

Collaboration and networking

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1 Introduction

FieldWorks stores all the data for a language project in a single database file. One reason for switching to the Microsoft SQL Server was the automatic networking capability. This provides a good solution for those who have networking capability, but it does not help multiple teams working on the same project in non-networked environments.

If you have networking capabilities, it is best to have multiple users working on a single database across a network rather than working on individual copies of the database. At this point, there are few capabilities for merging data when people work on independent databases.

2 Networking

Microsoft SQL Server provides solid networking capability, allowing users to open and work on FieldWorks projects across a network. (There are aspects of how FieldWorks programs work that are not solid—see below.)

If you use a firewall such as Windows Firewall, you must provide an opening for SQL Server or no one else will be able to access your database. Follow these steps to share your database with others using Windows Firewall:

Steps for MSDE (SQL Server 2000) (through FW 4.0.1)

1. Go to Start...Settings...Control Panel...Windows Firewall.
2. Click Exceptions...Add Program, and choose c:\Program Files\FieldWorks\MSSQL\$SILFW\Binn\sqlservr.exe.
3. Click OK to close the Add a Program dialog.
4. Click OK to close the Windows Firewall dialog.

Steps for SQL Server 2005 Express (after FW 4.0.1)

1. Go to Start...Settings...Control Panel...Windows Firewall.
2. Click Exceptions tab
3. Click Add Program, and choose c:\Program Files\Microsoft SQL Server\MSSQL.1\MSSQL\Binn\sqlservr.exe.¹

¹ It's possible your sqlservr.exe is in a different directory. This could happen if there are any other SQL Server 2005 installations on your machine. If in doubt, you can find out where your sqlservr.exe is located

4. Click OK to close the Add a Program dialog.
5. Click Add Program, and choose c:\Program Files\Microsoft SQL Server\90\Shared\sqlbrowser.exe.
6. Click OK to close the Add a Program dialog.
7. Click OK to close the Windows Firewall dialog.

If you use some other firewall, you need to do something similar.

Once you enable your SQL Server, another person with FieldWorks installed on their computer will be able to open a project on your machine through the File...Open dialog. By opening the Network Neighborhood section, they should be able to navigate to your machine and see and open your databases. When a project is opened remotely, the name in the title bar will include the remote machine name.

There are several caveats with networking in this way. (Some of these have not been verified, so there may be a few mistakes.)

- FieldWorks uses local files for many things that are not part of the database. As a result, you may need to set up a number of things on the local machine to match those on the remote machine.
 - ICU files are *always* used on the local machine, but when you open a remote database, it will usually install the languages from that database on your local machine. If PUA characters are being used, you need to copy the appropriate language definition file(s) and install these. See ICU and writing systems.doc.
 - *All* settings files and registry settings come from the local machine.
 - Keyboards and Keyman files come from the local machine.
 - Fonts *must* be installed on the local machine.
 - SIL Encoding converters are used from the local machine.
 - Various configuration files are used from the local machine.
- Pictures, media files, and other external links must come from the remote machine. They are inaccessible unless they are in a shared directory and the links are made in a way that they can be shared across the network. Data Notebook was set up to do this, but Flex and TE do not have that capability enabled yet.
- FieldWorks programs cache a lot of data in memory after reading it from the database in order to improve performance. If remote users simply look at data across the network without modifying data, the worst that can happen is they may not see recent database changes. They may need to Refresh, or possibly stop and restart the program.
- Because of local caches, when multiple users work on a database at the same time, there is potential for conflict. Some attempts were made in FieldWorks programs to update the cache when changes are made by another user, but this aspect has not been given development priority yet. It is quite likely that there will be some problems in this area.

Several users have worked in Flex across the network, so it *does* work. Use caution in this regard! If two users try to change the same string, it is quite possible that only the *last* user can save the change (and probably will not even know there was a conflict).

by using Start...Programs...Microsoft SQL Server 2005...Configuration Tools...SQL Server Configuration Manager. Click SQL Server 2005 Services on the left, then in the right pane Right click SQL Server (SILFW) and choose Properties. Click the Service tab. The Binary Path field contains the path to your version of sqlservr.exe.

As long as you do not try to change the same objects, it is probably safe. With multiple users working simultaneously on the same database, it works best to use Refresh fairly frequently, or stop and restart the program. This reduces the possibility of having old data in your cache.

- Remote users *cannot* do certain database operations on the database. For example, they cannot back up or restore the database. They probably cannot create new databases, and modifications to the writing systems will not be reflected on the host machine.

To open a database on a remote machine, you need to use File...Open, then go through the network neighborhood to get to the machine you want, and pick the project from that machine. One important thing when working in a network environment is to look carefully at the project name in the title bar. If it has the remote machine name as part of the name, then you know you are working with the remote database. Otherwise you are working on your local machine.

Another thing to be aware of is that each program (Flex, TE, Notebook, List Editor) keeps track of the last project the user had open in that program and will open on that project the next time. Thus Flex could start up on a remote machine the next time it is started while TE may start on a local database.

Also, you can set up a desktop icon, if you want, that will always open a given database regardless of what was last opened. The -c command line flag identifies the computer and -db identifies the database. You can also do this inside the program by choosing File...Project Management...Create shortcut on desktop.

When one machine is on a domain and the other on a workgroup, the domain machine can access a database on the workgroup machine, but the workgroup machine cannot access the database on the domain machine. If both machines are on the same domain, they can access each other's databases.

2.1 Remote VPN access

One way to access a remote machine across the Internet that works fairly well is to log on to the remote machine using VPN, then open a MS Remote Desktop window on the same machine and run FieldWorks from the remote desktop. This has the advantage that you are only transferring keystrokes and screen update data across the Internet instead of large amounts of FieldWorks data.

2.2 Troubleshooting SQL Server 2005 networking problems

The steps given under SQL Server 2005 Express should normally be adequate, based on the way FieldWorks installs SQL Server 2005. However, if you are still having trouble networking, you can check several things to make sure your SQL is configured correctly.

1. Start...Programs...Microsoft SQL Server 2005...Configuration Tools...SQL Server Configuration Manager.
2. Click SQL Server 2005 Service in the left pane. In the right pane, make sure SQL Server (SILFW) and SQL Server Browser are both running.
 1. Right-click SQL Server (SILFW) and choose Properties. "Log on as" should be set to Built-in account: Local System.

2. Right-click SQL Server Browser and choose Properties. “Log on as” should be set to Built-in account: Network Service.
3. In the left pane of SQL Server Configuration Manager, click SQL Server 2005 Network Configuration and then Protocols for SILFW. In the right pane, you should have TCP/IP Enabled.
4. In the left pane of SQL Server Configuration Manager, click SQL Native Client Configuration and then Client Protocols. In the right pane, you should have Shared Memory, TCP/IP, and Named Pipes Enabled
5. Start...Programs...Microsoft SQL Server 2005...Configuration Tools...SQL Server Surface Area Configuration.
6. Click “Surface Area Configuration for Services and Connections”, then under SILFW, Database Engine, Remote Connections in the left pane, it should be set to “Local and remote connections”, “Using TCP/IP only”. Close this dialog.
7. Back in the previous dialog, click “Surface Area Configuration for Features”. Under SILFW, Database Engine, OLE Automation and xp_cmdshell should both be enabled.

3 Current Flex merging capabilities

FieldWorks does not provide any merging capability when doing import from SFM or LinguaLinks. You can import an SFM file into an existing database, but if any entries are already present, a duplicate entry will be created.

FieldWorks 5.4 provides modest merging capabilities through LIFT export and import. At this point you can only export an entire lexicon in LIFT. See Flex tips.doc section 15.1 for information on merging LIFT data.

There is currently no way to merge interlinear text.

4 Current TE merging capabilities

The Translation Editor provides the capability to export to SFM files and import from SFM files. During import, a merge option can identify each change made and allows users to choose whether to accept or reject the change. FieldWorks 5.4 provides a more robust merge capability through export and import of OXES XML format.

5 Future goals

Possibilities for the future include the following:

- An option to export changes before a certain date from one program to an XML file and merge them into another database.
- An option to merge data directly from one database to another.