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Clarion Magazine

This edition includes all articles, news items and blog posts from October 1 2010 to October 31 2010.

Clarion News

Read 13 Clarion news items.

The ClarionMag Blog

Read 1 blog entry.

Articles

Installing And Configuring MySQL 5

October 11 2010

MySQL is a popular choice among Clarion developers looking to get into SQL. In this first of two articles Dave Harms looks at the licensing issues (chances are you need a commercial license) and walks through a MySQL 5 installation.

Creating a MySQL 5 Clarion Application

October 12 2010

In this second of two parts on MySQL, Dave Harms installs the 5.1.7 MyODBC driver (and later has to downgrade to 5.1.6), imports the sample database into the dictionary and wizards up an application.

Clarion Magazine at the ClarionLive! DevCon

October 20 2010

Clarion Magazine is headed for Denver on October 26th! The office will be closed from that day through Sunday, October 31 although we will be checking emails. Dave Harms is speaking on .NET Saturday afternoon and will be part of a panel discussion on Saturday night with Bruce Johnson and Mike Hanson. Look for conference coverage in ClarionMag and on Twitter!

Clarion.NET, Great Expectations, and the Emerald Isle

October 21 2010

Preparing for his ClarionLive! presentation on .NET puts Dave Harms in a reflective mood. But he struggles with explaining the difference between traditional Clarion Win32 development and full-on .NET development. He reaches for metaphors. He searches for analogies. He comes up with... Ireland?!

C7 Tips: Text Search And Regular Expressions

October 25 2010

The Clarion 7 IDE has a lot of features lacking in C6, such as the ability to use regular expressions in text searches. Dave Harms explains how this feature helps him synchronize SQL database schemas.

Bob Zaunere's Keynote

October 29 2010

Bob Zaunere gave a webcast keynote which included an announcement of an upcoming Clarion 8 release and an early look at the .NET AppGen.

The ClarionLive DevCon Is Under Way!

October 29 2010

Arnold Young and John Hickey kicked off the first ever ClarionLive DevCon with a reception at the most excellent Inverness Hotel.

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Clarion News

DMC to convert your application from TPS to SQL at DevCon? Survey

As a special offer in conjunction with the ClarionLive! DevCon, DMC is considering offering to convert your application to SQL for $199. Please take the survey if you are interested. The conversion offer (TPS application - C6 and/or C7 - to SQL) is done in two steps. First, DMC reads through your application's DCTX file and fixes common problems like missing primary keys, Date/Time problems, variable names the use SQL reserved words, missing GUIDs. Next, DMC parses through your TXA file and creates a new SQL version of your application. The result - you can have a working SQL version of your TPS App in minutes. You can merge your TPS and SQL versions into one dual application so you don't have to deploy different versions. DMC allows you to add instructions to your TPS code to direct DMC to turn on or off sections of your code in the conversion process - that way you only have to maintain one TPS application. When you upgrade that application you can quickly re-convert it to SQL and merge them all together into one switch-hitting application.

Posted October 5 2010 (permanent link)

UK Clarion User Group meeting to be broadcast around the world

Thanks to the help of John Hickey and Arnold Young, the UK Clarion User Group meeting will be broadcast around the world on October 6, 2010. If you would like to watch the three presentations of the meeting, then please register. The meeting starts at 8PM BST (GMT +1).

Posted October 5 2010 (permanent link)

PrintWindow 2.01

PrintWindow 2.01 is available. This release fixes column titles on browse listboxes when setting no horizontal limit.

Posted October 20 2010 (permanent link)

BSec 1.2

BSec 1.2 adds control level security to procedures. You can hide or disable individual controls based on security logon level.

Posted October 20 2010 (permanent link)

iQ-Notes 5.00

iQ-Notes 5.00 features a conversion from C6 to C7.

Posted October 20 2010 (permanent link)

vuAgent Now Free

vuAgent is now a free template from Valutilities.

Posted October 20 2010 (permanent link)

vuVoice Now Free

vuVoice is now a free template available from Valutilities.

Posted October 20 2010 (permanent link)

EasyCOM2INC_xPayment 1.00

EasyCOM2INC_xPayment 1.00 is a ready to go solution based on COM and EasyCOM2INC technologies. This product demonstrates using xPayment 2009 ActiveX (xAuthorize LLC) in a Clarion application. xPayment is a software component (ActiveX/COM/.NET) that enables developers to incorporate real-time credit card processing into their program or website within a matter of minutes. xPayment is fully secure using SSL for all data transfer protecting your sensitive data. xPayment currently supports over 100 different payment gateway services.

Posted October 20 2010 (permanent link)

xInactivity 1.7

xInactivity 1.7 is now available for Clarion 7.

Posted October 20 2010 (permanent link)

G-Calc Price Reduction

G-Calc's price has been reduced to $59 for a new purchase and $39 for an upgrade - both of these options include 12 months of updates. The release of v7.00 of the Noyantis G-Calc template sees multiple enhancements that include: A full overhaul of the entire product, from raw tpl to finished user interface; 12 different calculator styles including Windows Vista and Windows 7; Running tape facility (Display and print your calculations); Full Source Code included and compiled into your app - No DLL or LIB required; Multi-paste options; Insert at end of field; Hot keys; Auto-load of field content (if numeric); Load and Paste to field with focus; c55, c6.x, c7.x, ABC, Legacy, Single EXE and Multi DLL compatible; Implementation of BIDMAS / BODMAS rules on all calculations; Implementation of Calculator Class; A new 'Auto Open' mode added to Tape function; COS, SIN, TAN and MOD functions added; Windows Vista style added (standard + scientific); Windows 7 style added (standard + scientific); Length of calculated value increased.

Posted October 20 2010 (permanent link)

TDC Web Customer Portal

TDC Web Customer Portal" is a web application which quite simply provides a quick, dynamic and cost-effective link between your development team and your customers. Instantly it gives your customers the ability to view current bugs and features requested, or even make them part of the process by giving them permission to request features, consults, and report bugs, incidents and new ideas.

Posted October 20 2010 (permanent link)

Thin@ 1.4

Changes in Thin@ 1.4 include: RTF controls are now fully supported (including RTF status bar and RTF control panel); PROP:SelStart and PROP:SelEnd are now supported for TEXT and RTF controls; Integrated Clarion Calendar class is now fully supported; Additional client side embeds added (AfterCreatingWindow, BeforePaintingControl,AfterPaintingControl, TakeClientEvent); New function ThinNetMgr.GetControlOption added; CapeSoft Insight (Graphs) are now fully supported; Fomin reports are now supported; HALT() is now supported; NetSetup External IP address server parameter can now be configured with alternate paths using client ip address range as the condition; Timer events will now properly trigger even if the window is not focused; Timer event is now treated as non user event and will not increase user active server time; New function added ThinNetMgr.DisplayThread(LONG ThreadNo=0); New function added ThinNetMgr.DisplayControlImage(LONG Feq); NetSetup icons (positioned in the thinet\images folder) are renamed so they don't interfere with possible application icons with the same name; NetSetup Log tab is redesigned. Demo server is updated to the new 1.4 version. There is a new demo applicaton added for testing RTF controls.

Posted October 20 2010 (permanent link)

Updated DevCon Schedule

John and Arnold are continuing to fine tune the schedule as the ClarionLive! DevCon approaches.

Posted October 20 2010 (permanent link)

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The ClarionMag Blog

bshardi saved my butt too!

I just renewed my Comodo code signing certificate via Lindersoft (thanks as always to Friedrich for his excellent service) but I did so a little carelessly - I used FireFox and I didn't do any re-reading ahead of time to make sure I was doing everything right. And so when I went to retrieve my new certificate, FireFox automatically installed it into its certificate pool. That's not helpful, as I need a physical certificate file and a physical private key file.

A quick search of the SetupBuilder newsgroup led me to a post by Friedrich and a link to a forum post by someone named bshardi. That information stepped me through the process of extracing my certificate and key using OpenSSL. I got my files, and OpenSSL got a donation from me (good on 'em for adding a donation option to their installer).

Posted October 21 2010 (permanent link)

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Installing And Configuring MySQL 5

By Dave Harms

Posted October 11 2010

Although a lot of Clarion applications still use TPS files (hey, some even use Clarion DAT files), more and more I see Clarion developers moving to SQL. Clarion Magazine has published a number of MySQL-related articles, but it's a while since there's been an article on the basics.

In this article I'll show how to install MySQL and MyODBC and create a simple wizarded application for a MySQL database. But first, a word about licensing.

Do I need to pay an annual MySQL license fee?

While MySQL is an open source database, it isn't always a free database.

Here's the core issue: if you *distribute an application* (as source or as compiled code) and *that app uses MySQL*, then you either need a commercial license *or* you need to release your application's source under the open source GNU General Public License (GPL).

I don't know too many Clarion developers who are comfortable releasing their source code. And if you use third party products you're probably prevented from doing that anyway. Heck, it's probably not possible to release a third-party free Clarion app under the GPL anyway because you're shipping closed source Clarion DLLs as well, and those DLLs would have to be GPL'd. Good luck with that.

The common free use of MySQL is as backing for web sites, which works because traditionally web sites haven't been actual applications. But depending on how you read the license, if your web site makes use of Javascript (or any other code) then perhaps you're not eligible to use MySQL for free without releasing your Javascript and all the server code under the GPL.

In other words, the safe assumption is you need a license. The minimum cost (as of this writing) is $599 per server per year. That's cheaper than shelling out in excess of $7000 *per processor* for Microsoft SQL Server, but note that MySQL's prices are listed as *per year*. That's the minimum subscription price which gets you updates for one year and up to two support incidents - you can pay as much as $4999 per year for the Platinum edition.

But do you really need to pay an annual license fee? According Matthew Montgomery, Senior Support Engineer, "Usage of the MySQL Enterprise edition does require a support contract to be purchased with it."

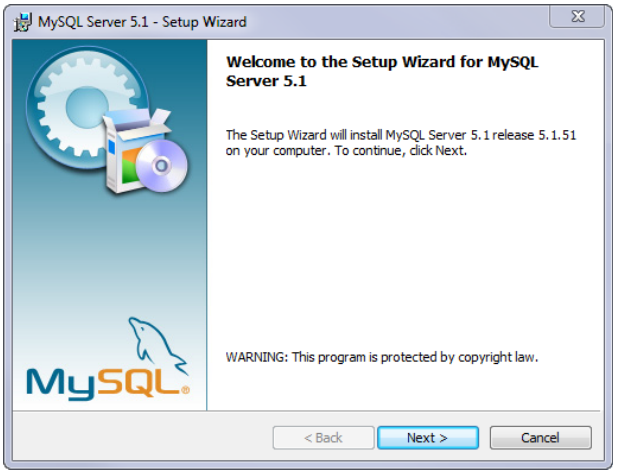
That seems pretty clear.

Okay, now that the major pain point has been covered, it's on to installing and using MySQL.

Installing MySQL 5.1

As of this writing the current release of MySQL is 5.1.51. You can download it here.

On running the installer you'll see the window in Figure 1.



MySQL Server 5.1 - Setup Wizard

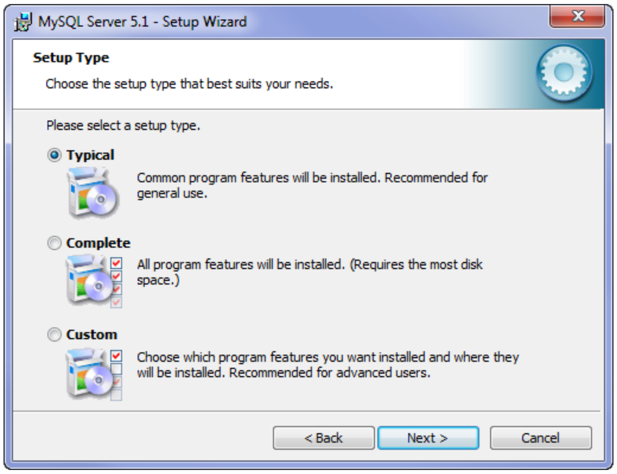
Welcome to the Setup Wizard for MySQL Server 5.1

The Setup Wizard will install MySQL Server 5.1 release 5.1.51 on your computer. To continue, click Next.

WARNING: This program is protected by copyright law.

Figure 1. Starting the installer

For most situations the typical setup is fine, but I'm in the habit of using the Custom setup (as in Figure 3) whenever I'm given the opportunity, if for no other reason than to see what is being installed and where. But in this case I had another reason for doing the custom setup - I already had an older version of MySQL installed, and I wanted to make sure I didn't have any conflicts between the two versions.



MySQL Server 5.1 - Setup Wizard

Setup Type

Choose the setup type that best suits your needs.

Please select a setup type.

● **Typical**

Common program features will be installed. Recommended for general use.

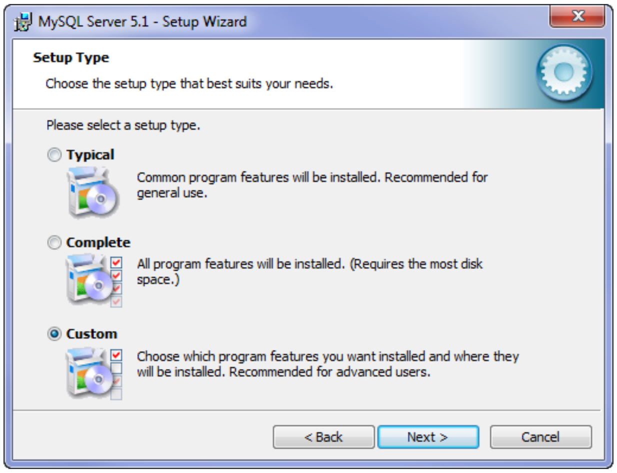
○ **Complete**

All program features will be installed. (Requires the most disk space.)

○ **Custom**

Choose which program features you want installed and where they will be installed. Recommended for advanced users.

Figure 2. Setup type



MySQL Server 5.1 - Setup Wizard

Setup Type

Choose the setup type that best suits your needs.

Please select a setup type.

○ **Typical**

Common program features will be installed. Recommended for general use.

○ **Complete**

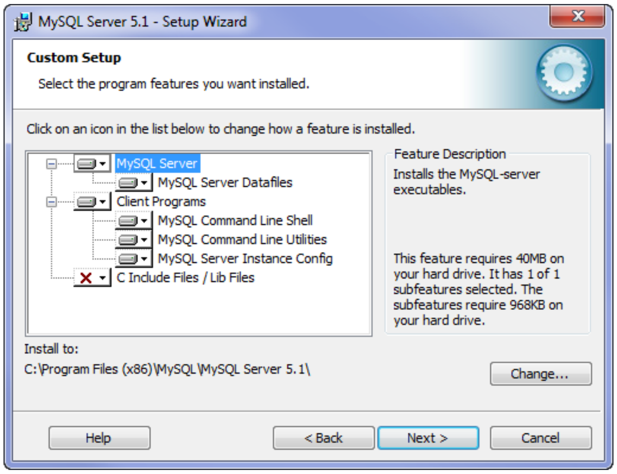
All program features will be installed. (Requires the most disk space.)

● **Custom**

Choose which program features you want installed and where they will be installed. Recommended for advanced users.

Figure 3. Choosing the advanced setup

The default program features include all the things 99.9% of MySQL users will need: The server itself, the command line shell, the utilities and a configuration utility. The only way you'd need the C include files is if you found it necessary to write your own interface to MySQL.



MySQL Server 5.1 - Setup Wizard

Custom Setup

Select the program features you want installed.

Click on an icon in the list below to change how a feature is installed.

```
⊟ MySQL Server
    MySQL Server Datafiles
⊟ Client Programs
    MySQL Command Line Shell
    MySQL Command Line Utilities
    MySQL Server Instance Config
  ✕ C Include Files / Lib Files
```

Feature Description

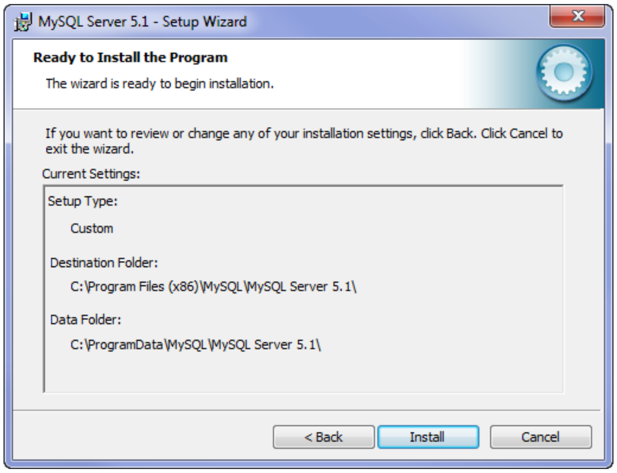
Installs the MySQL-server executables.

This feature requires 40MB on your hard drive. It has 1 of 1 subfeatures selected. The subfeatures require 968KB on your hard drive.

Install to:

C:\Program Files (x86)\MySQL\MySQL Server 5.1\

Figure 4. Setup options



MySQL Server 5.1 - Setup Wizard

Ready to Install the Program

The wizard is ready to begin installation.

If you want to review or change any of your installation settings, click Back. Click Cancel to exit the wizard.

Current Settings:

Setup Type:

Custom

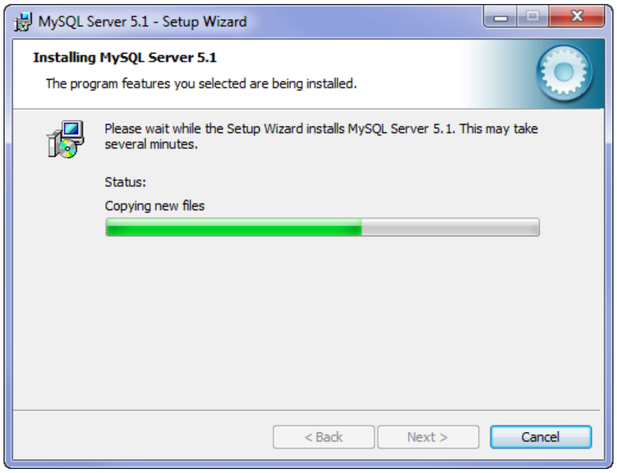
Destination Folder:

C:\Program Files (x86)\MySQL\MySQL Server 5.1\

Data Folder:

C:\ProgramData\MySQL\MySQL Server 5.1\

Figure 5. Ready to install



Installing MySQL Server 5.1

The program features you selected are being installed.

Please wait while the Setup Wizard installs MySQL Server 5.1. This may take several minutes.

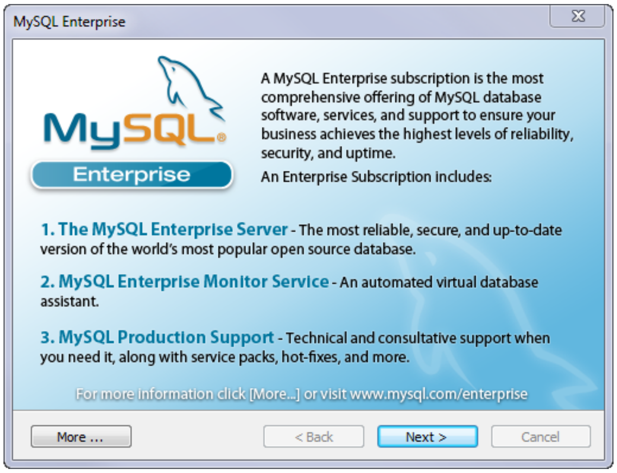
Status:

Copying new files

Figure 6. Installing

As installation completes you'll see some advertising for MySQL Enterprise, which is what you've just installed. The MySQL folks don't hit you over the head with your need to buy a license for non-GPL, non-web use. Really they don't tell you that at all during the installation process. They just hint, via the ads, that you may need a subscription. It's an interesting business model, as there are surely many MySQL installations out there that legally need a commercial license and don't have one.

Keep it legal. If your use of MySQL requires a license, buy that license.



A MySQL Enterprise subscription is the most comprehensive offering of MySQL database software, services, and support to ensure your business achieves the highest levels of reliability, security, and uptime.

An Enterprise Subscription includes:

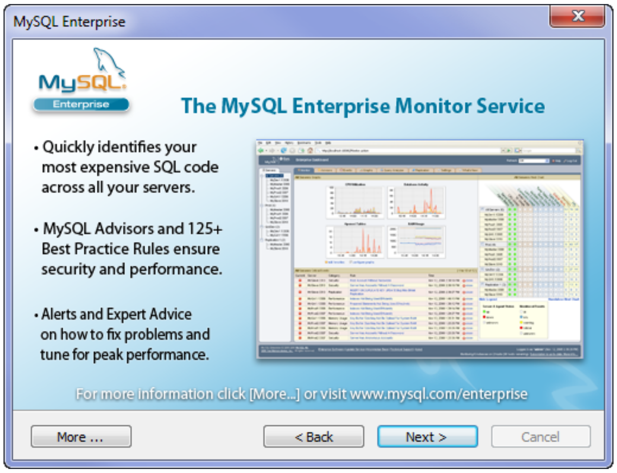
1. **The MySQL Enterprise Server** - The most reliable, secure, and up-to-date version of the world's most popular open source database.

2. **MySQL Enterprise Monitor Service** - An automated virtual database assistant.

3. **MySQL Production Support** - Technical and consultative support when you need it, along with service packs, hot-fixes, and more.

For more information click [More...] or visit www.mysql.com/enterprise

Figure 7. Subscription advertising


MySQL Enterprise

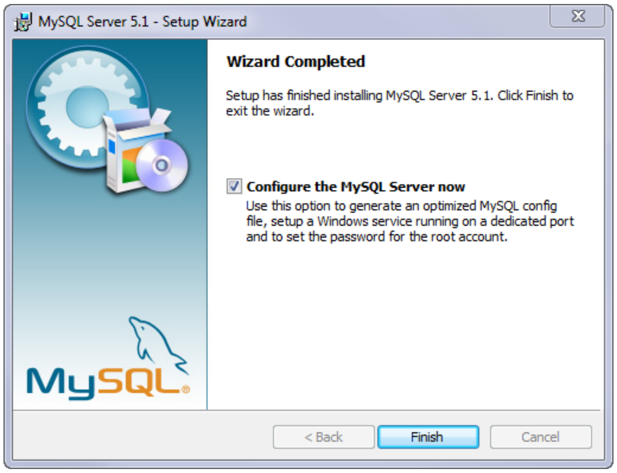
The MySQL Enterprise Monitor Service

- Quickly identifies your most expensive SQL code across all your servers.
- MySQL Advisors and 125+ Best Practice Rules ensure security and performance.
- Alerts and Expert Advice on how to fix problems and tune for peak performance.

For more information click [More...] or visit www.mysql.com/enterprise

Figure 8. More advertising

Once the MySQL is installed, the installer runs the setup Wizard.

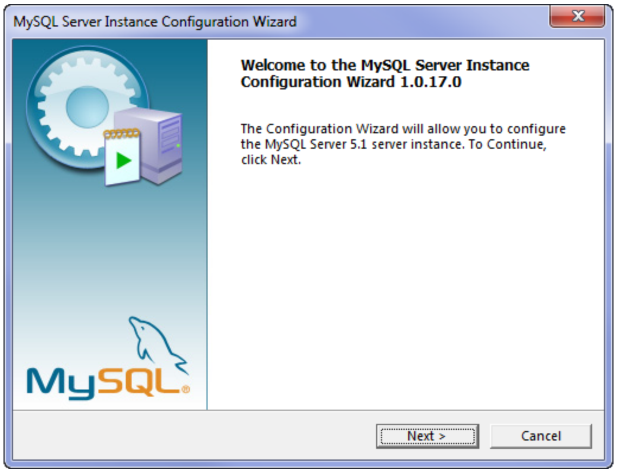

MySQL Server 5.1 - Setup Wizard

Wizard Completed

Setup has finished installing MySQL Server 5.1. Click Finish to exit the wizard.

☑ **Configure the MySQL Server now**
Use this option to generate an optimized MySQL config file, setup a Windows service running on a dedicated port and to set the password for the root account.

Figure 9. Preparing to configure MySQL

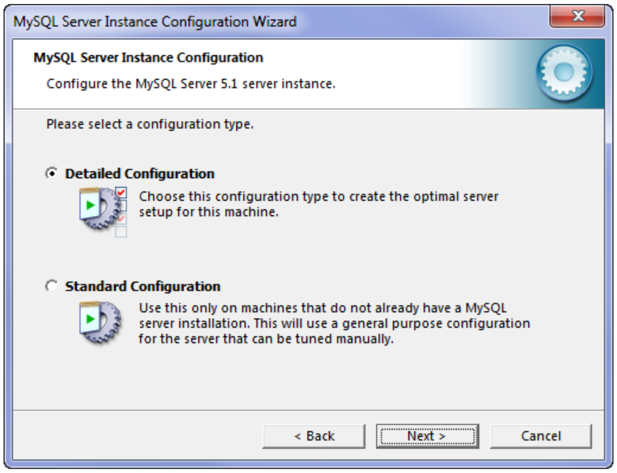

MySQL Server Instance Configuration Wizard

Welcome to the MySQL Server Instance Configuration Wizard 1.0.17.0

The Configuration Wizard will allow you to configure the MySQL Server 5.1 server instance. To Continue, click Next.

Figure 10. The Configuration Wizard

Since I already have MySQL installed on this computer I'm going to go ahead and use the Detailed Configuration option.



MySQL Server Instance Configuration Wizard

MySQL Server Instance Configuration

Configure the MySQL Server 5.1 server instance.

Please select a configuration type.

● **Detailed Configuration**

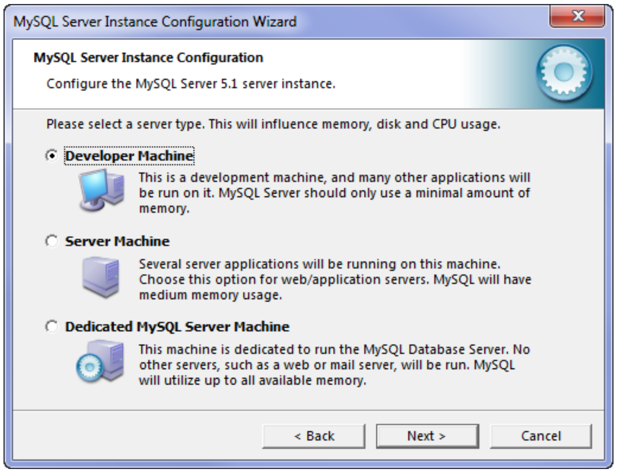
Choose this configuration type to create the optimal server setup for this machine.

○ **Standard Configuration**

Use this only on machines that do not already have a MySQL server installation. This will use a general purpose configuration for the server that can be tuned manually.

Figure 11. Choosing the detailed configuration

I've chosen the Developer Machine option because I'm really only using MySQL for minimal testing. If I needed to push some heavier data through MySQL during testing I'd probably go for the Server Machine option as that would give MySQL a little more access to memory. And clearly you only want to use the dedicated machine option when MySQL is the only server application running.



MySQL Server Instance Configuration Wizard

MySQL Server Instance Configuration

Configure the MySQL Server 5.1 server instance.

Please select a server type. This will influence memory, disk and CPU usage.

● **Developer Machine**

This is a development machine, and many other applications will be run on it. MySQL Server should only use a minimal amount of memory.

○ **Server Machine**

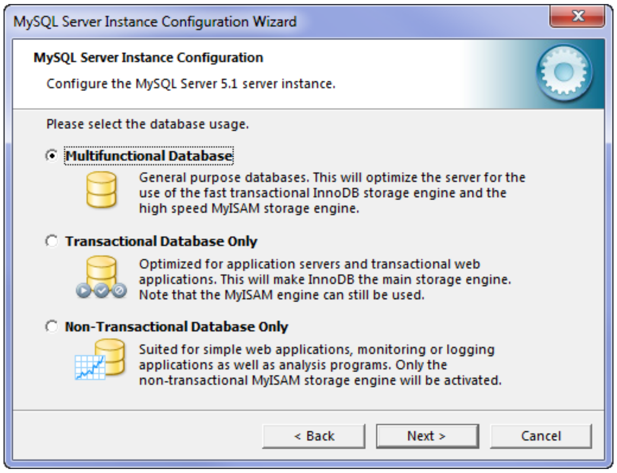
Several server applications will be running on this machine. Choose this option for web/application servers. MySQL will have medium memory usage.

○ **Dedicated MySQL Server Machine**

This machine is dedicated to run the MySQL Database Server. No other servers, such as a web or mail server, will be run. MySQL will utilize up to all available memory.

Figure 12. Instance configuration

MySQL takes an engine-based approach to data storage. There are a variety of storage engines available, but in general the two options are MyISAM (non-transactional) and InnoDB (transactional). For business application use you probably want to choose the Transactional Database option, but in light service I expect Multifunctional Database will do fine. In either case you should use the InnoDB storage engine to improve database integrity.



MySQL Server Instance Configuration Wizard

MySQL Server Instance Configuration

Configure the MySQL Server 5.1 server instance.

Please select the database usage.

● **Multifunctional Database**

General purpose databases. This will optimize the server for the use of the fast transactional InnoDB storage engine and the high speed MyISAM storage engine.

○ **Transactional Database Only**

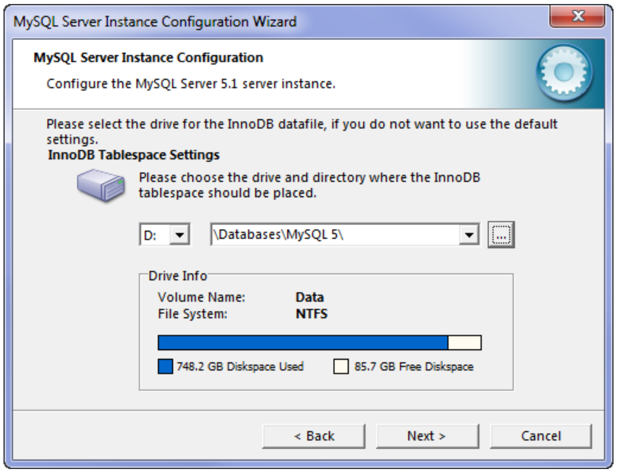
Optimized for application servers and transactional web applications. This will make InnoDB the main storage engine. Note that the MyISAM engine can still be used.

○ **Non-Transactional Database Only**

Suited for simple web applications, monitoring or logging applications as well as analysis programs. Only the non-transactional MyISAM storage engine will be activated.

Figure 13. Choosing the database type

A long time I ago I always dedicated my C drive to Windows only, and never data. After a brief flirtation with keeping everything on one big partition I'm back to separate data drives. In Figure 14 I'm using a directory on my D drive for my databases.



MySQL Server Instance Configuration Wizard

MySQL Server Instance Configuration

Configure the MySQL Server 5.1 server instance.

Please select the drive for the InnoDB datafile, if you do not want to use the default settings.

InnoDB Tablespace Settings

Please choose the drive and directory where the InnoDB tablespace should be placed.

D: \Databases\MySQL 5\

Drive Info

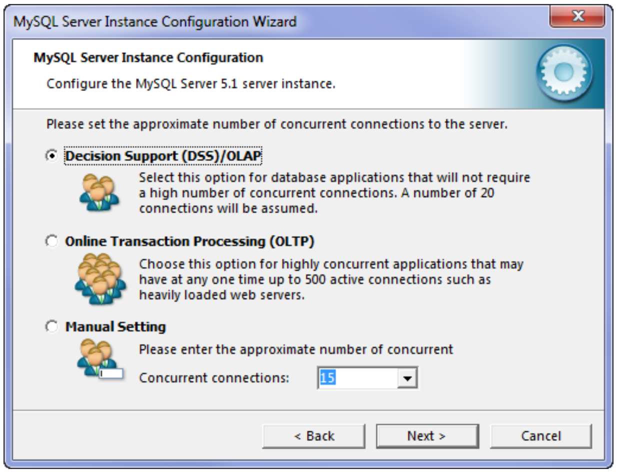
Volume Name: **Data**

File System: **NTFS**

■ 748.2 GB Diskspace Used □ 85.7 GB Free Diskspace

Figure 14. Setting the datafile directory

Again since this a development install of MySQL I'm not worried about a high number of connections, so the default setting is fine.



MySQL Server Instance Configuration Wizard

MySQL Server Instance Configuration

Configure the MySQL Server 5.1 server instance.

Please set the approximate number of concurrent connections to the server.

● **Decision Support (DSS)/OLAP**

Select this option for database applications that will not require a high number of concurrent connections. A number of 20 connections will be assumed.

○ **Online Transaction Processing (OLTP)**

Choose this option for highly concurrent applications that may have at any one time up to 500 active connections such as heavily loaded web servers.

○ **Manual Setting**

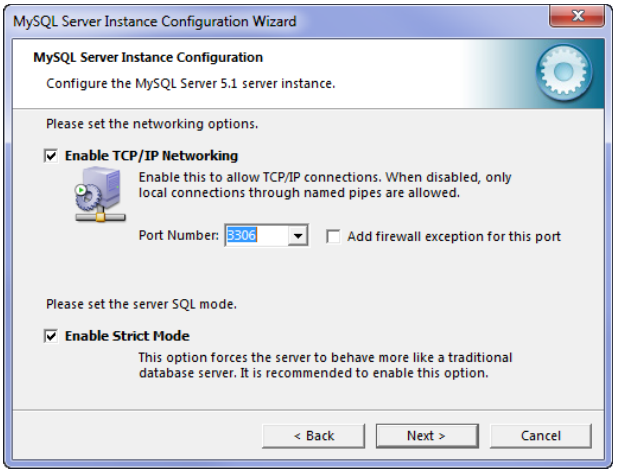
Please enter the approximate number of concurrent

Concurrent connections: 15

Figure 15. Setting connection numbers

I normally access MySQL via TCP/IP, so the default networking setting is what I want.

In Figure 16 I've shown the port as 3306, which is the default. In fact I changed that to 3307, since I already have an older version of MySQL running on port 3306.



MySQL Server Instance Configuration Wizard

MySQL Server Instance Configuration

Configure the MySQL Server 5.1 server instance.

Please set the networking options.

☑ **Enable TCP/IP Networking**

Enable this to allow TCP/IP connections. When disabled, only local connections through named pipes are allowed.

Port Number: 3306 □ Add firewall exception for this port

Please set the server SQL mode.

☑ **Enable Strict Mode**

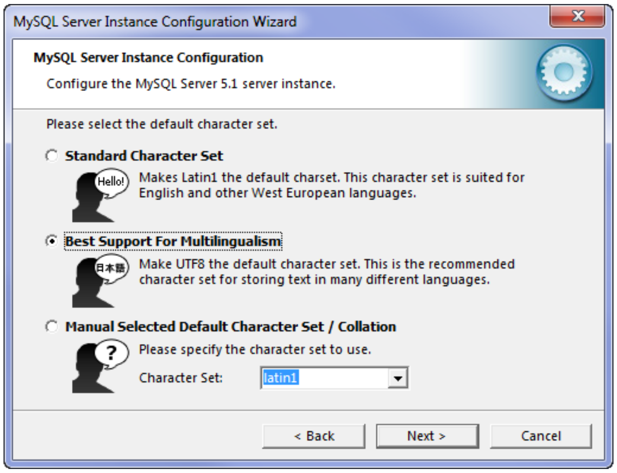
This option forces the server to behave more like a traditional database server. It is recommended to enable this option.

Figure 16. Enabling networking and strict mode.

Strict Mode ensures that only valid data can be entered into the database. From the documentation:

> Strict mode controls how MySQL handles input values that are invalid or missing. A value can be invalid for several reasons. For example, it might have the wrong data type for the column, or it might be out of range. A value is missing when a new row to be inserted does not contain a value for a non-NULL column that has no explicit DEFAULT clause in its definition. (For a NULL column, NULL is inserted if the value is missing.)

The default character set is Latin1, but in the interests of forward compatibility I've selected UTF8. For more on UTF8 and Unicode see Phil Carroll's excellent article on the subject.



MySQL Server Instance Configuration Wizard

MySQL Server Instance Configuration

Configure the MySQL Server 5.1 server instance.

Please select the default character set.

○ Standard Character Set

Makes Latin1 the default charset. This character set is suited for English and other West European languages.

● Best Support For Multilingualism

Make UTF8 the default character set. This is the recommended character set for storing text in many different languages.

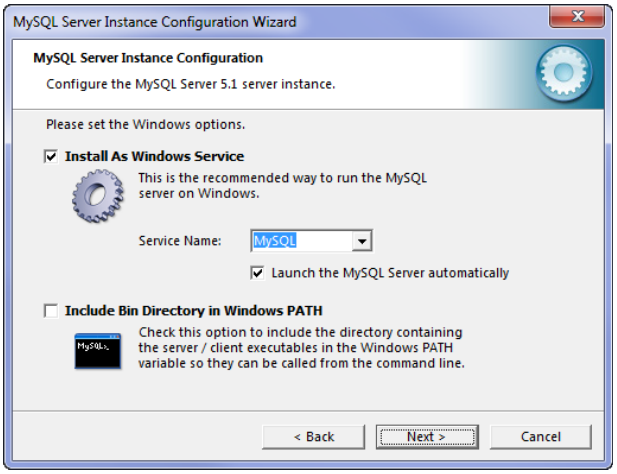
○ Manual Selected Default Character Set / Collation

Please specify the character set to use.

Character Set: latin1

Figure 17. Choosing the character set

When MySQL is installed as a service it launches automatically whenever you boot Windows, and runs without user intervention. If you don't install MySQL as a service you'll have it start it manually. While that might be acceptable for a development machine, it's generally not an option for a production database server.



MySQL Server Instance Configuration Wizard

MySQL Server Instance Configuration

Configure the MySQL Server 5.1 server instance.

Please set the Windows options.

☑ Install As Windows Service

This is the recommended way to run the MySQL server on Windows.

Service Name: MySQL

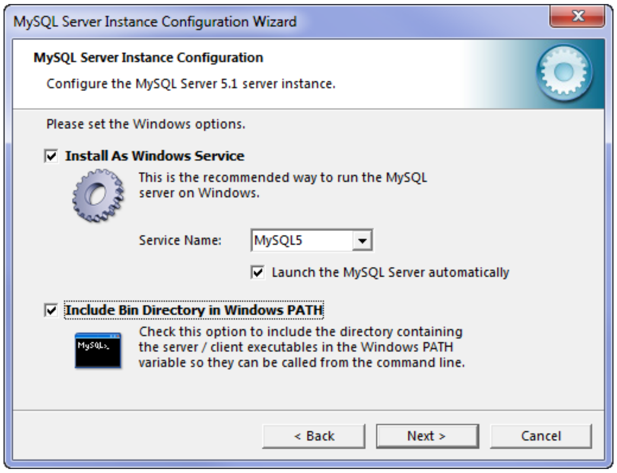
☑ Launch the MySQL Server automatically

□ Include Bin Directory in Windows PATH

Check this option to include the directory containing the server / client executables in the Windows PATH variable so they can be called from the command line.

Figure 18. Installing as a service

You will probably also want to include the Bin directory in the Windows PATH environment variable. That way you'll be able to run the various command line utilities without having to first locate and navigate to the MySQL Bin folder.


MySQL Server Instance Configuration Wizard

MySQL Server Instance Configuration

Configure the MySQL Server 5.1 server instance.

Please set the Windows options.

☑ **Install As Windows Service**

This is the recommended way to run the MySQL server on Windows.

Service Name: MySQL5

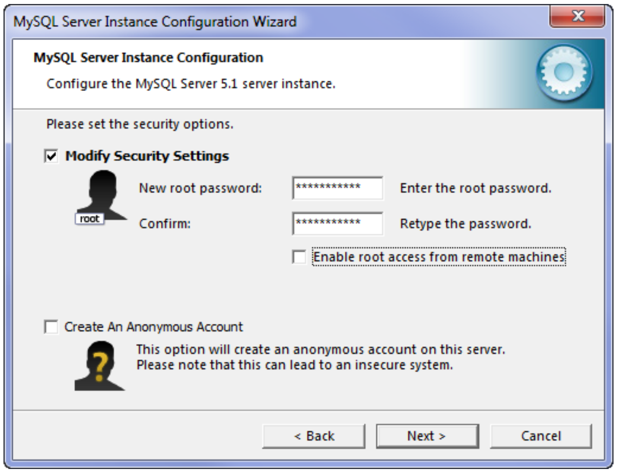
☑ Launch the MySQL Server automatically

☑ **Include Bin Directory in Windows PATH**

Check this option to include the directory containing the server / client executables in the Windows PATH variable so they can be called from the command line.

Figure 19. Adding the Bin directory to the PATH

The root password gives you full access to the MySQL server. You really should only use the root login for administrative purposes - any individuals or applications using the database (s) should have their own logins.


MySQL Server Instance Configuration Wizard

MySQL Server Instance Configuration

Configure the MySQL Server 5.1 server instance.

Please set the security options.

☑ **Modify Security Settings**

New root password: *********** Enter the root password.

Confirm: *********** Retype the password.

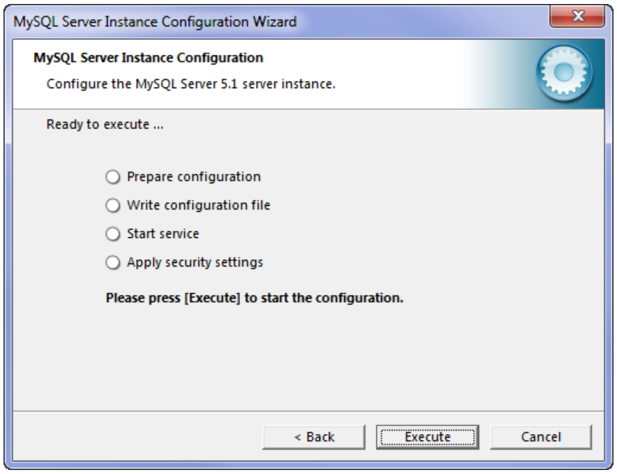
□ Enable root access from remote machines

□ Create An Anonymous Account

This option will create an anonymous account on this server. Please note that this can lead to an insecure system.

Figure 20. Setting the root password

The Configuration Wizard is now ready to run.


MySQL Server Instance Configuration Wizard

MySQL Server Instance Configuration

Configure the MySQL Server 5.1 server instance.

Ready to execute ...

○ Prepare configuration

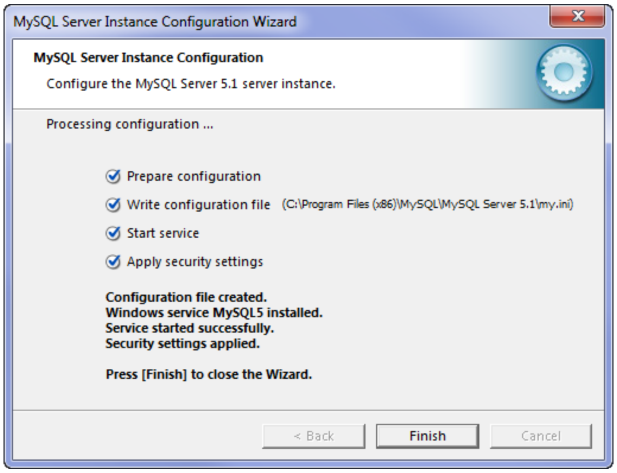
○ Write configuration file

○ Start service

○ Apply security settings

Please press [Execute] to start the configuration.

Figure 21. Ready to configure



MySQL Server Instance Configuration

Configure the MySQL Server 5.1 server instance.

Processing configuration ...

☑ Prepare configuration

☑ Write configuration file (C:\Program Files (x86)\MySQL\MySQL Server 5.1\my.ini)

☑ Start service

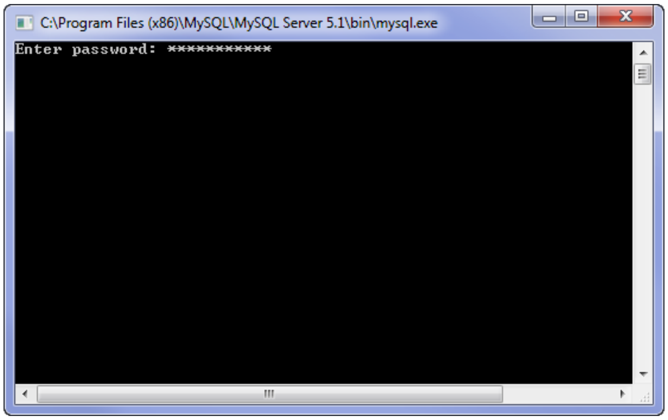
☑ Apply security settings

Configuration file created.
Windows service MySQL5 installed.
Service started successfully.
Security settings applied.

Press [Finish] to close the Wizard.

Figure 22. Configuring MySQL

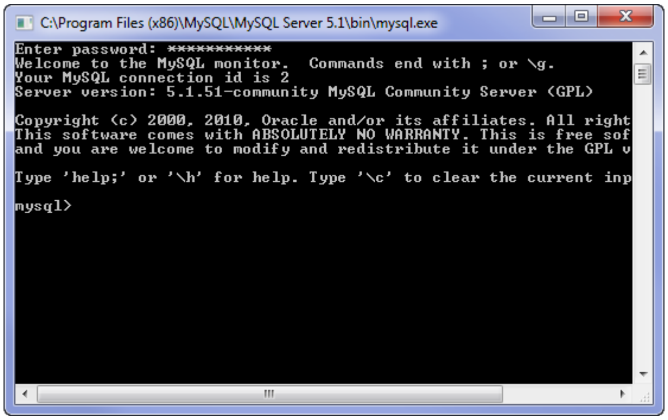
After MySQL is installed and configured, it's ready for use. Run the MySQL Command Line Client from the Windows menu. You'll be asked for the root password you supplied during the MySQL installation.



```
Enter password: ************
```

Figure 23. Logging in to the MySQL command line client

Once you're logged in you're ready to use the client to do administration tasks such as creating databases.



```
Enter password: ************
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 2
Server version: 5.1.51-community MySQL Community Server (GPL)

Copyright (c) 2000, 2010, Oracle and/or its affiliates. All right
This software comes with ABSOLUTELY NO WARRANTY. This is free sof
and you are welcome to modify and redistribute it under the GPL v

Type 'help;' or '\h' for help. Type '\c' to clear the current inp

mysql>
```

Figure 24. Ready to import the database

Installing the sample database

I Googled around for a sample database and found one at MySQLTutorial.org. Download the zip and extract the SQL file to a temporary directory. I used D:\temp.

Next, from the command line client type the following, substituting your temp directory as needed:

```
mysql> \. d:\temp\sampledatabase.sql
```

The \. tells the command line client to process the following text file as input.

To verify the import has worked, use this command to switch to the newly-created database:

```
mysql> USE classicmodels;
```

Use `show tables` to display the table names:

```
mysql> show tables;
    +-------------------------+
    | Tables_in_classicmodels |
    +-------------------------+
    | customers               |
    | employees               |
    | offices                 |
    | orderdetails            |
    | orders                  |
    | payments                |
    | productlines            |
    | products                |
    +-------------------------+
8 rows in set (0.00 sec)
```

You're almost done. Earlier I advised against using the root login for routine data access, so you'll need to set up a user with rights to use the ClassicModels database:

```
mysql> create user 'clarionmag'@'localhost' identified by 'devroadmaps';

mysql> grant all privileges on classicmodels.* to 'clarionmag'@'localhost'
```

The first statement creates the user named `clarionmag` with the password `devroadmaps`. The second statement gives that user full rights to the ClassicModels database (you probably wouldn't want to give a real user full rights, since that includes creating, modifying and deleting tables, but this is a test setup so no major worries.

In Part 2 I'll show how to install MyODBC and I'll wizard up an application to work with the MySQL database.

Resources

- Download MySQL 5.1 (or the latest release)
- Download MyODBC 5.1.6 (all 5.0 MyODBC versions are listed)
- Download the sample database

David Harms is an independent software developer and the editor and publisher of Clarion Magazine. He is also co-author with Ross Santos of Developing Clarion for Windows Applications, published by SAMS (1995), and has written or co-written several Java books. David is a member of the American Society of Journalists and Authors (ASJA).

Article comments

by Kraig Whiting on October 12 2010 (comment link)

I guess there's a reason why I have not paid too much attention to SQL and it rhymes with "$599 per server per year."

by Dave Harms on October 12 2010 (comment link)

Kraig, there are free options as well. Quite a few Clarion devs are happy using PostgreSQL, and Firebird is another popular choice.

As long as you don't exceed its capabilities, Microsoft's SQL Server Express is another one to consider.

by PATRICK PACE on October 13 2010 (comment link)

I have found the free admistrator and query utilities are a good complement to mysql.

by Dave Harms on October 13 2010 (comment link)

Patrick, do you mean MySQL Workbench?

by PATRICK PACE on October 15 2010 (comment link)

hello david the name of the download is mysql query browser and mysql administrator version 1.1.20. it can be found under archives. I have been using them for years but recently thay mysql have been pushing mysql workbench. I think the learning curve is much faster for basic administation. the query program allows you to test your sql scripts. I think they are a good addition to you mysql toolbox and they are free. Patrick

by Dave Harms on October 15 2010 (comment link)

Thanks Patrick - here's the link if anyone's interested.

BACK TO TOP

CLARION MAGAZINE
READ. LEARN. SOLVE.

Creating a MySQL 5 Clarion Application

By Dave Harms

Posted October 12 2010

In Part 1 I showed how to install MySQL5 and create a sample database. In this concluding article I'll walk through installing the MyODBC driver and I'll wizard up an application to use the sample MySQL database.

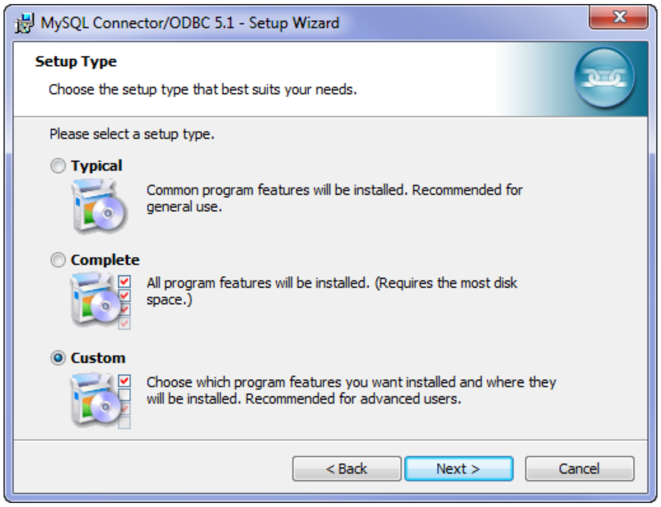
Installing MyODBC

When you install MySQL that's all you install - just the database server. You still need a way to connect to that server, and while there are many different technologies available, the one you'll need for Clarion work is the ODBC driver for MySQL, called MyODBC.

> **WARNING**: Although I'll show you how to install the latest MyODBC driver, I did encounter a problem that forced me to downgrade to the 3.51 version. Hopefully SoftVelocity will fix the bug (PTSS 37155). If not, the information shown for the 5.x install is the same information you need for the earlier MyODBC installs.

First, download the MyODBC installer. You can find the 32 bit 5.1 installer here.

As usual I've opted for the custom setup, although in this case it's not necessary at all.


MySQL Connector/ODBC 5.1 - Setup Wizard

Setup Type

Choose the setup type that best suits your needs.

Please select a setup type.

○ **Typical**

Common program features will be installed. Recommended for general use.

○ **Complete**

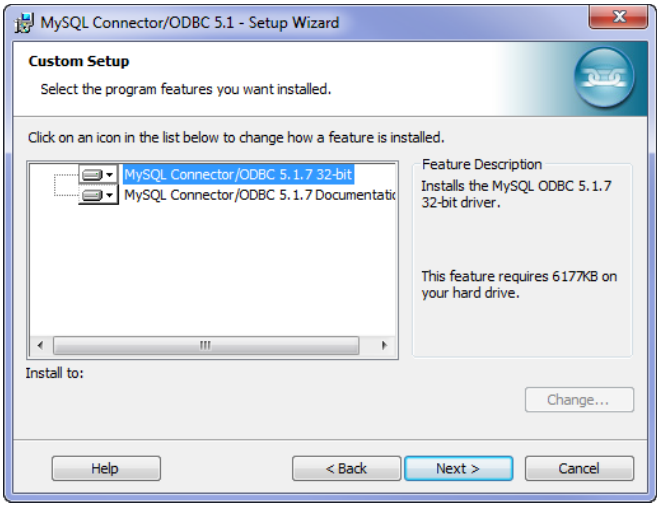
All program features will be installed. (Requires the most disk space.)

● **Custom**

Choose which program features you want installed and where they will be installed. Recommended for advanced users.

Figure 25. Choosing the Custom setup type

The only two items being installed are the driver and the driver documentation. Note that I'm installing the 32 bit version of the driver. You don't want or need the 64 bit version for Clarion work, even if you're running on 64 bit Windows, because the bitness of the ODBC driver has to match the bitness of the application.


MySQL Connector/ODBC 5.1 - Setup Wizard

Custom Setup

Select the program features you want installed.

Click on an icon in the list below to change how a feature is installed.

MySQL Connector/ODBC 5.1.7 32-bit

MySQL Connector/ODBC 5.1.7 Documentatic

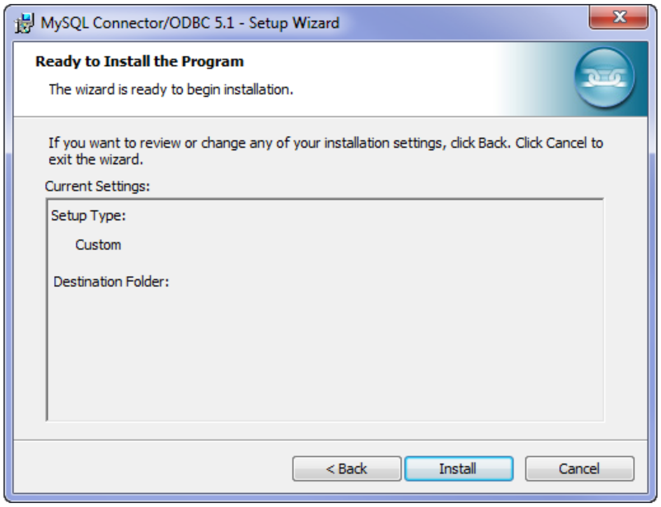
Feature Description

Installs the MySQL ODBC 5.1.7 32-bit driver.

This feature requires 6177KB on your hard drive.

Install to:

Figure 26. Setup components


MySQL Connector/ODBC 5.1 - Setup Wizard

Ready to Install the Program

The wizard is ready to begin installation.

If you want to review or change any of your installation settings, click Back. Click Cancel to exit the wizard.

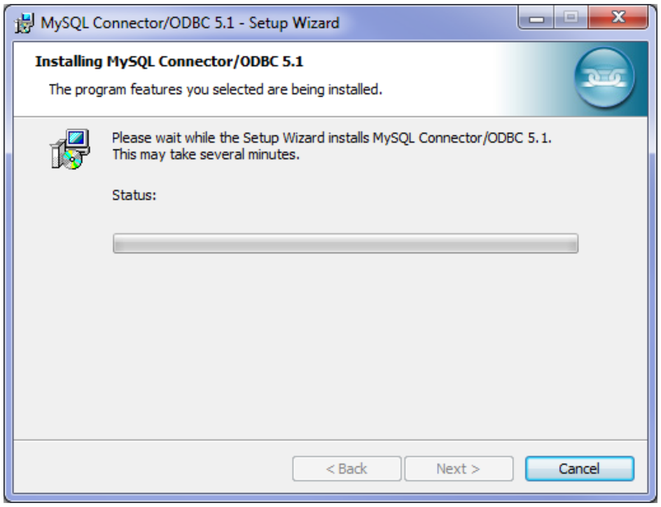
Current Settings:

Setup Type:

Custom

Destination Folder:

Figure 27. Ready to install



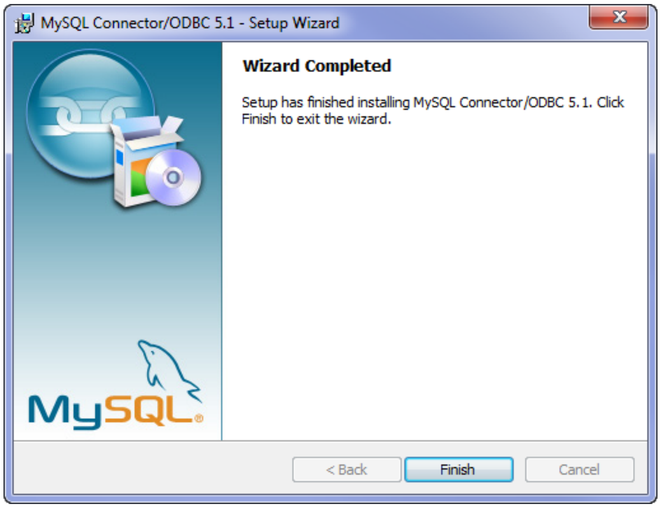
Installing MySQL Connector/ODBC 5.1

The program features you selected are being installed.

Please wait while the Setup Wizard installs MySQL Connector/ODBC 5.1. This may take several minutes.

Status:

Figure 28. Installing MyODBC



Wizard Completed

Setup has finished installing MySQL Connector/ODBC 5.1. Click Finish to exit the wizard.

Figure 29. End of wizard

Setting up the data source

With both MySQL and MyODBC installed, and a database in place, the next step is to use the ODBC Data Source Administrator set up an ODBC data source so your Clarion application can talk to the database. (Although you can use a DSN-less connection with your Clarion application, that won't work when importing tables - you need a named ODBC data source.)

If you're on a 32 bit version of Windows, just locate the ODBC administrator via the Control Panel.

If you're on a 64 bit version of Windows, pay close attention! You will have both 32 bit and 64 bit versions of the ODBC administrator. You *must* use the 32 bit ODBC admin to create your data source or your Clarion application won't see it.

If you're not careful, Windows' naming convention for 32 bit and 64 bit systems will trip you up.

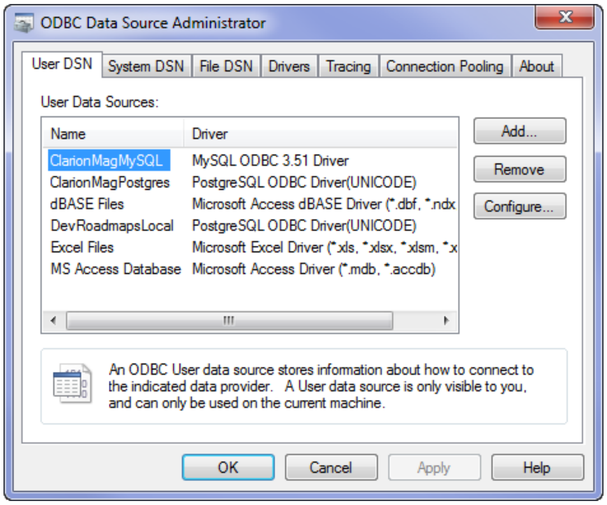
To set up data sources you need to use the version from the SysWOW64 directory. WOW64 stands for Windows on Windows 64 bit.

The executable is here:

%WINDIR%\SysWOW64\odbcad32.exe

Do *not* use the 64 bit version, which oddly enough is located in the System32 directory (% WINDIR%\System32\odbcad32.exe).

Figure 30 shows the ODBC Data Source Administrator.



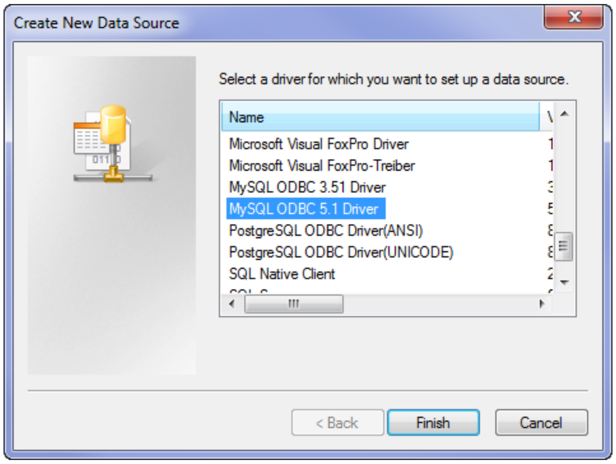
User Data Sources:

Name	Driver
ClarionMagMySQL	MySQL ODBC 3.51 Driver
ClarionMagPostgres	PostgreSQL ODBC Driver(UNICODE)
dBASE Files	Microsoft Access dBASE Driver (*.dbf, *.ndx
DevRoadmapsLocal	PostgreSQL ODBC Driver(UNICODE)
Excel Files	Microsoft Excel Driver (*.xls, *.xlsx, *.xlsm, *.x
MS Access Database	Microsoft Access Driver (*.mdb, *.accdb)

An ODBC User data source stores information about how to connect to the indicated data provider. A User data source is only visible to you, and can only be used on the current machine.

Figure 30. The ODBC Administrator

When you add a new data source you're presented with the driver selection window (Figure 31). Choose the MySQL ODBC 5.1 driver (keeping in mind that you may need to ultimately use a different version, depending on the status of PTSS 37155).



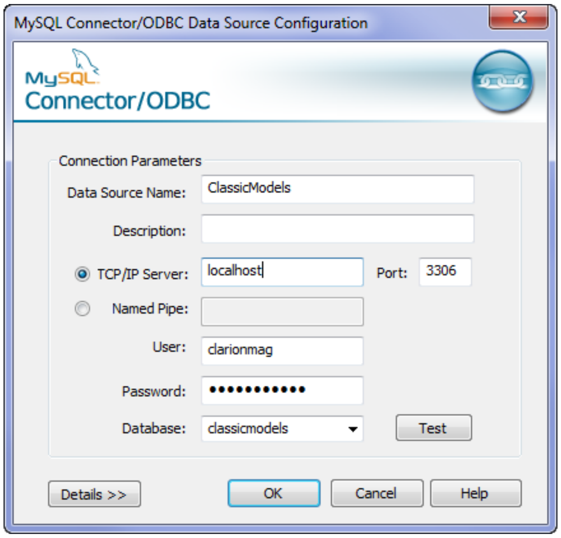
Select a driver for which you want to set up a data source.

Name
Microsoft Visual FoxPro Driver
Microsoft Visual FoxPro-Treiber
MySQL ODBC 3.51 Driver
MySQL ODBC 5.1 Driver
PostgreSQL ODBC Driver(ANSI)
PostgreSQL ODBC Driver(UNICODE)
SQL Native Client

Figure 31. Choosing a driver

Next, fill out the data source name, the server address (localhost, if MySQL is installed on your development machine), the port (I'm showing the standard 3306, although in my own install I had to use 3307 because I already had an older version of MySQL running on port 3306), the user name and the password.

Once you have entered all of that information you can click on the Database droplist and the available databases will be displayed (assuming you have the server and the port entered correctly).



MySQL Connector/ODBC Data Source Configuration

Connection Parameters

Data Source Name: ClassicModels

Description:

● TCP/IP Server: localhost Port: 3306

○ Named Pipe:

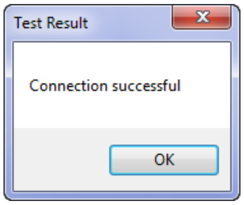
User: clarionmag

Password: ••••••••••••

Database: classicmodels

Figure 32. Setting connection properties

Just to be sure you have access, press the Test button.



Test Result

Connection successful

Figure 33. Testing the connection

Creating the data dictionary

Now you're ready to create the data dictionary. From within the Clarion IDE choose File | New | File. You'll see the New File dialog (Figure 34).

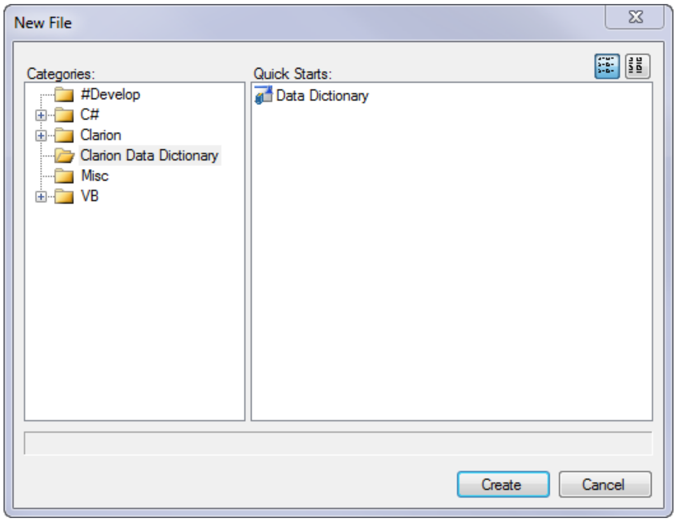


Figure 34. Creating a new dictionary

If you click on the Create button shown in Figure 34 nothing will happen. You won't get an error message or any other indication of a problem. What you must do is click on the Data Dictionary entry in the Quick Starts pane. *Then* you can click on Create.

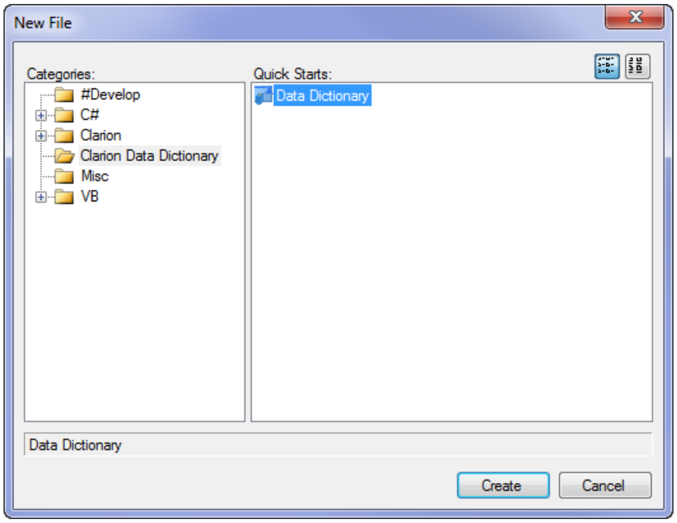


Figure 35. Selecting the Quick Start

Clarion will create a new data dictionary. Save it as CModels.dct.

There are two ways to import tables into the dictionary. One is to use the Table Import capability, and the other is to use the Dictionary Synchronizer.

Table Import is the shortest and easiest way. Just click on the ▾ icon on the DCT Explorer toolbar and choose Import Tables.

The Dictionary Synchronizer provides you with a more complete import/synchronization experience and a few extra options so I'll show that process, but the end result in this case is the same whether you use the synchronizer wizard or the table import wizard.

As far as I know, the only way to call the Synchronizer is via the DCT Explorer's toolbar, as shown in Figure 36.

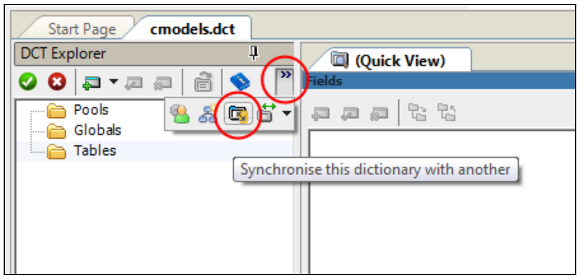
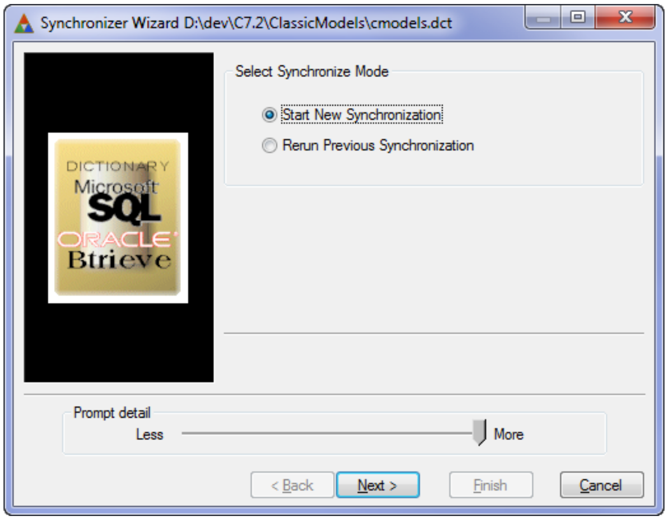


Figure 36. The Synchronizer menu option

Start a new synchronization.


Synchronizer Wizard D:\dev\C7.2\ClassicModels\cmodels.dct

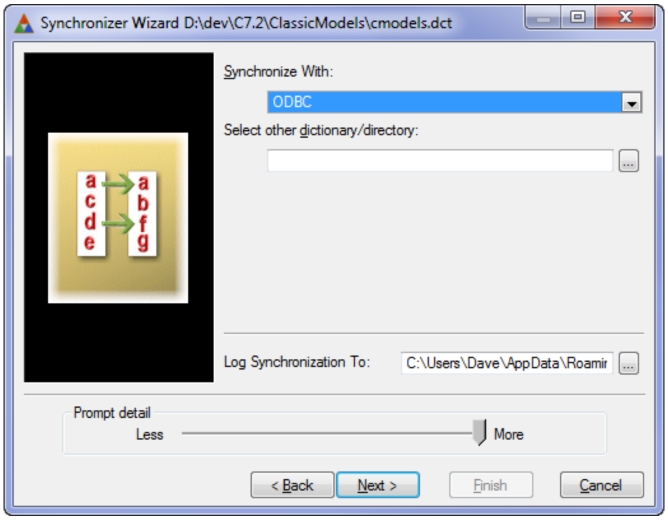
Select Synchronize Mode

● Start New Synchronization

○ Rerun Previous Synchronization

Figure 37. Starting the wizard

You want to synchronize with an ODBC data source. Leave the second field empty.


Synchronizer Wizard D:\dev\C7.2\ClassicModels\cmodels.dct

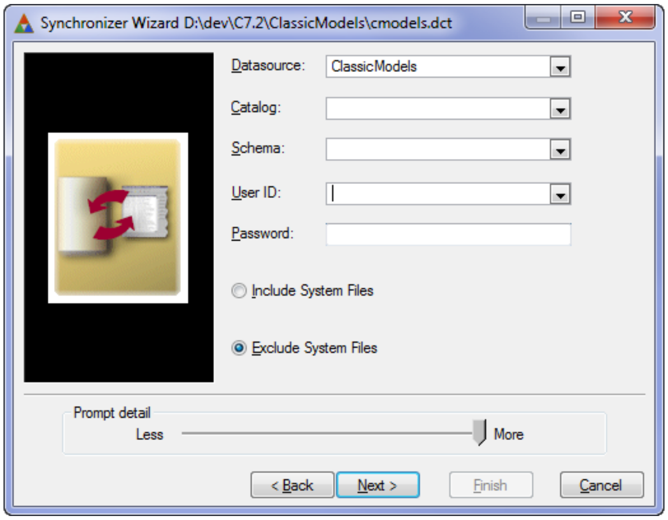
Synchronize With: ODBC

Select other dictionary/directory:

Log Synchronization To: C:\Users\Dave\AppData\Roamir

Figure 38. Synchronizing with ODBC

Set the Datasource field to the ClassicModels data source you previously created. You can leave all of the other fields blank, as the Synchronizer Wizard will pick up everything it needs via the ODBC data source.



Synchronizer Wizard D:\dev\C7.2\ClassicModels\cmodels.dct

Datasource: ClassicModels

Catalog:

Schema:

User ID:

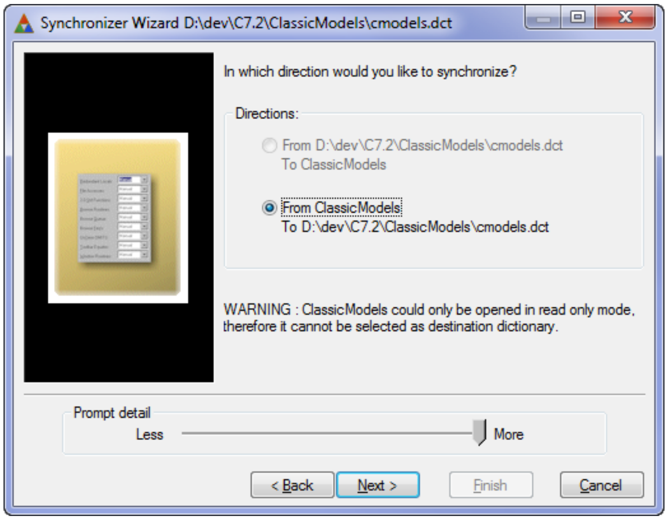
Password:

○ Include System Files

● Exclude System Files

Figure 39. Setting the data source

Your synchronization direction is from the database to the dictionary.



Synchronizer Wizard D:\dev\C7.2\ClassicModels\cmodels.dct

In which direction would you like to synchronize?

Directions:

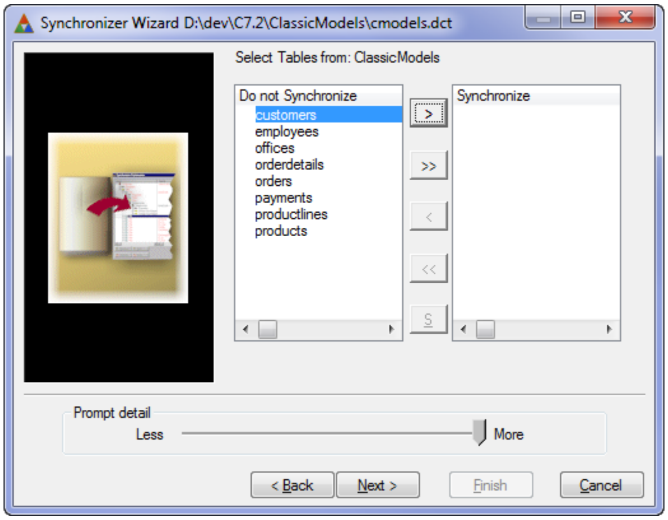
○ From D:\dev\C7.2\ClassicModels\cmodels.dct
To ClassicModels

● From ClassicModels
To D:\dev\C7.2\ClassicModels\cmodels.dct

WARNING : ClassicModels could only be opened in read only mode, therefore it cannot be selected as destination dictionary.

Figure 40. Setting the synchronization direction

You should see the tables listed on the left.



Synchronizer Wizard D:\dev\C7.2\ClassicModels\cmodels.dct

Select Tables from: ClassicModels

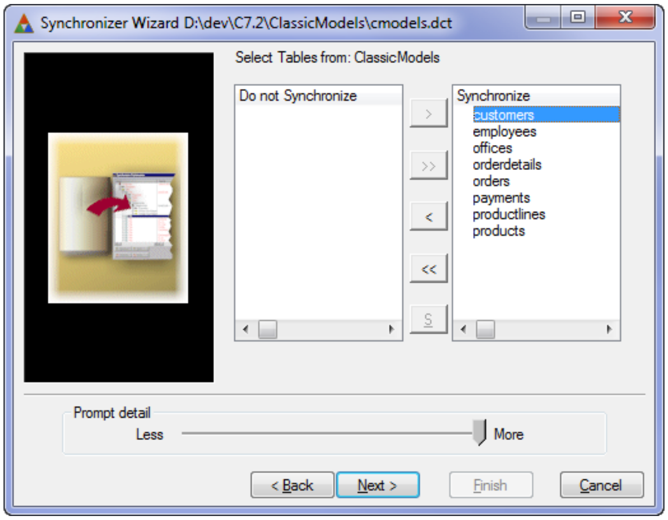
Do not Synchronize

- customers
- employees
- offices
- orderdetails
- orders
- payments
- productlines
- products

Synchronize

Figure 41. Available tables

Click on the >> button to move all of the files to the Synchronize list on the right.



Synchronizer Wizard D:\dev\C7.2\ClassicModels\cmodels.dct

Select Tables from: ClassicModels

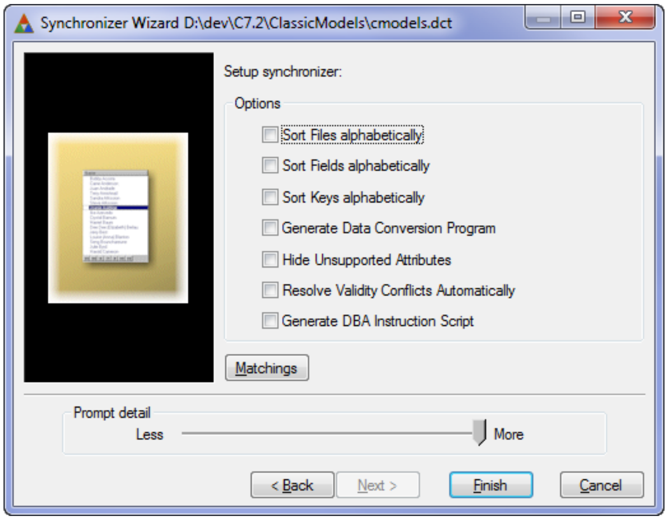
Do not Synchronize

Synchronize

- customers
- employees
- offices
- orderdetails
- orders
- payments
- productlines
- products

Figure 42. Choosing the tables to synchronize

You don't need to worry about any of the Synchronizer options since this is a fairly small database.



Synchronizer Wizard D:\dev\C7.2\ClassicModels\cmodels.dct

Setup synchronizer:

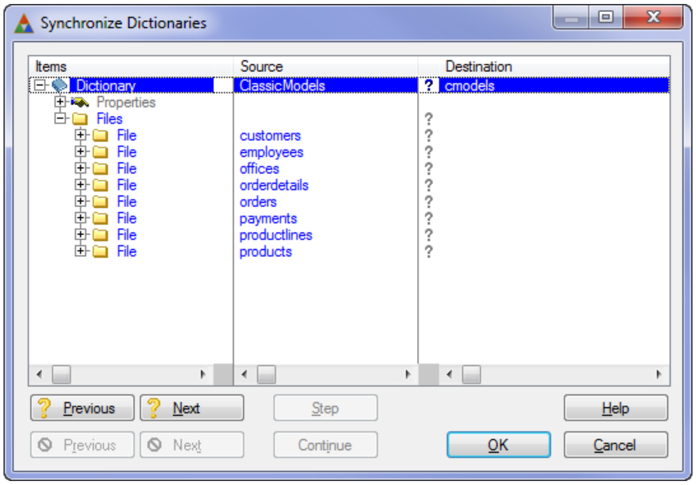
Options

- □ Sort Files alphabetically
- □ Sort Fields alphabetically
- □ Sort Keys alphabetically
- □ Generate Data Conversion Program
- □ Hide Unsupported Attributes
- □ Resolve Validity Conflicts Automatically
- □ Generate DBA Instruction Script

Prompt detail: Less — More

Figure 43. Synchronization options

Figure 44 shows the Synchronizer. All you'll be doing at this stage is importing the entire database, but the Synchronizer is also capable of showing you differences between your database and your dictionary and giving you various ways of resolving those differences.



Synchronize Dictionaries

Items	Source	Destination
Dictionary	ClassicModels	? cmodels
Properties		
Files		?
File	customers	?
File	employees	?
File	offices	?
File	orderdetails	?
File	orders	?
File	payments	?
File	productlines	?
File	products	?

Figure 44. The Synchronizer

If you click OK at this stage you'll end up with an empty dictionary. You have to tell the Synchronizer which tables to add. You do that by right-clicking on a table and choosing Add To or by pressing Ctrl-A. You can also do this at the Files or Dictionary level if you want to add all the tables at once.

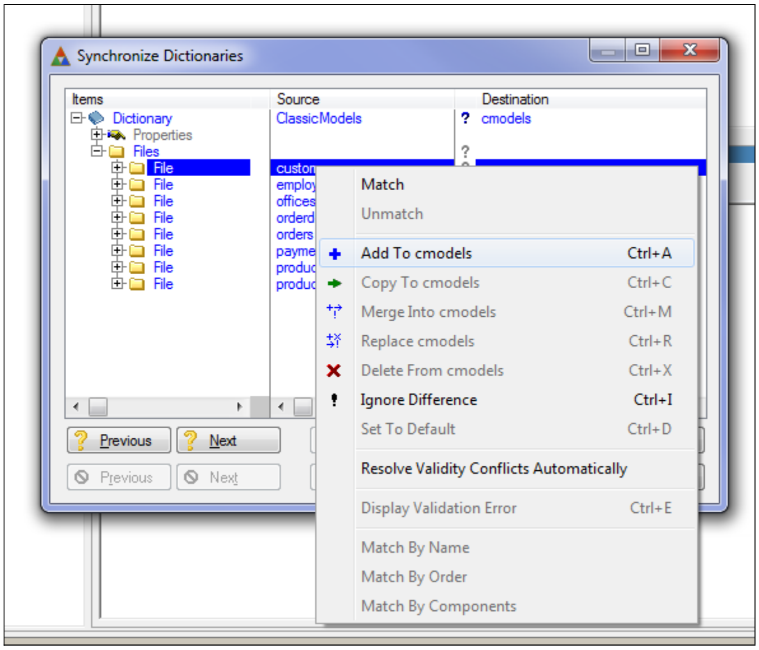
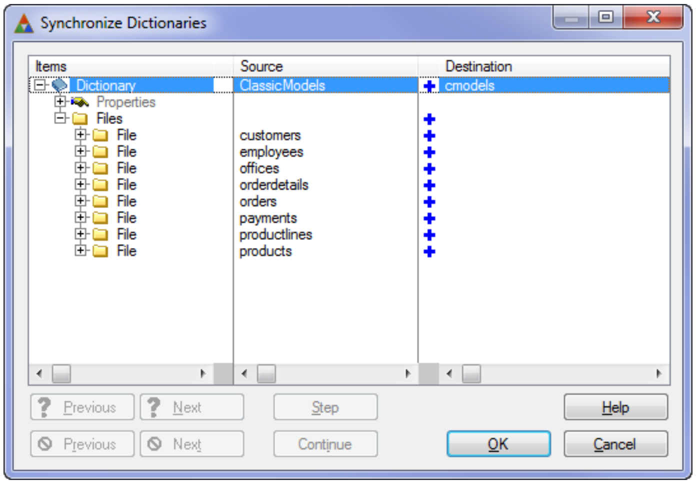


Figure 45. Adding the table to the dictionary

The + icons indicate the tables will be added to the dictionary. Click OK to proceed, then save the dictionary.

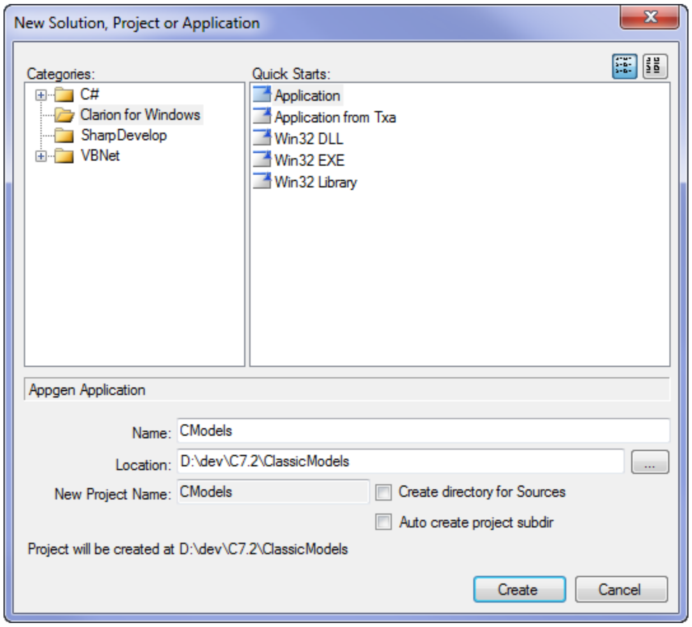


Items	Source	Destination
Dictionary	ClassicModels	+ cmodels
Properties		
Files		+
File	customers	+
File	employees	+
File	offices	+
File	orderdetails	+
File	orders	+
File	payments	+
File	productlines	+
File	products	+

Figure 46. All tables marked for adding

Creating the application

To create the application go to File | New Solution, Project or Application. Select the Clarion for Windows category and the Application Quick Start.



Appgen Application

Name: CModels

Location: D:\dev\C7.2\ClassicModels

New Project Name: CModels

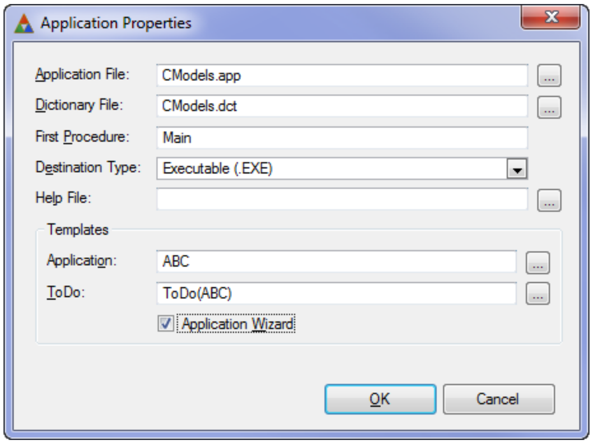
□ Create directory for Sources

□ Auto create project subdir

Project will be created at D:\dev\C7.2\ClassicModels

Figure 47. Creating a new application

Select the Dictionary File and make sure the Application Wizard option is checked.



Application File: CModels.app

Dictionary File: CModels.dct

First Procedure: Main

Destination Type: Executable (.EXE)

Help File:

Templates

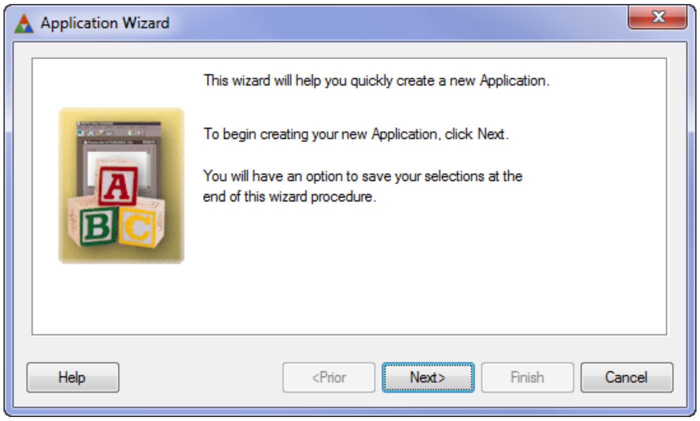
Application: ABC

ToDo: ToDo(ABC)

☑ Application Wizard

Figure 48. Setting the dictionary and enabling the Application Wizard

To get a basic app up and running just accept all the wizard defaults, and click Finish at the first opportunity.

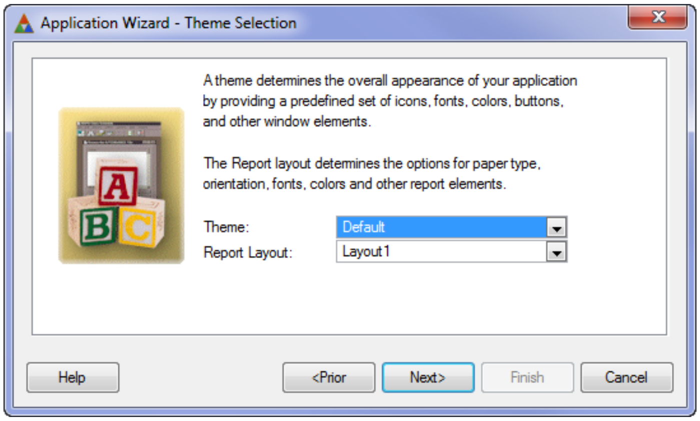

Application Wizard

This wizard will help you quickly create a new Application.

To begin creating your new Application, click Next.

You will have an option to save your selections at the end of this wizard procedure.

Figure 49. The Application Wizard


Application Wizard - Theme Selection

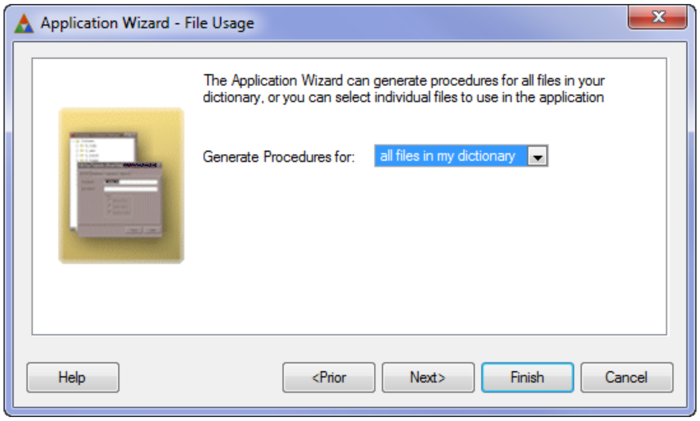
A theme determines the overall appearance of your application by providing a predefined set of icons, fonts, colors, buttons, and other window elements.

The Report layout determines the options for paper type, orientation, fonts, colors and other report elements.

Theme: Default

Report Layout: Layout1

Figure 50. Choosing the default layout

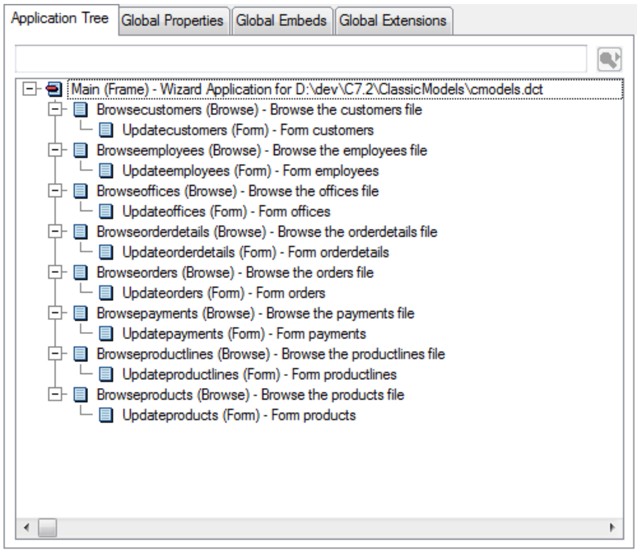

Application Wizard - File Usage

The Application Wizard can generate procedures for all files in your dictionary, or you can select individual files to use in the application

Generate Procedures for: all files in my dictionary

Figure 51. Generating browses and forms for all files

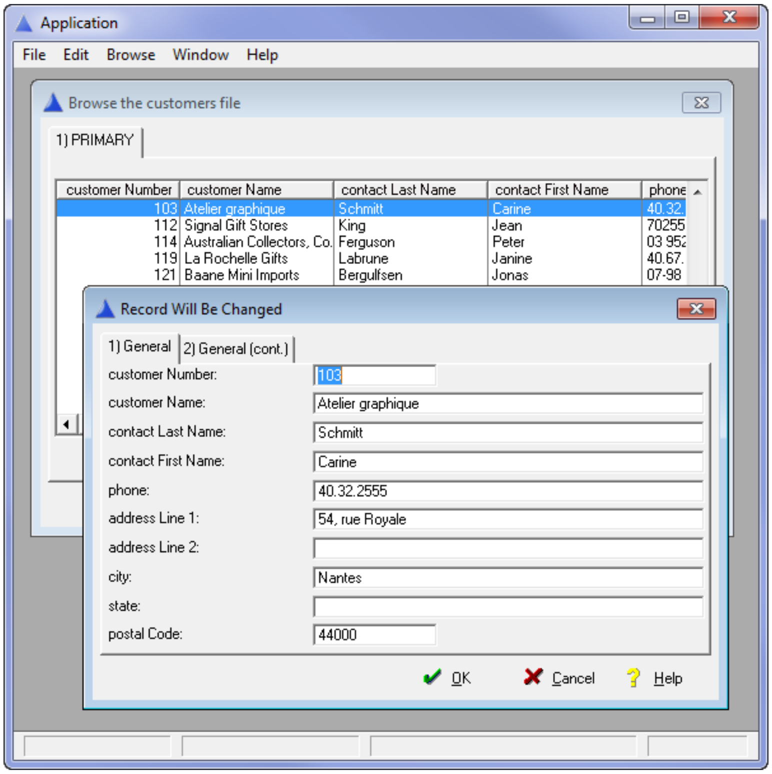
Figure 52 shows the generated procedures.



- Main (Frame) - Wizard Application for D:\dev\C7.2\ClassicModels\cmodels.dct
  - Browsecustomers (Browse) - Browse the customers file
    - Updatecustomers (Form) - Form customers
  - Browseemployees (Browse) - Browse the employees file
    - Updateemployees (Form) - Form employees
  - Browseoffices (Browse) - Browse the offices file
    - Updateoffices (Form) - Form offices
  - Browseorderdetails (Browse) - Browse the orderdetails file
    - Updateorderdetails (Form) - Form orderdetails
  - Browseorders (Browse) - Browse the orders file
    - Updateorders (Form) - Form orders
  - Browsepayments (Browse) - Browse the payments file
    - Updatepayments (Form) - Form payments
  - Browseproductlines (Browse) - Browse the productlines file
    - Updateproductlines (Form) - Form productlines
  - Browseproducts (Browse) - Browse the products file
    - Updateproducts (Form) - Form products

Figure 52. The generated procedures

And Figure 53 shows the running application. It may not be pretty yet, but it's a fully functional MySQL app!



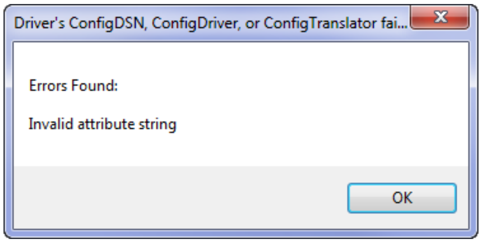
customer Number	customer Name	contact Last Name	contact First Name	phone
103	Atelier graphique	Schmitt	Carine	40.32.
112	Signal Gift Stores	King	Jean	70255
114	Australian Collectors, Co.	Ferguson	Peter	03 952
119	La Rochelle Gifts	Labrune	Janine	40.67.
121	Baane Mini Imports	Bergulfsen	Jonas	07-98

customer Number:	103
customer Name:	Atelier graphique
contact Last Name:	Schmitt
contact First Name:	Carine
phone:	40.32.2555
address Line 1:	54, rue Royale
address Line 2:	
city:	Nantes
state:	
postal Code:	44000

Figure 53. The running application

Two problems with MyODBC 5.1

When I first ran my application against the CustomModels database I was surprised to see only a single record displayed in the Customer browse. When I pressed PageDown, however, the browse loaded normally. Thinking there must be some ODBC setting out of whack, I went back to my ODBC administrator. But when I attempted to edit the CustomModels DSN the administrator gave me an Invalid attribute string error message (Figure 54).



Driver's ConfigDSN, ConfigDriver, or ConfigTranslator fai...

Errors Found:

Invalid attribute string

Figure 54. A bug in the ODBC driver

It turns out that the Invalid attribute string error is due to a bug in the 5.1.7 MyODBC driver. The solution is to download the patched driver and copy the patched DLL overtop of the installed DLL (I found my installed version in C:\Program Files (x86)\MySQL\Connector ODBC 5.1).

After that I was able to edit the DSN, but the browse bug was still there and I couldn't find an obvious cause. I asked the Clarion Skype chat members if anyone had encountered this problem, and Roberto Renz advised me to use the MyODBC 3.51 driver instead of the 5.1 driver. I already had that version installed, so I renamed my original DSN, created a new MyODBC 3.51 DSN with the original name, and re-ran the app. Everything worked as expected.

A little while later Mark Riffey reported that 5.1.6 has been working well for him. I uninstalled 5.1.7, installed 5.1.6, and my browses behaved normally again. I did a bit more digging and discovered a reported bug in 5.1.7 that causes the driver to limit the result set to a single row. So the moral of this story seems to be to avoid 5.1.7.

Summary

To get a Clarion application working with MySQL you need three things: the MySQL server, the MyODBC driver, and a dictionary that corresponds to the database. In this article I've stepped through installing MySQL, installing MyODBC, and using the Dictionary Synchronizer to import the MySQL database.

Resources

- Download MySQL 5.1 (or the latest release)
- Download MyODBC 5.1.6 (all 5.0 MyODBC versions are listed)
- Download the sample database

David Harms is an independent software developer and the editor and publisher of Clarion Magazine. He is also co-author with Ross Santos of Developing Clarion for Windows Applications, published by SAMS (1995), and has written or co-written several Java books. David is a member of the American Society of Journalists and Authors (ASJA).

Article comments

by Darko Karamarko on October 13 2010 (comment link)

Good work... I wish you could find some time in the near future and do similar with Firebird. thanks

by Dave Harms on October 13 2010 (comment link)

Darko,

I've been mulling over which one to do next. Firebird it is!

Dave

by Angel L. Bermudez, Jr. on October 20 2010 (comment link)

Really helped. Great job, can you please do one on Postgres?

Thanks

Angel

by Dave Harms on October 20 2010 (comment link)

Will do, Angel. After Firebird.

Dave

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CLARION MAGAZINE
READ. LEARN. SOLVE.

Clarion Magazine at the ClarionLive! DevCon

By Dave Harms

Posted October 20 2010

The Clarion Magazine office will be closed from Tuesday, October 26 through Sunday, October 31, 2010. During that time I'll be at the ClarionLive! DevCon in Denver. I won't have a booth set up anywhere as I'll be busy moderating sessions and filing reports for Clarion Magazine's subscribers, but I will be doing a short presentation on Clarion Magazine (and possibly DevRoadmaps) on Friday sometime between 5:15 and 6:00 p.m.

I'm also speaking at 3:30 on Saturday. The title of my presentation is "90 things every Clarion developer needs to know about .NET, in 90 seconds or less." Yes, there's a ton of material to cover. It's going to be a bit of a wild ride, but I trust everyone attending will come away with some useful new information.

Saturday evening from 8:00 to 10:00 Bruce Johnson, Mike Hanson and I will be having a panel discussion on "Future Proofing Your Development". Topics include:

- Choosing a data platform (do you really need to move from TPS to SQL?)
- How important is OOP, really?
- Isolating business logic (how and why)
- How testable does your code need to be?
- Sticking with Win32 vs porting to .NET
- Is rewriting an app in newer technology ever a good idea?
- What .NET technologies should you be using for desktop apps?
- What kinds of web technologies are available, and when should you use them?

I know, by Saturday night you'll be ready to put your feet up. But hang in there. We'll have three very different perspectives on Clarion development up on stage and the conversation is sure to be interesting.

David Harms is an independent software developer and the editor and publisher of Clarion Magazine. He is also co-author with Ross Santos of Developing Clarion for Windows Applications, published by SAMS (1995), and has written or co-written several Java books. David is a member of the American Society of Journalists and Authors (ASJA).

Article comments

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Clarion.NET, Great Expectations, and the Emerald Isle

By Dave Harms

Posted October 21 2010

The Denver DevCon is fast approaching, and I've been preparing my presentation, titled "90 things you need to know about .NET, in 90 minutes or less!"

My presentation isn't about Clarion.NET (although it gets a few mentions), but about the wider world of .NET development. And it's a really wide world.

If programming languages were countries, Clarion (Win32) would be, oh, Ireland, let's say. Nice country, Ireland. Beautiful landscapes. Lots of history. Decent local economy (ignoring the moment the recent housing bust and related problems). You can have a good life in Ireland.

But let's say you've lived your whole life in Ireland, you've never watched much TV, you don't read a lot, and you're not really on the internet much. In other words, Ireland is your home and you don't know or care much about anywhere else. And then a rich aunt dies and leaves you a packet of money on the condition that you spend a year traveling the world, visiting at least one different country a week and spending at least one month on each of the seven continents.

Your head would be spinning at the end of that year. You'd have a whole different perspective on life, on the world, on little old Ireland.

That's kind of what it's like diving into .NET. It's not the *whole* programming world - Java's the other heavyweight out there right now, and there are lots of smaller countries (like Clarion) - but .NET takes up a sizable chunk of the available space. And as most travellers find when going to a foreign land, there are a whole lot of things in .NET that just don't make sense right away. Migrating from Clarion Win32 programming to .NET programming can be difficult.

But does it really have to be that way? Should we have to go somewhere else to do .NET? Isn't the whole point of Clarion.NET to let us stay in Ireland and reap the benefits of all the .NET goodness out there in the wide world?

In short, can't we just do business with .NET and not have to live in a full-on .NET country?

Two paths

There are a lot of potential paths to .NET for Clarion developers, and rather than sketch them all out (or as many as I can think of) I'll stick with two ends of the spectrum.

At one end is the idea that in .NET you leave the Clarion language unchanged and you use it to create .NET binaries instead of Win32 binaries. Theoretically this can be done - in fact, Andrew Barnham has more or less done it for Java with his Clarion2Java project, in which Clarion code, unchanged, is compiled to Java bytecode. If this same process could be done for .NET you'd still be living in familiar old Ireland, but you'd have the opportunity for a lot more foreign trade (i.e. interoperability with the rest of the .NET world). In reality, Clarion# isn't like this - some key aspects of the language have changed, and you do have to modify your code.

At the other end of the spectrum is the idea that Clarion.NET is a radically different experience from Clarion Win32. The language changes to be more .NET-friendly, the application architecture becomes more mainstream, etc. To continue the analogy, you leave behind the comforts of home and you travel the world - you get to know other cultures, other ways of doing things. You set aside your preconceived notions of what life (code) should be like, and you experience the richness of other cultures. Is Clarion.NET actually like this? Maybe. It all depends on the capabilities of the new AppGen and the templates that ship with it.

More likely the reality (once there's an AppGen) will fall somewhere in between these two extremes.

You're not in Ireland anymore

My impression is that many Clarion programmers would like to stay in Ireland. They like the promise of familiarity with extra functionality. They want an easy upgrade path to .NET.

Based on what we've seen so far in Clarion#, I'd say that the "stay completely in Ireland" option is out of the question. The Clarion# language is significantly different from the Clarion Win32 language in that both the WINDOW structure and the ACCEPT loop are gone. That completely changes how you write UI code in Clarion#. So you'll have to spend some time in the land of Windows Forms (WinForms), which for the sake of illustration I'll say is the United States. Now, if SoftVelocity changes to WPF (the newer replacement for WinForms) or Silverlight (a subset of WPF, for browser apps), you're off to somewhere else, like Japan.

The "stay at home" option didn't go away by accident. Some years ago SoftVelocity considered preserving the `WINDOW` structure (and perhaps even `ACCEPT`, though I'm not as sure about that), and decided against that approach. But even if they had retained those language features the WINDOW structure would have to change to accommodate the unlimited variety of controls available in .NET. In any case SoftVelocity took another step toward the .NET mainstream.

There's still a very strong "local" flavor to Clarion.NET. The product has its own IDE. The Clarion# language, despite the loss of WINDOW and ACCEPT, is in most respects is very much like the Clarion language we already know. Much of the vocabulary of Clarion# is the same as the vocabulary of C# and VB.NET, the mainstream .NET languages; it's more like Clarion# is spoken with a thick Irish brogue.

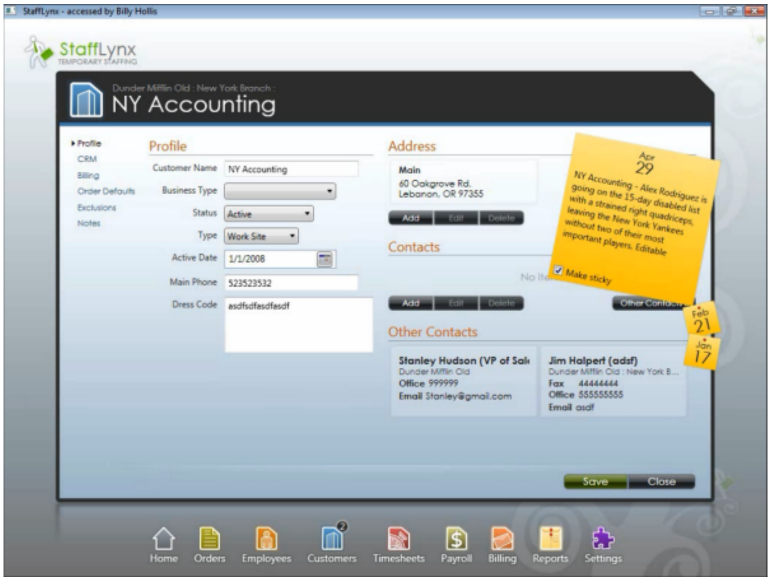
Globalization is upon us

For good or for ill, globalization is a factor in software development just as it is for national economies. Clarion.NET is a response to those forces. Clarion developers want access to those other markets. But many seem to think they can have that without paying a price, without losing anything meaningful about the Ireland they love.

I don't think that's a reasonable expectation.

First, the Clarion/Ireland way of building applications is (with apologies to the very progressive Irish) a little out of date. Our apps use the GDI (part of the Windows API) to draw the user interface. That's not a terrible thing, but one of the touted benefits of going to .NET is the ability to spruce up the user interface. If you want to get the best UI out of .NET applications you use XAML, an XML-based declarative approach used in both Silverlight and WPF. WPF and Silverlight don't use the Windows API to draw the user interface, they use DirectX, a newer subsystem with support for both 2D and 3D rendering.

Figures 1-3 show a few screens from Billy Hollis's now legendary DNRTV webcast on building WPF line of business applications.



Dunder Mifflin Old : New York Branch :

NY Accounting

Profile

Customer Name: NY Accounting
Business Type:
Status: Active
Type: Work Site
Active Date: 1/1/2008
Main Phone: 523523532
Dress Code: asdfsdfasdfasdf

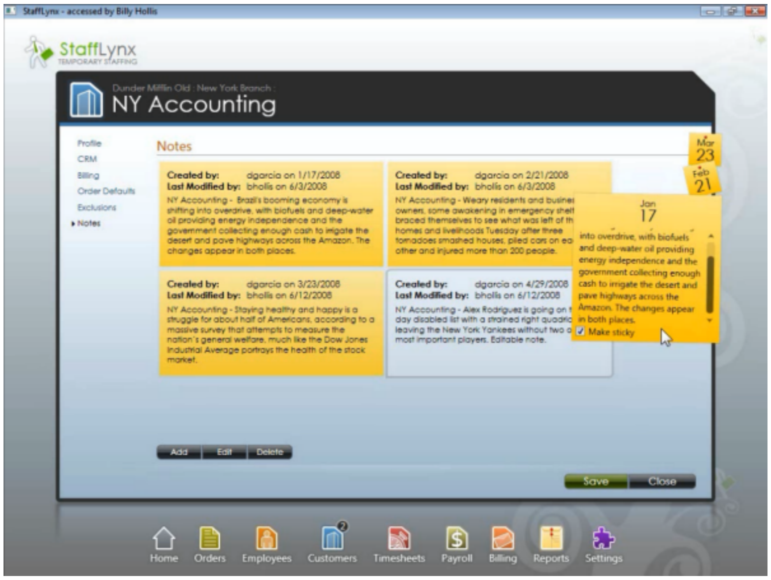
Main
60 Oakgrove Rd.
Lebanon, OR 97355

Apr 29
NY Accounting - Alex Rodriguez is going on the 15-day disabled list with a strained right quadriceps, leaving the New York Yankees without two of their most important players. Editable
☑ Make sticky

Stanley Hudson (VP of Sal
Dunder Mifflin Old
Office 999999
Email Stanley@gmail.com

Jim Halpert (adsf)
Dunder Mifflin Old : New York B...
Fax 44444444
Office 555555555
Email asdf

Figure 1. WPF application



StaffLynx - accessed by Billy Hollis

Dunder Mifflin Old : New York Branch :

NY Accounting

Notes

Created by: dgarcia on 1/17/2008
Last Modified by: bhollis on 6/3/2008
NY Accounting - Brazil's booming economy is shifting into overdrive, with biofuels and deep-water oil providing energy independence and the government collecting enough cash to irrigate the desert and pave highways across the Amazon. The changes appear in both places.

Created by: dgarcia on 2/21/2008
Last Modified by: bhollis on 6/3/2008
NY Accounting - Weary residents and busines owners, some awakening in emergency shelt braced themselves to see what was left of th homes and livelihoods Tuesday after three tornadoes smashed houses, piled cars on ea other and injured more than 200 people.

Created by: dgarcia on 3/23/2008
Last Modified by: bhollis on 6/12/2008
NY Accounting - Staying healthy and happy is a struggle for about half of Americans, according to a massive survey that attempts to measure the nation's general welfare, much like the Dow Jones Industrial Average portrays the health of the stock market.

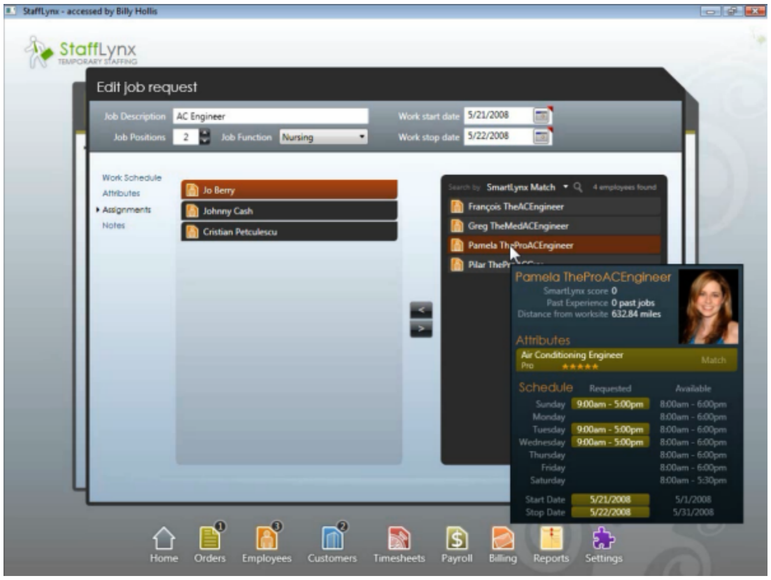
Created by: dgarcia on 4/29/2008
Last Modified by: bhollis on 6/12/2008
NY Accounting - Alex Rodriguez is going on t day disabled list with a strained right quadric leaving the New York Yankees without two o most important players. Editable note.

Jan 17

into overdrive, with biofuels and deep-water oil providing energy independence and the government collecting enough cash to irrigate the desert and pave highways across the Amazon. The changes appear in both places.

☑ Make sticky

Figure 2. WPF application



StaffLynx - accessed by Billy Hollis

Edit job request

Job Description: AC Engineer
Job Positions: 2
Job Function: Nursing
Work start date: 5/21/2008
Work stop date: 5/22/2008

Jo Berry
Johnny Cash
Cristian Petculescu

Search by SmartLynx Match — 4 employees found

François TheACEngineer
Greg TheMedACEngineer
Pamela TheProACEngineer
Pilar ThePr

Pamela TheProACEngineer
SmartLynx score 0
Past Experience 0 past jobs
Distance from worksite 632.84 miles

Attributes
Air Conditioning Engineer — Pro ★★★★★ — Match

Schedule	Requested	Available
Sunday	9:00am - 5:00pm	8:00am - 6:00pm
Monday		8:00am - 6:00pm
Tuesday	9:00am - 5:00pm	8:00am - 6:00pm
Wednesday	9:00am - 5:00pm	8:00am - 6:00pm
Thursday		8:00am - 6:00pm
Friday		8:00am - 6:00pm
Saturday		8:00am - 5:30pm
Start Date	5/21/2008	5/1/2008
Stop Date	5/22/2008	5/31/2008

Figure 3. WPF application

If SoftVelocity had ported Clarion to .NET unchanged, with `WINDOW` and `ACCEPT` intact, could you create those kinds of user interfaces? I think it's highly unlikely, and if you could do it, it would be a whole lot more work than doing it the "normal" way with XAML.

Will the new AppGen be able to work with XAML? Maybe, although the window designer's drag-and-drop-with-embeds approach we're familiar with is more applicable to a WinForms model.

Clarion's standard application architecture is also something of a problem. Newer application architectures emphasize something called Separation of Concerns (SoC). The idea is that you want to divide the program up into parts that don't overlap in functionality. The user interface is one of those parts, the business layer is another, the database access yet another, etc. In a typical Clarion application the user interface code, the business logic and the database access are often lumped together in a single procedure. This makes it much more difficult to test and reuse code.

App migration possibilities

Let's stick a little longer with the hope of making a smooth transition from Clarion Win32 to .NET.

It's theoretically possible to take an existing Clarion application and port it to Clarion#. You don't have `WINDOW` and `ACCEPT`, but with some work you could probably reproduce most of the functionality using WinForms, which uses the same GDI technology to create windows as does Clarion Win32.

Some things are going to be problematic, such as buttons that are on tabs but located outside the tab's bounds. In Clarion Win32, those buttons show; in WinForms, they're outside the bounds of their containing control and don't show. (It's worth noting that you'd have the same problem if Clarion# had a `WINDOW` structure and translated that structure into a WinForms window behind the scenes.)

Let's say you overcome the UI issues. You'll also need to work through other language changes such as the loss of `OVER` and the move from one-based array indexes to zero-based array indexes. So you overcome those as well. In the end you'll have an app that looks pretty much like your Clarion Win32 app, and it'll have the same internal structure as your old app.

What exactly have you gained? Nothing much visually, although you can use a greater variety of custom controls more easily. How about the ability to call .NET code? Guess what - you can do that already from a Clarion Win32 app, though again not quite as easily as from a native .NET app.

The fact is many of the benefits developers expect to get from .NET just aren't available here in Ireland. They're out there in the rest of the world.

SoftVelocity's vision isn't fully a stay-at-home vision either. They're embracing a new data access technology (their LINQ to File provider) and they've said they will support WPF at some point. None of that stuff exists in the Clarion Win32 world.

Migrating to a new platform is seldom easy, and I think it's safe to say that the more advantage you want to take of .NET's capabilities, the more challenging that migration will be, and the more time you'll be spending in foreign lands.

And it's not just about you and your code; it's also about the code from all the third party vendors you may be using. How much of that code still applies in .NET? How much of that code can reasonably be ported to .NET?

The case for staying home

I'm a huge fan of .NET - I think it's going to be with us for a long time, and I'm excited about the many advances that have been made in programming tools and techniques on the .NET platform. I'm a big believer in the benefits of seeing the world. I write .NET code almost every day.

At the same time, I think we need to have an appreciation for what we have in our own country. No, Clarion Win32 isn't a perfect language, and the application architecture is a bit outdated. What we do have, however, is a very mature, very productive environment for building Windows applications. This environment, this culture, is the product of many years of work by a lot of talented individuals. It includes not just the Clarion code generation technology and the application architecture embodied in the templates, but also the many third party products and the collective knowledge about Clarion programming as found here in Clarion Magazine, in the SoftVelocity newsgroups, and elsewhere on the internet.

So enjoy your time in Win32 development; there will be value in Clarion 6/7+ for years to come. And if you're one of those Clarion developers planning to ride the Win32 product through to retirement, more power to you.

The case for going abroad

If you really do have a compelling need for a .NET solution, consider where you are on the above-mentioned spectrum. Are you still mostly trying to stay within the current Clarion way of doing things? If so, can you achieve most or all of what you want simply by calling .NET code from Clarion (or vice versa)? Perhaps you don't really need a full-on .NET solution just yet.

If you need something now, base your decisions on what's available now. If you can afford to wait, then wait. But in either case do your research; learn everything you can about how to build your kind of application in .NET. Do you need ASP.NET (WebForms), ASP.NET MVC, WinForms, WPF, Silverlight, Compact Framework, Windows Phone 7 (Silverlight), or any combination thereof? If you're planning a long-term strategy you should seriously consider the XAML-based technologies (WPF and Silverlight). And you should definitely be thinking of a more modern application architecture that embodies the principle of separation of concerns (a common feature of XAML-based applications).

If you'd like to fully adopt current best practices and mainstream technologies, and you absolutely must do it now, then you're going to be spending a good chunk of your time outside of Ireland. I'm talking Visual Studio and learning C# and/or VB.NET. Yes, you can build .NET applications with Clarion.NET even without the AppGen, but the toolset isn't nearly as rich. You may still want to use Clarion# to create libraries for tasks like TPS file access and reporting, but on the whole Visual Studio has a productivity advantage, assuming you're comfortable with C# or VB.NET syntax.

That productivity advantage may swing back to Clarion.NET at such time as there's an AppGen. But there's no way to know that until the AppGen is actually available. What if your need is for WPF and the AppGen generates only WinForms code? Or vice versa?

Be as prepared as you can be.

Conclusion

Don't just be prepared. Be realistic.

This transition, from Win32 to .NET, is oddly different from the last major transition, from DOS to Windows. We didn't have any tooling for Windows then - it was all new. So we had no particular expectations. This time around we all have years of Windows development experience. We have much more definite expectations, and in many cases those expectations aren't realistic.

In the mid-nineties, writing Windows applications typically meant enduring the pain of C or C++. Clarion for Windows provided a huge language productivity advantage *and* a huge code generation advantage. Good times.

The language *productivity* advantage really doesn't exist in .NET - C# and VB.NET are pretty much equivalent to Clarion# (and they come with a more feature-rich IDE). There may be some code *reuse* advantages: if you have a lot of non-UI code, or a bunch of reports, those may port fairly cleanly. And the Clarion# runtime lets you continue to do familiar kinds of file access.

The one big advantage most Clarion developers are waiting for is code generation. There too, some caution is in order. Many of us rely on a host of third party products, mature templates and a long-established runtime library. But the Win32 development culture we enjoy didn't appear overnight, and it's unreasonable to expect a .NET version of this culture to appear fully formed, like magic, on the day the AppGen ships. Cultures take time to develop. If SoftVelocity were to deliver the long-awaited Clarion.NET AppGen tomorrow, complete with templates, it would take time (probably years) for Clarion.NET environment (including the third party products) to reach the maturity of the Clarion Win32 environment.

It's going to take time to make the transition to .NET. It's going to take a lot of learning as well.

Clarion Win32 is a small, familiar country; .NET is hundreds of countries, some of them impossibly strange. But if you like to travel, this is a great time to see the world.

Shameless plug alert!

The following is a promotional notice for Clarion Magazine's sister site, DevRoadmaps.com.

I began publishing .NET-related articles in Clarion Magazine back in 2005, with the first Clarion# articles appearing in late 2007 following the first release of Clarion.NET. I also began redeveloping the Clarion Magazine web site in Clarion#, later in C#, and the more I learned about .NET the more I realized just how big the .NET world really is. And I talked to Clarion developers who were trying to find their way in .NET, and all reported the same problem I'd experienced. It's *really* difficult to find the information you need.

In the Clarion world the problem is often too little information; in the .NET world the problem is too much information. That's not information that's specific to Clarion.NET - it's information that's applicable to all kinds of .NET development, and Clarion.NET is just one of the tools you can use to do that development.

While ClarionMag is the home of Clarion-related information, including Clarion.NET-related information, I wanted to create a new site that would make it easier for .NET business software developers of all kinds find the information they need. I also wanted to avoid filling Clarion Magazine up with .NET information not specific to Clarion.NET

If you're a .NET developer there may be in excess of 10,000 web pages containing some potentially useful information for the kind of development you do. If you were to take those web pages and put them in book form they would fill a bookshelf. And if you took one of those books off the shelf and opened it, you'd find page after random page of articles. You'd have lots of cross references (see Volume 12, page 234) and a heck of an index (Google, Bing) but there would be nothing like a table of contents.

A table of contents is a wonderful thing. It provides you with an overview of the information; it helps you zero in on subjects of interest; it shows you things in context, so you can see how one piece of information relates to another piece of information; and it shows you things you may not have realized you needed to know.

That's the void that DevRoadmaps fills. We locate and filter relevant web pages and organize them into a table of contents-like view, what we like to call a Roadmap. Not only can you use the roadmap to locate the information you want, you can also create your own customized view of the roadmap including just the topics you personally find interesting. (We also have a beta version of the roadmap implemented for Clarion Magazine.)

If you're interested in .NET development, take a moment to look at DevRoadmaps. Like Clarion Magazine, DevRoadmaps is a subscription-based publication. During the beta period you can get a one-year subscription to DevRoadmaps for just $79, saving $20 off the gold price. And subscribers get free access during the beta period, plus our usual money back guarantee with a full refund during the first year if you're not completely satisfied.

David Harms is an independent software developer and the editor and publisher of Clarion Magazine. He is also co-author with Ross Santos of Developing Clarion for Windows Applications, published by SAMS (1995), and has written or co-written several Java books. David is a member of the American Society of Journalists and Authors (ASJA).

Article comments

by Andrew Barnham on October 21 2010 (comment link)

Hi Dave. I think that the issue of programmer familiarity is only one aspect of this transition. Another is preservation of investment. If you have 1000 manhours invested into a Win32 App, ideally you would like to preserve as much of that investment into .NET as possible. Another is end-user comfort : which also fits into your familiarity perspective. End users resist changes to both the look and their workflow; even smallest changes cause people to fluster: and a complete stack replacement is always highly disruptive. The new environment may and should encourage switching to newer techniques in a graduated process and at least allow, upto as much as practical graduated, gentle transition for all stakeholders, programmers, end-users, support people etc. Evolution, not Revolution.

Different peoples needs and expectations and willingness to learn and experiment with new technologies; unproven within the context of their business needs; differ. Yet the above at least describes the Clarion.NET I would be willing to pay money for. Unless I have completely misread the situation I would think the product I just described would be attractive to most too; not just the tinkerers and the early adopters. If such a product existed 2 years ago, I would of brought it and learnt .NET.

Even a straight port will provide significant advantages as I have discovered with Clarion2Java. Managed code delivers productivity gains: runtime is more stable, easier to debug. And in clarion2java at least, compile duty cycle is significantly faster than Clarion Win32. Also gain access to new libraries (which you can do in Win32 anyway by bridging to .NET as you indicate above). SV doesn't have to solve everything in first release, just provide a solid foundation that is attractive to typical clarion programmer. Let the likes of yourself and Capesoft and other innovators work on enriching and extending the new foundation.

Some of the language problems you describe above are actually not terribly difficult to solve and solved in Clarion2Java without requiring clarion programmers to change their ways. OVER() attribute, Array Indexing and UI challenges such as controls appearing outside of their container bounds.

by Dave Harms on October 21 2010 (comment link)

Thanks Andrew - you certainly have a better perspective than any of us I think, given your work with Clarion2Java.

One thing to keep in mind is that SoftVelocity's perspective isn't necessarily yours or mine. They need sufficient sales to justify the investment in building Clarion.NET. Will they get that by creating a tool that's optimal for the existing (and, in global terms, quite small) user base? Or rather by creating a tool that has wider appeal but that has less appeal to that core user base? At the risk of sounding like a broken record, I don't envy

SV their choices.

by Andrew Barnham on October 21 2010 (comment link)

Understood. Not having access to SV's books or business thinking, can only speculate. Yet I feel that my strategy quite likely aligns with their business strategy. So I will indulge in a little more speculation never-the-less :) ...

SV investment into Clarion.NET: spans multiple years. Manhour investment must be at least 5k hours if not more. c2j is approx 800 hours. 3 years people have been complaining about a lack of an AppGen. c2j has an app gen! : Clarion's. I do about 70/30 clarion &amp; java in terms of time; because the appgen is a proven effective tool; even in c2j context.

I don't envy their position. Selling programming tools to programmers these days is hard work; most language innovation that professional industry pays attention to occurs in OSS environments or by the giants like Microsoft. None spends money on unproven solutions anymore: it has to be either free or underwritten by a giant (Microsoft). If SV was a modern startup with no customer base and no software asset and just a nebulous plan to RADify .NET and charge money for it, I think pretty much anyone would consider what they are trying to do to be highly unlikely to succeed. But when you think about it, this is pretty much what SV have done: they have barely leveraged their existing assets/customers.

Look at how successful Android is, it is successful because it faithfully replicates the Java language even though strictly speaking it isn't Java. SV have pegged the ground with something no-one recognizes; that has no mind-share at all.

Yet if my speculations are broadly correct then they have choices; they have a existing customer base and a software asset. A big difficulty from my point of view is that they now have multiple largely incompatible product streams to support: Clarion and Clarion.NET. But it wouldn't be too difficult, I should imagine to consolidate their disparate streams into a unified strategy along the lines I suggest above.

If their current internal strategy is, "how can we repackage the .NET world, add value and resell it", I would assert that this is a flawed strategy. A better strategy would be "What is the best way to bring .NET to our customers and allow our existing assets embrace and extend .NET".

by Dave Harms on October 22 2010 (comment link)

Andrew, you make some very good points. I don't think I have anything to add.

Dave

by Rhys Daniell on November 16 2010 (comment link)

Thanks Dave (and Andrew), stimulating as usual.

Let's not forget that many Clarion 'programmers' are not, strictly speaking, programmers but more like Business Analysts. Our job is to automate our customers' business processes and ensure that their business rules are applied throughout their organisation.

('Programmers' on the other hand, get their kicks from cutting code. New toys are of more interest to them than a productive end result.)*

The seductive UI that .Net can deliver is of little interest to my customers; on the other hand bang for the buck is much more important. And there is no doubt that Clarion delivers that in spades.

Much to the chagrin of mates who are .Net aficionados, I have yet to knock back a customer request because it cannot be delivered - and quickly - in Clarion. We have thin clients, web services, interaction with all sorts of documents.

My personal take on .Net is that it's the product of a bunch of cosseted geeks happily playing in an enormous sandpit up in Redmond. Those guys may have intellectual and marketing firepower but they're not street smart. Bruce Barrington was when he dreamed up CPD.

Looking forward I only see one hole in the business development spectrum that the current Clarion/third party toolset does not plug, and it's sneaking up fast. That hole is mobile devices. The recent release of tablets in the 5" to 9" screen range has suddenly provided a device that could shoulder the PC aside - as, it turns out, has already happened in Japan. Once you have pervasive and inexpensive mobile broadband and a pocketable device with reasonable battery life and a useable interface you can un-tether people from their desks and all sorts of interesting things become possible.

There are already toolsets to address this market but they appear to be universally clueless about data. So if I was SV I'd sidestep .Net altogether and build something that could produce data-rich mobile applications. (We tend to forget that 'data-rich' is Clarion's strong point.)

But I'm not SV, and I'm pretty sure that they have no interest in stepping outside their own tiny sandpit.

- Happy to defend that statement in some other thread :-)

---

by Ray Rippey on November 16 2010 (comment link)

Well, I'm one of those that want to use my Win32 apps to retire with... then I can play with .net or the Android OS.. when I have time to play again. If SV came out with an appgen that I could write simple apps (to start with), I'd probably purchase the product.

Because of the AppGen, Clarion has made me money. I know our business wouldn't be where it is today if I was writing in any other language.

I have businesses that are just now starting to use some of the features like text messaging (as an example). The industry I'm in (video rentals) are slow to change and use what is available. However, the younger folks out there are embracing the new technology. That's why I'd like to be able to write small apps with my code generator (Clarion) for mobile phones. Now, with Windows entering the market, it ought to be a slam dunk for SV to build us something useful for that phone. If SV came out with a small .net generator that I could simply design useful apps for phones, I'd be in 7th heaven.

As far as porting my 20 years worth of code to .net, not interested at all. I've still got people out there using our old dos program.. I imagine they'll be using our Windows software for quite a while.

But when it comes to writing new apps for new industries, great. I'd love to have an app (gen) for that!

by Dave Harms on November 16 2010 (comment link)

Rhys,

> My personal take on .Net is that it's the product of a bunch of cosseted geeks happily playing in an enormous sandpit up in Redmond.

There are some useful lessons we can lean from those geeks, including the value of automated testing and code reusability via established design patterns. Other stuff too. But no question that for raw business app developer productivity there's no equivalent in .NET.

by Dave Harms on November 16 2010 (comment link)

Ray, definitely "play" makes a whole lot more sense than "rewrite" when it comes to .NET.

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C7 Tips: Text Search And Regular Expressions

By Dave Harms

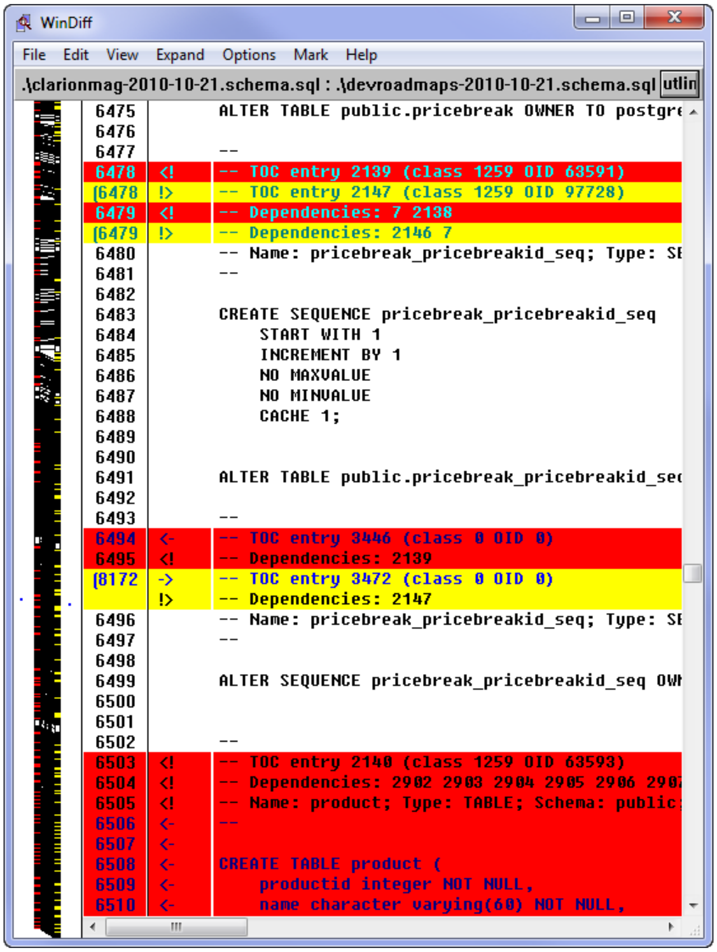
Posted October 25 2010

Work in C7 for a while, and you sometimes forget how much more primitive some things are in C6 and earlier versions. Search and replace is one such example.

I recently needed to compare SQL schemas from two PostgreSQL databases. I have two web sites (ClarionMag and DevRoadmaps) that share a core code base; they also share a database design, or schema. I also have development versions of both of these sites, so that means I have potentially four different databases to keep in alignment.

I don't usually work on ClarionMag and DevRoadmaps at the same time; instead, I'll make a change to one of my development databases, and then I'll propagate that change to the two live databases and then at some point make copies of the live databases for further development work.

I use a fairly simple process to keep my database schemas synchronized. I dump each database schema to a text file, and then I use a difference program like WinDiff to compare the files. But the raw schema files don't lend themselves to this approach because of different unique identifiers. Figure 1 shows a portion of a compare between two schema dumps.



.\clarionmag-2010-10-21.schema.sql : .\devroadmaps-2010-10-21.schema.sql

```
 6475        ALTER TABLE public.pricebreak OWNER TO postgre
 6476
 6477        --
 6478   <!   -- TOC entry 2139 (class 1259 OID 63591)
(6478   !>   -- TOC entry 2147 (class 1259 OID 97728)
 6479   <!   -- Dependencies: 7 2138
(6479   !>   -- Dependencies: 2146 7
 6480        -- Name: pricebreak_pricebreakid_seq; Type: SE
 6481        --
 6482
 6483        CREATE SEQUENCE pricebreak_pricebreakid_seq
 6484            START WITH 1
 6485            INCREMENT BY 1
 6486            NO MAXVALUE
 6487            NO MINVALUE
 6488            CACHE 1;
 6489
 6490
 6491        ALTER TABLE public.pricebreak_pricebreakid_sec
 6492
 6493        --
 6494   <-   -- TOC entry 3446 (class 0 OID 0)
 6495   <!   -- Dependencies: 2139
(8172   ->   -- TOC entry 3472 (class 0 OID 0)
        !>   -- Dependencies: 2147
 6496        -- Name: pricebreak_pricebreakid_seq; Type: SE
 6497        --
 6498
 6499        ALTER SEQUENCE pricebreak_pricebreakid_seq OWN
 6500
 6501
 6502        --
 6503   <!   -- TOC entry 2140 (class 1259 OID 63593)
 6504   <!   -- Dependencies: 2902 2903 2904 2905 2906 290
 6505   <!   -- Name: product; Type: TABLE; Schema: public;
 6506   <-   --
 6507   <-
 6508   <-   CREATE TABLE product (
 6509   <-       productid integer NOT NULL,
 6510   <-       name character varying(60) NOT NULL,
```

Figure 1. Comparing two raw schema dumps

The mostly black bar down the left side is an indicator of where in the files those differences occur (compare with Figure 7 below). There are about 1500 differences between the two files, and almost all of them are due to lines that begin with `-- TOC entry` or `-- Dependencies`. I need to clear out those lines in order to see the meaningful differences between the two schemas.

In this article I'll show you how to do that with regular expressions. But first a quick review of the differences between C6 and C7 searching functionality.

C6 search vs C7 search

Figure 2 shows the C6 search and replace window.

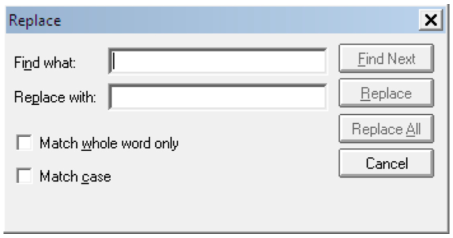
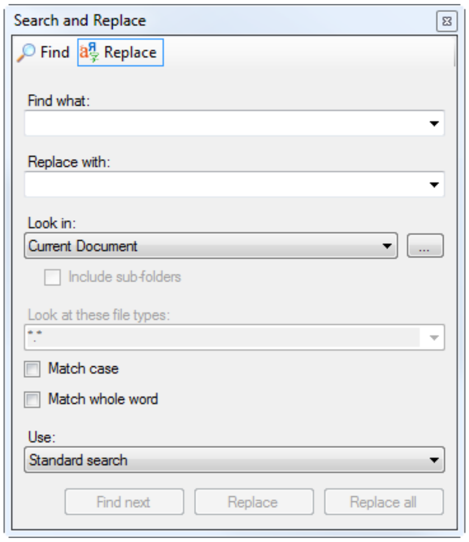


Figure 2. C6 search and replace options

The only search options are to match on whole words and match case. Search is available in the text editor, for the current file (or procedure, structure, or embed).

C7 adds a number of new options to search and replace, as shown in Figure 3.



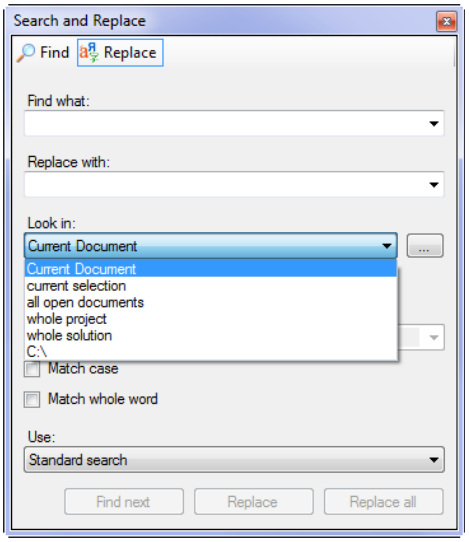
Look in: Current Document

Look at these file types: *.*

Use: Standard search

Figure 3. C7 search and replace options

There are a number of important improvements in C7's search and replace. Both the find and replace fields have history droplists, so you can pick from previously-entered values. C6 lets you search the currently context only, while the C7 "Look in" droplist contains additional choices (Figure 4).



Find what:

Replace with:

Look in: Current Document

□ Match case

□ Match whole word

Use: Standard search

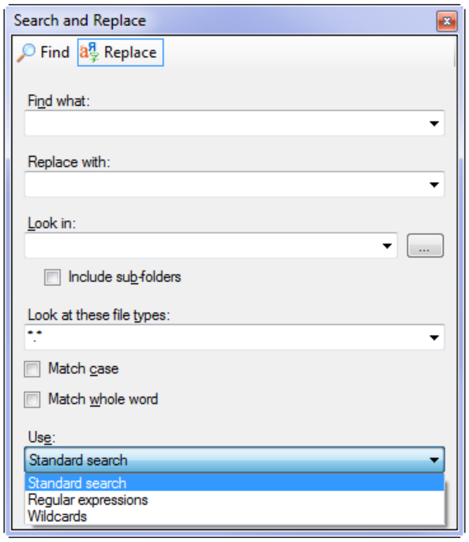
Figure 4. "Look in" options

Keep these options in mind when you're searching. It's easy to fall into C6 habits and only think about searching the text in front of you. But with C7 you can also search selected text, the currently open documents, or all documents in the project or solution. You can also search folders: click on the [...] button after the droplist to choose a specific directory to search.

All of these are terrific features that can save you a ton of time. But this article is about yet another search feature: regular expressions.

Search types

C7 provides three types of searches: standard, wildcard, and regular expression. Figure 5 shows the search type (Use) droplist.



Find what:

Replace with:

Look in:

□ Include sub-folders

Look at these file types: *.*

□ Match case

□ Match whole word

Use: Standard search

Figure 5. The search type droplist.

Standard searches are what we have in C6. Your only search options are whether the search is case sensitive and whether it looks at whole words only.

Wildcard searches let you substitute * and ? in exactly the same way you use them in directory lists. A * stands for more than one character (any character), and ? stands for any single character.

The important thing to remember about wildcard searches is that they are only meaningful inside other text. In my example, if I my search term is

```
 -- Dependencies
```

and my text is

```
 -- Dependencies: 823 7
```

C7 will match only up to the end of `Dependencies` - it will not include the `:` or any other of the following characters. (Visual Studio, on the other hand, will match wildcards before and after a search term, to the beginning/end of the line.)

If my search term is

```
 -- Dependencies*7
```

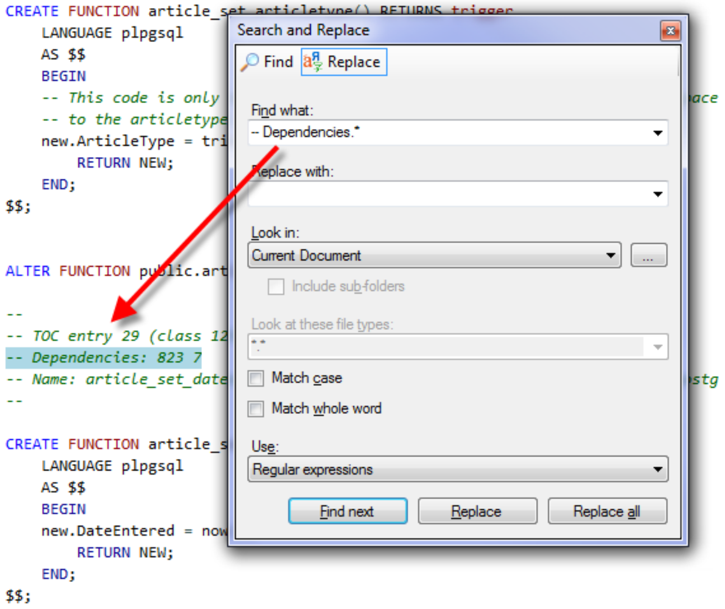
then C7 will match the whole line, but that will work only as long as my last character is 7. I really want to be able to match all lines that begin with -- Dependencies and replace them with a blank string.

Enter regular expressions.

Searching with regular expressions

If you're not familiar with regular expressions (regex), take a moment to read Carl Barnes' excellent article on the subject. In short, regex is pattern matching. And since C7 supports regex searches, all I need to do is find the right pattern and I'll be able to replace the lines that begin with `-- TOC entry` and `--Dependencies` with empty strings so WinDiff can show me just the differences I care about.

In this case the expression is pretty simple: I just follow my previous search terms with a period and an asterisk (.*). That's regex for any character repeated any number of times.



```
CREATE FUNCTION article_set_articletype() RETURNS trigger
    LANGUAGE plpgsql
    AS $$
    BEGIN
    -- This code is only                                                    ace
    -- to the articletype
    new.ArticleType = tri
        RETURN NEW;
    END;
$$;


ALTER FUNCTION public.art

--
-- TOC entry 29 (class 12
-- Dependencies: 823 7
-- Name: article_set_date                                                   stg
--

CREATE FUNCTION article_s
    LANGUAGE plpgsql
    AS $$
    BEGIN
    new.DateEntered = now
        RETURN NEW;
    END;
$$;
```

Search and Replace

Find what: -- Dependencies.*

Replace with:

Look in: Current Document

□ Include sub-folders

Look at these file types: *.*

□ Match case

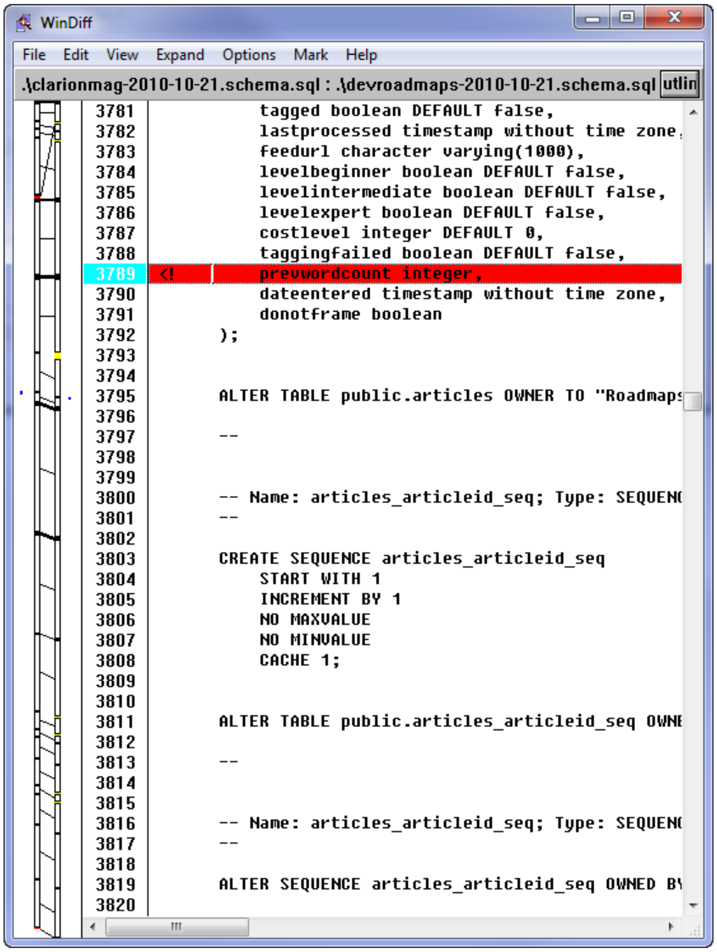
□ Match whole word

Use: Regular expressions

Figure 6. Using a regex

You can match the beginning and end of a line with the ^ and $ characters, but these don't seem to work in C7. But in this case they're not needed.

After searching for and replacing `-- TOC.*` (and doing a couple of non-regex searches specific to my schemas) WinDiff now shows me just the relevant differences between the schemas (Figure 7).

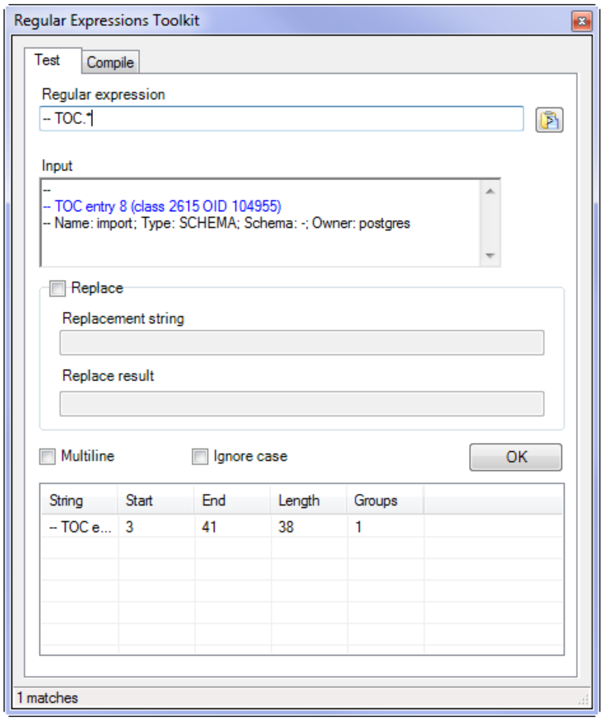

WinDiff
File
Edit
View
Expand
Options
Mark
Help
.\clarionmag-2010-10-21.schema.sql : .\devroadmaps-2010-10-21.schema.sql
utlin

```
          tagged boolean DEFAULT false,
          lastprocessed timestamp without time zone,
          feedurl character varying(1000),
          levelbeginner boolean DEFAULT false,
          levelintermediate boolean DEFAULT false,
          levelexpert boolean DEFAULT false,
          costlevel integer DEFAULT 0,
          taggingfailed boolean DEFAULT false,
 <!       prevwordcount integer,
          dateentered timestamp without time zone,
          donotframe boolean
      );


      ALTER TABLE public.articles OWNER TO "Roadmaps

      --


      -- Name: articles_articleid_seq; Type: SEQUENC
      --

      CREATE SEQUENCE articles_articleid_seq
          START WITH 1
          INCREMENT BY 1
          NO MAXVALUE
          NO MINVALUE
          CACHE 1;


      ALTER TABLE public.articles_articleid_seq OWNE

      --


      -- Name: articles_articleid_seq; Type: SEQUENC
      --

      ALTER SEQUENCE articles_articleid_seq OWNED BY
```

Figure 7. Comparing the adjusted schema dumps

Regex search and replace made it easy to remove all of the "noise" from the schema dumps and focus in on the important differences.

C7 ships with a regex toolkit - it's on the Tools menu.



Regular expression: -- TOC.*

Input:

```
--
-- TOC entry 8 (class 2615 OID 104955)
-- Name: import; Type: SCHEMA; Schema: -; Owner: postgres
```

□ Replace

Replacement string:

Replace result:

□ Multiline □ Ignore case

String	Start	End	Length	Groups
-- TOC e...	3	41	38	1

1 matches

Figure 8. The Regular Expressions Toolkit

You can use the regex toolkit to build and test your expressions. In Figure 8 I've typed in my expression and have pasted some sample text into the Input box. When I press OK any matches are highlighted, so I can verify that my regex is working as expected. The toolkit will also create a .NET assembly with a compiled version of your regex, although that's only applicable for .NET development, not C7 work.

Summary

Clarion 7's search and replace features go well beyond those found in C6. In combination with multi-file, project-wide and directory-specific search, regular expressions are a powerful tool for finding and replacing text. I've used only the simplest of expressions here; many more complex expressions are possible. See Carl's article for more information.

David Harms is an independent software developer and the editor and publisher of Clarion Magazine. He is also co-author with Ross Santos of Developing Clarion for Windows Applications, published by SAMS (1995), and has written or co-written several Java books. David is a member of the American Society of Journalists and Authors (ASJA).

Article comments

by Joshua Berry on November 16 2010 (comment link)

David, Do you know of any way to do regex replacements with the C7 IDE using references?

These don't seem to work as expected (but do in notepad++): search: (newtable)\s([^\s]+)$ replace: CREATE TABLE \2 (id serial, remarks text);

--something like the following: newtable fred --becomes: CREATE TABLE fred (id serial, remarks text);

I can't find the right documentation to explain how to do this, and using patterns like \1 or $1 haven't yielded the desired results.

---

by Dave Harms on November 16 2010 (comment link)

Joshua, I don't have an answer but if you have VS I'd work on getting the search and replace working there. I can't guarantee you that will mean it will work in C7, but inasmuch as the SD IDE (on which C7 is based) is meant to work like VS it's probably your best shot.

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Bob Zaunere's Keynote

By Dave Harms

Posted October 29 2010

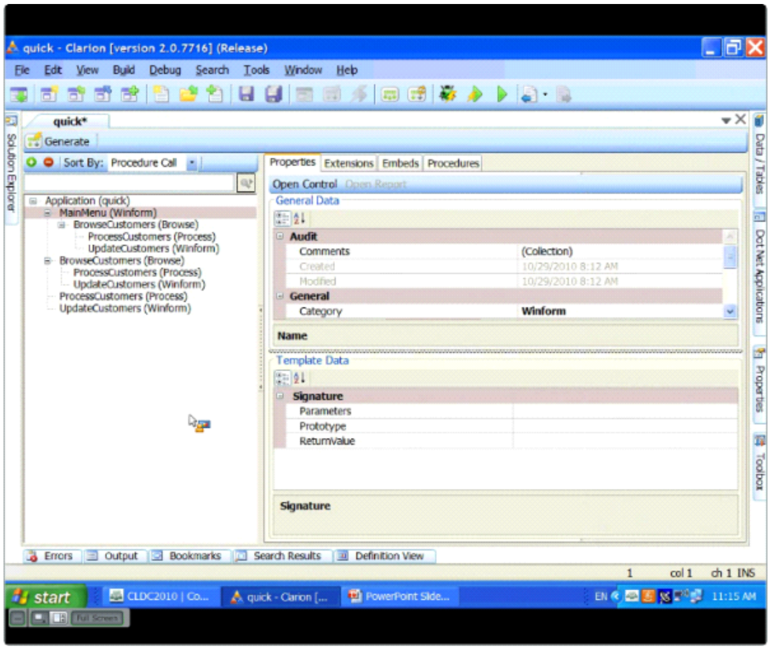
The ClarionLive DevCon got off to an official start this morning with a welcome from and announcements by Arnold Young and John Hickey. This is the first time I've attended a conference that was simulcast to web attendees, and despite Arnold and John's herculean efforts there were a few glitches. First a router failed; Benjamin Krajmalnik rode to the rescue with a replacement. Connectivity issues with Florida prevented SoftVelocity president Bob Zaunere from presenting his webcast at the appointed time, so Bob Foreman stepped in and delivered the first half of his presentation while the team sorted out the technical issues. I'm afraid I don't have a lot to say about that first half as I was busy assisting with testing connections.

SoftVelocity president Bob Zaunere began his keynote by thanking John and Arnold for their efforts, and commenting on the passion Clarion developers have for the product. This year marks SoftVelocity's tenth anniversary and Bob Z reviewed the many Clarion product releases in that decade, a more substantial list than most of us probably realize.

He reminded us of David Bayliss's comment to the effect that ABC was "the big bang", and by extension Z dubbed C7 the supernova (at the end of the C6 lifetime). C7 supports 15 years of legacy Clarion versions, and is one IDE for both Windows and .NET.

Z announced two new releases: Clarion 7.3 and a pre-release of C8. The updated IDE features cleaner icons, locators at the top of every list, more keyboard shortcuts and both simple and complex views of data.

Z briefly showed AppGen.Net, which stores apps in Appx files, signifying an XML app format. He stated that code generation is working well, but the UI is still under construction. This was a very quick look - no generated code or running application was shown.



```
Application (quick)
  MainMenu (Winform)
    BrowseCustomers (Browse)
      ProcessCustomers (Process)
      UpdateCustomers (Winform)
  BrowseCustomers (Browse)
    ProcessCustomers (Process)
    UpdateCustomers (Winform)
  ProcessCustomers (Process)
  UpdateCustomers (Winform)
```

Audit	
Comments	(Collection)
Created	10/29/2010 8:12 AM
Modified	10/29/2010 8:12 AM
General	
Category	**Winform**

Name

Signature	
Parameters	
Prototype	
ReturnValue	

Signature

Figure 1. AppGen.NET

AppGen.NET includes designers, extensions and embeds.

Clarion# makes it easier to call .NET code from a Clarion Win32 app. Just add NAME and PUBLIC attributes to a .NET procedure and you can call that procedure from Win32 as easily as you call any other DLL procedure. There is no need to use COM or a C++ wrapper.

Z closed by declaring Clarion has “a long history, and a bright future”

More details to follow.

David Harms is an independent software developer and the editor and publisher of Clarion Magazine. He is also co-author with Ross Santos of Developing Clarion for Windows Applications, published by SAMS (1995), and has written or co-written several Java books. David is a member of the American Society of Journalists and Authors (ASJA).

Article comments

by carlosg on October 29 2010 (comment link)

Dave,

> easier to call .NET code from a Clarion Win32 app

Is this something already available in Clarion# or a new feature?

If a new feature, was a target version/date for its release commented?

I already have a need for this, I was going to start researching C++/IJW.

Thanks for any info.

by Geoff Robinson on October 30 2010 (comment link)

I had to smile about the "bright future" reference.

BB gave a presentation called "Clarion's Bright Future" 13 years ago (when he announced the 32 bit IDE)

see:

http://www.clarionmag.com/col/97-09-barrington.html

cheers

Geoff R

---

by Graham Dawson on October 31 2010 (comment link)

Dave,

It's quite annoying seeing a screenshot of a Clarion.NET Build 7716 when we're all still on Build 7036 and the last release was at the end of March 2010 !

This evening I've been putting enhancements into a Clarion.NET Compact Framework application we have for a PDA.

I spent a good 3 hours trying to get some simple QUEUE functions to work in the Clarion.NET CF RTL (just doing GETs to locate entries) - nothing worked reliably and I ended up ditching the QUEUE implementation entirely and using direct SQLite methods.

I've given up doing any Clarion.NET PTSS reports - there doesn't seem much point when no releases with fixes are forthcoming.

Add to that the lack of communication between SoftVelocity and it's Clarion.NET users (unanswered e-mails, deleted newsgroup posts etc) and you can understand my frustration.

7 months is a **very**, **very** long time without a release in a Beta program...

Graham

---

by Dave Harms on November 1 2010 (comment link)

Carlos, as far as I know this is a new feature for Clarion.NET, and I don't know anything about a release date.

---

by Dave Harms on November 1 2010 (comment link)

Geoff,

Now there's a blast from the past!

---

by Dave Harms on November 1 2010 (comment link)

Graham,

Yes, the pace of Clarion.NET releases has been terribly slow this year.

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The ClarionLive DevCon Is Under Way!

By Dave Harms

Posted October 29 2010

I’m happy to report that I made it to the ClarionLive DevCon with a good half hour to spare before the Thursday evening reception. That wouldn’t be too remarkable except that my wife and I and our eight year old daughter left Winnipeg some 51 hours earlier, for a four hour drive to Fargo and what should have been a quick flight to Denver.

We hadn’t fully accounted for the weather. A record-breaking low barometric pressure brought intense winds to North Dakota (and many other areas besides); at one point on the drive down we saw a semi that had evidently been blown off the road. With gusts at tropical storm force, United saw fit to cancel our flight. I don’t think we’d have enjoyed the ride anyway.

We checked into a local hotel and received a “distressed traveller” rate. The wind whipped the rain across the hotel parking lot, creating a scene out of one of those “here comes the hurricane” reports on CNN, right at the point where no one really wants to be outside anymore. And this wasn't a warm rain.

After supper we settled in for the night, thinking we’d have a bit of a sleep-in prior to our flight which had been rebooked for the following noon, this time via Minneapolis instead of direct to Denver.

At 6 a.m. the clock radio went off. At 8 a.m. the hotel alarm sounded; there was a fire in the laundry room which was quickly extinguished, but the alarm continued to sound briefly at five minute intervals for some time.

Then our noon flight was cancelled, replaced by an evening flight. Which was cancelled. Back to a different hotel. No fire alarms, but we had to get up at 6:00 to make our 8:30 flight. The ticket agent advised us to get to the airport by 7:00, as that was a “busy” time.

I counted five travellers in the airport at 7:00 a.m. The ticket lineup eventually swelled to… twelve.

And the incoming flight was late; so late that by the time the plane arrived, decanted its passengers, and took us on board to Minneapolis, we’d missed our connection. Fortunately we were able to get a later flight.

So a little over two days after leaving home, we’re very happy to finally be here!

The Inverness is a terrific venue – Arnold and John (with help from Robert Paresi, Benjamin Krajmalnik, and perhaps others) have found a real gem. I’ll have some pics up tomorrow (hopefully).

Our hosts opened the conference with a wine/beer/appies reception, and it was great to see a lot of familiar faces and meet some folks for the first time. As we got in late I wasn’t able to catch any part of the Capesoft WebShop, but I hear that as usual Bruce and company put on an excellent training event.

Tomorrow morning we’ll be hearing Bob Z’s keynote, followed immediately by Bob Foreman’s first of two sessions on Clarion 7. After that Mike Hanson will talk on best coding practices. In the afternoon Rick Martin has two sessions, one on classes and templates and the other on SQL. Shawn Mason’s SQL Extravaganza fills the evening time slot.

I’ll be filing reports, and tweeting the conference as I’m able @clarionmag. Or you can just check the ClarionMag home page for the latest tweets.

David Harms is an independent software developer and the editor and publisher of Clarion Magazine. He is also co-author with Ross Santos of Developing Clarion for Windows Applications, published by SAMS (1995), and has written or co-written several Java books. David is a member of the American Society of Journalists and Authors (ASJA).

Article comments

by Michael Gorman on October 31 2010 (comment link)

One of the reasons why I didn't come is because my better half (Maxine) had a Tues-Thurs class in Indianapolis, IN. I was thinking that I'd just let her drive the 12 hours back to Bowie, MD. (not an good idea for increasing marital bliss, of course...).

Well, on the way back the "breakdown" gods got to my 1998 V90 Volvo and I completely lost power steering. So, my daughter and her husband came out to Pittsburgh and took "dear Maxine" back to MD. So, here I am 8:14PM Sunday night reading your article and being actually grateful that I didn't come to be with you all.... Otherwise I'd be asking who's interested in having a new "room-mate."

I will be checking and hope you guys had a good time.

Regards, Mike Gorman

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