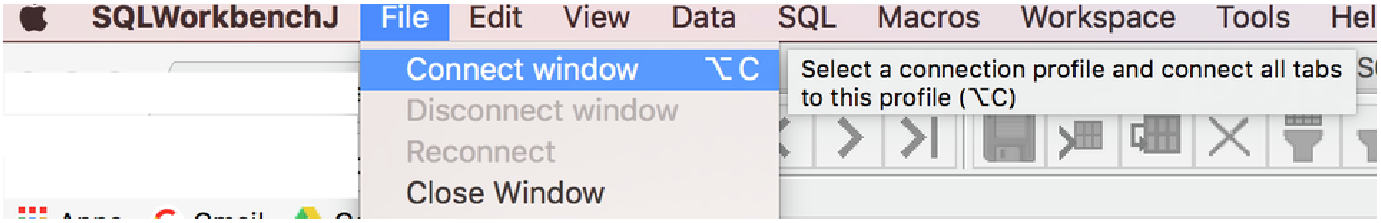
Name: PostgreSQL

Library:
postgresql-9.3-1101.jdbc4.jar
/Users/ahsanulhadi/postgres_jdbc_driver/postgresql-42.1.4.jar

Classname: org.postgresql.Driver

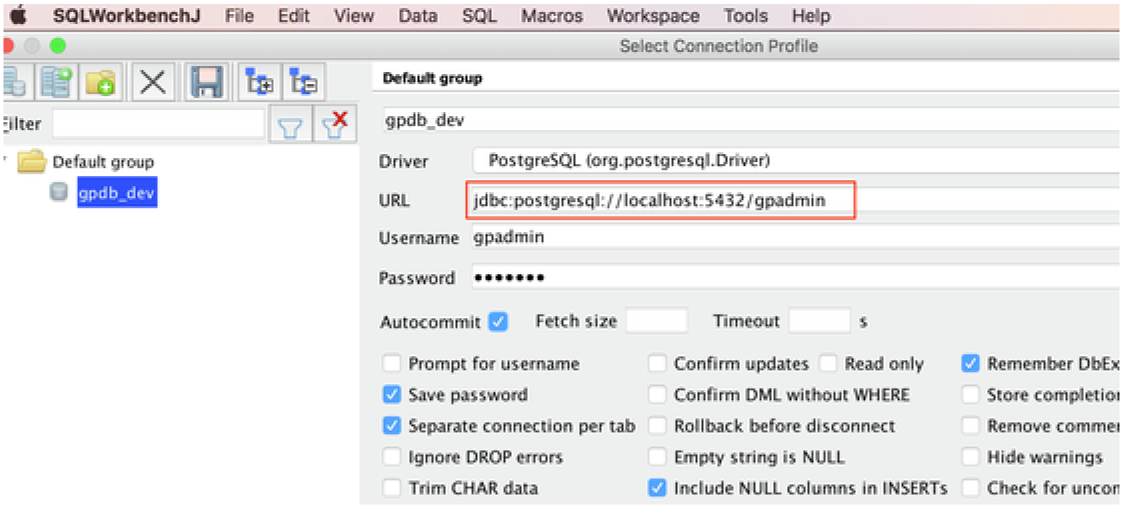
Sample URL: jdbc:postgresql://host:port/name_of_database

Now, create new Database co nnection profile.



Select a connection profile and connect all tabs to this profile (⌥C)

Add the database connection info and save the profile.


SQLWorkbenchJ File Edit View Data SQL Macros Workspace Tools Help
Select Connection Profile
Filter

Default group
gpdb_dev

Default group

gpdb_dev

Driver PostgreSQL (org.postgresql.Driver)

URL jdbc:postgresql://localhost:5432/gpadmin

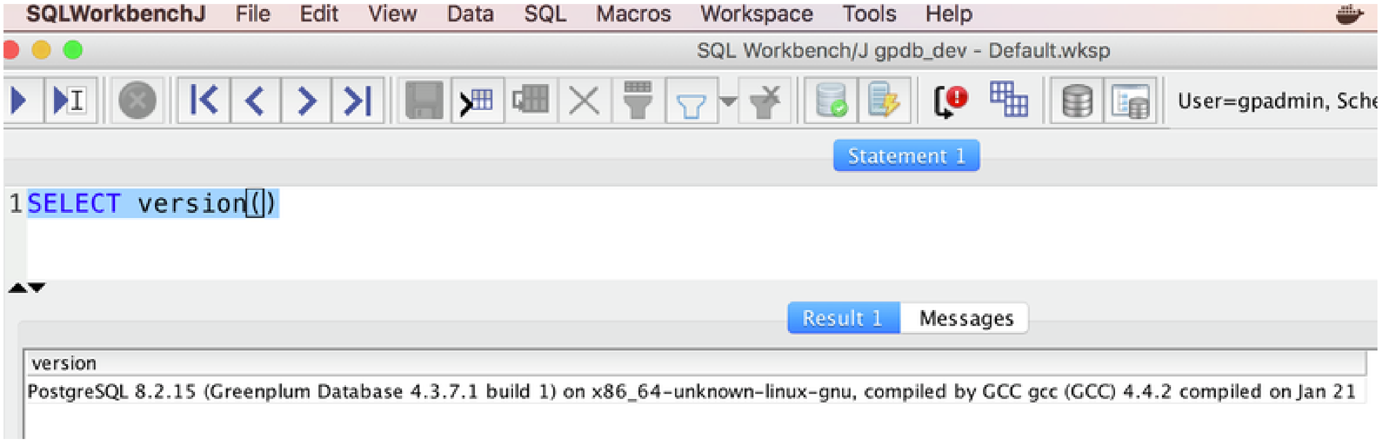
Username gpadmin

Password •••••••

Autocommit ☑ Fetch size Timeout s

□ Prompt for username	□ Confirm updates □ Read only	☑ Remember DbEx
☑ Save password	□ Confirm DML without WHERE	□ Store completio
☑ Separate connection per tab	□ Rollback before disconnect	□ Remove comme
□ Ignore DROP errors	□ Empty string is NULL	□ Hide warnings
□ Trim CHAR data	☑ Include NULL columns in INSERTs	□ Check for uncon

And connect 🙂


SQLWorkbenchJ File Edit View Data SQL Macros Workspace Tools Help
SQL Workbench/J gpdb_dev - Default.wksp
User=gpadmin, Sche
Statement 1
Result 1
Messages

```
SELECT version()
```

```
version
PostgreSQL 8.2.15 (Greenplum Database 4.3.7.1 build 1) on x86_64-unknown-linux-gnu, compiled by GCC gcc (GCC) 4.4.2 compiled on Jan 21
```