FmPro Migrator for Windows

FileMaker to PostgreSQL Quickstart Guide

.com Solutions Inc.
www.fmpromigrator.com

Overview

This quickstart guide provides step by step instructions for migrating individual FileMaker databases into PostgreSQL database tables. This process involves three phases (1) the generation of migration scripts, (2) the creation of new PostgreSQL database tables and (3) the import of FileMaker data into the new PostgreSQL database tables. This document describes a migration from FileMaker 6 to PostgreSQL.

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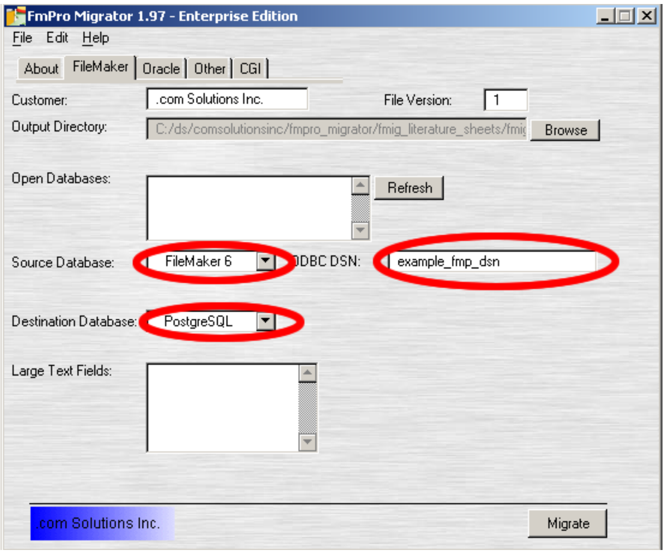
Supports FileMaker 7
Migrates FileMaker Pro to 7 Databases
MySQL, Oracle, Access, SQL Server, Sybase, DB2, PostgreSQL
Web Interface for each migrated database
FmPro Migrator
Migrate from Access to FileMaker 7
Migrate from FileMaker to FileMaker 7
Migrate structure and data
Large text fields migrated
JPEG image data migrated
Economical Site License
All database platforms supported
Process 50 database files at once
Prototype web apps with FileMaker
Export FileMaker JPEG images to local disk
FmPro Migrator
Migrates FileMaker Pro to 7 Databases

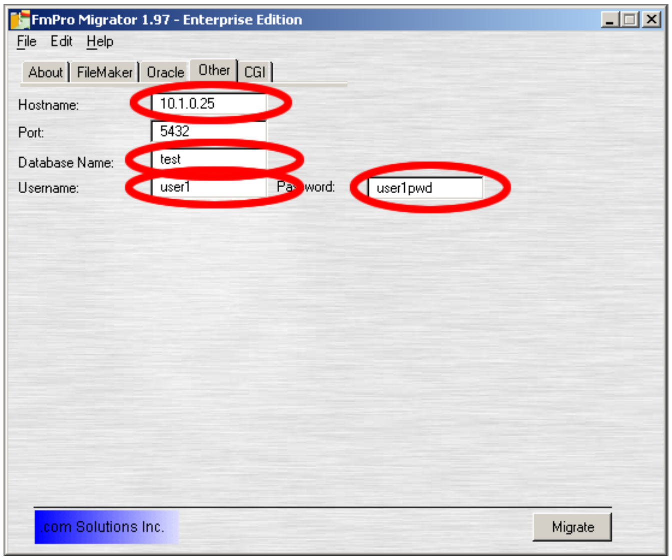
Step 1

Open one or more FileMaker database files within FileMaker. Make sure that the Local and Remote Data Access Companion plug ins are enabled and that file sharing is enabled for each FileMaker database file. Change the names of any FileMaker database files which contain spaces or special characters, because database names are used for the names of database tables within PostgreSQL. Launch FmPro Migrator and select the type of source and destination databases. Either keep the ODBC DSN listed in FmPro Migrator or change it to match an ODBC DSN which already exists on your computer.

Enter PostgreSQL database and server info on the FmPro Migrator "Other" folder tab (as shown in the image on the right - below).



Customer: .com Solutions Inc.
File Version: 1
Output Directory: C:/ds/comsolutionsinc/fmpro_migrator/fmig_literature_sheets/fmi
Open Databases:
Source Database: FileMaker 6
ODBC DSN: example_fmp_dsn
Destination Database: PostgreSQL
Large Text Fields:
.com Solutions Inc.

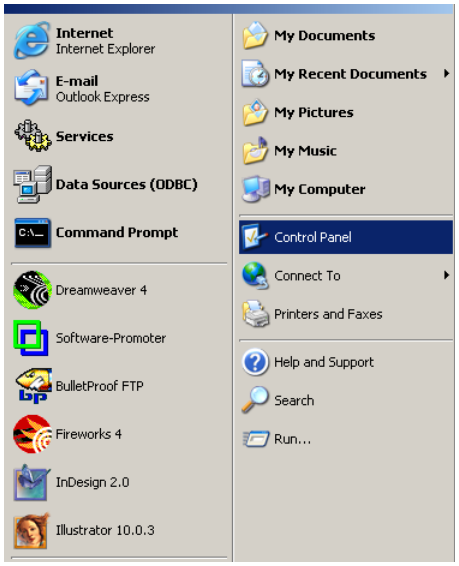


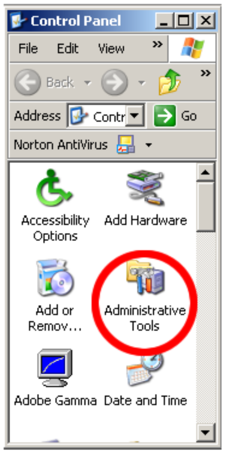
Hostname: 10.1.0.25
Port: 5432
Database Name: test
Username: user1
Pa word: user1pwd
.com Solutions Inc.

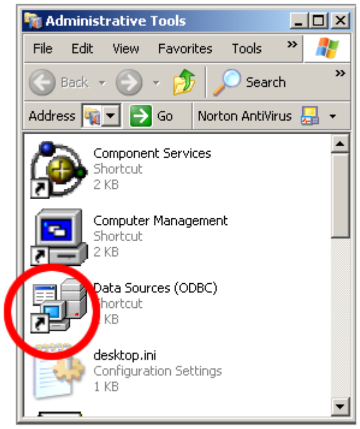
Step 2

Open the Windows Data Sources (ODBC) Control Panel to create a new FileMaker 6 System DSN to match the ODBC DSN name used by FmPro Migrator for the source database. FmPro Migrator will use this ODBC DSN to query the FileMaker database to obtain database structure information. The Data Sources (ODBC) control panel is located within the Administrative Tools folder of the Windows Control Panel.

Note: With Windows XP, it may be necessary to select the Classic View for the Control Panel in order to see the Administrative Tools folder.

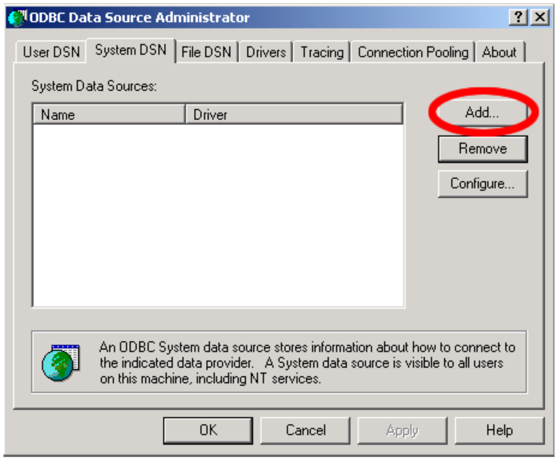




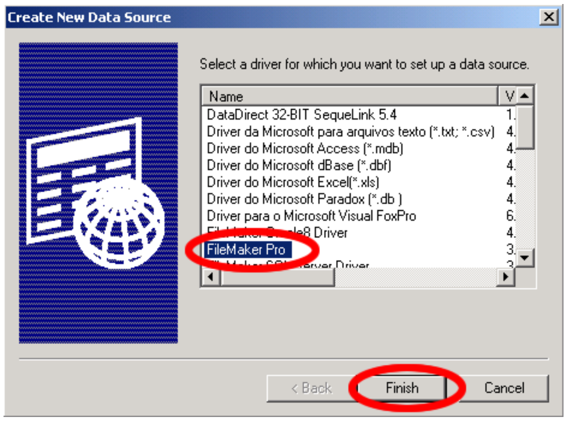


Step 3

Click the System DSN tab, then click the Add button.
Select the FileMaker Pro driver, then click the Finish button.



An ODBC System data source stores information about how to connect to the indicated data provider. A System data source is visible to all users on this machine, including NT services.

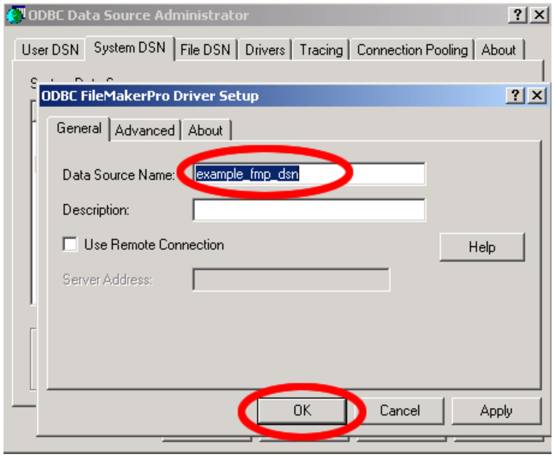


Select a driver for which you want to set up a data source.

Name	V
DataDirect 32-BIT SequeLink 5.4	1.
Driver da Microsoft para arquivos texto (*.txt; *.csv)	4.
Driver do Microsoft Access (*.mdb)	4.
Driver do Microsoft dBase (*.dbf)	4.
Driver do Microsoft Excel(*.xls)	4.
Driver do Microsoft Paradox (*.db)	4.
Driver para o Microsoft Visual FoxPro	6.
FileMaker Oracle8 Driver	4.
FileMaker Pro	3.
FileMaker SQL Server Driver	3.

Step 4

Enter the name of the ODBC DSN in the first field. This name should exactly match the name entered into the Source Database ODBC DSN field within FmPro Migrator.
Select the Advanced tab, change the Max Text Length from 255 to 65000.
Click the Ok button.

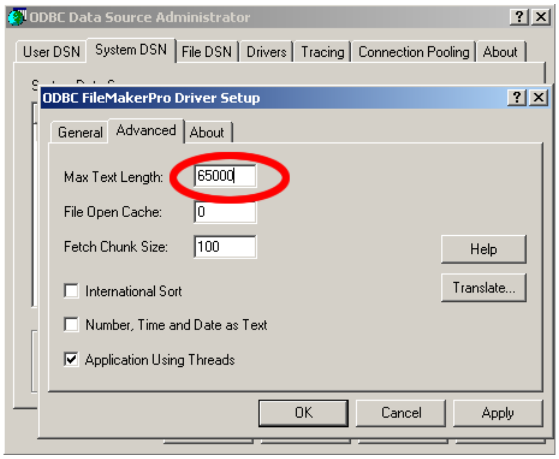


Data Source Name: example_fmp_dsn

Description:

☐ Use Remote Connection

Server Address:



Max Text Length: 65000

File Open Cache: 0

Fetch Chunk Size: 100

☐ International Sort

☐ Number, Time and Date as Text

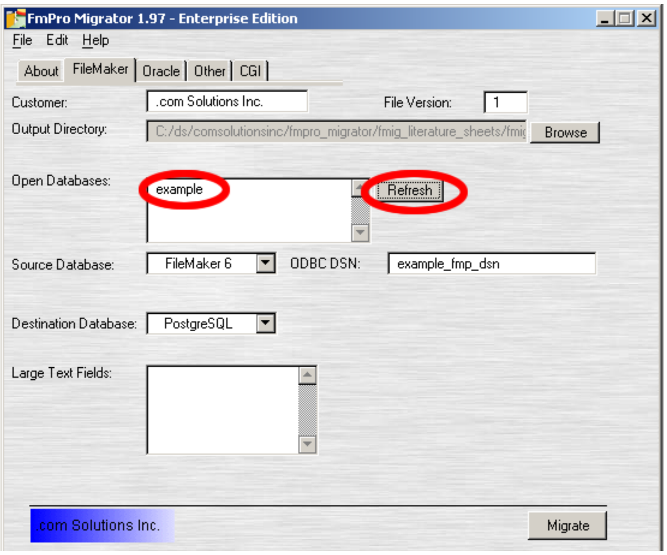
☑ Application Using Threads

Step 5

Within FmPro Migrator, select the destination directory for the migration files.

Step 6

Click the Refresh button in FmPro Migrator. All of the database files opened in FileMaker 6 should show up in the Open Databases field. In the example below, only one database file is opened in FileMaker, a database named **example.**



Customer: .com Solutions Inc.

File Version: 1

Output Directory: C:/ds/comsolutionsinc/fmpro_migrator/fmig_literature_sheets/fmig

Open Databases: example

Source Database: FileMaker 6

ODBC DSN: example_fmp_dsn

Destination Database: PostgreSQL

Large Text Fields:

Step 7

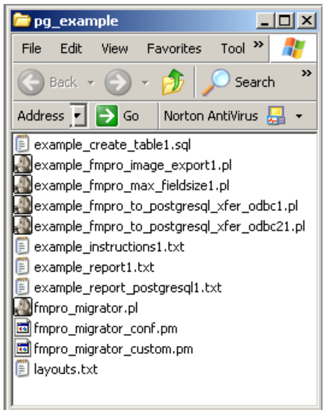
FmPro Migrator uses Perl to generate migration scripts and transfer data between databases. ActiveState Perl needs to be installed. Download and install the latest version of ActivePerl from www.activestate.com.

Step 8

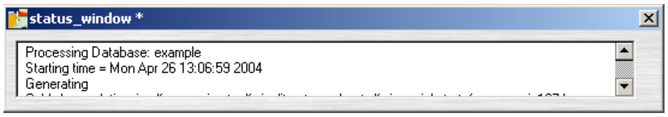
Save the configuration information by selecting Save As from the File menu within FmPro Migrator.

Step 9

Press the Migrate button in FmPro Migrator to generate migration scripts and database documentation files. Scripts which start with the name of the original FileMaker database file(s) will then be created within the output directory as shown below. If these scripts are not created, select the Status Window menu item from the FmPro Migrator File menu. The status window will display info about any problems which occurred during the script generation process.



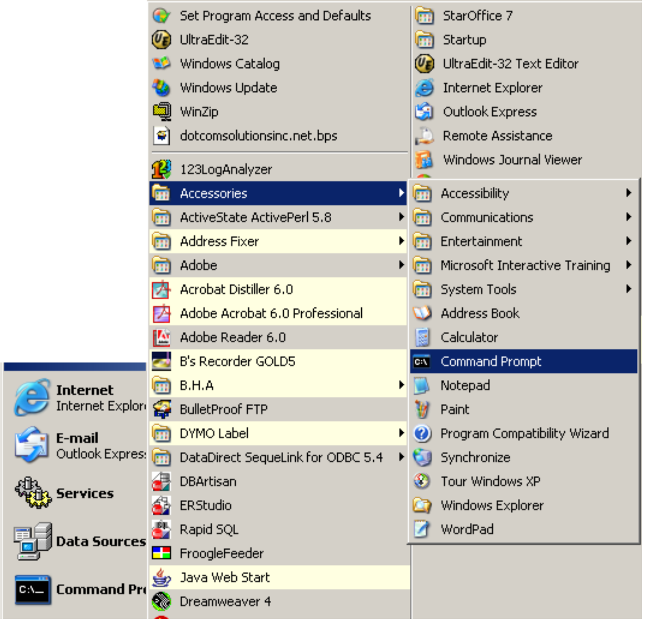
```
example_create_table1.sql
example_fmpro_image_export1.pl
example_fmpro_max_fieldsize1.pl
example_fmpro_to_postgresql_xfer_odbc1.pl
example_fmpro_to_postgresql_xfer_odbc21.pl
example_instructions1.txt
example_report1.txt
example_report_postgresql1.txt
fmpro_migrator.pl
fmpro_migrator_conf.pm
fmpro_migrator_custom.pm
layouts.txt
```

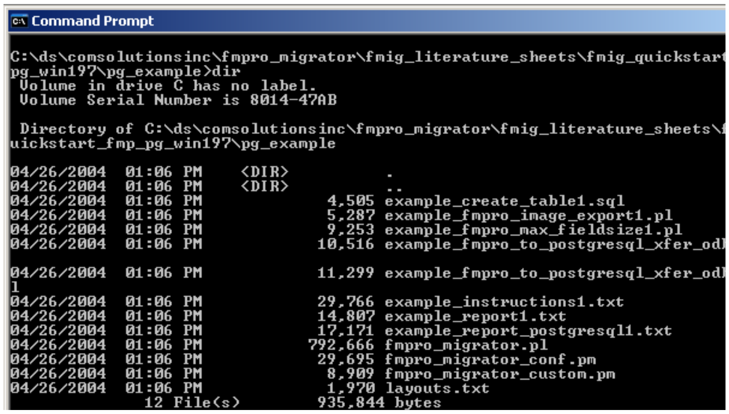


```
Processing Database: example
Starting time = Mon Apr 26 13:06:59 2004
Generating
```

Step 10

Open the Windows Command Prompt by selecting Start > Programs > Accessories > Command Prompt. (You can drag the Command Prompt menu item over to the top of the Start menu in order to make it easier to access in the future.)
Use the `cd` command to navigate into the folder of generated scripts.
Note: Using the `cd ..` command allows you to navigate up one level in the directory structure.
Typing the `dir` command displays a list of files/folders.





```
C:\ds\comsolutionsinc\fmpro_migrator\fmig_literature_sheets\fmig_quickstart
pg_win197\pg_example>dir
 Volume in drive C has no label.
 Volume Serial Number is 8014-47AB

 Directory of C:\ds\comsolutionsinc\fmpro_migrator\fmig_literature_sheets\f
uickstart_fmp_pg_win197\pg_example

04/26/2004  01:06 PM    <DIR>          .
04/26/2004  01:06 PM    <DIR>          ..
04/26/2004  01:06 PM             4,505 example_create_table1.sql
04/26/2004  01:06 PM             5,287 example_fmpro_image_export1.pl
04/26/2004  01:06 PM             9,253 example_fmpro_max_fieldsize1.pl
04/26/2004  01:06 PM            10,516 example_fmpro_to_postgresql_xfer_od

04/26/2004  01:06 PM            11,299 example_fmpro_to_postgresql_xfer_od
l
04/26/2004  01:06 PM            29,766 example_instructions1.txt
04/26/2004  01:06 PM            14,807 example_report1.txt
04/26/2004  01:06 PM            17,171 example_report_postgresql1.txt
04/26/2004  01:06 PM           792,666 fmpro_migrator.pl
04/26/2004  01:06 PM            29,695 fmpro_migrator_conf.pm
04/26/2004  01:06 PM             8,909 fmpro_migrator_custom.pm
04/26/2004  01:06 PM             1,970 layouts.txt
              12 File(s)        935,844 bytes
```

Step 11

Enter the following commands within the command prompt window to install the Perl DBI and DBD-ODBC modules using the ActiveState Perl Package Manager (PPM). PPM will download and install these modules from the ActiveState website automatically with the following commands.

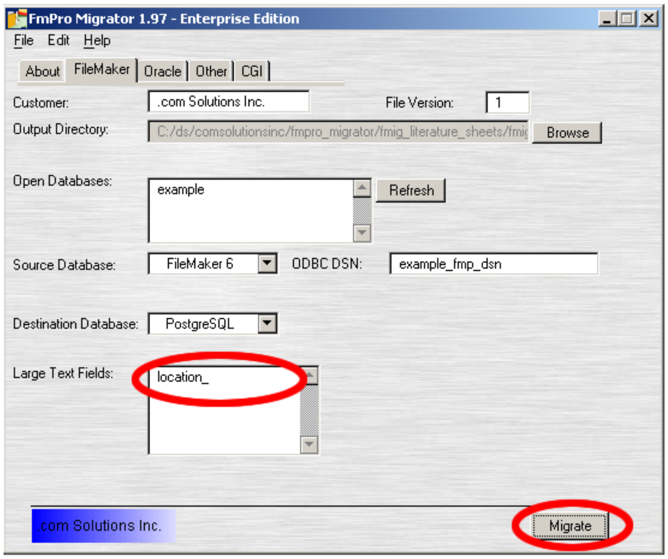
```
ppm
install DBI
install DBD-ODBC
quit
```

Step 12

Prior to creating the PostgreSQL database table, it is necessary to determine the maximum amount of data stored within each field of the FileMaker database. Run the **example_fmpro_max_fieldsize1.pl** program from the Windows command prompt to create the fieldsize report file.

```
perl example_fmpro_max_fieldsize1.pl
```

After this program finishes, it will produce the **example_fmpro_max_fieldsize_report.txt** file. Examine the contents of the **example_fmpro_max_fieldsize_report.txt** file to determine whether there are more than 254 characters of information stored within any of the text fields of the FileMaker database file. For this example, the FileMaker field named "location" is used as an example of a text field which contains more than 254 characters. Examining the **example_fmpro_max_fieldsize_report.txt** file shows that FmPro Migrator will rename this FileMaker field as "location_" when creating the PostgreSQL database table. To designate this field as a Large Text field, enter "location_" within the FmPro Migrator Large Text Fields field.



Customer: .com Solutions Inc.
File Version: 1
Output Directory: C:/ds/comsolutionsinc/fmpro_migrator/fmig_literature_sheets/fmi
Open Databases: example
Source Database: FileMaker 6
ODBC DSN: example_fmp_dsn
Destination Database: PostgreSQL
Large Text Fields: location_

Step 13

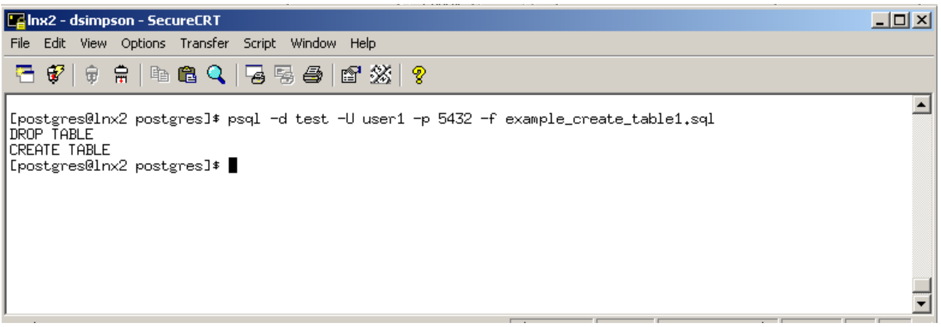
Click the Migrate button in FmPro Migrator to regenerate the migration scripts.
The **example_create_table1.sql** file should now show that the "location_" column is now designated as a TEXT field instead of a VARCHAR field.
Manually make any additional column size changes that you require within the **example_create_table1.sql** file prior to creating the PostgreSQL database table.

Step 14

The **example_create_table1.sql** file makes use of a user defined type called “lo” for storing FileMaker container field data as large binary objects within the PostgreSQL database table. The SQL statements used to create this user defined type (or domain in PostgreSQL 7.3+) is commented out by default. Un-comment the appropriate code for your particular version of the PostgreSQL database.

Transfer the **example_create_table1.sql** file to the PostgreSQL database server.
For this example, the PostgreSQL database is running on a Linux server. The file has been transferred to the PostgreSQL server via an ftp connection and an SSH session has been opened to the Linux server.
Execute the command listed at the top of this file to create the PostgreSQL database table.

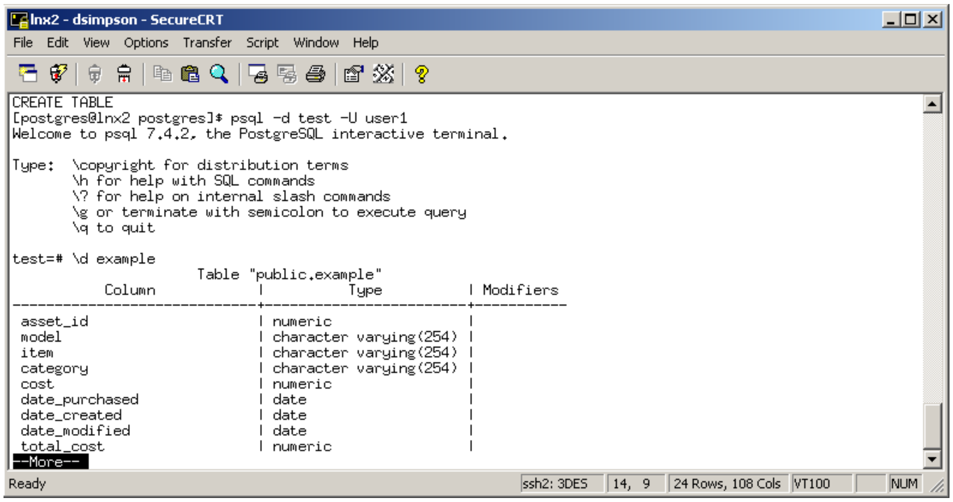
```
psql -d test -U user1 -p 5432 -f example_create_table1.sql
```


lnx2 - dsimpson - SecureCRT
File Edit View Options Transfer Script Window Help

```
[postgres@lnx2 postgres]$ psql -d test -U user1 -p 5432 -f example_create_table1.sql
DROP TABLE
CREATE TABLE
[postgres@lnx2 postgres]$ █
```

Step 15

Verify that the table was created by using the `\d` command within psql.


lnx2 - dsimpson - SecureCRT
File Edit View Options Transfer Script Window Help
Ready
ssh2: 3DES
14, 9
24 Rows, 108 Cols
VT100
NUM

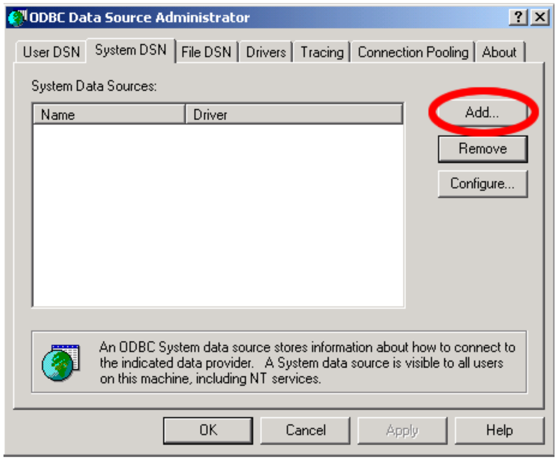
```
CREATE TABLE
[postgres@lnx2 postgres]$ psql -d test -U user1
Welcome to psql 7.4.2, the PostgreSQL interactive terminal.

Type:  \copyright for distribution terms
       \h for help with SQL commands
       \? for help on internal slash commands
       \g or terminate with semicolon to execute query
       \q to quit

test=# \d example
                      Table "public.example"
           Column            |          Type          | Modifiers
-----------------------------+------------------------+-----------
 asset_id                    | numeric                |
 model                       | character varying(254) |
 item                        | character varying(254) |
 category                    | character varying(254) |
 cost                        | numeric                |
 date_purchased              | date                   |
 date_created                | date                   |
 date_modified               | date                   |
 total_cost                  | numeric                |
--More--
```

Step 16

Download and install the psqlodbc driver from the gborg website.
The psqlodbc ODBC driver is used to transfer data from FileMaker to PostgreSQL because it provides native support for the user defined “lo” column type used for transferring FileMaker container field data to PostgreSQL.

Step 17

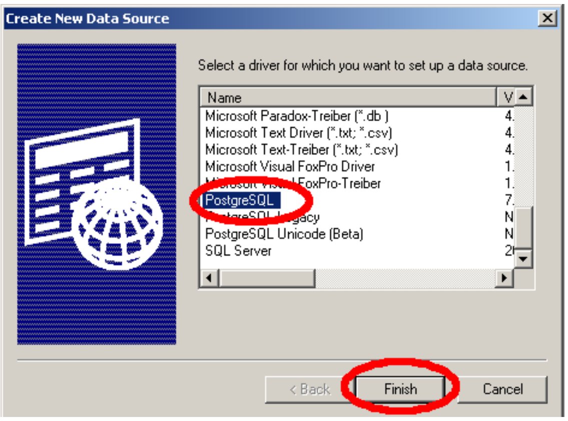
Create a new ODBC System DSN to match the Destination Database ODBC DSN name defined by FmPro Migrator within the **example_fmpro_to_postgresql_xfer_odbc1.pl** file. For this example database file, the ODBC DSN name is **example_pg_dsn.**
Click the System DSN tab, then click the Add button.
Select the **PostgreSQL** driver, then click the Finish button.



System Data Sources:

Name	Driver

An ODBC System data source stores information about how to connect to the indicated data provider. A System data source is visible to all users on this machine, including NT services.

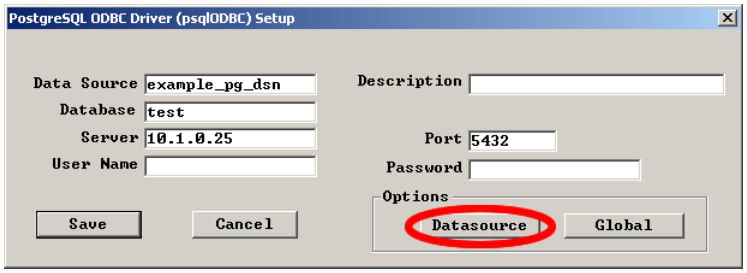


Select a driver for which you want to set up a data source.

Name	V
Microsoft Paradox-Treiber (*.db)	4.
Microsoft Text Driver (*.txt; *.csv)	4.
Microsoft Text-Treiber (*.txt; *.csv)	4.
Microsoft Visual FoxPro Driver	1.
Microsoft Visual FoxPro-Treiber	1.
PostgreSQL	7.
PostgreSQL Legacy	N
PostgreSQL Unicode (Beta)	N
SQL Server	2

Step 18

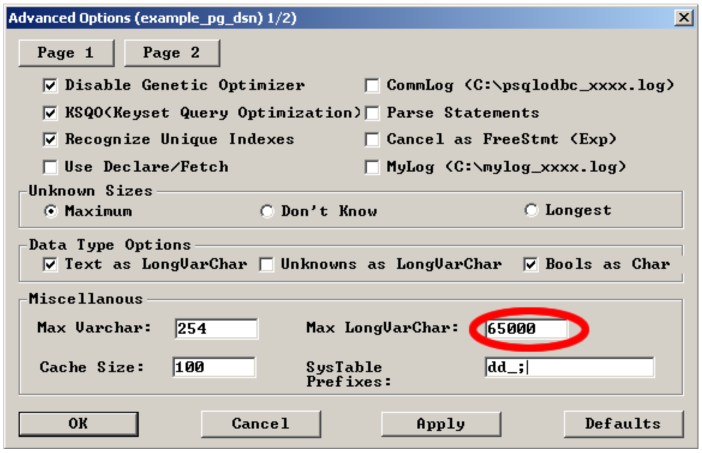
Enter the data source name and server info on the first pane of the PostgreSQL ODBC driver panel. Then click on the DataSource button.



Data Source example_pg_dsn
Database test
Server 10.1.0.25
User Name
Description
Port 5432
Password

Step 19

Increase the size for the Max LongVarChar parameter from 8190 to 65000.
Click the Ok button, then the Save button.



☑ Disable Genetic Optimizer
☐ CommLog (C:\psqlodbc_xxxx.log)
☑ KSQO(Keyset Query Optimization)
☐ Parse Statements
☑ Recognize Unique Indexes
☐ Cancel as FreeStmt (Exp)
☐ Use Declare/Fetch
☐ MyLog (C:\mylog_xxxx.log)

Unknown Sizes
● Maximum ○ Don't Know ○ Longest

Data Type Options
☑ Text as LongVarChar ☐ Unknowns as LongVarChar ☑ Bools as Char

Miscellanous
Max Varchar: 254
Max LongVarChar: 65000
Cache Size: 100
SysTable Prefixes: dd_;

Step 20

Run the **example_fmpro_to_postgresql_xfer_odbc1.pl** script from the Windows command prompt window to copy the data from the FileMaker database to the new PostgreSQL table.
As the script runs, each processed record number will be displayed on the screen.
You can verify the copied data by using SQL commands in psql or by using a graphical utility.

Troubleshooting

Error:
```
psql:example_create_table1.sql:36: ERROR:  function int4out(lo) does
not exist
```
This error may be observed when running the example_create_table1.sql file to create the new database table within the PostgreSQL database.

Solution: If container fields exist within the FileMaker database, an object type of “lo” needs to be created within the PostgreSQL database. The “lo” object type is used to define a special column type of “lo” which is used to store binary large object data from the FileMaker database. This type is used because it is fully supported by the psqlodbc ODBC driver.
If the PostgreSQL database version is less than 7.3, then the “CREATE TYPE lo” statement should be uncommented and run within the example_create_table1.sql file. If this command is executed on a PostgreSQL 7.3 or higher database, error 36 will be displayed. This means that the “CREATE DOMAIN lo” statement should be used.

Error:
```
DBI connect(‘example_pg_odbc_dsn’,’HASH(0x1a7f070)’,...) failed:  at
example_fmpro_to_postgresql_xfer_odbc1.pl line 113
Can’t connect to the PostgreSQL example_pg_odbc_dsn database: FATAL:  no
pg_hba.conf entry for host “10.1.0.15”, user “HASH(0x1a7f070)”, database
“test”
 (SQL-28000)(DBD: db_login/SQLConnect err=-1)
Issuing rollback() for database handle being DESTROY’d without explicit
disconnect().
```

Solution: This error means that the TCP/IP address or host name of the computer running the **example_fmpro_to_postgresql_xfer_odbc1.pl** script has not been added to the **pg_hba.conf** file on the PostgreSQL server. Edit the **pg_hba.conf** file on the PostgreSQL server to allow access to the server from the computer running the migration scripts, then issue the `pg_ctl reload` command to reload the configuration information within the **pg_hba.conf** file.

Error:
```
DBD::ODBC::st execute failed: ERROR:  value too long for type
character varying(254) (SQL-HY000)(DBD: st_execute/SQLExecute err=-1) at
example_fmpro_to_postgresql_xfer_odbc1.pl line 139.
```

Solution: This error means that an attempt was made to insert more than 254 characters into a VARCHAR(254) field within the PostgreSQL database. The recommended solution to this problem is to run the **example_fmpro_max_fieldsize1.pl** program to determine the maximum number of characters located within each FileMaker database field. Then make changes as needed to the **example_create_table1.sql** and re-create the PostgreSQL database table.