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FmPro Migrator - FileMaker to SQL Server

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This document provides an explanation of the steps required to perform a FileMaker to SQL Server data migration project using FmPro Migrator or FmPro Migrator Developer Edition.

Documentation Conventions:

FileMaker 11+ - refers to FileMaker Pro or FileMaker Pro Advanced version 11 or higher. FileMaker 7+ - refers to FileMaker Pro or FileMaker Pro Advanced version 7 or higher. FileMaker 5/6 - refers to FileMaker Pro versions 5, 5.5 or 6.0 SQL Server - refers to Microsoft SQL Server 2000 - SQL Server 2019 database servers

Note: This manual does not cover the steps required to create a <u>.NET application</u>, <u>LiveCode</u> stack or <u>PHP web application</u> from the FileMaker database. These tasks are covered in other manuals. This manual covers only the process involved with transferring the data from FileMaker to SQL Server.

Revision 9 4/15/2024 [Updated for FmPro Migrator 11.01. Added new Licensing FmPro Migrator infor.]

Character Conversion Notes

It has been found that for proper character encoding, the following configuration works well: 1) Install matching platform versions (64-bit or 32-bit) of the FileMaker database and FmPro Migrator on Windows.

2) In the FileMaker ODBC driver, disable the Auto-Detect Language checkbox in the Advanced Language dialog.

3) Set the Multi-byte Text Encoding menu to UTF-8 in the Advanced Language dialog. For SQL Server:

4) Enable the Perform Translation for Character Data checkbox on the last panel of the SQL Server ODBC DSN configuration.

As of FmPro Migrator v11, all FmPro Migrator downloads are fully functional with features unlocked via a single license key.

This section of the manual shows how to enter the license key to unlock the features within FmPro Migrator.

FmPro Migrator 11.01 4/14/2024

Demo Edition Dialog



When launched the first time, FmPro Migrator will be running in Demo mode as shown in this screenshot. Clicking the Ok button opens the order page of the website.

In addition to transferring data for 5 database fields, the conversion features shown on the GUI tab of the Migration Process window will convert 5 layouts or forms/reports & scripts.

•••	FmPro Migrator	
About F	ïleMaker	
	 FmPro Migrator migrates FileMaker Pro database structure a MySQL, Access, SQLite, SQL Server, Sybase, DB2 and Post tables. FileMaker to FileMaker 11+ migrations/table consolidation p Access, Visual FoxPro, Firebird, SQL Server, MySQL to FileM supported. FileMaker Pro Layouts, Microsoft Access or Visual FoxPro F converted into LiveCode stacks, Access databases or Visua FileMaker Layouts are converted into PHP web applications 	and data into Oracle, greSQL database rojects are supported. Aaker 11+ migrations are forms and scripts are I Studio .Net projects. and LiveCode stacks.
	Developed by .com Solutions Inc. www.fmpromigrator.com FmPro Migrator 11.01 Demo (64bit) License	
.com Solutions	Inc.	Chat now

Clicking the "License" button on the About tab, or selecting the Help -> License/About menu items will open the About window where you can enter the license key.



On the About FmPro Migrator window:

(1) Product name and version licensed, (2) Demo or Licensed will be displayed, (3) The Upgrade button opens the website order page, (4) Email address associated with your license key, (5) Clipboard button reads the license key from the clipboard, (6) License key field, (7) Email Support button opens the Contact form on the website, (8) Visit Website opens the order page in Demo mode or the product page in Licensed mode, (9) Check for Update opens the downloads page with the latest software version, (10) Ok button closes the About window.



Your product license key will be displayed in your web browser when your order has been completed. It will also will be sent via email at the same time, please check your SPAM folder if the email doesn't arrive in a few minutes.

(1) Copy the license key to the clipboard and click the clipboard icon. Once validated (2) the product name will change, (3) the License validation date will be updated, (4) your email address will be displayed, and (5) the license key will be displayed in the field under the Email address when clicking inside the field. In this screenshot the license key has been obscured.

And that is all you need to do to license all of the features of FmPro Migrator.

Prior to transferring data from a FileMaker Pro database into a SQL database is is usually necessary to delete all Unstored Calculation and Summary fields from the FileMaker Pro database tables. This step is usually necessary when transferring more than a few thousand records because the amount of time required for FileMaker Pro to calculate these values may cause an ODBC timeout, thus preventing the data from being transferred at all. This step should be completed before Step 2 - Get Fieldsize is run.

FmPro Migrator includes an automated field deletion feature which can help with this task.

Open Manage Deleted Fields Window



Once the FileMaker table definitions have been imported via the clipboard, the list of tables will be displayed within the Migration Process window.

1) Double-click on the table name, the Table Details window will be displayed. Click on the Manage Deleted Fields button near the top of the Table Details window, the Manage Deleted Fields window will open.

3) Click on the Mark for Deletion Button, all of the Unstored Calculation, Summary and Global fields in the selected table will be marked for deletion.

Note: Global fields are also marked for deletion in order to reduce the number of fields of data to speed up the data transfer process. For the example table shown in this screenshot, there were 15 fields marked for deletion. At this point, the fields have not yet been deleted, they have just been marked for deletion.

000		Manage De	Table Summar	v	
Manage de		ed feilds (Global, stored	tbl_Assets	L	
	Calculation) in destination da	the source and	Field Count	67	
	ousenadori de	cabases.	Deleted Fields	15	
			Remaining Fields	52	
		Res	ults:	-	
Mark f	or Deletion	Field 10 of 15 Field 11 of 15 Field 12 of 15	Processed [Pass #1]. Processed [Pass #1]. Processed [Pass #1].		
UnMark	for Deletion	Field 13 of 15 Field 14 of 15 Field 15 of 15	Processed [Pass #1]. Processed [Pass #1]. Processed [Pass #1].		Clear
1 Dele	te Fields	Field 1 of 2 Pro Field 2 of 2 Pro	ocessed [Pass #2]. ocessed [Pass #2]. ompleted		
Add De	leted Fields				

1) Click the Delete Fields button. FmPro Migrator will first print a list of the ALTER TABLE SQL commands in the Results window, then the ALTER TABLE commands will be sent directly to the FileMaker database thru the ODBC connection. An example of these commands is listed below.

Note: It is common for some DROP COLUMN commands to fail as a result of Outstanding References by other fields. In order to resolve this issue, FmPro Migrator logs the failed DROP COLUMN commands and then re-sends those commands to the FileMaker Pro database again, in reverse order during Pass #2 processing. If PASS #2 still results in DROP COLUMN command failures, the remaining list of undeleted fields will be listed at the end of the processing.

Click on the Clipboard icon to copy the commands any other software for review purposes. It will be helpful to have these field names available when deleting the fields manually. It is necessary to manually delete any fields which were not deleted automatically in order to proceed with Step #2 - Get Fieldsize.

```
ALTER TABLE "tbl_Assets" DROP COLUMN "Total Cost"
ALTER TABLE "tbl_Assets" DROP COLUMN "Total Book Value"
ALTER TABLE "tbl_Assets" DROP COLUMN "Total Depreciation"
ALTER TABLE "tbl_Assets" DROP COLUMN "Template Information Global"
ALTER TABLE "tbl_Assets" DROP COLUMN "HiliteLibrary"
ALTER TABLE "tbl_Assets" DROP COLUMN "HiliteSortedBy"
ALTER TABLE "tbl_Assets" DROP COLUMN "HiliteCategory"
ALTER TABLE "tbl_Assets" DROP COLUMN "HiliteAssignedTo"
```

ALTER TABLE "tbl Assets" DROP COLUMN "HiliteItem" ALTER TABLE "tbl Assets" DROP COLUMN "HiliteModel" ALTER TABLE "tbl Assets" DROP COLUMN "HiliteSerialNumber" ALTER TABLE "tbl Assets" DROP COLUMN "HiliteLocation" ALTER TABLE "tbl Assets" DROP COLUMN "SC Full URL ReadWrite" ALTER TABLE "tbl Assets" DROP COLUMN "SC Full URL ReadOnly" ALTER TABLE "tbl Assets" DROP COLUMN "SC URL Prefix" Field 1 of 15 Processed [Pass #1]. Field 2 of 15 Processed [Pass #1]. Field 3 of 15 Processed [Pass #1]. Field 4 of 15 Processed [Pass #1]. Field 5 of 15 Processed [Pass #1]. ALTER TABLE "tbl Assets" DROP COLUMN "HiliteLibrary" [FileMaker][FileMaker] (13): Outstanding references Field 6 of 15 Processed [Pass #1]. ALTER TABLE "tbl Assets" DROP COLUMN "HiliteSortedBy" [FileMaker][FileMaker] (13): Outstanding references Field 7 of 15 Processed [Pass #1]. Field 8 of 15 Processed [Pass #1]. Field 9 of 15 Processed [Pass #1]. Field 10 of 15 Processed [Pass #1]. Field 11 of 15 Processed [Pass #1]. Field 12 of 15 Processed [Pass #1]. Field 13 of 15 Processed [Pass #1]. Field 14 of 15 Processed [Pass #1]. Field 15 of 15 Processed [Pass #1]. Field 1 of 2 Processed [Pass #2]. Field 2 of 2 Processed [Pass #2]. _____ Completed -----

Adding Deleted Fields to the SQL Database [PHP & LiveCode Conversions]

$\Theta \odot \odot$		Manage De	eleted Fields		
	Manage deleted feilds (Global, Summary, Unstored Calculation) in the source and destination databases.		<u>Table Summ</u> tbl_Assets	ary_	
			Field Count	67	
			Deleted Fields	15	
			Remaining Fields	52	
		Res	ults:		
Mark f	or Deletion	Field 0 of 15 F Field 7 of 15 F Field 8 of 15 F Field 9 of 15 F	rocessed. Processed. Processed.		
UnMark	for Deletion	Field 10 of 15 Field 11 of 15	Processed. Processed.	Clear	
Dele	te Fields	Field 12 of 15 Field 13 of 15 Field 14 of 15 Field 15 of 15	Processed. Processed. Processed. Processed.		Clear
Add De	leted Fields				
					///

After the table has been created in the SQL database, and the data transferred to the SQL database, the deleted columns can then be added to the SQL database table.

<u>Note</u>: This step is only needed if a PHP Conversion project is being generated, in order to insure that the database columns referenced in the CakePHP Model files exist within the database table.

ALTER TABLE tbl assets ADD total cost DOUBLE NULL; ALTER TABLE tbl assets ADD total book value DOUBLE NULL; ALTER TABLE tbl assets ADD total depreciation DOUBLE NULL; ALTER TABLE tbl assets ADD template information global TEXT NULL; ALTER TABLE tbl assets ADD hilitelibrary BLOB NULL; ALTER TABLE tbl assets ADD hilitesortedby TEXT NULL; ALTER TABLE tbl assets ADD hilitecategory BLOB NULL; ALTER TABLE tbl assets ADD hiliteassigned to BLOB NULL; ALTER TABLE tbl assets ADD hiliteitem BLOB NULL; ALTER TABLE tbl assets ADD hilitemodel BLOB NULL; ALTER TABLE tbl assets ADD hiliteserialnumber BLOB NULL; ALTER TABLE tbl assets ADD hilitelocation BLOB NULL; ALTER TABLE tbl assets ADD sc full url readwrite TEXT NULL; ALTER TABLE tbl assets ADD sc full url readonly TEXT NULL; ALTER TABLE tbl assets ADD sc url prefix TEXT NULL; Field 1 of 15 Processed. Field 2 of 15 Processed.

```
Field 3 of 15 Processed.
```

Field 4 of 15 Processed. Field 5 of 15 Processed. Field 6 of 15 Processed. Field 7 of 15 Processed. Field 8 of 15 Processed. Field 9 of 15 Processed. Field 10 of 15 Processed. Field 12 of 15 Processed. Field 13 of 15 Processed. Field 14 of 15 Processed. Field 14 of 15 Processed.

Install FileMaker ODBC Driver



Run the DataDirect SequeLink installer, within the xDBC/ODBC Client Driver Installer folder on the FileMaker Pro installation CD. Follow the prompts to install the FileMaker ODBC Driver.

Create ODBC DSN



To create a new System ODBC DSN, open the Control Panel > Administrative Tools > Data Sources (ODBC) Control Panel.

🖗 ODBC Data Source Adn	ninistrator	? ×				
U 1 System DSN	File DSN Drivers Tracing Connection F	ooling About				
System Data Sources:	<u> </u>					
Name	Driver 2	Add				
db2_dsn example_fmp_dsn6 fb_dsn FrontBase Datasource openbase_dsn pg2_pv360_dsn	IBM DB2 ODBC DRIVER - DB2COP1 FileMaker Pro FrontBase ODBC FrontBase ODBC Actual OpenBase PostgreSQL Unicode	Remove Configure				
sqlserver2_dsn	SQL Server					
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.						
	OK Cancel Apply	Help				

(1) Click the System DSN tab, then (2) click the Add button.

Create New Data Source	x
Select a driver for which you want to set up a data source.	
< 2 Finish Cancel	

(1) Select the DataDirect 32-BIT SequeLink driver, then (2) click the Finish button.

If the DataDirect 32-BIT SequeLink driver does not appear within the list of available drivers, please refer to FileMaker Technical Support Knowledge Base record #357 for more details about the driver installation process.

DataDirect SequeLink for ODBC Setup	? X
General About	
Data Source Nam 1 example_fmp_dsn Help Description: Translate	
SequeLink Server 2 localhost	
SequeLink Server 1 3 2399	
Server Data Source: 4	
Distinguished Name:	
Test Connect OK Cancel Ap	oply

(1) Enter the Data Source Name, (2) SequeLink Server Host, (3) SequeLink Server Port, then (4) click on the Server Data Source button.

Set Data Source = Default			
	Server Data Sources	×	
	Default 1		

Cancel

(1) Click the item named "Default", then (2) click the Ok button. Don't select the actual name of the database shown in the list, or you will have to change the database name for each individual database file which you want to use with this ODBC DSN. Selecting the Default item in the list insures that you will always be able to open any FileMaker database file regardless of its name, as long as ODBC sharing is enabled.

0K

Note: Setting up the Server Data Source value to the "Default" value, enables multiple individual FileMaker Pro files to be used with the driver, without requiring a change to be made to the ODBC DSN parameters. However the limitation associated with this configuration is that only one

FileMaker Pro database file can be used at one time with the ODBC driver. Having two database files open at the same time confuses the ODBC driver (even if a table name is specified to the driver) causing none of the tables within any of the open files to be found by the ODBC driver.

Enable ODBC/JDBC Sharing within FileMaker Pro

3	FileMak	er Pro	o Advar	nced						
File	Edit	View	Insert	Format	Recor	rds	Scripts	Tools	Window	Help
Ľ	<u>N</u> ew Da	tabase	e				8	00	1 🖬 🖷	i 🗇 i
2	Open			Ct	rl+0					
	Open R	e <u>m</u> ote		Ctrl+Shi	ft+0					
	Open R	ecen <u>t</u>			I					
	⊆lose			Ct	rl+W					
	Manage	;			I					
	S <u>h</u> aring				J		EileMa	iker Netv	vork	
	File Opt	iona					<u>O</u> DBC	JDBC		
	Change	Deccu	vord				Instar	nt <u>W</u> eb P	ublishing.	
	change	- 1333 <u>v</u>	<u>v</u> ora			_				
_	Print <u>S</u> e	tup								
8	Print			C	trl+P					
	Import f	Record	ds		I	•				
	Export P	Record	ds							
	Save/Se	end <u>R</u> e	ecords A:	s	I	•				
	Send Ma	aiį								
	Send Lir	n <u>k</u>								
	Save a	Сору /	As							
	Reco <u>v</u> e	r								
	E <u>×</u> it			Ct	rl+Q					

ODBC/JDBC Sharing needs to be enabled within any FileMaker Pro database file which is going to be used with the FileMaker ODBC driver.

ODBC/JDBC Sharing Settings		<u>?</u> ×
ODBC/JDBC Settings Turn on ODBC/JDBC Sharing to publish all shared open fi ODBC/JDBC Sharing: C Of	les using this protocol.	
Currently open files	ODBC/JDBC access to file File: "FileMakerDB.fp7" All users Specify users by privilege set No users (no access via ODBC/JDBC) OK Cance Cance	el

(1) Turn on ODBC/JDBC Sharing, (2) for the currently open FileMaker Pro database file, (3) for All Users, then (4) click the Ok button.

DataDirect SequeLink fo	r ODBC Setup		<u>?</u> ×
General About			
Data Source Name:	example_fmp_dsn	Help	
Description:	[Translate	
Use LDAP			
SequeLink Server Host:	localhost	j	
SequeLink Server Port:	2399	ĺ	
Server Data Source:	Default		
Distinguished Name:		[
Test Connect	ок	Cancel Ap	ply

Click the Test Connect button, enter the Username/Password to connect to the FileMaker database file which is currently open.

If the test fails:

1) Verify that the FileMaker database file is open.

2) Verify that ODBC sharing is enabled for the account entered into the connection test dialog prompt.

3) Make sure that there aren't two different copies of FileMaker running at the same time. Both older and current versions of FileMaker use TCP/IP Port# 2399 for ODBC connectivity. If this type of conflict occurs, close both versions of the FileMaker application, and only open the one copy you want to serve the database file being migrated.

4) Try rebooting the computer (after clicking Ok to save changes and close this ODBC dialog). Then test the DSN again after rebooting.

DataDirect SequeLink fo	r ODBC Setup		? ×
General About			
Data Source Name: Description:	example_fmp_dsn	Help Translate	
🗖 Use LDAP			
SequeLink Server Host:	localhost		
SequeLink Server Port:	2399		
Server Data Source:	Default		
Distinguished Name:			
Test Connect	ј ок	Cancel Ap	iply

Click the Ok button to save changes and create the new System DSN.

Install the FileMaker ODBC driver from within the xDBC folder on the installation CD or CD image file.

Downloading the FileMaker ODBC Driver

Software Update: FileMaker xDBC client drivers for FileMaker

xDBC Client Drivers for FileMaker 19

Products	Windows download	Macintosh download
FileMaker Pro 19.4.1 FileMaker Server 19.4.1	Win 🧿	Mac O Requires 64-bit ODBC Manager
Products	Windows download	Macintosh download
FileMaker Pro 19.3.1 FileMaker Server 19.3.1	Win 🧿	Mac O Requires 64-bit ODBC Manager

The FileMaker ODBC driver is also available from the Claris support website: https://www.claris.com/resources/downloads/

On this web page, look for the item labelled: xDBC update for FileMaker Platform

This item will link to the page shown in this screenshot, the actual URL has a very specific document number, which might change - so it is best to start with the downloads page.

FileMaker Pro 18 Advanced
Version: 18.0.2.209 (07-05-2019)
Windows Version: 10.0 (Build 19043) Windows Platform: Windows 10 Pro Application Architecture: 64-bit Physical RAM: 4,073.300 Meg (80% Used)
License Key:
1 Info Credits About OK

Starting with FileMaker Pro 19, only 64-bit versions are available for installation. Earlier versions of FileMaker may include both 32-bit and 64-bit versions. To find the version of FileMaker running on your computer:

1) Select the Help -> About FileMaker Pro Advanced menu. 2) Click the Info button as shown above to see the Application Architecture.

If you are running the 64-bit version of FileMaker Pro, then you want to be using the 64-bit version of FmPro Migrator and the 64-bit version of the ODBC Administrator to create the ODBC DSN.

🧀 FmPro Migrator	-	×
File Edit Help		
About FileMaker		
FmPro Migrator migrates FileMaker Pro database structure and data into Oracle, MySQL, Access, SQLite, SQL Server, Sybase, DB2 and PostgreSQL database tables. FileMaker to FileMaker 11+ migrations/table consolidation projects are supported. Access, Visual FoxPro, Firebird, SQL Server, MySQL to FileMaker 11+ migrations are supported. FileMaker Pro Layouts, Microsoft Access or Visual FoxPro Forms and scripts are converted into LiveCode stacks, Access databases or Visual Studio 2010.Net projects. FileMaker Layouts are converted into PHP web applications and LiveCode stacks.		
Developed by .com Solutions Inc. FmPro Migrator 9.37 DE (64bit)		
.com solutions Inc.		

Both 32-bit and 64-bit versions of FmPro Migrator are available. The About screen shows which version you are running.

Create ODBC DSN - Windows

						x
💮 🗸 🗟 « All Contro	Panel Items Administrative Tools	• •	Search Adminis	trative Tools		٩
Organize 🔻 Burn				•== -		?
☆ Favorites	Name	Date modified	Туре	Size		
📃 Desktop	🔊 Component Services	7/13/2009 9:09 PM	Shortcut		2 KB	
\rm Downloads	Computer Management	7/13/2009 9:08 PM	Shortcut		2 KB	
🖳 Recent Places	📆 Data Sources (ODBC)	7/13/2009 9:08 PM	Shortcut		2 KB	
	Maintains ODE	C data sources and dri	vers. rtcut		2 KB	
🥞 Libraries	🔝 iSCSI Initiator	7/13/2009 9:08 PM	Shortcut		2 KB	
Documents	🛃 Local Security Policy	6/5/2011 9:50 AM	Shortcut		2 KB	
🌙 Music	Performance Monitor	7/13/2009 9:08 PM	Shortcut		2 KB	
Pictures	🕞 Print Management	6/5/2011 9:49 AM	Shortcut		2 KB	
📑 Videos	🔊 Services	7/13/2009 9:08 PM	Shortcut		2 KB	
	🛃 System Configuration	7/13/2009 9:08 PM	Shortcut		2 KB	
📜 Computer	🔊 Task Scheduler	7/13/2009 9:09 PM	Shortcut		2 KB	
🏭 Local Disk (C:)	🞓 Windows Firewall with Advanced Security	7/13/2009 9:08 PM	Shortcut		2 KB	
🖵 FileMaker_xDBC_Up	📧 Windows Memory Diagnostic	7/13/2009 9:08 PM	Shortcut		2 KB	
雬 share on 'psf' (X:)	📷 Windows PowerShell Modules	7/13/2009 9:51 PM	Shortcut		3 KB	
🚽 Home on 'psf' (Y:)						
⋥ Host on 'psf' (Z:)						
👊 Network						
14 items						

To create a new System ODBC DSN, open the Control Panel > Administrative Tools > Data Sources (ODBC) Control Panel.



<mark>acs_dsn</mark> example_acs_dsn32bit example_acs_dsn64bit example_fmp_dsn18_32bit	64-bit 32-bit 64-bit	Microsoft Access Driver (*.mdb, *.acc Microsoft Access Driver (*.mdb) Microsoft Access Driver (*.mdb, *.acc
example_acs_dsn64bit example_fmp_dsn18_32bit	64-bit	Microsoft Access Driver (*mdb) * acc
example_fmp_dsn18_32bit		
	32-bit	FileMaker ODBC Configure
example_fmp_dsn19	64-bit	File Maker ODBC
OracleCloud_dsn	64-bit	Oracle in instantclient_19_6
SQL_Server_2017_dsn	64-bit	SQL Server
SQL_Server_2017_dsn_32bit	32-bit	SQL Server
salserver2 dsn	32-bit	SQL Server
(3

The 64-bit ODBC Administrator shown in this screenshot is available from the path: %windir%\system32\odbcad32.exe

Both 32-bit and 64-bit ODBC DSNs are displayed in the ODBC Administrator, as shown in the Platform column of the listing.

Running under Windows 10, it shows (64-bit) in its window title when running.



The 32-bit ODBC Administrator is available from the path: %windir%\syswow64\odbcad32.exe

This screenshot is from an earlier version of Windows, which doesn't show the Platform type in the list of ODBC DSNs and it also doesn't show in its title whether it is running 32-bit or 64-bit.

(1) Click the System DSN tab, then (2) click the Add button.

Create New Data Source	
Create New Data Source	Select a driver for which you want to set up a data source. Name \

(1) Select the FileMaker ODBC driver, then (2) click the Finish button.

ODBC Driver Configuration - FileMaker 11+ - Windows (1)

FileMaker DSN Configuration	— X —
	The FileMaker ODBC assistant helps you configure your ODBC driver and connections. About You will be prompted for the host address and database name.
ODBC for FileMaker	
	< Back Next > Cancel

Click Next button.

Click the About button if you need to find the version number for the driver.



1) Enter a name for the ODBC DSN, (2) click the Next button.

ODBC Driver Configuration - FileMaker 11+ - Windows (3)

FileMaker DSN Configuration	• • • • • • • • • • • • • • • • • • •
	Which host do you want to connect to? Host: localhost The host is typically referred to by its IP address. If the database is on this computer, enter localhost. Connect to host to obtain the names of available databases.
ODBC for FileMaker	
	<

 If you are using a local copy of FileMaker Pro or FileMaker Pro Advanced, then use "localhost" as the host name. Otherwise use the IP address or hostname of the FileMaker Advanced Server.
 You may optionally click the "Connect to host ..." button to get a list of database files. **ODBC Driver Configuration - FileMaker 11+ - Windows (4)**

FileMaker DSN Configuration	
ODBC for FileMaker	Which database do you want to connect to? Database: Default If your application requires special handling of non-English text, click Advanced Language Advanced Language Describe text fields as long varchar Save long running queries to a log file: Browse Long query time (milliseconds): 5000
	< Back Next > Finish Cancel

1) Enter "Default" as the database name. Or if you have multiple database files open locally or on the server, then select the database name from the list or enter the name of the database. Using the Default keyword means that you can avoid changing the setup of the ODBC DSN when using different database files - but it means that only one file can be open at a time. 2) Click the Advanced Language button.



1) Uncheck the "Auto-detect language settings" button, 2) select System (WinLatin1) for the text encoding, 3) click the Ok button.

It has been found that for proper character encoding, the following configuration works well: 1) Install matching platform versions (64-bit or 32-bit) of the FileMaker database and FmPro Migrator on Windows.

2) In the FileMaker ODBC driver, disable the Auto-Detect Language checkbox in the Advanced Language dialog.

3) Set the Multi-byte Text Encoding menu to UTF-8 in the Advanced Language dialog. For SQL Server:

4) Enable the Perform Translation for Character Data checkbox on the last panel of the SQL Server ODBC DSN configuration.



ODBC Driver Configuration - FileMaker 11+ - Windows (7)



Click the Next button.

	The ODBC data source has the following configuration: FileMaker ODBC Driver (32-bit) 11.3.76.0 Data Source Name: example_fmp_dsn11 Description: FileMaker 11 DSN Host: localhost Database: Default Use Long Varchar Type: No Auto-detect Language Settings: No Multi-byte text encoding: UTF-8 Log Long Running Queries: No
ODBC for FileMaker	

Click the Test button.

ODBC Driver Configuration - FileMaker 11+ - Windows (8)

FileMaker Login	—X —
Data Source Name: example_fmp_dsn11	3 OK Cancel

1) Enter Username, 2) Password (if needed), 3) click the Ok button.

Review the test results, make corrections as necessary until the test passes.

ODBC Error Troubleshooting Steps:

1) Verify that the FileMaker database file is open.

2) Verify that ODBC sharing is enabled for the account entered in the connection test dialog prompt.

3) Make sure that there aren't two different copies of FileMaker running at the same time. Both older and current versions of FileMaker use TCP/IP Port# 2399 for ODBC connectivity. If this type of conflict occurs, close both versions of the FileMaker application, and only open the one copy you want to serve the database file being migrated.

4) Try rebooting the computer (after clicking Ok to save changes and close this ODBC dialog). Then test the DSN again after rebooting.

ODBC Driver Configuration - FileMaker 11+ - Windows (9)

FileMaker DSN Configuration	
	Which database do you want to connect to? Database: Default If your application requires special handling of non-English text, click Advanced Language. Advanced Language Describe text fields as long varchar Save long running queries to a log file:
ODBC for FileMaker	Long query time (milliseconds): 5000
	< Back Next > Finish Cancel

Click the Finish button.

Copy SequeLink.bundle File to /Library/ODBC



For FileMaker 7+ Databases on macOS:

Manually copy the SequeLink.bundle file from the ODBC Client Driver folder on the FileMaker application CD or ESD dmg to the /Library/ODBC folder within macOS.

Note: Using the FileMaker ODBC driver with FileMaker Pro/Advanced 7+ requires the FileMaker database file and ODBC driver to be open locally on the same computer where FmPro Migrator is running. The exception to this requirement is when the database file is opened with FileMaker Server Advanced.

Download & Install iODBC Driver Administrator from OpenLink Software

Download and install the iODBC Data Source Administrator, provided by OpenLinkSoftware, available from (<u>www.openlinksw.com</u>). Downloading the iODBC framework or any trial version of an OpenLink Software ODBC driver for macOS will provide you with the iODBC Driver Manager. The iODBC driver manager does not stop working after the trial software expires. The iODBC driver manager provides a test feature which enables you to quickly test ODBC driver connections after creating or updating an ODBC DSN.

Name	Version	File
Actual Access	1.8c	/Library/OD
Actual Open Source Databases	2.8d	/Library/OD
Actual OpenBase	2.2	/Library/OD
Actual Oracle	2.9b	/Library/OD
Actual SQL Server	2.8e	/Library/OD
FileMaker 9 ODBC	5.50	/Library/OD
FrontBase	01.20.0092	/Library/Frc
MySQL 3 ODBC	##.##	/usr/lib/libi
Add a driver Remove the	e driver Configure the	driver
An ODBC driver allows ODBC-enabled pr sources. To install new drivers, use the o	rograms to get information from drivers setup program if availabl	ODBC data e, or add it

Open the OpenLink ODBC Administrator application, (1) click on the ODBC Drivers tab, then (2) click the Add a driver button.

Specify Name and Pathname to Driver

(DBC Driver Ad	d/Setup	
Description of the driv	FileMaker 9 ODBC		
Driver file name	macos/ivslk20.dylib		Browse
Setup file name			Browse
Driver defined as	r defined as 💿 User	O System	
Keyword	Value		
Keyword			Add
Value			Update
		Can	зок

(1) Enter a descriptive name for the driver, this is a name which you will select when creating an ODBC DSN which uses the driver. (2) Enter the full pathname to the ivslk component within the SequeLink.bundle file.

This image shows part of the pathname to use for a FileMaker 9 ODBC driver, with the full pathname listed below:

/Library/ODBC/sequelink.bundle/contents/macos/ivslk20.dylib

The name of the ivslk component changes with each revision of the DataDirect SequeLink driver file. You can't count on it staying the same, so it is recommended that you navigate to the location of the SequeLink.bundle file and select Ctrl + Show Package Contents to view the contents of the MacOS folder. Clicking the Browse button to the right of the Driver file name field doesn't allow the selection of individual components within bundle files. You always need to manually type in this pathname.

(3) Click the Ok button, and the driver will be added to the list of available ODBC Drivers.

If the driver doesn't get added, try to close, then reopen the ODBC Administrator program.

Add a System DSN

stem Data Sources			
Name	Description	Driver	Add
example_acs_dsn	-	Actual Access	Domouro
example_fmp_dsn	-	FileMaker 9 ODBC	Kemove
FMSR_DSN	SQLite ODBC DSN	Actual Open Source Data	Configure
frontbase_dsn	-	FrontBase	
mysql_dsn	-	Actual Open Source Data	
openbase_dsn	-	Actual OpenBase	Test
oracle_dsn	-	Actual Oracle	
pg_pv360_dsn	PostgreSQL on pv360	Actual Open Source Data	
pv360_oracle_dsn	-	Actual Oracle	,
() () () ()	
An ODBC S data provid machine.	ystem data source stores info ler. A System data source is v	ormation about how to connect isible to all users and processe:	to the indicated s on this

(1) Click the System DSN tab, then (2) click the Add button.
	Name	Ve
	Actual Access	0
	Actual Open Source Databases	
	Actual OpenBase	
	Actual Oracle	
	Actual SOL Sonior	
	FileMaker 9 ODBC	U
No K	FrontBase	-
	MySQL 3 ODBC	
	OpenLink DB2 Driver (Express Edition) v6.0	
N N R	OpenLink DB2 Driver (Express Edition)(Unicode) v6.0	A
	One and tails IDDC Like Dations	Y

(1) Select the FileMaker 9 ODBC driver from the list, (2) click the Finish button.



(1) Enter the name of the DSN, this name must match the name shown within FmPro Migrator for the FileMaker Pro database. (2) Enter the Port, (3) Host, (4) ServerDataSource and (5) ServerDataName. Each Keyword and Value needs entered manually in the Keyword and Value fields. (6) After entering each Keyword/Value pair, click the Add button and the values will appear in the list of Keyword/Value pairs.

(7) Click the Ok button to create the System DSN.

Note: Setting up the ServerDataSource and ServerDataName values with "Default" values, enables multiple individual FileMaker Pro files to be used with the driver, without requiring a change to be made to the ODBC DSN parameters. However the limitation associated with this configuration is that only one FileMaker Pro database file can be used at one time with the ODBC driver. Having two database files open at the same time confuses the ODBC driver (even if a table name is specified to the driver) causing none of the tables within any of the open files to be found by the ODBC driver.

Enable ODBC/JDBC Sharing within FileMaker Pro

New Database Open Open Remote Open Recent Close	業O 企業O ▶ 業W	
manage		
Sharing	•	FileMaker Network
File Options Change Password		Instant Web Publishing ODBC/JDBC
Page Setup Print	жP	
Import Records	•	
Export Records		
Save/Send Records As	•	
Send Mail		
Send Link		
Save a Copy As		
Recover		

ODBC/JDBC Sharing needs to be enabled within any FileMaker Pro database file which is going to be used with the FileMaker ODBC driver.

F	ileMaker ODBC/JDBC Settings
ODBC/JDBC Settings	
Turn on ODBC/JDBC Sharing to publish	all shared open files using this protocol.
ODBC/JDBC Sha	ring: On
File access via ODBC/JDBC	
2	ODBC/JDBC access to file
FileMakerDB.fp7	File: FileMakerDB.fp7
	3 O All Users
	Specify users by privilege set Specify
	○ No users

(1) Turn on ODBC/JDBC Sharing, (2) for the currently open FileMaker Pro database file, (3) for All Users, then (4) click the Ok button.

Test ODBC DS	SN			
	ſ	iODBC Data Sour	ce Administrator	
	User DSN System I System Data Sources	DSN File DSN ODBC Dr	ivers Connection Pooling T	racing About
	Name Name	Description SQLite ODBC DSN PostgreSQL on pv360	Driver Actual Access FileMaker 9 ODBC Actual Open Source Data FrontBase Actual Open Source Data Actual OpenBase Actual Oracle Actual Open Source Data Actual Oracle	Add Remove Configure
	An ODBC Sy data provid machine.	ystem data source stores info er. A System data source is v	ormation about how to connect to isible to all users and processes of Cance	the indicated on this

(1) Click the System DSN which has just been created, (2) click the Test button.

Login fo	or example_fmp_dsn
Usern.	Admin
Passw 2	
	Can 3 Ok

Enter the (1) Username, (2) Password, then (3) click the Ok button to test the ODBC DSN.



If the test passes, this dialog will be displayed, showing that the ODBC Driver Manger has used this ODBC DSN to successfully connect to the FileMaker database.

If the test fails:

1) Re-verify the pathname to the svlk file within the SequeLink.bundle file.

2) Verify that the FileMaker database file is open.

3) Verify that ODBC sharing is enabled for the account entered in the connection test dialog prompt.

4) Make sure that there aren't two different copies of FileMaker running at the same time. Both older and current versions of FileMaker use TCP/IP Port# 2399 for ODBC connectivity. If this type of conflict occurs, close both versions of the FileMaker application, and only open the one copy you want to serve the database file being migrated.

5) Try rebooting the computer (after clicking Ok to save changes and close this ODBC dialog). Then test the DSN again after rebooting.



Download and install the free ODBC Administrator for macOS from www.odbcmanager.net

You will use the ODBC Administrator to create and manage your ODBC DSNs on macOS.





(1) Open the xDBC folder on the FileMaker install CD (or installer image DMG file).

(2) Double-click the FileMaker ODBC.mpkg installer to install the FileMaker ODBC driver. Follow the insular prompts.

Add a System DSN

	ystem DSN Dri	vers Tracing	Connection Pooling	About
Name	Description	Driver		
example_acs_dsn		Actual Access	(2)	Add
example_fmp_dsn		FileMaker 9 OD	вс	
example_fmp_dsn7		FileMaker 9 OD	вс	Remove
FMSR_DSN	SQLite ODBC	Actual Open Sou	urce Databases	Configure
frontbase_dsn		FrontBase		configure
mysql_dsn		Actual Open Sou	urce Databases	
openbase_dsn		Actual OpenBas	e 🚺	
oracle_dsn		Actual Oracle		
pg_pv360_dsn	PostgreSQL o	Actual Open Sou	urce Databases	
pv360_oracle_dsn		Actual Oracle		
sqlserver2_dsn		Actual SQL Serv	er 🔰	
sqlserver_dsn		Actual SQL Serv	er 🎴	
sybase_dsn		Actual SQL Serv	er 🖌	
test_acs	my database	Actual Access	Ŧ	

(1) Click the System DSN tab, then (2) click the Add button.

Choose the FileMaker ODBC Driver

	(oose a	driver:			ing About
Name	Driver				
exam exam	Actual Or Actual SC	acle L Server			
exam	FileMaker	ODBC			
front mysq	MySQL 3 SQLite3	ODBC			× pune
open	ase_usn		лена оренвазе		
oracle			Actual Oracle		OK
pg_p			Actual Open Sou		
pv36	oracle_dsn		Actual Oracle		
sqiserv	erz_asn		Actual SQL Server	U	
sybase	dsn		Actual SQL Server	<u> </u>	
test_ac	s	my database	Actual Access	×	

(1) Select the FileMaker ODBC driver from the list, (2) click the Ok button.

FileMaker ODBC DSN Configuration - Page 1

FileMaker DSN Configuration			
k	Introduction		
Introduction Data Source	The FileMaker ODBC assistant helps you manage your ODBC driver		
Connection	About		
DatabaseConclusion	You will be prompted for the host address and database name.		
ODBC for FileMaker	To configure the data source, click the Continue button.		
	Cancel Go Back Continue		

Click the Continue button.

	FileMaker DSN Configuration
	Enter the data source name and description
 Introduction Data Source Connection Database Conclusion 	This assistant creates an ODBC data source that you can use to connect to your database. What name do you want to use to refer to the data source? Name: example_fmp_dsn11 How do you want to describe the data source? Description:
FileMaker	
	Cancel Finish Go Back Continue

(1) Enter a name for the FileMaker ODBC DSN. The name used here needs to be exactly the same as the ODBC DSN Name you enter into FmPro Migrator.

(2) Click the Continue button.

Note: You can pick a different name than you see here, just make sure that you enter exactly the same name into FmPro Migrator.

FileMaker ODBC DSN Configuration - ODBC DSN Field in FmPro Migrator

00		FmPro Migra	ator				
About File	Maker						
Step 1	Output Directory:	/Users/dsimpson/Desl	ktop/Access_To	_FM/	(Browse	1
Get Info Drag & Drop	Source Database: Source Db User:	Access	Source Db Pa	ssword:	n den 1	_	1
	Destination Database: Destination Db User:	Admin	Destination D	b Password:	p_uarr r	_	
.com Solutions Inc.							11.

In this screenshot, the FileMaker 11 database is the destination database, therefore the FileMaker ODBC DSN name is entered in the Destination Database ODBC DSN field.

If the FileMaker database was the source database, and the data was being copied to a different database server, then the FileMaker ODBC DSN would be entered into the ODBC DSN field for the Source Database (not shown in this screenshot).

FileMaker ODBC DSN Configuration - Page 3

	FileMaker DSN Configuration
	Enter the connection information
 Introduction Data Source Connection Database Conclusion 	Which host do you want to connect to? Host: localhost The host is typically referred to by its IP address. If the database is on this computer, enter localhost. Connect to host to obtain the names of available databases.
ODBC for FileMaker	Cancel Finish Go Back Continue

(1) Enter the hostname for the FileMaker database (default is localhost).

(2) Click the Continue button.

For a file which has been opened on your local desktop machine, leave the default setting of localhost.

For a hosted file hosted by FileMaker Server Advanced, enter the IP Address or hostname of the FileMaker Server Advanced computer.

	FileMaker DSN Configuration
	Enter the database information
⊖ Introduction	Which database do you want to connect to?
Data Source	Database: Default
Connection Detabase	
Database Conclusion	If your application requires special handling of non-English text,
	Choose
ODBC for FileMaker	Long query time (milliseconds): 5000
	Cancel Finish Go Back Continue

(1) For most locally hosted database files, enter the text "Default" into the Database field, instead of selecting a database from the list. This way you can use any single database file without re-selecting the database name each time you open a new file.

To use this feature, you must only have one FileMaker database file open at a time, or an error will occur when attempting to read info from the database.

(2) Click the Advanced Language button.

	FileMaker DSN Configuration
	These options affect the way non-English characters are handled by the driver.
 Introduce Data S Connecti Database Conclusi 	Auto-detect language settings for application Application uses the "wide" ODBC API Treat text types asCode System (MacRoman) Multi-byte text encoding ✓ UTF-8
ODBC FileMal	for Long query time (milliseconds): 5000
	Cancel Finish Go Back Continue

- (1) Un-check the Auto-detect language settings checkbox.
- (2) Select UTF-8 from the Multi-byte text encoding menu.
- (3) Click the Ok button.

FileMaker ODBC DSN Configuration - Page 4

	FileMaker DSN Configuration
 Introduction Data Source Connection Database Conclusion 	Enter the database information Which database do you want to connect to? Database: Default If your application requires special handling of non-English text, click Advanced Language. Advanced Language
ODBC for FileMaker	Save long running queries to a log file: Choose Long query time (milliseconds): 5000
	Cancel Finish Go Back Continue

(1) Click the Continue button.

	FileMaker DSN Configuration
	Conclusion
⊖ Introduction	The ODBC data source has the following configuration:
 Data Source Connection Database Conclusion 	FileMaker ODBC Driver 11.0.58 Data Source Name: example_fmp_dsn11 Description: Host: localhost Database: Default Auto-detect Language Settings: No Application Uses "Wide" API: No Treat Text Types as Unicode: No Multi-Byte Encoding: UTF-8 Log Long Running Queries: No
ODBC for FileMaker	
	Cancel Test Go Back Done

(1) Click the Test button.

If the test fails, use the following steps to enable ODBC sharing for the FileMaker database. **Note:** Each FileMaker database needs to have ODBC sharing enabled individually.

FileMaker ODBC DSN Configuration - Page 5 - ODBC DSN Test



Enter the (1) Username, (2) Password, then (3) click the Ok button to test the ODBC DSN.



(1) Click the Ok button.

If the test passes, this dialog will be displayed, showing that the ODBC Driver Manger has used this ODBC DSN to successfully connect to the FileMaker database.

If the test fails:

1) Verify that the FileMaker database file is open.

2) Verify that FileMaker ODBC sharing is enabled for the account entered in the connection test dialog prompt.

4) Make sure that there aren't two different copies of FileMaker running at the same time. Both older and current versions of FileMaker use TCP/IP Port# 2399 for ODBC connectivity. If this type of conflict occurs, close both versions of the FileMaker application, and only open the one copy you want to serve the database file being migrated.

5) Try rebooting the computer (after clicking Ok to save changes and close this ODBC dialog). Then test the DSN again after rebooting.

	FileMaker DSN Configuration
	Conclusion
 Introduction Data Source Connection Database Conclusion ODBC for FiloMakor 	The ODBC data source has the following configuration: FileMaker ODBC Driver 11.0.58 Data Source Name: example_fmp_dsn11 Description: Host: localhost Database: Default Auto-detect Language Settings: No Application Uses "Wide" API: No Treat Text Types as Unicode: No Multi-Byte Encoding: UTF-8 Log Long Running Queries: No
, nonicitor	Cancel Test Go Bac Done

(1) Click the Done button to save the new ODBC DSN.

Enable ODBC/JDBC Sharing within FileMaker Pro

New Database Open Open Remote Open Recent Close	業O 企業O ▶ 業W	
manage		
Sharing	•	FileMaker Network
File Options Change Password		Instant Web Publishing ODBC/JDBC
Page Setup Print	жP	
Import Records	•	
Export Records		
Save/Send Records As	•	
Send Mail		
Send Link		
Save a Copy As		
Recover		

ODBC/JDBC Sharing needs to be enabled within any FileMaker Pro database file which is going to be used with the FileMaker ODBC driver.

Select Sha	aring Parameters
	FileMaker ODBC/JDBC Settings
	ODBC/JDBC Settings
	ODBC/JDBC Sharing: On File access via ODBC/JDBC
	2 FileMakerDB.fp7 3 Image: All Users 3 Specify users by privilege set Specify 1 No users
	(Cancel OK

(1) Turn on ODBC/JDBC Sharing, (2) for the currently open FileMaker Pro database file, (3) for All Users, then (4) click the Ok button.

Open 32-bit ODBC Administrator



On 64-bit versions of Windows, use the 32bit ODBC Administrator when using FileMaker Pro or FileMaker Pro Advanced as your data source.

SQL Server ODBC DSN Setup [1]

Microsoft SQL Server DS	N Configuration
SQL Server 2012	This wizard will help you create an ODBC data source that you can use to connect to SQL Server. What name do you want to use to refer to the data source? Name: sqlserver2_dsn How do you want to describe the data source? Description: Which SQL Server do you want to connect to? Server: local
	3 Finish Next > Cancel Help

(1) Enter a name for the SQL Server ODBC DSN, (2) select the server, (3) Click the Next button.

Microsoft SQL Server DS	N Configuration
800	How should SQL Server verify the authenticity of the login ID?
SQL Server 2012	With Integrated Windows authentication.
	SPN (Optional):
	With SQL Server authentication using a login ID and password entered by the user.
	Login ID: user1
	Password: ••••••
presented and a second	
	3
	< Back Next > Cancel Help

(1) Enter username, (2) password login info to connect to the SQL Server database [or alternatively use integrated Windows Authentication.

<u>Note</u>: The SQL Server ODBC DSN can use either Windows authentication or username/password authentication. However FmPro Migrator can only use username/password authentication to communicate with the SQL Server database.

Microsoft SQL Server DS	N Configuration
	Change the default database to:
SQL Server 2012	Mirror server:
	SPN for mirror server (Optional):
	Attach database filename:
	Use ANSI quoted identifiers.
	V Use ANSI nulls, paddings and warnings. Application intent:
	READWRITE Multi-subnet failover.
	2
	< Back Next > Cancel Help

(1) Select the default database, (2) click the Next button.

Microsoft SQL Server DSI	N Configuration	x
Mogart	Change the language of SQL Server system messages to:	-
SQL Server 2012	Use strong encryption for data	
	Perform translation for character data	
	Use regional settings when outputting currency, numbers, dates and times.	
	Save long running queries to the log file:	
	C:\Users\ADMINI~1\AppData\Local\Temp\QUERY Browse	
	Long query time (milliseconds): 30000	
	Log ODBC driver statistics to the log file:	
	C:\Users\ADMINI~1\AppData\Local\Temp\STATS Browse	
	2	
	< Back Finish Cancel He	lp

(1) Select Perform translation for character data, (2) click the Finish button.

Step 1 - Get Info - SQL Server

At this point in the process, the FileMaker ODBC Driver should already be installed and a system DSN should have already been created. Please see earlier sections of this manual for more details.

Step 1 - Install FileMaker ODBC Driver

FmPro Migrator uses the FileMaker ODBC driver provided by FileMaker Inc. to transfer data from FileMaker databases.

For FileMaker 5/6 Databases on Windows:

The FileMaker ODBC driver is installed automatically when the FileMaker application is installed. This driver is installed with the Demo and Full versions of the FileMaker application. If you are converting FileMaker 2, 3 or 4 database files, upgrade these files into FileMaker 5/6 files in order to perform the migration.

For FileMaker 7+ Databases on Windows:

Install the DataDirect SequeLink driver using the installer located in the xDBC folder on the FileMaker application CD. Do not download and install the DataDirect SequeLink driver from the Datadirect website. The FileMaker ODBC driver is only supplied on the FileMaker installation CD or the FileMaker ESD (downloadable CD image) with the fully licensed versions of FileMaker Pro, FileMaker Developer 7, FileMaker Advanced and FileMaker Server Advanced. For FileMaker 11 databases on Windows use the ODBC Client Driver Installer within the xDBC

For FileMaker 11 databases on Windows use the ODBC Client Driver Installer within the xDBC folder.

For FileMaker 2, 3, 4, 5, 6 Databases on macOS:

Upgrade these database files to FileMaker 7+, use the FileMaker 7+ ODBC driver on macOS.

For FileMaker 7+ Databases on macOS:

Manually copy the SequeLink.bundle file from the ODBC Client Driver folder on the FileMaker application CD or ESD dmg to the /Library/ODBC folder within macOS.

For FileMaker 11 databases on macOS double-click the file named FileMaker ODBC.mpkg within the xDBC/ODBC Client Driver Installer folder. Install the ODBC Manager app from the <u>www.odbcmanager.net</u> website.

Note: Using the FileMaker ODBC driver with FileMaker Pro/Advanced 7+ requires the FileMaker database file and ODBC driver to be open locally on the same computer where FmPro Migrator is running. The exception to this guideline is when the database file is opened with FileMaker Server Advanced.

000	FmPro Migrator	
About FileMak	Ker CGI	
	FmPro Migrator migrates FileMaker Pro database structure and data into Oracle, MySQL, Access, SQL Server, Sybase, DB2, PostgreSQL and FrontBase database tables.	
3	FileMaker to FileMaker 7/8/9 migrations are supported. Access and SQL Server to FileMaker 7/8/9 migrations are supported.	
	Perl CGI scripts are also generated for each migrated database.	
	Developed by .com Solutions Inc. www.fmpromigrator.com	
.com Solutions Inc.		11.

Launch FmPro Migrator, then click on the FileMaker tab at the top of the window.

About FileMa	aker CGI	FmPro Migra	tor		
Step 1	Output Directory:	/test/			Browse
VIII -	FileMaker App Name:	FileMaker Pro		Select	
AML	Open Databases:			Refresh	
Get Info					
ClipBoard XML 🛟					
	Source Database:	FileMaker 7	ODBC DSN:	example_fmp_dsn	_
	Source Db User:	Admin	Source Db Pa	assword:	
	Destination Database:	FileMaker 9 🛟	ODBC DSN:	example2_fmp_dsn	
	Destination Db User:	Admin	Destination I	Db Password:	

FmPro Migrator stores migration process information within a SQLite database file named MigrationProcess.db3. This file contains the metadata for the source database file(s), including tables, fields, table creation SQL code and status info. Therefore the first step in the migration

process is to select the Browse button to select the output folder FmPro Migrator will use when creating the MigrationProcess.db3 file.





Tip: To restart an existing migration project, select the output directory, then select Continue Migration... from the File menu.

Click the yellow Continue button to open the Migration Process window.

000		FmPro Mig	rator			
About Fil	eMaker CGI					
Step 1	Output Directory:	/Users/dsimpson/fmpro_migrator/fmpro_migrator_release_40"				
	FileMaker App Name:	FileMaker Pro	(Select		
XML	Open Databases:			Refresh		
Get Info						
ClipBoard XML	•	Elle Malure O				
	Source Database:	FileMaker 9	UDBC DSN:	example_tmp_dsn		
	Source Db User:	Admin	Source Db Pa	3SWord:		
	Destination Database:	FileMaker 9	ODBC DSN:	example2_fmp_dsn		
	Destination Db User:	Admin	Destination D	b Password:		

Select the type of source database from the Source Database menu.

Note: Since there isn't a MacOS X compatible FileMaker ODBC driver for FileMaker 5/6, these older database files should be converted to FileMaker 7 or higher in order to perform the migration on MacOS X.

Either use the existing ODBC DSN name "example_fmp_dsn" or change this name to reflect the name of a System ODBC DSN you have created on your computer.

Enter the Username and Password required to access the source database file. If a password has not been configured within a FileMaker 7+ file, set the username to "Admin" with the password field empty. The user account entered here needs to have full access to the database file and needs to have ODBC access privileges within the file. This is the default access for the Admin account.

00		EmPro Mi	grator	
About File	Maker CGI		g	Continue
Step 1				
	Output Directory:	/Users/dsimpson/f	mpro_migrator/fmp	ro_migrator_release_Currer Browse
	FileMaker App Name:	FileMaker Pro		Select
XML	Open Databases:		(Refresh
Get Info				
ClipBoard XML 🛟				
	Source Database:	FileMaker 9	ODBC DSN:	example_fmp_dsn
	Source Db User:	Admin	Source Db Pas	ssword:
	Destination D: 1:	SQL Server	ODBC DSN:	sqlserver2_dsn
	Dest. DB 2	localhost	-	
	Dest. DB Port:	3333	3	
	Dest DB Name: 4	database1	-	•
	Dest DB Username:	user1	Dest DB Password:	

(1) Select SQL Server as the destination database type. Once the destination database has been selected, a new set of fields will become visible for entering the connection parameters for the destination database.

The destination database may located either locally or remotely. (2) Enter the hostname or IP address for the database server, (3) TCP/IP Port number, (4) database name, (5) username, (6) password. Windows authentication is not supported for the SQL Server database connection - see Note3 below for info about creating a login account and schema and assigning privileges.

Note1: It is not generally necessary to enter/change the TCP/IP Port number for SQL Server databases since the connection to the database is an ODBC connection.

Note2: Make sure that the SQL Server database account entered in field (5) has full access to the SQL Server database. This account should have all privileges granted in order for FmPro Migrator to be able to create/drop tables and insert data.

Note3: Create a SQL Server login account, SQL Server user account and then create a schema for the SQL Server database. Each of these accounts can have the same name. Make sure that login user is assigned as the owner of the schema.

Step 1 - Get Info

FmPro Migrator needs to get info about tables, fields, field types and repeating fields status within the source FileMaker database file(s). This info is used to create the tables/fields within the destination database and is used to copy data between the databases.

There are multiple ways which FmPro Migrator can use to get info about the source database file, as listed below. Use the method which works best for your computer OS and the version of the FileMaker database file being migrated.

Select the pop-up menu below the Step 1 Get Info icon to select the method you want to use to get info from the source database file(s). This pop-up menu is context-sensitive, based upon the selected source database type and the platform where FmPro Migrator is running (MacOS X or Windows).

Step 1 - Get Info - Using Drag & Drop - macOS & Windows

	<u>File Edit H</u> elp					
	About FileMaker CO	ii]			Continue	
	Step 1	Output Directory:	C:/ds/fmpro_migr	ator/403_test/		Browse
· ~	Get Info	Open Databases:		A		
	Drag & Drop 🗢	Source Database:	FileMaker 6	▼ ODBC DSN:	example_fmp_dsn	
		Destination Database:	SQL Server	✓ ODBC DSN:	sqlserver2_dsn	
Asset_Mana		Dest. DB	localhost]		
		Dest. DB Port: Dest DB Name:	3333 database1			
		Dest DB Username:	user1	Dest DB Password	≜?Bxosr+	

FmPro Migrator reads the metadata directly from older FileMaker database files, including FileMaker 2, 3, 4, 5 and 6 on MacOS X and Windows. This method of getting info from FileMaker provides a very accurate representation of the source database file, including calculation formula definitions and repeating field counts for each field.

1) Rename the original source file(s) to remove any spaces or special characters. This filename

will be used as a table name within SQL statements used by FmPro Migrator to retrieve data, and the FileMaker 5/6 ODBC driver does not allow spaces within table names. Spaces can be replaced with underscore characters to make the name easier to read. It is not necessary to replace characters within most filenames, as FmPro Migrator handles this task automatically when creating the SQL code which creates the destination table.

2) Delete all scripts, relationships and file references from the source file(s). Deleting the scripts, relationships and file references reduces the number of dependencies within the file and makes it easier to delete any fields which need removed from the table.

Select File > Define Fields... menu to open the Define Fields window within FileMaker. Delete all fields which are defined as Unstored Calculation, Summary or Global type fields. If these types of fields remain within the database file during the migration, it is likely that the ODBC driver will time out before retrieving the data from the source database.

2) Create an empty copy of the source database file by selecting Save a Copy As... from the File menu, and selecting "clone (no records)" from the save dialog. Change the name of the saved file to exactly match the name of the original file.

3) Drag & Drop the empty copy of the source database file onto the Step 1 Get Info icon.

4) Repeat these steps for each source database file which needs migrated.

Note: Since there is no FileMaker ODBC driver available for older versions of FileMaker on MacOS X, if you use this method to get info from your source database file(s), you will will then need to upgrade the file(s) to FileMaker 7+ prior to performing the migration. You will then need to change the source database type from FileMaker 5/6 to FileMaker 7+ within FmPro Migrator.



Step 1 - Get Info - Using ClipBoard XML - macOS & Windows

The most desirable method for obtaining info about FileMaker 7+ database files on macOS and Windows is thru copying the table structure using FileMaker Advanced (version 8+). This method copies the table creation XML code from the clipboard and includes all of the info required to

create the tables, fields, repeating field count and calculation formulas.

Open the FileMaker database file.

Select Define/Manage Database from the File menu within FileMaker.

	Manage Data	base for "Asset_Manageme	nt3"	
	Tables	Fields Relationships)	
A table is a unique set of r	ecords and fields. A fil	e can contain more than one tab	le.	
1 table defined in this file			View by: creation order	;
Table Name	Source	Details	Occurrences in Graph	4
Asset_Management3	FileMaker	44 fields, 3 records	Asset_Management3	
Table Name: Asset_M	anagement3	2 Create	Change Dele Paste Impor	te rt

(1) Select all of the tables on the Tables tab, (2) click the Copy button.

Once the Table XML info has been put onto the ClipBoard, the Paste button will become active. Click the Cancel or Ok buttons to close the Define dialog.

$\Theta \Theta \Theta$		FmPro M	ligrator		
About FileM	aker CGI			Continue	
Step 1	Dutput Directory: FileMaker App Name: Dpen Databases:	/Users/dsimpson, FileMaker Pro	/fmpro_migrator/fmpi	ro_migrator_release_Currer Brows Select Refresh	e)
	Source Database: Source Db User: Destination Database:	FileMaker 9 Admin SQL Server	ODBC DSN: Source Db Pas ODBC DSN:	example_fmp_dsn sword: sqlserver2_dsn	
	Dest. DB Dest. DB Port: Dest DB Name: Dest DB Username:	localhost 3333 database1 user1	Dest DB Password:	A? B×□ R↓ ●	
.com Solutions Inc.					//.

Within FmPro Migrator, click the Step 1 Get Info button (with the ClipBoard XML menu option selected). The yellow Continue... button will become visible once FmPro Migrator has completed processing the Table XML from the ClipBoard.

Note1: In order for the ODBC driver to find each table within the source database file, there must be a TO on the relationship graph which exactly matches the name of the base table within the FileMaker database file. It is generally easier to delete all of the TOs and relationships from the relationship graph. Then create new TOs consisting of only the base table name. Otherwise, the ODBC driver will not be able to find and transfer data from each table within the FileMaker database.

Note2: If you want to transfer relationships to the destination database, use FileMaker Advanced to export a DDR from the original FileMaker 7+ file before removing the TOs. Then import the relationships from the DDR later in the migration process, so that SQL code can be created to represent these relationships within the destination database.

Note3: It is not necessary to replace spaces within FileMaker 7+ table names, as was necessary for FileMaker 5/6 files. It is necessary to replace high ASCII characters (greater than ASCII character code 127) and Unicode characters within table and field names, as these characters are not supported by the FileMaker ODBC driver.

🚽 FmPro Migrator					
<u>F</u> ile Edit <u>H</u> elp					
About FileMaker CG	I]	_			
Step 1	Dutput Directory:	C:/ds/fmpro_migra	tor/		Browse
X	Open Databases:		A	Refresh	
Get Info					
	Source Database:	FileMaker 9	✓ ODBC DSN:	example_fmp_dsn	
	Source Db User:	Admin	Source Db Pa	issword:	
	Destination Database:	SQL Server	ODBC DSN:	sqlserver2_dsn	
	Dest. DB	localhost			
	Dest. DB Port:	3333			
	Dest DB Name:	database1			
	Dest DB Username:	user1	Dest DB Password	±	
.com Solutions Inc.					

Click the Step 1 Get Info button. The table structure info will be read from the source database file, and written into a newly created MigrationProcess.db3 file. The yellow continue button will then become visible.

Note1: In order for the ODBC driver to find each table within the source database file, there must be a TO on the relationship graph which exactly matches the name of the base table within the FileMaker database file. It is generally easier to delete all of the TOs and relationships from the relationship graph prior to gathering info via ODBC. Then create new TOs consisting of only the base table name. Otherwise, the ODBC driver will report each TO (including self-joins) as a separate base table within the FileMaker database. So you will end up trying to migrate the same data multiple times, just based upon the TOs on the relationships graph - which is not required. For migration purposes, you only need to migrate the data from the base tables.

Note2: If you want to transfer relationships to the destination database, use FileMaker Advanced to export a DDR from the original FileMaker 7+ file before removing the TOs. Then import the relationships from the DDR later in the migration process, so that SQL code can be created to represent these relationships within the destination database.

Note3: It is not necessary to replace spaces within FileMaker 7+ table names, as was necessary for FileMaker 5/6 files. It is necessary to replace high ASCII characters (greater than ASCII character code 127) and Unicode characters within table and field names, as these characters are not supported by the FileMaker ODBC driver.

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Step 1							
	Output Directory:	C:/Users/dsimpso	n/Desktop/FM to Access	:/	E	Browse	
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	Source Database:	File Maker 19	ODBC DSN:	example_fmp_dsn	19	_	
	Source Db User:	Admin	Source Db Pass	word:			
	Destination Database:	SQL Server	✓ ODBC DSN:	sqlserver2_dsn			
	Src. DB Hostname:	localhost					
	Src. DB Port:	3333					
	Dest. DB Name:	test					
					_		

Step 1 - Get Info - Click Continue... Button

FmPro Migrator will make the yellow Continue... button visible once it has gathered info from the FileMaker database. Click this button to open the Migration Process window and continue on to Step 2 of the migration process.

Step 2 - Get Fieldsize

FmPro Migrator needs to determine the maximum amount of data stored within each field of the source database table. To accomplish this task, FmPro Migrator performs a SELECT query to read all of the records from the source FileMaker database table. Before FmPro Migrator can make a successful ODBC connection to the source database, a System ODBC DSN needs to be created.

At this point in the process, the FileMaker ODBC driver should already be installed on either MacOS X or Windows.

Step 2 - Get Fieldsize $\Theta \Theta \Theta$ **Migration Process** Tables Relationships GUI TOs Layouts Scripts **1** Tables: 1 XLS New Table Source Destination Fields Recor Instructions: Asset_Management3 FileMaker 9 MySQL Step 2: Install the FileMaker ODBC driver from the FileMaker installer 4 . CD. Create an ODBC Fields: 44 DSN matching the New Fieldname 🍵 ID Original Fieldname PK Auto-Increment Next SN DSN name listed in 1 Asset ID 1 the Table Details 2 Model 0 0 window. 3 0 Item 0 5 Category 0 0 Turn on ODBC Cost In In Sharing within FileMaker. Step 3 Step 2 Step 4 Menu: File > Sharing > ODBC/JDBC **... ...** Click the Get FieldSize icon. Get Fieldsize Create Table Transfer Data Troubleshooting: Not Started Not Started Not Started Step 5 Step 6 Optional Step 7 **... Convert Data** Create Table Transfer Data Image Export (Repeating Fields) (Repeating Fields) (Repeating Fields) Not Started Not Started Not Started com Solutions Inc.

(1) Click on a table in the Tables list. Once a table is selected, a list of fields contained within the table will be displayed in the Fields list. These fields represent the info gathered from the source database by FmPro Migrator.
(2) Clicking the Table Details button opens the Table Details window, which enables you to view and make changes to the individual parameters for the table.

(3) The Field Details button provides you with the ability to view and make changes at the field level.



Click the Step 2 Get Fieldsize button. FmPro Migrator will make an ODBC connection to the source FileMaker database, and put up a progress dialog as it is reading thru the records. After the records have been successfully read from the table, the status menu at the bottom of the Step 2 button will change from "Not Started" to "Completed". The status will be set to "Failed" if the Get Fieldsize step fails for some reason.

If the Get Fieldsize step fails:

1) Check to make sure that the source database is open within FileMaker Pro on the local computer.

2) Make sure that ODBC sharing is enabled.

3) For FileMaker 7+ databases, make sure that there is a TO on the RelationshipGraph which exactly matches the name of the base table being queried by FmPro Migrator.

4) Open the Define/Manage Database dialog and verify the existence of the base table within the FileMaker database.

Before transferring data into SQL Server, it will be necessary to have a SQL Server database available to store the data. This section of the manual shows how to create the database, login user, database user and schema within the SQL Server database. These screenshots show the process being done with Navicat software, so they will look at little different compared to using Microsoft SQL Server Management Studio software.

Create SQL Server Database					
New Database (sqlserver201	.2_w7vm) - Database				
General Filegroups Files	Advanced Comment SQL Preview				
Database Name:	test4				
Owner:	user1 👻				
Collation:	Latin1_General_100_CI_AS_SC				
Recovery Model:	SIMPLE				
Compatibility Level:	110 -				
	OK Cancel				

Adatabase user named user1 has already been created, so it is being used in this example as the database owner. But the sa account could also be used.

The Collation has been set as Latin1_General_100_CI_AS_SC for Unicode support. Other collations could be used in order to support the specific character encoding of the local computer

which is transferring the data. Database tables will be created using NVARCHAR column types by FmPro Migrator for storing Unicode characters. All data within FileMaker database files is natively stored as UTF8 data.

Create SQL Server Login User

* Untitled (sqlserver2012_w7vm) - Login - Navica	t Premium	
File View Favorites Tools Window Help		Sign In
₩ .	•••• [•] [•] [•] [•] [•]	×
Connection User Table	View Function Others	SQL Server Backup Query Report 🗸
mysql_MacOSX	Objects < 🚨 user3 (sqlserver2	012 🚨 user4 (sqlserver2012 🚨 user4 🔉 🔭
cc_oracle_DEV-JPA	🔳 😛 New 🗎 Save	
▲ 🤁 sqlserver2012_w7vm	General Roles User Mapping S	Server Permissions Endpoint Permissions Logir
≥ test ≥ € test2	Login Name:	user4
▶ Stest3	Authentication Type:	SQL Server Authentication 👻
dbo	Password:	•••••
guest	Confirm Password:	•••••
	Enforce Password Policy	
	Enforce Password Expiration	
	User Must Change Password at N	Jext Login
	Default Database: 4	test4
	Default Language:	<default></default>
	🔽 Enabled	
	Credential:	•

Selecting the button User-> Login User creates the new login user within the database. (1) This is the user account and (2) password which will be used by FmPro Migrator to log into the database, create/drop tables, insert data into the new tables.

(3) The Enforce Password Policy has been disabled, because FmPro Migrator isn't going to be able to log into the account to change the password upon first login. For production usage, after the data has been transferred, this option should probably be enabled. (4) The newly created database is selected as the default database, though FmPro Migrator does specify the database name each time it connects.

Create SQL Server Database User

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Connection	View Eurotian Others S			Schedule	Model	
mysql_MacOSX	Objects . * Untitled @test4 (so	lsenver201	uery Report	Schedule	Woder	-
xamp_MySQL						
cc_oracle_DEV-JPA	Ceneral D L O LOL	D · · · D · · ·		601 D :		
test	General Roles Owned Schemas	Database Permissions	Object Permissions	SQL Preview		
▷ Setest2	User Name:	user4				
▷ est5 ▲ est4	User Type:	For Login	•			
昌 書 dbo	Login Name:	user4	•			
当 guest	Default Schema:	<default></default>	-			
	_					

Create a SQL Server database user to match the login user just created. (1) The username is the same as the login, (2) the user type is "For Login", the login name is the same as the previously created login (which will appear in the list of available logins). (4) The Default Schema is left at <default> for now, since it doesn't yet exist.

Setting Roles & Permissions

🍲 * Untitled (sqlserver2012_w7vm) - Login - Navica	at Premium		A 1.02		_ D X
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xamp MySQL	Objects < 👗 user3 (se	glserver2012 🚠 user4 (s	;qlserver2012 👗 us	er4 @test3 (sqlserv	👗 * Ul 义 🤫
cc_oracle_DEV-JPA	😑 🛛 🏷 New 🗎 Sa	/e			
▲ 🎦 sqlserver2012_w7vm	General Roles User Ma	pping Server Permissions	Endpoint Permissions	Login Permissions	SQL Preview
test	Permission		Grant With Gra	nt Option Deny	
≥ test3	ADMINISTER BULK OPERATI	ONS			
⊿ 🧧 test4	ALTER ANY CREDENTIAL				
📱 dbo	ALTER ANY CONNECTION				
📇 guest	ALTER ANY DATABASE				-
	ALTER ANY EVENT NOTIFIC	ATION			=
	ALTER ANY ENDPOINT				
	ALTER ANY LOGIN				
	ALTER ANY LINKED SERVER				
	ALTER RESOURCES				
	ALTER SERVER STATE				
	ALTER SETTINGS				
	ALTER TRACE				
	AUTHENTICATE SERVER				
	CONTROL SERVER				
	CONNECT SQL				
	CREATE ANY DATABASE				
	CREATE DDL EVENT NOTIFIC	CATION			
	CREATE ENDPOINT				
	CREATE TRACE EVENT NOT	FICATION			-

For the purposes of the data transfer, the Roles & Permissions for the login user account are set as follows. These should be changed as necessary after completion of the data transfer in order to match existing IT user policies.

Roles:

serveradmin sysadmin

Server Permissions:

ALTER ANY LOGIN ALTER SETTINGS CONTROL SERVER CONNECT SQL

Click the Save button to save these changes.



 Ontitled @test4 (sqlserver2012_w/vm) - 	Database User - Navicat Premium	A 0		
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¥ . 🚣 . 🔲				
Connection User Table	View Function Others SQL Server Backu	o Query Report Schedule Model		
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⊿ 🧧 test4	ALTER ANY SERVICE	ALTER ANY SERVICE		
dbo	ALTER ANY SYMMETRIC KEY	ALTER ANY SYMMETRIC KEY		
guest	ALTER ANY USER	ALTER ANY USER		
	AUTHENTICATE	AUTHENTICATE		
	BACKUP DATABASE	BACKUP DATABASE	~	
	BACKUP LOG	BACKUP LOG		
	CHECKPOINT	CHECKPOINT		
	CONNECT	CONNECT	✓	
	CONNECT REPLICATION	CONNECT REPLICATION		
	CONTROL	CONTROL	~	
	CREATE AGGREGATE	CREATE AGGREGATE		
	CREATE ASSEMBLY	CREATE ASSEMBLY		
	CREATE ASYMMETRIC KEY	CREATE ASYMMETRIC KEY		
	CREATE CERTIFICATE	CREATE CERTIFICATE		
	CREATE CONTRACT	CREATE CONTRACT		
	CREATE DATABASE	CREATE DATABASE		
	CREATE DATABASE DDL EVENT NOTIFICATION	CREATE DATABASE DDL EVENT NOTIFICATION		
	CREATE DEFAULT	CREATE DEFAULT		

For the purposes of the data transfer, the Roles & Permissions for the database user account are set as follows. These should be changed as necessary after completion of the data transfer in order to match existing IT user policies.

Roles:

db_datareader db_datawriter db_owner

Owned Schemas:

<Not configured>

Database Permissions:

ALTER ALTER ANY SCHEMA BACKUP DATABASE CONNECT CONTROL CREATE FUNCTION CREATE PROCEDURE

Click the Save button to save these changes.

Create User Schema [Ok to Skip]

Note: It is no longer necessary to create a database schema for the new database user because FmPro Migrator now uses DBO as the default schema name when creating tables. Once the Get Fieldsize step has been completed, FmPro Migrator has enough information to create the SQL code defining the table in the destination database. The fieldsize info is automatically used when creating the table in the SQL database.

Note1: If you are using FmPro Migrator 8.01 or higher, FmPro Migrator will automatically write the tables into the dbo schema for SQL Server, and directly to the table without a schema designation for other databases.



Click the Step 3 Create Table button to create the table in the destination database.

FmPro Migrator will generate the table creation SQL code, connect to the destination database

and create the table. Once the table has been successfully created, the status menu under the Step 3 Create Table button will be changed to "Completed".

Holding down the shift key while clicking the Step 3 Create Table button drops and re-creates the table in the destination database.

Warning: Dropping the table in the destination database causes the loss of all data within the table.



if problems occur while creating the table in the destination database, you can review the table creation SQL code generated by FmPro Migrator by clicking the Table Creation Details button, next to the Step 3 Create Table icon.



<i> T</i> able Creation	Details	_		×
	This window displays the table creation SQL code which is executed in the destination database. Changes made in this window can be immediately executed in the destination database by clicking the Execute SQL buttons.	~ (3)		
Drop Table Name:	[test].[dbo].[tbl_assets]			
Table Creation SQL	Code:			
CREATE TABL	E [test].[dbo].[tbl_assets]		Drop T	able
(id NOT NULL	(1) DECIMAL IDENTITY(5,1)	Execute	sQL
model NULL		NVARCHAR(25)	Sav	/e
item NULL,		NVARCHAR(25)	6	2
category NULL,		NVARCHAR(25)		
cost		DECIMAT(18 4)		
Post Table Creation	SQL Code:			
	(Execute	e SQL
			Sav	ve
			0)

From within the Table Creation Details window, the Table Creation SQL code can be (1) manually edited, (2) saved or (3) re-executed in the destination database. The table can also be (4) dropped in the destination database.

The Post Table Creation SQL code can also be (5) manually edited, (6) executed, and (7) saved.

Clicking the (8) refresh button re-loads the previously stored version of the SQL code from the SQLite database.

Step 4 - Transfer Data - Unicode Characters

Advanced Language Options
These options affect the way non-English characters are handled by the driver.
Auto-detect language settings for application
Multi-byte text encoding: UTF-8
OK Cancel

As of FmPro Migrator 7.58, NVARCHAR/NVARCHAR(MAX) columns are created within SQL Server databases.

As of FmPro Migrator 9.37, FmPro Migrator always uses the SQL_WVARCHAR binding within the Perl script to insure proper UTF-8 encoding of the data for Access databases.

In general you should always select UTF-8 in the Advanced Language Options section of the FileMaker ODBC Driver 11+ versions.

Note: For most databases, it is no longer necessary to hold down the Shift key when clicking the Transfer Data step for full Unicode compatibility. For Microsoft Access and SQL Server databases, FmPro Migrator always performs this task for you automatically, as indicated by a small command prompt window showing the data transfer in progress. Nothing is actually displayed in this window presently. If you wanted to see the data transfer in progress, you could use the command prompt on Windows to run the xferData.EXE application which then runs the xferData.pl script.

DSN Configuration Note: Since the xferData.EXE app is used for transferring data to Access databases, the ODBC DSN for the Access database will need to be configured to point to the Access2016.accdb file. The automatically generated file DSN is only used for creating the table in the Access database. So if you can create the table, but not transfer the data - the ODBC DSN configured in FmPro Migrator probably needs updated to use the Access2016.accdb database file.



Click the Step 4 Transfer Data button to transfer data from the source table in the FileMaker database to the newly created table in the destination database. Once the data has been transferred successfully, the status menu below the Step 4 Transfer Data button will change from "Not Started" to "Completed".



If the data transfer process fails, an error message will be displayed containing the text of the error message returned by the destination database.

Some of the most common data transfer errors include:

FileMaker numeric fields containing non-numeric data.

FileMaker date fields containing non-date/time data.

FileMaker primary key fields containing duplicate or empty values.



The FileMaker application is very forgiving of the types of data which can be entered into each field. Therefore it is possible for non-numeric data to be entered into numeric fields if field validation has not been enabled for these fields. However SQL databases generally won't accept non-numeric data within numeric fields, which will cause an error during the data transfer process.

If this type of error occurs:

Option 1: Correct the data within the FileMaker database in order to resolve the problem. Then drop and re-create the table in the destination database and click the Step 4 Transfer Data button again.

Option 2: Correct the data after transferring the data to the destination database. To get the data

transferred to the destination database, click the Set Numeric Fields to Text button, above the Fields list. This button instructs FmPro Migrator to change all of the numeric field types to varchar field types in the table creation SQL code for the destination table.

Step 4 - Transfer Data - Lock Table Details

🖻 😑 💮 Та	ble Details
Change th fields lis occur wh the field.	ne table details using ted below. Changes en clicking outside
Original Table	Asset_Management3
New Table	
Source DB	FileMaker 9 🛟
Destination DB	MySQL 🛟
Fields	44
Records	3
Source DSN	example_fmp_dsn
Source DB Username	Admin
Source DB Password	
Destination DSN	example2_fmp_dsn
Dest. DSN Username	
Dest. DSN Password	U
Dest. DB Hostname	localhost
Dest. DB Port#	3306
Dest. DB Name	test
Dest. DB Username	user1
Dest. DB Password	user1pwd
Oracle Service Name	prod1
Oracle User Name 🗹	user1 •

After clicking the Numeric to Varchar, Date to Varchar or Varchar to TEXT buttons, open the Table Details window and click the lock icon. Setting the lock icon prevents FmPro Migrator from re-setting the field types back to their original values when clicking the Step 3 Create Table button.

Hold down the Shift key and click the Step 3 Create Table button to drop and re-create the table in the destination database, then click the Step 4 Transfer Data button again.

<u>Note</u>: You must generate table creation SQL code by clicking the Step 3 Create Table button at least once, before clicking the lock icon on the Table Details window.

Step 4 - Transfer Data - Troubleshooting - Non-Date/Time Data Type Error

If data transfer errors occur as a result of having non-date/time data within Date/Time fields, clicking the Set Date/Time Fields to Varchar button will change these column types to varchar columns in the destination database.

Open the Table Details window, click the Lock icon, then hold down the Shift key while clicking the Step 3 Create Table button.

Step 4 - Transfer Data - Varchar to TEXT Conversion



It is not usually necessary to change Varchar columns to TEXT column types in the destination database. But occasionally you might need to perform this task. If you wanted to perform a quick migration, without running the Get Fieldsize step, you could just convert all of the Varchar columns

to TEXT column types without worrying about the exact size of the data being transferred. FmPro Migrator will utilize the correct column type in the destination database for storing the largest amount of text.

After clicking the Varchar to TEXT button, open the Table Details window, click the Lock icon, then hold down the Shift key while clicking the Step 3 Create Table button. This process will drop and re-create the table in the destination database, creating the new table with the requested column type changes.

Step 4 - Transfer Data - Troubleshooting					
	7.11.0.1.1				
	l able Details				
	Change the fields liste occur whe the field.	he table details using d below. Changes en clicking outside			
					
	Original Table	Asset_Management2			
	New Table	Asset_Management2			
	Source DB	FileMaker 9 🛛 🔻			
	Destination DB	Access 🔻			
	Fields	41			
	Records	3			
	Source DSN	example_fmp_dsn7			
	Source DB Username	Admin			
	Source DB Password				
	Destination DSN	example_acs_dsn			
	Dest. DSN Username	example2_fmp_dsn			
	Dest. DSN Password	user1pwd			
	Dest. DB Hostname	10.1.0.38			
	Dest. DB Port#	3333			
	Dest. DB Name	test			
	Dest. DB Username	user1			
	Dest. DB Password	user1pwd			
	Oracle Service Name	prod1			
	Oracle User Name 🛛 🔽	user1			

Error Message: Count Error (1).

If an unexpected error occurs during the data transfer process, there is an alternate data transfer

process built into FmPro Migrator which can be used. Hold down the shift key when clicking on the Transfer Data button. The alternate data transfer method will open a separate console window and will run a compiled Perl program to transfer the data between databases.

If transferring data to an Access database, create an ODBC DSN to the destination database, as shown in the Table Details window. Open the Table Details window by double-clicking on the table in the list of tables.

<u>Note</u>: For some databases like SQL Server and Microsoft Access, this alternate data transfer method is always used, so you don't need to hold down the shift key.

Step 4 - Transfer Data Troubleshooting - SQL Server 2008 Memory Error



SQL Server 2008 may fail to insert data which will display this error message in FmPro Migrator.

Troubleshooting Tip #1:

Install the latest SQL Server Service Pack (at least SP3).

Troubleshooting Tip #2:

Try using the following commands to free up memory:

DBCC FREESYSTEMCACHE ('ALL'); DBCC DROPCLEANBUFFERS; DBCC FREEPROCCACHE; DBCC FREESESSIONCACHE;

Troubleshooting Tip #3:

Upgrade to SQL Server 2012 or higher. Database tables which failed to transfer to SQL Server 2008 have successfully worked with SQL Server 2012+ versions.

The buttons for Steps 5, 6 and 7 will only be visible if the source FileMaker Pro database table contains repeating fields.

FmPro Migrator converts non-relational repeating fields data into child records referencing the parent table record using the primary key of the parent table. The child table is created in the destination database using the naming convention *parent_table_repeating*. Each individual repeating fields data value is written into a separate record within this table.



In order to accurately transfer repeating fields data, FmPro Migrator needs to determine the Primary Key field within the source FileMaker database table. FmPro Migrator identifies the Primary Key field as being a field in which Unique and Not Empty data validation is configured. The Primary Key field contains a "1" in the PK column as shown in the field list.

If the Primary Key field contains empty or non-unique values, then the data needs to be corrected, or a new Primary Key field needs to be defined. Only one field should be defined as the Primary Key, and this field should be defined as a numeric field, as SQL databases don't generally handle Auto-Incrementing of Text and Numeric values within the same field (as FileMaker easily does).

To create a new Primary Key field within the FileMaker database, create a numeric field having Unique and Not Empty field validation. Disable the Unique and Not Empty validation for the original Primary Key field.

Select the Records > Show All Records menu item, to make sure that all records will be affected by the Replace Field Contents feature.

After creating the new field, put the cursor into this new field, then select the Records > Replace Field Contents menu item.

Repeating Fields Processing - Creating New Primary Key				
	R	eplace Field Contents		
	Permanently replace Number" in the 3 re	e the contents of the field "S cords of the current found s	erial et?	
	O Replace with: "S	N1 SN2 SN3"		
	(1) Replace with ser	ial numbers:		
	Initial value:	1)	
	Increment by:	1		
	Update serial	number in Entry Options?		
	C Replace with cal	culated result: Specify)	
		2 Replace	Cancel	

Using Replace Field Contents, replaces the empty values within the new Primary Key field with an incrementing series of numbers, within all records of the source table.

After adding this new Primary Key field and replacing field contents, you will need to start the migration process over starting with Step 1, since the structure of the source table has changed and FmPro Migrator needs to be aware of any changes which have been made to the source table.

Step 5 - Convert Data (Repeating Fields) - FileMaker 7+ Only



For FileMaker 7+ source database tables, Step 5 processing is designed to change the contents of repeating fields data so that it can be transferred thru the FileMaker 7+ ODBC driver. FileMaker 7+ ODBC drivers are no longer capable of transferring data from repeating fields within the FileMaker database. To work-around this ODBC Driver limitation, FmPro Migrator moves all of the repeating fields data into the first repeating data value, and separates each repeat value with a TAB data separator.

When the Step 5 Convert Data (Repeating Fields) button is clicked, FmPro Migrator generates FileMaker Script Workspace scripts to convert the data within each repeating field data and puts this script onto the ClipBoard.



Repeating Fields conversion scripts have been put onto the clipboard.

 Change Numeric and Date/Time fields to Text within FileMaker.
 Paste these scripts into the Script Workspace within FileMaker Pro.
 Run the script named: RF Convert - for Table: tbl_Assets



Click the Ok button to the informational dialog.

Open the FileMaker Script Workspace, and paste the script from the ClipBoard into FileMaker.

Manually change each of the repeating fields from Numeric or Date/Time format to Text within FileMaker. It is not necessary to re-gather info from FileMaker after making this change.

Run the script shown in the dialog (the one you just pasted into the Script Workspace).

Warning: Running the RF Convert script for a particular table is a task which should be performed **one-time only**. It should not be run more than once. To verify whether the RF Convert script has previously been run on a table, check to see if all of the repeating field data values have been moved to the first repeating field occurrence within the database.

If FileMaker gets interrupted while running the script, it's generally not possible to start the process over again with the remaining records. For instance, the script could stop if a data validation error occurs with one of the other fields of the database table. If this type of problem occurs, then it will be necessary to get a copy of the database file, copy and run this script again after solving the problem.

Step 5 - Convert Data (Repeating Fields) - Verifying Data Conversion



This image shows the contents of a repeating field shown on the FileMaker layout as "Serial #", which has been successfully converted with the RF Convert ScriptMaker script. If the RF convert script had not been run, then there would be vertical lines separating each repeating value. But since all of the repeating field data values have been placed into the first repeat occurrence, these vertical lines are not visible.

FmPro Migrator sets the status of the Step 5 Convert Data (Repeating Fields) step to "In Progress" when you click the button to generate and put the script onto the ClipBoard. FmPro Migrator doesn't know when you have actually run the RF Convert script within the Script Workspace, so you should click the pop-up menu and set the status of this step to "Completed" once you have completed this task. Keeping the status selections updated can be helpful if you get interrupted while performing the migration, so that you will know which steps you have completed for each table to be migrated.



Click the Step 6 Create Table (Repeating Fields) button to create the repeating fields table in the destination database.

FmPro Migrator will generate the table creation SQL code, connect to the destination database and create the table. Once the repeating fields table has been successfully created, the status menu under the Step 6 Create Table (Repeating Fields) button will be changed to "Completed".

Holding down the shift key while clicking the Step 6 Create Table (Repeating Fields) button drops and re-creates the table in the destination database.

Warning: Dropping the table in the destination database causes the loss of all data within the table.



Click the Step 7 Transfer Data (Repeating Fields) button to transfer data from the source table in the FileMaker database to the newly created repeating fields table in the destination database. Once the data has been transferred successfully, the status menu below the Step 7 Transfer Data (Repeating Fields) button will change from "Not Started" to "Completed".

Step 7 - Transfer Data (Repeating Fields) - Troubleshooting

All of the same troubleshooting steps apply to transferring repeating fields data as were mentioned within the Step 4 instructions. But one additional consideration involves reviewing the data transferred into the repeating fields.

Reviewing the data validates whether the each of the steps were processed correctly. For

instance, if only 1 repeating value was transferred to the destination table, then this could mean that the RF Convert script wasn't run or the contents of the source table fields weren't converted into Text prior to processing. If either of these problems occur, it is a simple matter to go back and re-do those processing steps, drop & re-create the table in the destination database then press the Step 7 button to transfer the data again.