



MySQL to Postgres Migration

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Who am I

Database Administrator working at Pictage Inc

The company provides online image hosting, printing and sales solutions, and services to professional photographers. The company is a leader in the industry. Pictage services more than 10,000 professional photographers all over the United States.

Pictage is the photographer's one-stop and complete partner enabling online viewing, selling, and printing professional images.

www.pictage.com

www.shootq.com



mysql2psql

- It can create postgresql dump file from mysql database or directly load data from mysql to postgresql (at about 100 000 records per minute). Translates most data types and indexes.

Authors

- Max Lapshin et. al



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Installation requirements

- Postgres 8.4 and above, Mysql 5.1 and above
- Ruby 1.9.1 – latest version
- Ruby gem 1.8.14 - Package manager for Ruby
- postgresql-server-dev-9.1 - The postgresql-devel package contains the header files and libraries
- ruby1.9.1-dev: This package contains the header files and library, necessary to make extension library for Ruby 1.9.1
- Other libraries required: libmysqlclient-dev, libmysql-ruby1.9
- Install Ruby postgresql interface (gem install pg) and Ruby mysql interface (gem install mysql)



Things to take care before migration

- Generate a mysql2pgsql.yml file
- Create a separate user to access the mysql database or existing user which has capability to dump the database.
- Update mysql2pgsql.yml file with username, password, host and port information



Migration of only schema

- Update parameters `supress_data` and `supress_ddl` in `mysql2psql.yml` file as

`supress_data: true`

`supress_ddl: false`



Migration of only data

- Update parameters `supress_data` and `supress_ddl` in `mysql2psql.yml` file as

`supress_data: false`

`supress_ddl: true`



Migration of both schema & data

- Update parameters `supress_data` and `supress_ddl` in `mysql2psql.yml` file as

`supress_data: false`

`supress_ddl: false`



Excluding tables during migration

- To list all tables that needs to be excluded under `exculde_tables` parameter

`exclude_tables:`

- table1
- table2



Migrating only the selected tables

- To list all tables that needs to be migrated under “tables” parameter. Only tables listed here will be migrated

tables:

- table1
- table2



Things to take care after migration

- Configuring postgresql.conf
- Configuring pg_hba.conf
- Creating users on the database
- Granting permissions on the database and tables
 - Note every time you create a database you need to grant permissions



Problems during migration

- Year & month function does not exist in psql, we should create a year function in pgsql.

```
CREATE OR REPLACE FUNCTION year(timestamp  
without time zone) RETURNS float  
AS 'select extract(year from $1);' language sql  
immutable ;
```

```
CREATE OR REPLACE FUNCTION  
month(timestamp without time zone) RETURNS float  
AS 'select extract(month from $1);' language sql  
immutable ;
```



Problems during migration

2. Group by Clause issue:

Postgresql follows standard SQL

MySQL extends the use of GROUP BY so that the select list can refer to nonaggregated columns not named in the GROUP BY clause.

- `SELECT o.custid, c.name, MAX(o.payment)
FROM orders AS o, customers AS c WHERE
o.custid = c.custid GROUP BY o.custid;`



Problems during migration

3. Order by issue: When Order by used with group by clause results differently in postgresql

In MySQL - GROUP BY forces ORDER BY. (This is a violation of the standard. It can be avoided by using ORDER BY NULL.)

Postgresql follows standard SQL



Problems during migration

3. Order by issue: When Order by used with group by clause results differently in postgresql

In MySQL - GROUP BY forces ORDER BY. (This is a violation of the standard. It can be avoided by using ORDER BY NULL.)

Postgresql follows standard SQL



Problems during migration

4. Data type issues

- tinyint in Mysql is converted to boolean
- datetime to timestamp without time zone
- mediumtext to text



Problems during migration

5. Error occurs when the datetime column of a table has NULL values

"Mysql2psql: conversion failed: undefined method `hour' for nil:NilClass"

Either add a default date as 01/01/1970

Or exclude the table while dumping the database and load the table using csv file to postgresql.



Questions

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