



# Flex2SQL

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## Quick Start Guide

# Overview

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Thank you for downloading our free trial or purchasing Mertechn's DataFlex to SQL database application drivers. This Quick Start Guide will help you perform your first migration.

Flex2SQL includes a Migration Utility and a dynamic link library (DLL). This guide will walk you through using the Migration Utility to migrate your existing DataFlex database to a Microsoft SQL Server, Oracle, MySQL, or PostgreSQL database. The utility automatically creates new SQL tables and indexes from your existing DataFlex data. After the migration, Flex2SQL uses the DLL to allow your application to access these new files from your SQL backend.

If you need more information while performing your migration, reference the full Flex2SQL User's Guide included in your Flex2SQL installation.

## Supported DataFlex Versions and SQL Platforms

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Flex2SQL supports DataFlex 3.1d and above running on Windows (2000, XP 32bit, Vista32bit, 2003, 7, 2008, 8, 10) and Linux operating systems.

The following table details which SQL databases Flex2SQL can connect to:

Database	Supported Versions	Required Components
PostgreSQL	8.4 and above	PostgreSQL client libraries and client networking utility
Oracle	10g or later	Oracle SQL*Net client

Microsoft SQL	2005 and above (including Azure and LocalDB)	SQL Server Native client
MySQL	5.0 and above	MySQL client library, libmysql.dll in Windows or libmysql.so in Linux

## Installation and Licensing

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The Flex2SQL Setup Wizard guides you through the installation process. Follow the prompts to accept the software license agreement, select where the Mertech SQL drivers are installed (C:\Program Files (x86)\Mertech Data Systems\DB Drivers\DataFlex\bin by default), and accept the terms of the MySQL license agreement.

If you're evaluating the product, the Flex2SQL installer provides a full-use, 30 day trial license that allows you to test Flex2SQL alongside your application and data. If you want to request more time with the trial license, or you have any other questions, contact us at [sales@mertechdata.com](mailto:sales@mertechdata.com) or +1.954.585.9016. Be sure to provide your company name and information on how you intend to use our driver.

**Linux Installation:** If you are using Flex2SQL with Linux, begin by installing Flex2SQL on Windows and selecting the Complete option in the Setup Wizard. This will install the Linux version of the drivers as part of your Windows installation. Then, copy the Linux drivers to your Linux machine.

**Oracle-specific Installation Info:** Before using the Oracle version of Flex2SQL, confirm that you've installed the correct Oracle client (we recommend the applicable version of [Oracle Instant Client](#)) and properly defined the following Oracle environment variables on your client PC:

- **ORACLE\_HOME:** This should be set to the top level directory that contains the database client software or the entire database installation. The driver needs the Oracle client libraries and files located using this environment variable. Each user must have this variable set properly to use the driver.
- **TNS\_ADMIN:** This should be set to the directory that contains the Oracle file tnsnames.ora, which allows calls to the Oracle database to set required server connections.

If you're installing the Oracle driver using shared libraries, you must also set the library path environment variable. This variable lists the directories to search for DLLs. We recommend you place this variable in each user's profile after the ORACLE\_HOME environment variable is set. If you don't set the library path environment variable, the driver won't function correctly. The path environment variable takes the following forms on different operating systems:

- **Windows:** PATH
- **Linux and Solaris:** LD\_LIBRARY\_PATH
- **HP-UX:** SHLIB\_PATH
- **AIX:** LIBPATH

Then, you must run your server-side control scripts as a SYSDBA before you can perform a Flex2SQL migration (if you do not have DBA privileges, ask your DBA to perform the following steps). To do so:

1. Open Flex2SQL. The Login dialog box appears.
2. In the Server Type field, select Oracle from the drop-down list.
3. Select SYSDBA from the AutoMode drop-down list.
4. In the Server Name field, type the name of the server you're logging in to.
5. In the User Name field, type the SYSDBA username (for example SYS or SYSTEM).
6. In the Password field, type the user's password.
7. Click *Connect* to log in to the server. Server-side license scripts will run automatically.
8. Log out, then log in as a DEFAULT user before you perform a migration.

And finally, you must update your scripts as described below:

- For a non-Real Application Cluster (RAC) database:

```
create or replace view mds_session_info as select username, machine, terminal, module
from v$session where module like 'ORAFlex%';
grant select on mds_session_info to public;
drop public synonym mds_session_info;
create public synonym mds_session_info for sys.mds_session_info;
commit
```

- For a RAC database:

```
create or replace view mds_session_info as select username, machine, terminal, module
from gv$session where module like 'ORAFlex%';
grant select on mds_session_info to public;
drop public synonym mds_session_info;
create public synonym mds_session_info for sys.mds_session_info;
commit
```

# Migrating Your Data

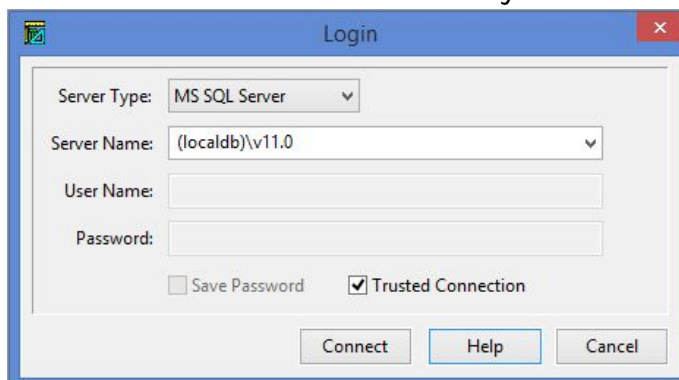
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The example below uses files from DataFlex's example Order Entry application to create matching tables and indexes on Microsoft SQL Server and then copies the data to the newly created tables. The procedure consists of logging in to the target database, choosing the files to be converted, and then running the *Convert Database* command.

## 1. Log In to Your Target Database

Open the Flex2SQL Migration Utility and use the following instructions to log in to your target SQL database:

1. From the drop-down list, select your desired SQL server type:
  - **PostgreSQL Users:** If the PostgreSQL server does not have ciText support enabled, a message appears explaining how to enable this feature.
  - **Oracle Users:** Select the *Help* button and print instructions in the License Count View for ORAFlex topic. License control scripts must be run before performing a migration.
2. Type the name of the server you're logging in to and the username and password for this session.
  - **Microsoft SQL Users:** You can omit the username and password and select *Trusted Connection* to rely on Windows Authentication.



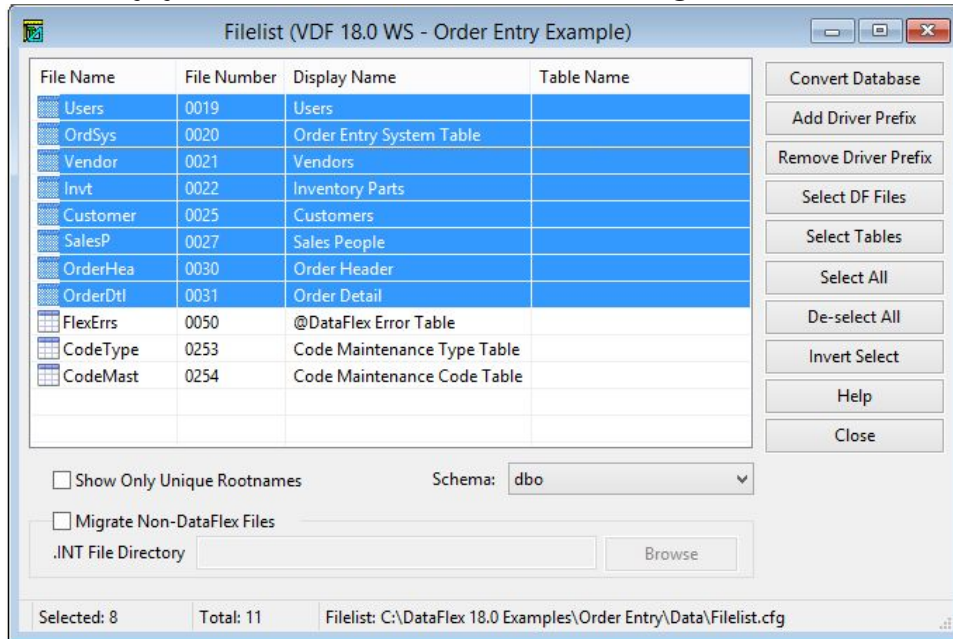
3. Click *Connect* to log in to the server.
4. If you logged in to PostgreSQL, Microsoft SQL Server, or MySQL, select your target database from the *Select Database* dialog box.

## 2. Choose the Files to Convert

1. From the menu bar, select *File > Open > Select Workspace*.
2. Select your Visual DataFlex version (18 in the example below) and

Workspace (Order Entry Example in the example below). Then, click *Select*.

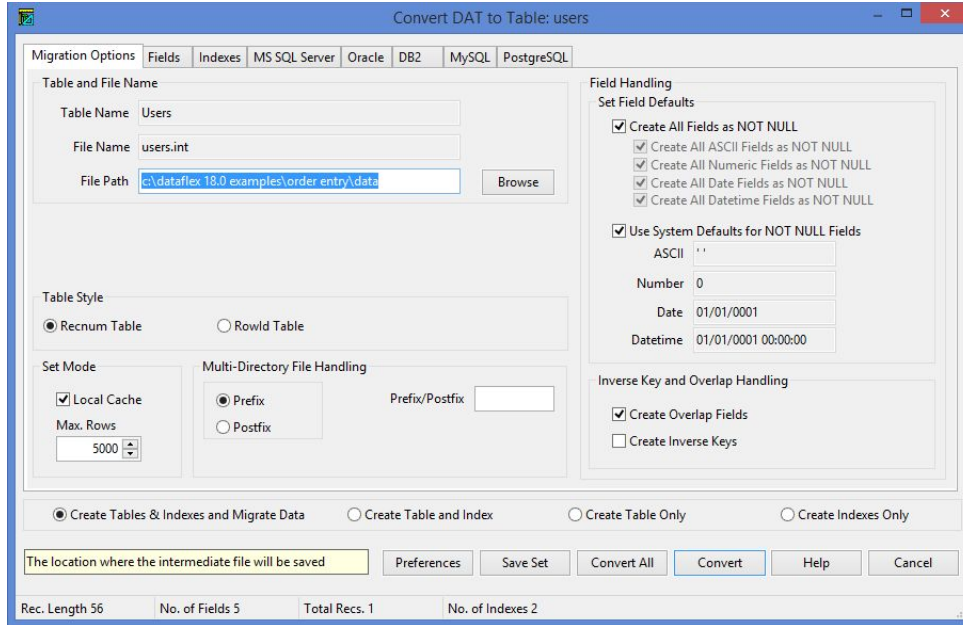
3. Click *Select All* to select all DataFlex files in the filelist for conversion. If necessary, you can select individual files using CTRL + click.



- **Important:** Do not include the FlexErrs, CodeType, and CodeMast DataFlex tables in your migration. These tables are DataFlex specific, and SQL databases do not require them.

### 3. Start the Migration Process

1. Click *Convert Database*.
2. If required, change Flex2SQL's default migration preferences.
3. Choose *Create Tables & Indexes and Migrate Data*. Then, click *Convert All*. Flex2SQL converts your files to the target database (see the *What Happens During the Migration?* section below for more information on the conversion).

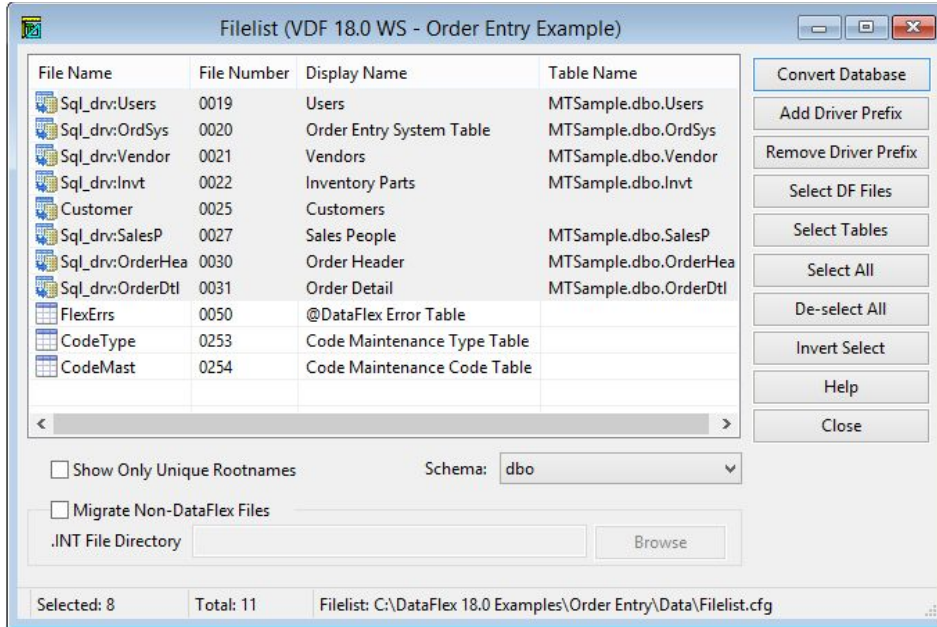


4. After the conversion finishes, review the Migration Report by selecting *Reports > Migration Report* from the menu. The Migration Report shows any errors that occurred during the migration.

## What Happens During the Migration?

The Flex2SQL Migration Utility converts the selected files to the target database, adds a driver prefix (for example, `Sql_drv`) to the root file name entry in `filelist.cfg`, and generates an intermediate file for each converted file (for example, `Users.INT`).

After the conversion finishes, examine the *Filelist* dialog box. Notice the selected files' names all have a driver prefix.



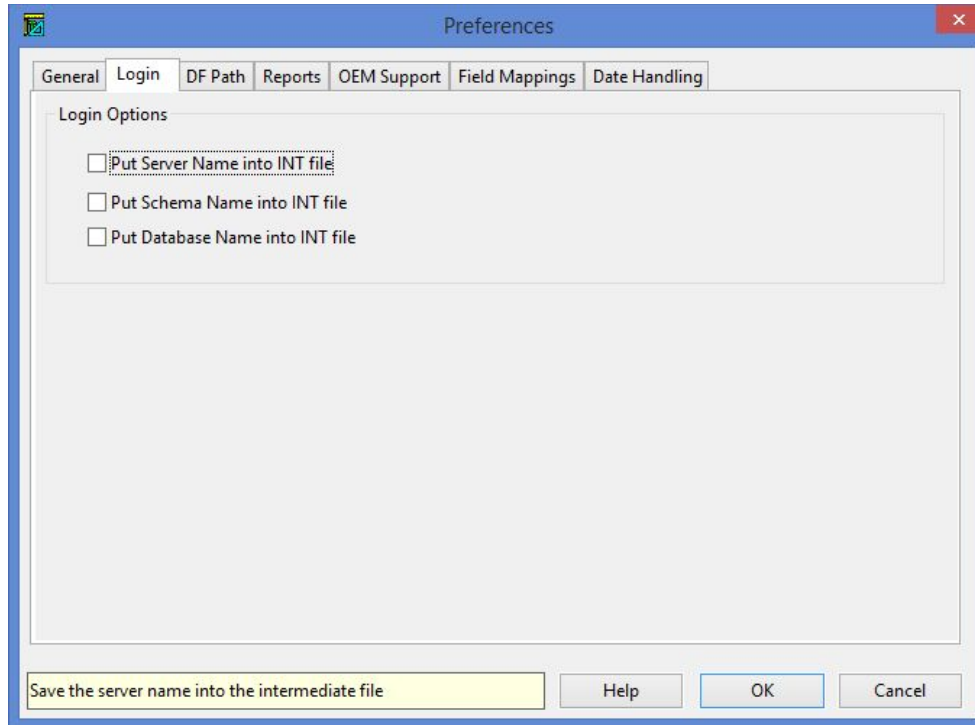
In the future, when your application issues an open command for a file containing a driver prefix, the DataFlex runtime will pass the open operation to our driver. The driver uses the .INT file to connect to and open the correct, converted SQL table.

## 4. Running Your Program

After you've converted all your files, you must update your application to prompt users to log in to your SQL database. This is the only change you must make to your application. You can implement this change in one of three ways:

- To get you started, Flex2SQL automatically prompts users to log in to your SQL database when they open your application. This option is useful for testing, but we don't recommend using it long-term, as it requires users to log in to your database each time they open the application.
- If you'd like to circumvent the login requirement without updating your application's code, you can use Flex2SQL to hard code your server login details (SERVER\_NAME, SCHEMA\_NAME, and DATABASE\_NAME) in a .INT file. To do so, you must adjust your Flex2SQL preferences to include your server, schema, and database names in the .INT file. To include these names in the .INT file, select *Tools* from the Flex2SQL menu, then select *Preferences > Login*. Select all three checkboxes found on the *Login* tab.





- Alternatively, you can add login code directly to your program. For example, you could add: `Login "(localdb)\v11.0" "" "" "SQL_DRV"`.

## Beyond the Basics

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The Flex2SQL Migration Utility allows you to do much more than the basic migration shown in this example. With Flex2SQL, you can:

- Create scripts for high-speed data migration, using native tools like SQL\*Loader and Bulk Copy.
- Create scripts to commit changes directly to your backend or generate DataFlex restructure code for remote site distribution.
- Browse both DataFlex and SQL data.
- Create and modify tables and indexes on your backend.
- Transfer DataFlex relationships and retrieve relationship information from your server.
- Create files with the same name in your backend database.

Flex2SQL also allows you to optimize your programs for faster data access. Embedded SQL statements and stored procedure calls let you easily manipulate large numbers of tables and data on your SQL server. You can find these commands, as well as examples of how to use them, in the Flex2SQL Command Reference Guide (mertech.inc).

# Additional Flex2SQL Documentation

For more information on Flex2SQL, refer to the following additional resources:

Document	Includes	Where to Find It
Flex2SQL Help	<p>Detailed info on the Migration Utility, including how to:</p> <ul style="list-style-type: none"> <li>• Customize your settings.</li> <li>• Create and restructure tables.</li> <li>• Perform index maintenance.</li> <li>• Synchronize relationships.</li> <li>• Perform high-speed script-based migration.</li> </ul>	<p>In the Migration Utility, select <i>Help</i> from the menu.</p> <p>Or, select Mertech's SQL Drivers for DataFlex App from the Windows Start menu, then select Flex2SQL Utility Help.</p>
Flex2SQL Programmer's Guide	<p>Examples of how to:</p> <ul style="list-style-type: none"> <li>• Consolidate directories during migration.</li> <li>• Work with multiple databases and servers.</li> <li>• Use stored procedures and result sets.</li> <li>• Propagate changes to customer sites.</li> <li>• Optimize database design.</li> <li>• Improve performance.</li> </ul>	<p>Select Mertech's SQL Drivers for DataFlex App from the Windows Start menu, then select Programmer's Guide.</p> <p>Or, open DataFlex Studio Help and browse to the guide.</p>
Flex2SQL Command Reference Guide (mertech.inc)	<p>A list of commands to optimize your application for faster database access, with examples of how to use them.</p>	<p>Select Mertech's SQL Drivers for DataFlex App from the Windows Start menu, then select Command Reference.</p> <p>Or, open DataFlex Studio Help and browse to the guide.</p>

Other	Our website includes a variety of Flex2SQL related documents, such as: <ul style="list-style-type: none"><li>● Whitepapers</li><li>● Case studies</li><li>● Webinars</li><li>● Blog posts</li></ul>	<a href="http://Mertechdata.com">Mertechdata.com</a>
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# Contact Information

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If you'd like to know more about Merteck's products, please visit our website, [mertechdata.com](http://mertechdata.com), or contact us at:

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