

Clarion Magazine

Clarion News

- » [Clarion Data Mapper 1.50](#)
- » [Clarion Desktop 2.75](#)
- » [CoolFrames 1.07 Beta](#)
- » [Clarion 7 Alpha Released](#)
- » [Clarion Desktop 2.74](#)
- » [CoolFrames 1.06 Beta](#)
- » [Windows Time Zone Data Update](#)
- » [EasyExcel 4.03](#)
- » [Whitemarsh February 2007](#)
- » [AmazingGUI Gold Release](#)
- » [FinalStep 2.10](#)
- » [NeatMessage 2.11](#)
- » [CoolFrames 1.04 Beta](#)
- » [New Clarion Handy Tools Build](#)
- » [Comodo Code-Signing Certificates Available From Lindersoft](#)
- » [ClarionMag's Eighth Anniversary Sale Ends Today](#)
- » [Gitano One Day Sale](#)
- » [Aussie DevCon Super Early Bird Discount Ends ThisWeek](#)
- » [Rasp Updated](#)
- » [Lindersoft Offers Low-Priced Comodo Code Signing](#)
- » [CoolFrames 1.03 Beta](#)
- » [SimFileLauncher Updated](#)
- » [FileTuner Tests, Fixes Files](#)
- » [ClarionMag's Eighth Anniversary Sale](#)
- » [Class Anatomy Autogenerates Clarion Class Docs](#)
- » [ProScan, ProImage Demos](#)
- » [ProImage/ProScan Wedding Sale Extended](#)
- » [ProImage 1.6 Released](#)
- » [ProScan 1.5 Released](#)
- » [Comment on Clarion News](#)

[\[More news\]](#)

[\[More Clarion 101\]](#)

Latest Free Content

- » [First Look: Clarion 7 Alpha, Part 2](#)
- » [First Look: Clarion 7, Alpha Stage 1](#)
- » [Source Code Library Update Available](#)

[\[More free articles\]](#)

Save up to **50% off ebooks.**
Subscription has its rewards.



Latest Subscriber Content

First Look: Clarion 7 Alpha, Part 2

Dave Harms continues his look at the first C7 Alpha release by compiling a C6 application under C7 and applying the new extended UI features. Part 2 of 2.

Posted Wednesday, February 28, 2007

Embedding The SQLite Engine In Clarion Applications

SQLite is a public domain, lightweight embeddable SQL database which is fast and stable, and can create both disk and in-memory tables. John Taylor presents a wrapper class that makes it easy to use SQLite in your Clarion app.

Posted Tuesday, February 27, 2007

First Look: Clarion 7, Alpha Stage 1

Clarion 7 Alpha 1 has gone out to third party developers for compatibility testing. In a Clarion Magazine exclusive, Dave Harms starts unpacking the new IDE.

Posted Friday, February 23, 2007

Faster Newsgroup Access With Hamster

For some developers the SoftVelocity news server is just too slow. The solution: use the Hamster NNTP proxy to create a local cache. Dave Harms shows how it's done.

Posted Thursday, February 22, 2007

Apache As A Reverse Proxy For Clarion Web Servers

Third Party toolkits such as Handy Tools and CapeSoft's NetTalk/Self Service have enabled Clarion developers to write special purpose web servers. But how do you go about hosting these servers, particularly when you have more servers than you have public IP addresses? Benjamin Krajmalnik explains.

Posted Thursday, February 22, 2007

Get Ahead Of Your Competition With Vista And Office 2007

If you're looking at Vista and O2007 as just another giant hassle cooked up by the friendly folks in Redmond (you know, because it's their job to make your life miserable), try again. As Mark Riffey shows, having at least one machine running Microsoft's latest platform can help you gain a competitive advantage.

Posted Wednesday, February 14, 2007

Eliminating Circular DLL Calls

The more DLLs in your application, the greater the risk of circular calls, and at shutdown time those circular calls can result in memory deallocation problems. In this article George Lehman takes on the onerous task of removing circular calls in a large multi-DLL app. His reward: the elimination of sporadic GPFs.

Posted Tuesday, February 13, 2007

Source Code Library Update Available

The January update for the Clarion Source Code Library is now available. If you've purchased the library go to [My ClarionMag](#) to download. If you've already downloaded the full version posted at the end December you only need to download this update. If you are downloading both files be sure to install the update last.

Posted Tuesday, February 06, 2007

[\[Last 10 articles\]](#) [\[Last 25 articles\]](#) [\[All content\]](#)

Source Code

The ClarionMag Source Code Library

Clarion Magazine is more than just a great place to learn about Clarion development techniques, it's also home to a massive collection of Clarion source code. Clarion subscribers already know this, but now we've made it easier for subscribers and non-subscribers alike to find the code they need.

The Clarion Magazine Source Library is a single point download of all article source code, complete with an article cross-reference.

Clarion Sites

[More info](#) • [Subscribe now](#)

Clarion Blogs

Printed Books & E-Books

E-Books

E-books are another great way to get the information you want from Clarion Magazine. Your time is valuable; with our [e-books](#), you spend less time hunting down the information you need. We're constantly collecting the best Clarion Magazine articles by top developers into themed PDFs, so you'll always have a ready reference for your favorite Clarion development topics.

Printed Books

As handy as the Clarion Magazine web site is, sometimes you just want to read articles in print. We've collected some of the best ClarionMag articles into the following print books:

- » [Clarion 6 Tips & Techniques Volume 3](#) - ISBN: 0-9689553-9-8
- » [Clarion 6 Tips & Techniques Volume 1](#) - ISBN: 0-9689553-8-X
- » [Clarion 5.x Tips and Techniques, Volume 1](#) - ISBN: 0-9689553-5-5
- » [Clarion 5.x Tips and Techniques, Volume 2](#) - ISBN: 0-9689553-6-3
- » [Clarion Databases & SQL](#) - ISBN: 0-9689553-3-9



We also publish Russ Eggen's widely-acclaimed [Programming Objects in Clarion](#), an introduction to OOP and ABC.

From The Publisher

About Clarion Magazine

Clarion Magazine is your premier source for news about, and in-depth articles on Clarion software development. We publish articles by many of the leading developers in the Clarion community, covering subjects from everyday programming tasks to specialized techniques you won't learn anywhere else. Whether you're just getting started with Clarion, or are a seasoned veteran, Clarion Magazine has the information *you* need.

Subscriptions

While we do publish some free content, most Clarion Magazine articles are for subscribers only. Your [subscription](#) not only gets you premium content in the form of new articles, it also includes all the back issues. Our [search engine](#) lets you do simple or complex searches on both articles and news items. Subscribers can also post questions and comments directly to articles.

Satisfaction Guaranteed

For just pennies per day you can have this wealth of Clarion development information at your fingertips. Your Clarion magazine subscription will more than [pay for itself](#) - you have my personal guarantee.

Dave Harms

ISSN

Clarion Magazine's ISSN

Clarion Magazine's [International Standard Serial Number \(ISSN\)](#) is 1718-9942.

About ISSN

The ISSN is the standardized international code which allows the identification of any serial publication, including electronic serials, independently of its country of publication, of its language or alphabet, of its frequency, medium, etc.

Clarion Magazine

Clarion News

[Search the news archive](#)

Clarion Data Mapper 1.50

Clarion Data Mapper 1.50 is now available for download, or use the "Check for Updates" feature from within Data Mapper. Data Mapper is a tool that you can use to create relational diagrams from your dictionary, as well as generate reports. The free version displays a nag screen as it starts up, and you're limited to saving two dictionaries and five views per dictionary at one time.

Posted Wednesday, February 28, 2007

Clarion Desktop 2.75

Clarion Desktop 2.75 is now available for download. This build includes several new features which will open up a lot more functionality, especially for suppliers who sell products using a subscription model. More info on these changes can be found on the "3rdParty / Advanced" page at ClarionDesktop.com. Sign up for a Pro Edition license (for just \$3!) before the end of February and watch your inbox on 1 March for a surprise gift.

Posted Wednesday, February 28, 2007

CoolFrames 1.07 Beta

CoolFrames 1.07 (beta) is now available. This release adds a Clarion 5.5 build.

Posted Wednesday, February 28, 2007

Clarion 7 Alpha Released

The first alpha release of Clarion 7 has gone out to participating third party developers. Testing will be focused on the C7 RTL and compiler, validation of runtime compatibility with C6, and field trials for the new UI enhancements implemented in C7. Additionally these new IDE components and features will be introduced in Phase 1 and have a thorough shakedown in the field; Project System, Report and Window Designers, Source Editor, Class Browser, and Code Completion.

Posted Monday, February 26, 2007

Clarion Desktop 2.74

Clarion Desktop 2.74 includes fixes to feed changes resulting from the upgrade of software on the Clarion Desktop server. If your ClarionMag or SoftVelocity news feeds are no longer working please

upgrade. Freebie alert: at the end of this month Gary will be announcing a free giveaway to all Clarion Desktop subscribers.

Posted Monday, February 26, 2007

CoolFrames 1.06 Beta

New in CoolFrames 1.06 beta release: Fixed regression in 1.05 where MDI Child window transparency broke; Known issue: MDI Child Maximize not supported - this will be addressed in the next release; Added "Centre Text" option to "Caption Text" button; Fixed bug where caption text colour was not set.

Posted Monday, February 26, 2007

Windows Time Zone Data Update

From Microsoft: Starting in the spring of 2007, daylight saving time (DST) start and end dates for the United States will transition to comply with the Energy Policy Act of 2005. DST dates in the United States will start three weeks earlier, at 2:00 A.M. on the second Sunday in March. DST will end one week later, at 2:00 A.M. on the first Sunday in November. The update that this article describes changes the time zone data to account for the DST change for the United States. This update also includes other DST-related changes, time zone-related changes, and settings-related changes. Some of these changes will occur in 2007. Some of these changes have occurred since the products that are listed in the "Applies To" section were originally released. The update that this article describes is a cumulative update rollup that includes all the changes that were previously released in Microsoft Knowledge Base articles 928388 and 929120. This update also describes some additional changes since the last cumulative update in Microsoft Knowledge Base article 928388.

Posted Thursday, February 22, 2007

EasyExcel 4.03

EasyExcel 4.03 is now available. Changed methods include PrintSheet and GetCell; new methods include SetActivePrinter, PrintRange, and PrintWorkbook. The print code template now has the ability to set an active printer and print a range of cells or the entire workbook.

Posted Wednesday, February 21, 2007

Whitemarsh February 2007

There are five items in this February 2007 announcement: Advances in the U.S. Army Data Interoperability Program; Data Interoperability Community of Interest Handbook; Strategy for Successful Development of Information Systems Book; Whitemarsh Metabase version 6.9.1; The Short Paper Series addition. The Office of the CIO of the United States Army has accelerated its efforts to effect data interoperability across the Army including both data interoperability and enterprise-wide, end-to-end data semantics traceability. This effort, led by LTC Cliff Daus and Ronald Bechtold (Senior Executive) began with a one-day meeting of the ADHIWG (Army Data Harmonization Integration Working Group) in January. Whitemarsh participated in this effort by constructing and delivering a two-hour tutorial on

Data Interoperability and Traceability. The presentation is available upon request from Whitemarsh (whitemarsh@wiscorp.com). The Army also created two charters, one for the data management Center of Excellence (Center of Excellence), and the other for the ADHIWG. The COE is to provide Army-wide data management assistance to achieve data interoperability and traceability. Whitemarsh is honored to have its overall data interoperability framework as a key element in Army policy and its infrastructure. The Data Interoperability Community of Interest Handbook was finished, published and is available either from the Whitemarsh website, or from Amazon. On Amazon, search for the author: Michael M Gorman. The table of contents and the first chapter are posted on the Whitemarsh website at: www.wiscorp.com/dicoihb.pdf. Organizations that have purchased the book are deep in engineering their data interoperability programs and establishing their communities of interest. A new book, Strategy for Successful Development of Information Systems, is nearing completion. The table of contents and the first chapter of this book have been posted. The link is: www.wiscorp.com/ssdis.pdf. While this book stands alone, it also serves as a next-level detailed methodology for communities of interest as they create interoperable information systems. It is not enough to just know how to engineer a community of interest and bureaucratically operate one, you also have to know how to create the shared-data information systems critical to success. This book fills that need. Whitemarsh also has a complete data interoperability workshop that can be employed within your organization. Metabase version, 6.9.1 is released and is described in the ReadMe that is on the Whitemarsh website at: http://www.wiscorp.com/metabase_demo.html. The new capabilities of the 6.9.0 metabase release is described in the October 2006 news letter. This new version fixed several problems that had surfaced. Additionally, 6.9.1 implemented a data model cloning process. This new process enables you to take an already created specified (conceptual), implemented (logical), or operational(physical) data model and clone it. Once cloned you can then make necessary changes so that you can have two or more variations of the same model in very quick order. This is very valuable in the creation of retail data warehouse models that have some common dimensions but different fact tables. The last item is the latest edition to the Whitemarsh Short Paper Series: Managing Value Domains. Value domain management is essential to enterprise-wide data interoperability. Included in the overall objective of the paper is an enterprise-wide definition and management of value domains, and the mapping between and among value domain values. The paper also addresses the two major ways of implementing value domains. First, the value domain is implemented as a column with a DBMS enforced set of explicit values such that the use of any other value causes an error. Second, through the creation of a table such as Regions that would have a row of data for the New England region and a foreign key that connects the Region table to the Region column. This short paper is located at: www.wiscorp.com/sp/sp07.pdf The complete short paper series publications are still available. Posted Monday, February 19, 2007

AmazingGUI Gold Release

AmazingGui adds full gdiPlus graphics, gradient or solid color for buttons, entry, spin, list, combo, text and other controls, gradient or solid color for window background. Complete message box overriding to keep your application look and feel without writing any code, and much more.

Posted Monday, February 19, 2007

FinalStep 2.10

New in FinalStep 2.10: Pseudo maximize function (replaces standard maximize function); Disable option for background color; Disable option for tab shadow; Maintenance code implementation; Serial number and maintenance code retained by setup program for future upgrades; Installer compatible with Clarion Desktop; Installer now Vista compatible (signed); Overall better resize support for SV's resize and ERS; Tab shadow resize problem fixed (using Clarion's resize).

Posted Monday, February 19, 2007

NeatMessage 2.11

New in NeatMessage 2.11: Multi-DLL example for Clarion 6.x, ABC; New code templates and multi-DLL setup documentation; Installer now digitally signed.

Posted Monday, February 19, 2007

CoolFrames 1.04 Beta

The CoolFrames 1.04 beta release is now available. Changes include: Fix for compatibility with PowerToolbar; Buttons re-colored to match selected custom frame color.

Posted Friday, February 16, 2007

New Clarion Handy Tools Build

Build 11A1.01 of the Clarion Handy Tools is now available. Subscribers can click on the startup icon for their WEBUPDATER tool to download, install and verify the latest version. CHT is now a Clarion Desktop supplier.

Posted Friday, February 16, 2007

Comodo Code-Signing Certificates Available From Lindersoft

After some delays, all qualified Lindersoft customers are now able to purchase code signing certificates for as little as \$66 per year (on a three year term). The same certificate can be used to sign application, installation and PAD files. Prices are \$79 for one year, \$143 for two years, and \$200 for three years. By comparison a Verisign Code Signing Certificates costs \$499 for one year, \$894 for two years and \$1,293 for three years. A Thawte Code Signing Digital ID costs \$199 for one year and \$399 for two years. If you already requested a Code Signing Certificate with the old ordering system, please request the certificate again. The old order requests have been removed.

Posted Friday, February 16, 2007

ClarionMag's Eighth Anniversary Sale Ends Today

This month marks Clarion Magazine's eight anniversary, and to celebrate we're offering big discounts on Clarion Magazine subscriptions. Renewals are as low as \$99 for one year, \$169 for two years. New subscriptions are \$50 off, or just \$119 for one year, \$199 for two years, and your subscription/

renewal includes all the back issues. There's no risk - we offer a full money back guarantee. Sale ends Friday, Feb 16.

Posted Friday, February 16, 2007

Gitano One Day Sale

Gitano has a one day icon special - get the Mallorca Icon Collection and the Webmaster collection for \$99 (reg \$398). The Mallorca Collection contains 693 images, seven formats, nine sizes. The WebMaster Collection contains 355 images, also in seven formats and nine sizes.

Posted Wednesday, February 14, 2007

Aussie DevCon Super Early Bird Discount Ends ThisWeek

The Super Early Bird Discounts for Capesoft Training and the Aussie DevCon end on February 18th. There is a further early bird discount that ends on March 18th. C7, Clarion.NET and more get an airing at the DevCon with Robert Zaurner and the SV staff leading the charge.

Posted Tuesday, February 13, 2007

Rasp Updated

The latest beta release of Rasp includes security profiles, user history, and more.

Posted Tuesday, February 13, 2007

Lindersoft Offers Low-Priced Comodo Code Signing

Lindersoft has teamed up with Comodo, Inc., a leading WebTrust Compliant Certification Authority, to make Code Signing and SSL certificates available to qualified Lindersoft customers at a discounted price. Code signing is about verifying the origin of digital content and the fact that it hasn't changed since it was signed. If you trust the source, then you can trust the application because it comes from a verified source. Recent operating system updates to Windows XP (Service Pack 2) and the new Windows Vista make it vital to use digital signatures in your application files and installation packages. Vista uses code signing more widely than earlier versions of Windows. The Comodo Code Signing Certificate is available at a discounted price of \$79 (1-year), \$143 (2-years), and \$200 (3-years) to qualified Lindersoft customers.

Posted Friday, February 09, 2007

CoolFrames 1.03 Beta

CoolFrames version 1.03 beta is now available for download. Please note that the install file requires an unlocking code which is supplied when you purchase CoolFrames.

Posted Friday, February 09, 2007

SimFileLauncher Updated

SimFileLauncher now has the ability to do a disk search to allow you to sort the files found up or down, by filename or path. All files and paths are now shown in lower case.

Posted Friday, February 09, 2007

FileTuner Tests, Fixes Files

FileTuner is a Topspeed and Btrieve file tester, refresher and fixer. It is a template coupled with an app, which has a Browse procedure that combined with a template will take any DCT you specify and allow you to test, scan and fix damaged files. The procedures in the app can be imported into yours, or you can change the DCT of the app (It is sort of "plug and play"). you don't need to change anything in your DCT. For Topspeed files, it uses the Tpsfix and Topscan programs, but it masks them for the end user. For Btrieve, it will use Butil and internal libraries. While it is not fully automatic yet, you may simply "select all" and go for it (A full process would be two steps; first test, then "Fix broken files", if any). Topspeed tests are completed and working, and Btrieve is in development. All source code is included. Introductory price is US\$49.

Posted Friday, February 09, 2007

ClarionMag's Eighth Anniversary Sale

This month marks Clarion Magazine's eight anniversary, and to celebrate we're offering big discounts on Clarion Magazine subscriptions. Renewals are as low as \$99 for one year, \$169 for two years. New subscriptions are \$50 off, or just \$119 for one year, \$199 for two years, and your subscription/renewal includes all the back issues. There's no risk - we offer a full money back guarantee.

Posted Friday, February 09, 2007

Class Anatomy Autogenerates Clarion Class Docs

The latest version of Class Anatomy adds the Java-like ability to autogenerate documentation from your Clarion classes. You can also add comments in the source code (provided you follow the CA method) and these will also be embedded into the docs, as well as shown in CA. From the trayicon you can copy the comment layout to your clipboard and put them into your class and into your class methods.

Posted Friday, February 09, 2007

ProScan, ProImage Demos

Demos of ProImage 1.6 standalone and integrated with ProScan 1.5 as a page editor are now available.

Posted Thursday, February 01, 2007

ProImage/ProScan Wedding Sale Extended

The ProScan/ProImage "Wedding Sale" celebrates the long awaited union of ProScan and ProImage; as this event was delayed the special bundle pricing has been extended until midnight Sunday (February 4, 2007). During that time you can save \$25 off ProImage or ProScan or save \$75 on the bundle price.

Posted Thursday, February 01, 2007

ProImage 1.6 Released

ProImage 1.6 has now been officially released and is available for immediate download. This release includes: Full compatibility and integration with ProScan; Mouse Resize of the Visual Target System; The FreeHand crop mode allows the user to draw out an area that they want to use from the source image; TrueView Image Protection adds automatically resampling on a crop resizes the output to prevent distortion of the image at all times; Smart Image Clipboard makes it easy to use the copy selection feature to copy small representations to paste into emails as well as full size representations to paste into other programs; 264 free high quality icons for ProImage from www.icons-icons.com, a subset for ProImage from the "Lights", "Brights" and "Roma" icons sets; Numerous small enhancements and a few minor bug fixes.

Posted Thursday, February 01, 2007

ProScan 1.5 Released

ProScan 1.5 has now been officially released and is available for immediate download. Features include: Full compatibility and integration with ProImage; TIFF Navigators that allow your users to "turn the page" of a TIFF displayed on a standard Browse or Form (without loading the Scan Manager); A Shuffle Feature that allows users to move a page forward or backwards in a TIFF document to correct when a page is scanned out of order; Backwards compatibility with Clarion 5.5 (to match that of ProImage); Custom compression settings for individual scanner profiles; Other numerous small enhancements and a few minor bug fixes.

Posted Thursday, February 01, 2007

Comment on Clarion News

You can express an opinion on the news on the ClarionLife news page.

Posted Thursday, February 01, 2007

Clarion Magazine

First Look: Clarion 7 Alpha, Part 2

by Dave Harms

Published 2007-02-28

In [Part 1](#) I gave an overview (a very brief overview) of the new Clarion IDE; in this second part I'll focus on the differences you can expect in the Clarion applications you produce, as well as touch on one or two IDE issues.

Porting to C7

C7 Alpha Phase 1 doesn't include the AppGen (that's slated for Phase 4) but that doesn't mean you can't use AppGen with C7. The trick is to generate C7 code with C6, then use C7 to handle the compile.

The Alpha release comes with a small install program which lets you apply the C7 visual styles code to your C6 applications. The installer adds or modifies the following files:

File	Changes
\\libsrc\cwint.clw	new file, adds various INTERFACES and EQUATE definitions for menu styles
\\libsrc\menustyle.inc \\libsrc\menustyle.clw	New MenuStyleManager class to manage menu appearance
\\template\abchain.tpl	ABC global options
\\template\abprocs.tpw	ABC app frame changes
\\template\abwindow.tpw	ABC window prompt changes
\\template\cw.tpl	Legacy global options
\\template\frame.tpw	Legacy app frame changes
\\template\standard.tpw	Legacy window prompt changes

All of the C7-only code is contained in conditional compile statements so it will only be included by the compiler if you're actually using C7. That leaves C6 apps essentially unchanged.

The process is simple:

1. Generate the source for your C6 app
2. Use the File|Export Project File command to export a .PRJ file from your C6 app.
3. Open the PRJ in Clarion 7. Clarion creates a new solution file.
4. Build and run

PRJs are simply text files containing the project data. This information is contained inside APP files, and normally the only time you use a PRJ is if you have a hand coded application. So essentially you're treating your C6 like a hand coded C7 app, except that you're still generating your code in C6. Obviously this means that if you add a new module to your application, or otherwise change the project data, you'll need to re-export before compiling in C7. It also means that if you already have a hand coded app you can compile it in C7 as well (although it will be that much harder for you to duplicate the new UI features as you'll have to hand code them).

Of course this process will be moot once the AppGen arrives, but it's still a technique to keep in mind. For instance, if you're trying to track down a GPF or other bug you could create a PRJ and modify your generated source until you find the error, then fix the error in the app and regenerate.

The Graph example

To test out the C7 compiler and the new UI features I loaded up the graph example (svgexam.app) from the Clarion examples directory. Figure 1 shows the App Settings tab (in C6, of course, with the C7-compatible extensions) in the Global Properties sheet.

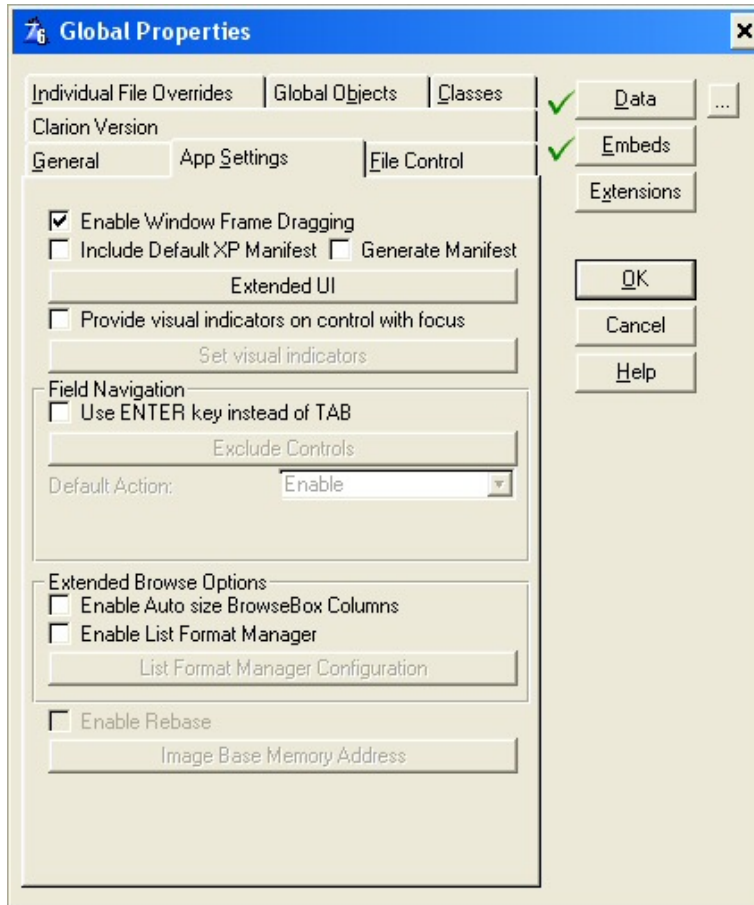


Figure 1. The global App Settings tab

Clicking on the Extended UI button displays the Extended UI options in Figure 2.

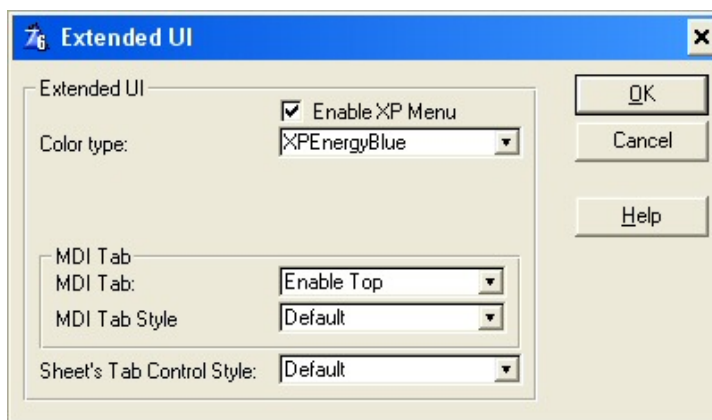


Figure 2. Extended UI options

There are a number of options available, and these can also be set at runtime as they're all implemented with the property syntax. The Color type setting applies to XP-style menus with the color gradient, and there are a number of options.

MDI tabs, as you'll see below, are a tab equivalent to the open window list. Every time you open an MDI window you'll see a new tab on the frame, and you can choose several styles, including Default,

B&W, Colored, Squared, and Boxed. I've set the tab style to Default for both MDI and regular sheets. The same tab options are available for all sheets, and the last setting specifies the default for the app. You can override these on the individual sheet controls.

The only other thing you might need to do with an app is make sure the main menubar has a field equate. The graph example already does, but I also tried the School example and it needed a menubar field equate.

I saved my changes and generated all the source code. I then ran C7 and opened the PRJ file. C7 automatically created a same-named solution file, all in the svexam directory.

I hit the Make/Run button and C7 compiled the app in roughly half the time it took C6. SV is saying that code generation time is also dramatically improved, so take your coffee breaks now while you still can.

Figure 3 shows the C7-compiled app with the new styles, including the MDI tab. Note also the new default Clarion icon.

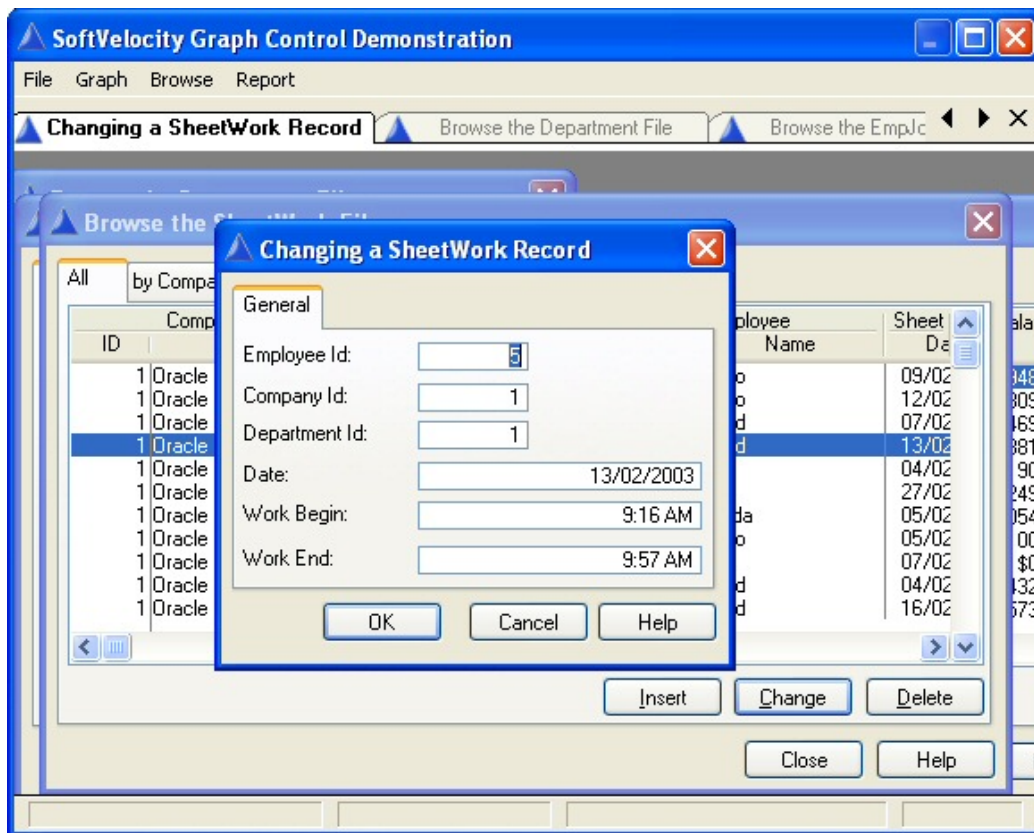


Figure 3. C7-compiled app with extended UI enabled

Figure 4 shows the XP-style menu detail (and some colored tabs in the background, just for fun).

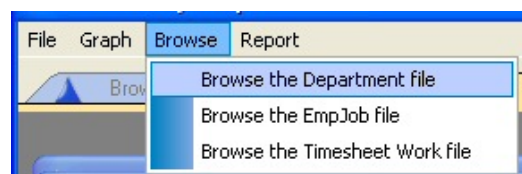


Figure 4. C7 XP-style menus

For comparison, Figure 5 shows the original C6 app.

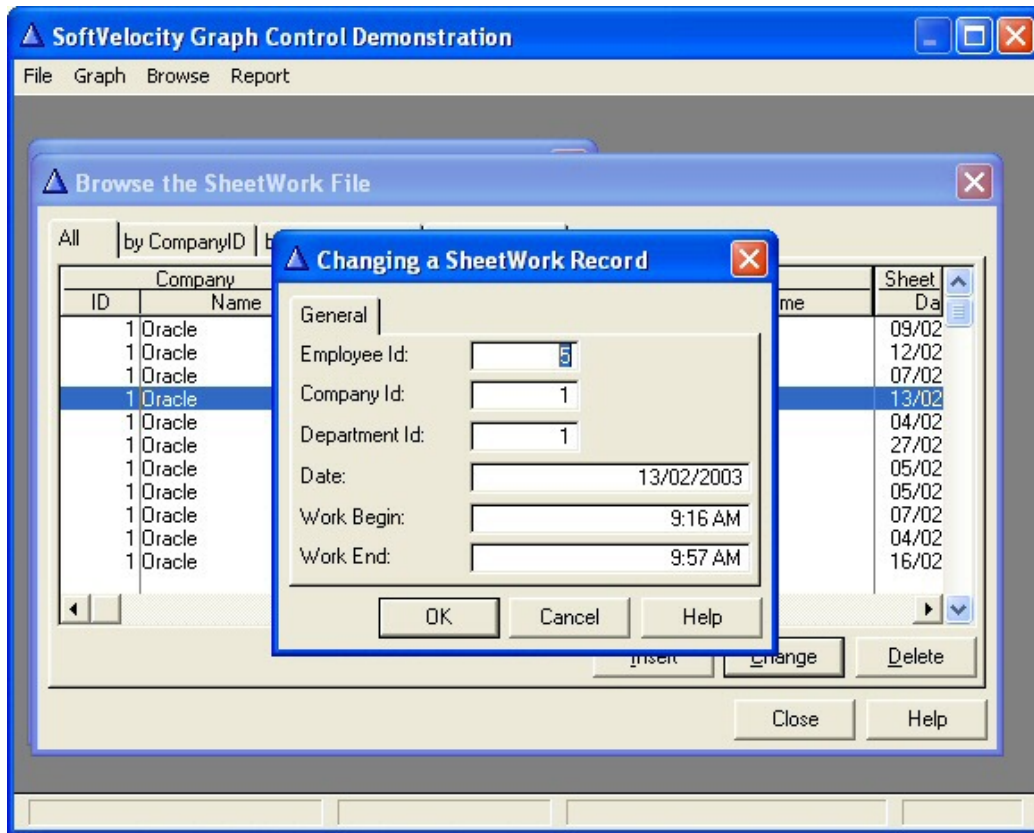


Figure 5. The C6 version

As you can see the C6 app doesn't have any styles, with the very odd exception of the vertical scroll bar. That's particularly strange because I also see it on a C6 app which as far as I know has no manifest. In any case, the C7 version of the same app appears (to my untrained eye) fully themed/styled/coiffed/whatever.

I took some flak from other alpha testers who thought the screenshot in Figure 4 wasn't an adequate demonstration of how nice a C7 app can look. And they're right. But it is a decent example of the new UI features as they appear out of the box.

Some of the alpha testers have successfully converted fairly large, multi-DLL applications to C7 without difficulty, so it doesn't appear that there are any significant runtime issues associated with the migration to C7. That makes sense as the RTL changes mainly involve the addition of the new extended UI features.

Figures 6 and 7 show another before/after comparison. The alpha tester who supplied these images points out that C7 fixed a problem with icon sizing in the menus.

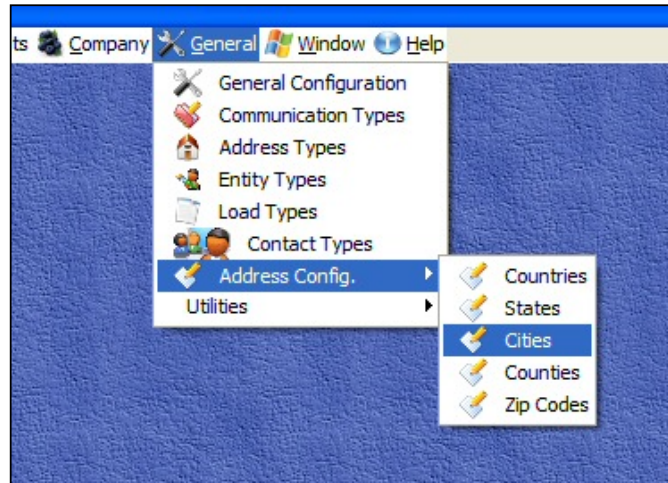


Figure 6. Menus in C6

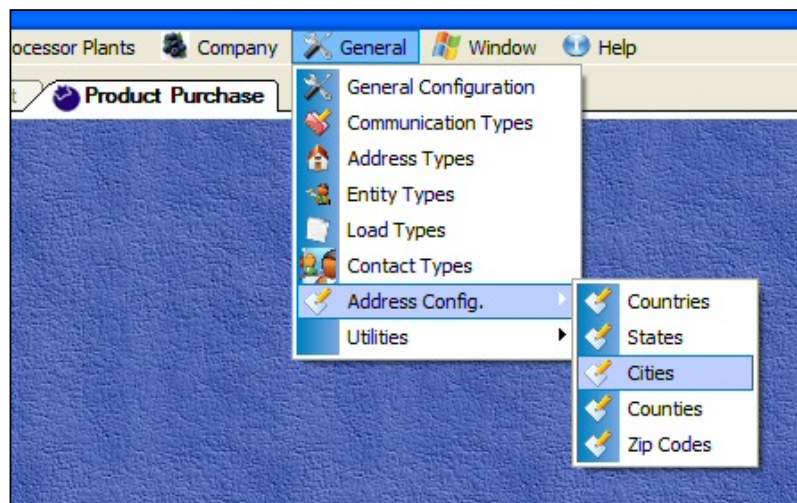


Figure 7. Menus in C7

Compiling with multiple versions of Clarion

One of the much-touted features of the C7 IDE is its ability to work with previous versions of Clarion. In Alpha Phase 1 this means support for various Clarion compilers. I have both 5.5 and 6.3 installed on my development machine and the install program detected both versions and added them to the IDE (you can also add Clarion versions manually).

To compile code using an earlier compiler I select the version from the project options Compiling tab (Figure 8).

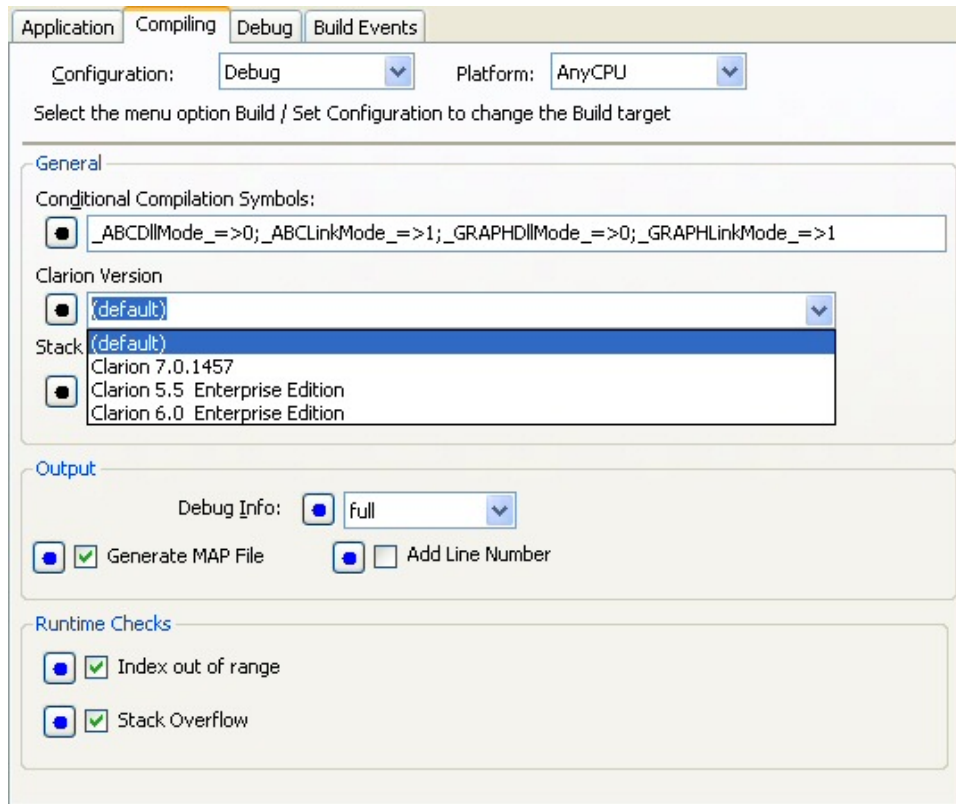


Figure 8. Project options, Compiling tab

I tested the multi-version support by compiling some C6 apps in C7, using the C6 compiler, and it worked like a charm.

There's a nice new feature in the C7 project system which is obscured by the Clarion Version drop down. It's a checkbox for Copy Core DLLs to Target. If you check this, the IDE copies all the core Clarion DLLs used by your app to the directory where your EXE is generated. That means you don't have to have every version of Clarion on your system on the path, and it greatly reduces the likelihood of DLL clashes.

That's not all, folks

It's taken me a lot longer than I expected to get this article done. It's not that I ran into bugs - there are surprisingly few. It's just that every time I started to write about some aspect of the new IDE I found another interesting avenue to explore. I haven't even begun to touch on the IDE's configurability, the AddIn Manager, the Component Inspector, multi-language support, search/replace, the RegEx toolkit, bookmarks, editor options, the structure (window,report) formatters, the property view, and a bunch of other stuff.

[Stay tuned.](#)

[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](#)).

Reader Comments

Posted on Wednesday, February 28, 2007 by Loren Gregg LaBaw

Just a quick question. In the C7.A1 you have, is it possible to use the C6 appgen from the C7 IDE?

Thanks

Loren Gregg LaBaw

Posted on Wednesday, February 28, 2007 by Dave Harms

No, the C6 IDE is completely separate. But it's very easy to make a change in C6, generate, and switch to C7 and hit the compile button.

As noted in the article, this is a temporary situation only. It's there simply to allow alpha testers to fully test their apps against the C7 RTL.

Dave

Posted on Wednesday, February 28, 2007 by Rakesh Khatri

Does C7 resolve ClearType font display issue?

Posted on Wednesday, February 28, 2007 by Loren Gregg LaBaw

Just a quick question. In the C7.A1 you have, is it possible to use the C6 appgen from the C7 IDE?

Thanks

Loren Gregg LaBaw

Posted on Wednesday, February 28, 2007 by Dave Harms

I'm not familiar with the ClearType issue, but I've enabled ClearType on my display. What do I need to do to test?

Dave

Posted on Wednesday, February 28, 2007 by douglas johnson

David,

> Open the PRJ in Clarion 7.

> Clarion creates a new solution file

Does this indicate C7 has adopted a solution concept similar to Visual Studio - ie a solution contains many projects?

If so, does C7 essentially contain a solution compile manager?

Posted on Wednesday, February 28, 2007 by Rakesh Khatri

Dave - On any Entry Control/Field - change the default font to TAHOMA. For comparison purpose, kept one field with default font. Compile, Run and see if data display correctly.

Posted on Wednesday, February 28, 2007 by Dave Harms

Rakesh - the bug is present in the C7 RTL. I've filed a bug report with an example.

Dave

Posted on Wednesday, February 28, 2007 by Dave Harms

Douglas,

Correct, in fact the C7 project system is built on top of MS Build.

Posted on Wednesday, February 28, 2007 by Robert Johnson

I seem to remember once that we would be able to open projects in say 5.5 and 6 at the same time.. Is that still going to be a possibility?

Robert

Posted on Wednesday, February 28, 2007 by Geoff Robinson

Comparing the C7 entry form in Figure 3 to the C6 version in Figure 5, am I the only person who thinks that the C7 version is a really backwards step? The C6 version is bevelled (or "beveled" to those of you in north America) or 3D whereas the new C7 version is flat 2D and takes me back almost 20 years to the look of Windows 2. I know these things are just fashion (the width of ties and trouser legs go in and out in cyclic fashion) but really the flat look doesn't do it for me...

So I hope C7 gives you the option to globally allow a 3D look by default without having to fiddle around!

Posted on Thursday, March 01, 2007 by Dave Harms

Robert, you can run multiple copies of the IDE so yes, AFAIK you will be able to have different apps in different versions up at the same time. You can do it with PRJs now. But you only have one project open at a time in any one instance of the IDE.

Dave

Posted on Thursday, March 01, 2007 by Dave Harms

Geoff, no idea but I'll bring it up.

Dave

Posted on Thursday, March 01, 2007 by Arnor Baldvinsson

Geoff,

This is the XP Theme style. You can use it or you can use the old classic style. This same applies to C6 apps that use XP Theme from PowerOffice, see for example http://www.vordur.com/images/Screenshot-Owners-Form_big.png

Arnor

Posted on Thursday, March 01, 2007 by Günter Siegismund

Hello Dave,

we are working with Clarion 6.1 Build 9034.

Our software is heavily built on the function EVALUATE in Clarion.

In the above version of Clarion I can bind a procedure with for example two parameters and the users of our software can use this function with one or two parameters.

Both is valid.

In future version of Clarion this has changed.

Now it is only possible to use a bound function with exact the same number of parameters as programmed.

Can you tell me, whether this has changed in Clarion 7?

If necessary I can send you a little app file to demonstrate this.

Regards

Günter Siegismund

Posted on Thursday, March 01, 2007 by Dave Harms

Günter, see your email.

Dave

Posted on Friday, March 02, 2007 by Dave Harms

Günter - email sent again.

Posted on Friday, March 02, 2007 by Kevin Jackson

Hi,

A really quick question I hope, are disabled icons on buttons rendered any better than under C6 (which is I know is SWB, but it's not very attractive).

Best Regards,

Kevin.

Posted on Friday, March 02, 2007 by Dave Harms

Kevin, looks the same in C7.

Dave

Posted on Saturday, March 03, 2007 by Stephen Ryan

Günter

the evaluate problem in clarion 6.1 was corrected because some technical person decided that evaluate had to work properly as documented.

you will need to process the instructions before they are executed in bulk where ever you have stored them.

we developed a solution for this, create a recursive token parser and build up your statement by the open and close brackets, when you have a word create a new object for each word, count your brackets, you will have to do a replace parameters, its not hard.

steve ryan

Posted on Sunday, March 04, 2007 by Günter Siegismund

Hello Steve,

Thank you for your comment.

I fear, this has to be the way to go.

Any chance to see your solution?

Cheers

Günter.

[Add a comment](#)

Clarion Magazine

First Look: Clarion 7, Alpha Stage 1

by Dave Harms

Published 2007-02-23

The long-awaited alpha release of Clarion 7 has now gone out to selected third party developers for compatibility testing. As Bob Z has [blogged](#), the Clarion 7 alpha program is being rolled out in four stages. The first stage comprises the new IDE, which includes the source editor, formatters, compiler, class browser, solution files (the C7 version of projects, but with far more capability), support for XP styles, and no doubt some other stuff I've overlooked. Although you can't open an App with this release of C7 you can certainly compile code from your C6 apps, with a little bit of work.

Installing C7

The alpha arrived in a 29 meg zip file containing a 30 meg C7 installer, a 200K Clarion 6 visual styles installer, and a readme file. The installer is powered by [SetupBuilder](#), a truly wonderful product written in Clarion by LinderSoft. With the advent of Vista and its requirement for code-signed installers I predict SetupBuilder will become absolutely essential for any Clarion developer shipping software. SetupBuilder makes installing under Vista as painless as it can be. But that's a subject for another article...

The C7 install has been tested on Vista, I'm told, but as of yet I've only installed it on an XP machine. I expect to try it on Vista next week.

Figure 1 shows the start of the install process.

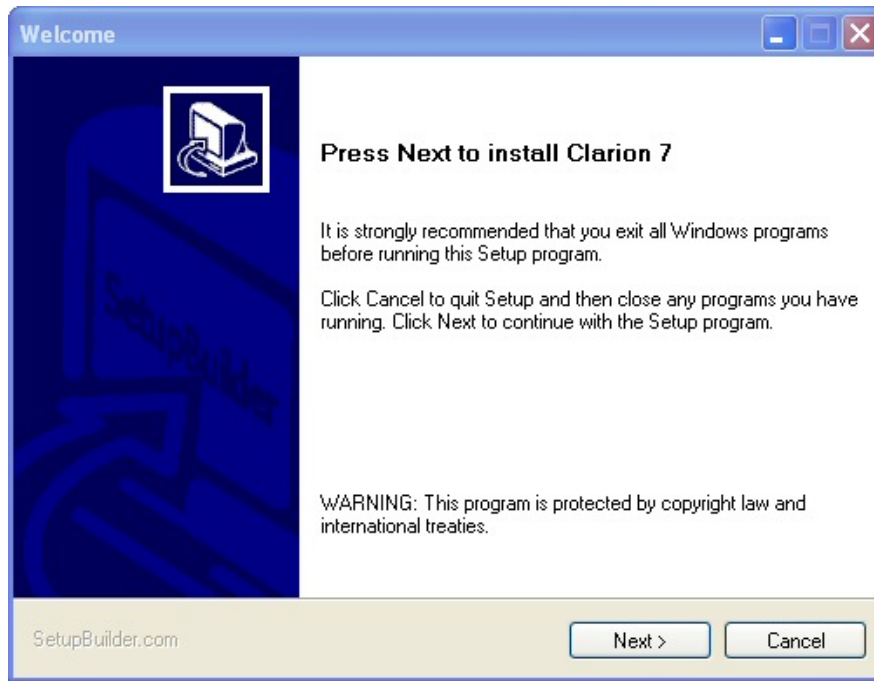


Figure 1. It sure is nice to see this window

As with most programs these days, C7 installs by default under the Program Files directory.

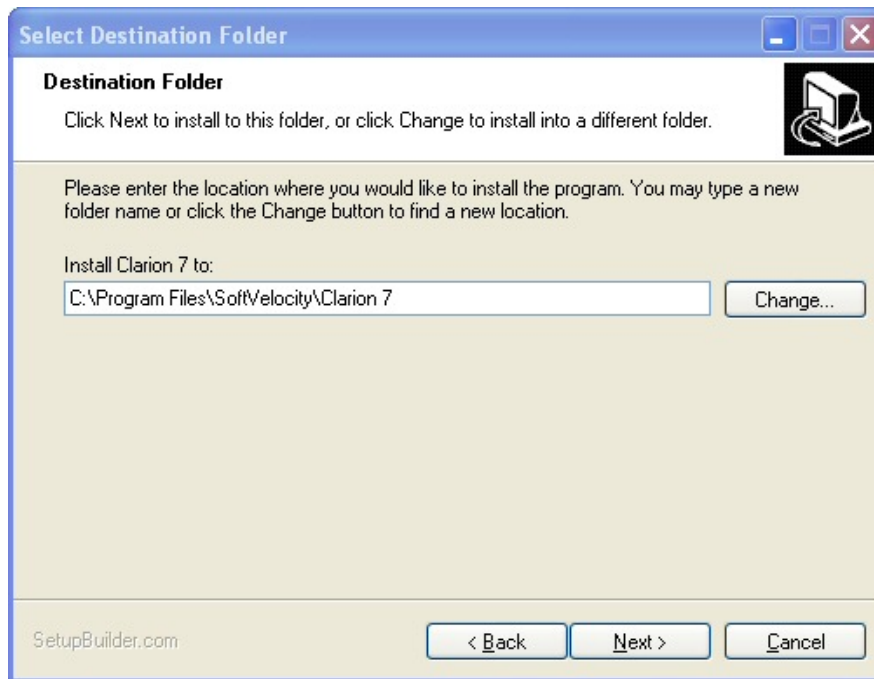


Figure 2. The default installation directory

Figure 3 shows the space requirements of 70 megs. I have a copy of SharpDevelop 2.0 on my system (C7 uses the C# IDE as a foundation) which only takes up about 20 megs.

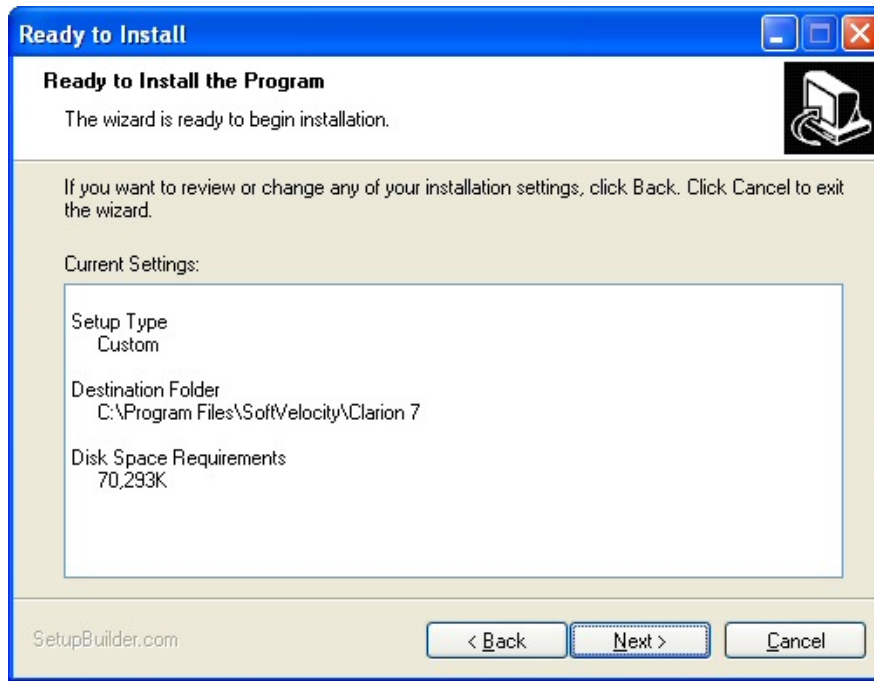


Figure 3. C7's disk space requirements

I didn't time the actual installation but it went pretty quickly.

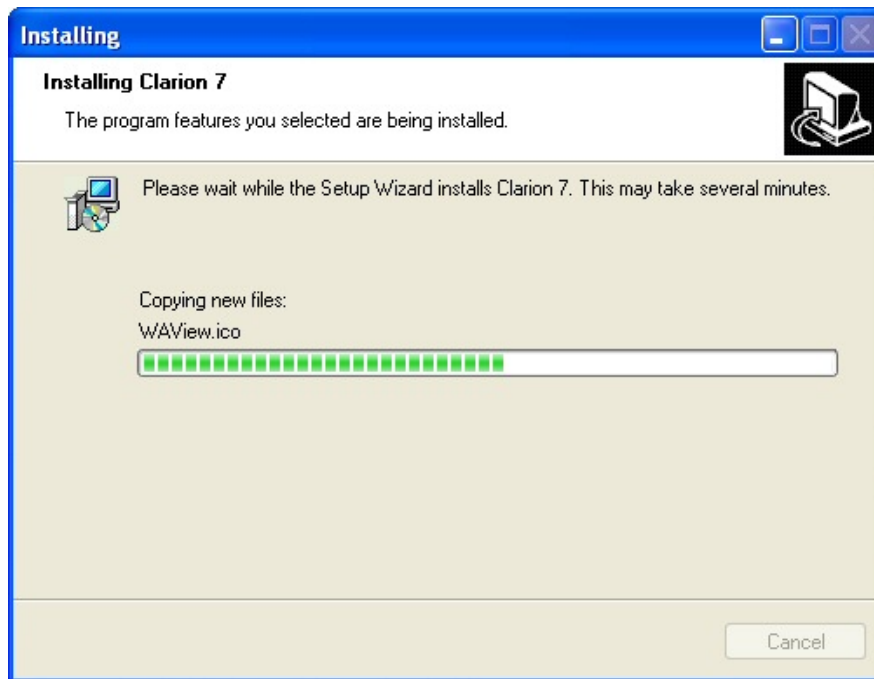


Figure 4. Installing C7

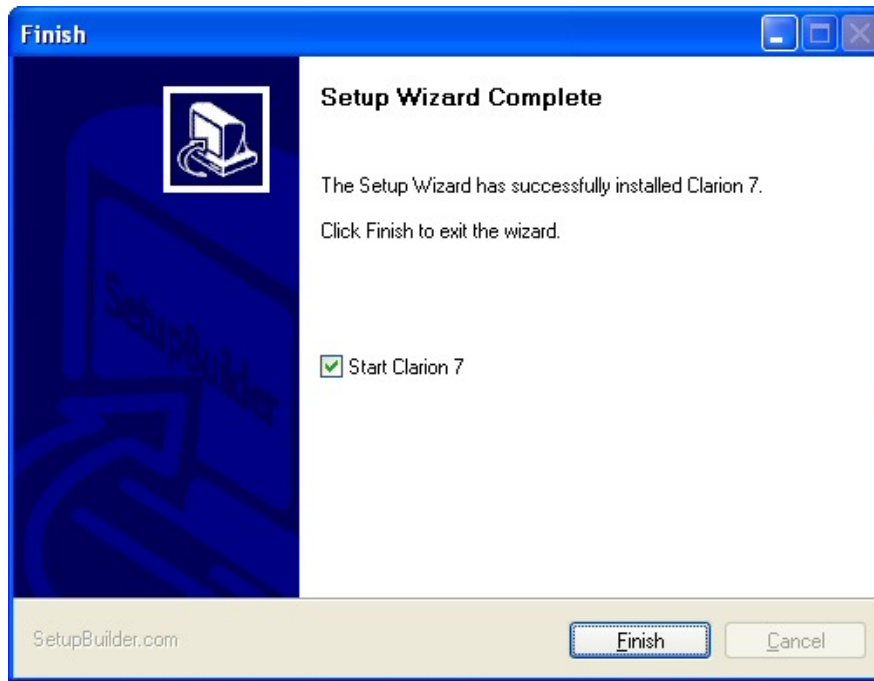


Figure 5. Ready to roll!

The Start Clarion 7 checkbox doesn't actually launch C7; instead it brings up the C7 Quick Start guide, which offers a few words of introduction and explains how to go about loading the IDE. The install program adds the following shortcuts to Start | Programs | Clarion (Alpha):

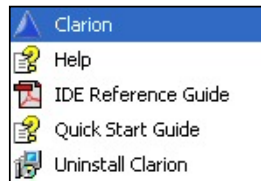


Figure 6. The Clarion program menu items

The Clarion Help file is still in a state of flux, as you would expect. It contains some information about C7 and Clarion.NET but there are very few screen shots of the new IDE, and many topics are only bookmarks so far. There is a whole new section for the Clarion.NET language reference including new compiler directives (NAMESPACE and USING), new simple data types (BOOL, CHAR, CLASTRING and CLADecimal), STRUCTs, ENUMs, DELEGATEs, TRY, CATCH, THROW, and a bunch of other stuff. More on that at a later date when Clarion.NET is available.

Unlike Clarion.NET, there isn't that much that's new for the Win32 Clarion language as of C7. A couple of old VBX properties are now deprecated (PROP:vbfile, PROP:vbname, and PROP:vbEvent) and there are a few new properties to help support the new visual styles. Since the alpha does not include the AppGen, you make use of these new properties in C7 by generating your C6 code with the templates and source files applied by the C6 visual styles installer I mentioned above. From the help:

As an added feature to the initial release of Clarion 7, Clarion 6 has now included a special template interface designed to add powerful XP styles easily to your existing applications that you are planning to

migrate to Clarion 7.

Projects in the initial release of Clarion 7 are first exported to an external project file from a Clarion 6 application, which is then imported and processed by the Clarion 7 IDE. Using this technique, the Extended UI interface is used to include special styles that Clarion 7 supports from inside your current Clarion 6 application. This includes XP Style Menus, MDI tab controls, and special enhancements for SHEET and TAB controls.

This Extended UI support will not affect your existing Clarion 6 applications. A special compiler flag detects that the code generated to support the styles you implement will only be incorporated into your Clarion 7 programs.

I'll go over the visual styles aspect of C7 in part two.

On my machine there was a delay of some seconds after I ran Clarion, and then the splash screen shown in Figure 7 appeared.



Figure 7. The new splash screen

As Figure 7 demonstrates, Clarion 7 and Clarion.NET share exactly the same IDE, although Clarion.NET is not part of this release.

Figure 8 shows C7 as it appeared on my machine.

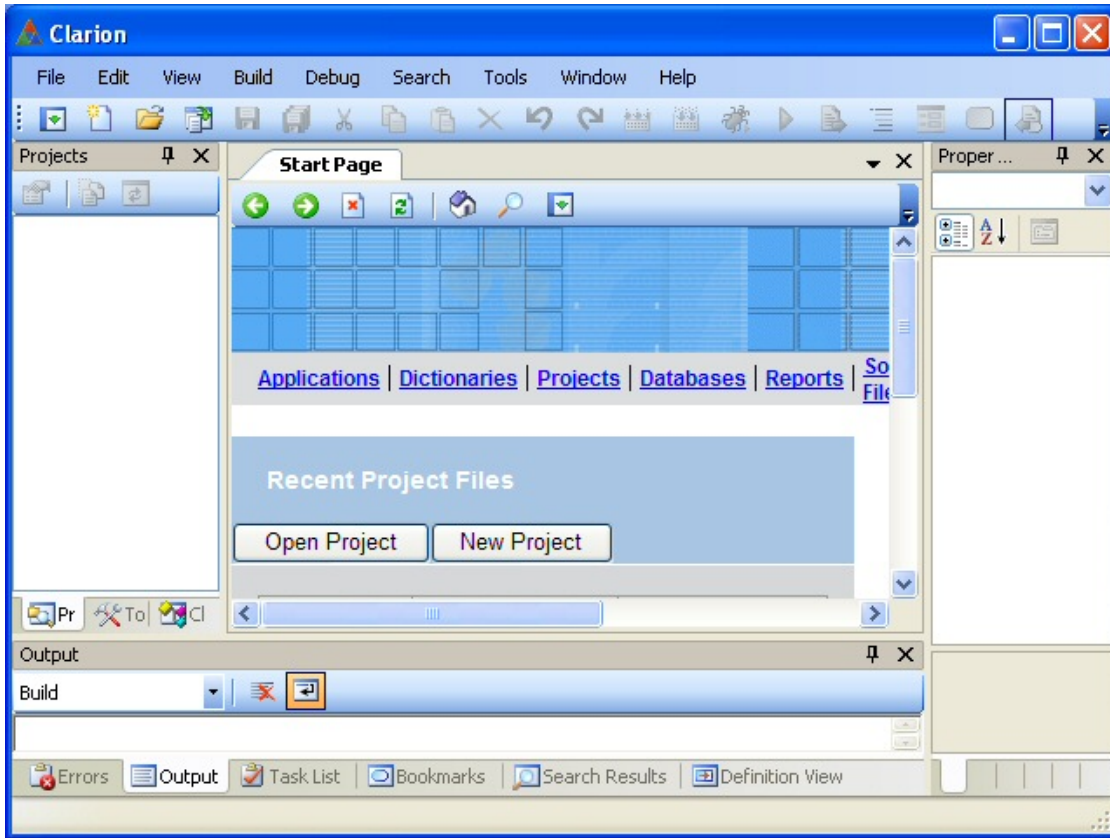


Figure 8. The new IDE on opening.

I maximized the IDE on a 1280x1024 monitor to get the IDE layout shown in Figure 9.

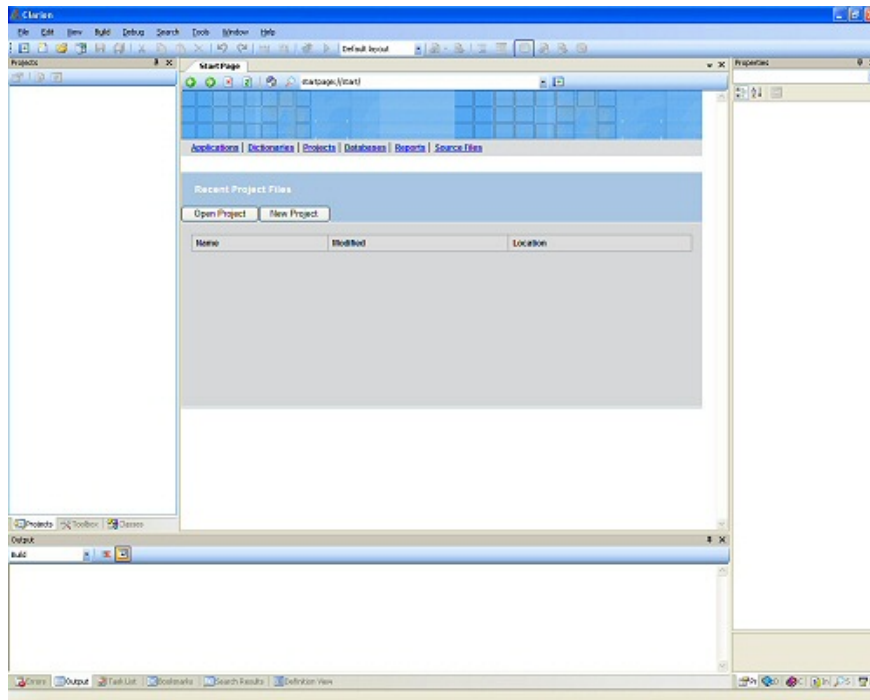


Figure 9. The new IDE maximized (view full size image)

The IDE layout

If you've used any of the mainstream IDEs such as Visual Studio then this layout won't seem too unfamiliar. Along the top you have the main menu and the toolbars. The central area is the working area where you'll see the source files, formatted windows and reports, and the like. On the left you have space for your project list and primary tools, and on the right space for more tools. Program output, bookmarks, search results and the like are kept along the bottom. As with other IDEs you can rearrange the panels to suit your needs, and there are several predefined layouts. If you mess up the layout badly you can always reset to the defaults.

Figure 10 shows the IDE with a window loaded in the structure designer (aka the window formatter).

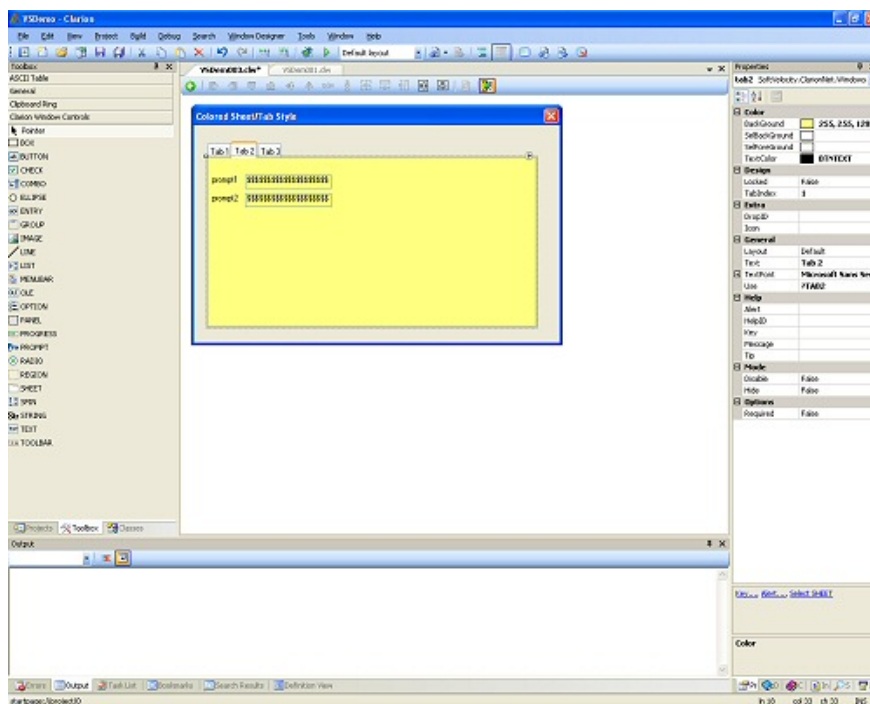


Figure 10. The IDE with a window in the structure designer ([view full size image](#))

It's a little hard to see in the downsized version of Figure 10, but on the left hand side you have a list of controls you can populate on the window, and on the right hand side you have a property editor.

Figure 11 shows the code view of the window in Figure 10.

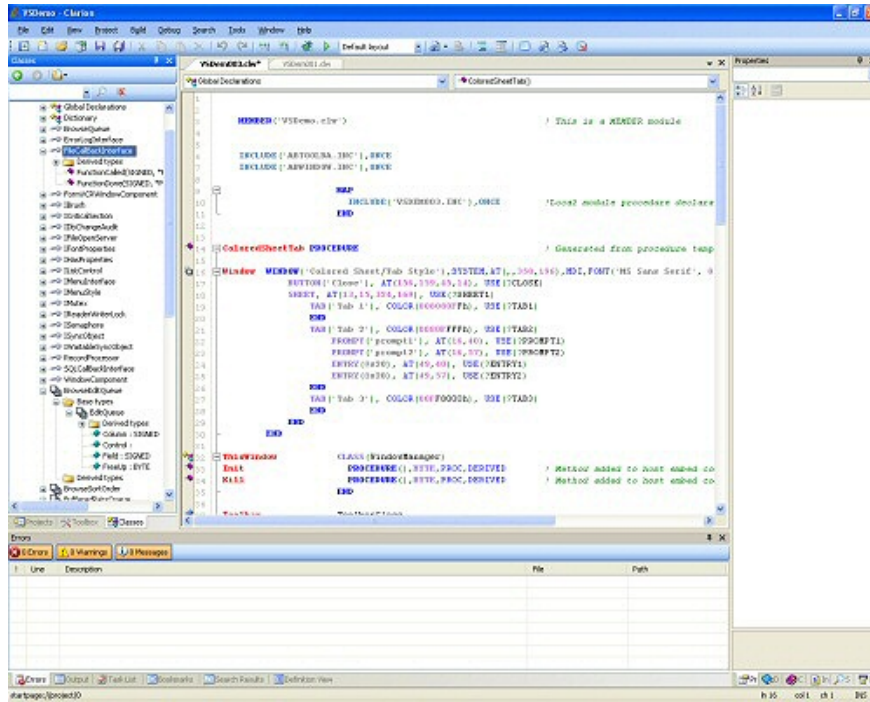


Figure 11. Editing the window source code (view full size image)

Again, you can move the various pieces of the IDE around to suit your fancy. I don't know exactly how the Dictionary Editor and AppGen will fit into this scheme but I expect them to follow the same basic concept of a central workspace surrounded by supporting tools.

A tour of the menus

To give you a better idea of the breadth of the new IDE, here are screen shots of the drop down menus. Some items are grayed out simply because no appropriate file was loaded at the time.

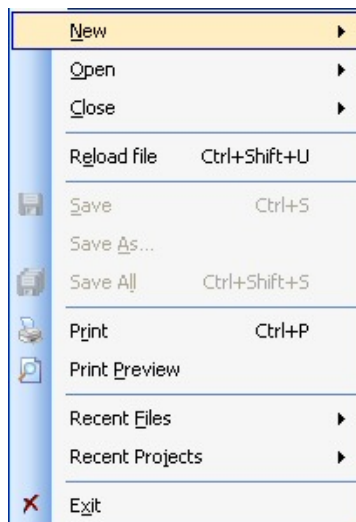


Figure 12. The File menu

Pretty basic stuff in the File menu. Note the ability to reload a file that may have been edited by

another program.

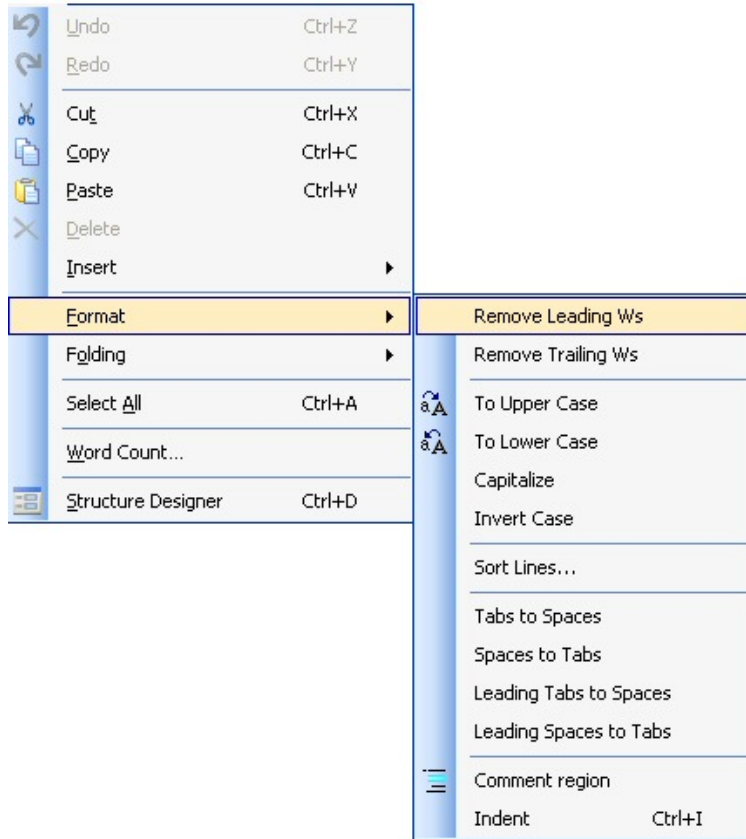


Figure 13. The Edit menu with the Format submenu

The Edit menu has a nifty formatting submenu. I suggest you not use Sort Lines on the body of your source code. It is pretty nice for lists of simple variable declarations. On the other hand, if you do use it on your source code, you can always Undo. Yes, we finally have an editor with real, working, multi-level undo which seems to work flawlessly.

One thing I would like to see is a source code formatter that will indent misaligned code.

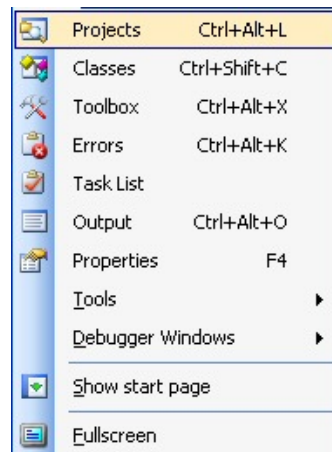


Figure 14. The View menu

The View menu gives you access to the various toolboxes, although you can also reach these via the appropriate tabs and icons in the workspace. You can also use it to return to the start page.

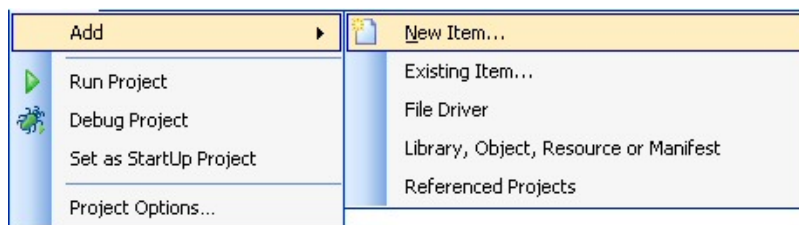


Figure 15. The Project menu with the Add submenu showing

The Project menu lets you run, debug, and manage projects. Clarion 7 uses solution files which allow for much more complex project setups than traditional project files.



Figure 16. The Build menu

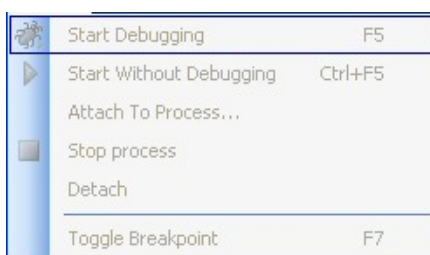


Figure 17. The Debug menu

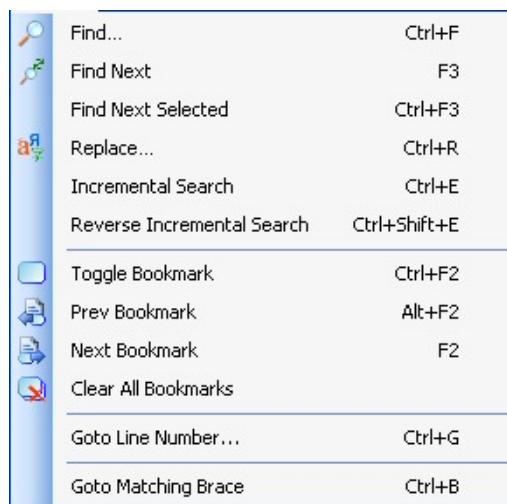


Figure 18. The Search menu

C7's search capabilities far exceed anything in Clarion 6. I particularly like the ability to do Find All and bookmark all found items.

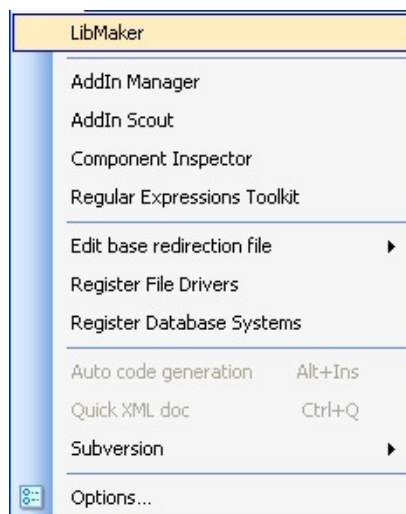


Figure 19. The Tools menu

The new Clarion IDE is highly extensible, built as it is on the IDE licensed from SharpDevelop. And the SharpDevelop IDE is specifically designed to be extensible. This looks like fertile ground for third party developers.

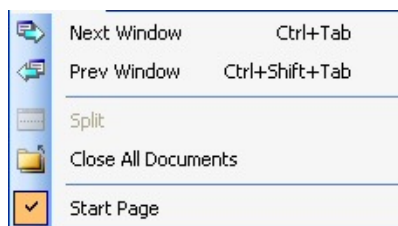


Figure 20. The Window menu

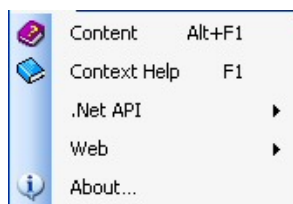


Figure 21. The Help menu

The Help menu includes Microsoft's .NET API documentation and the Web submenu leads to web pages including SoftVelocity's blog site.

Not only has the IDE changed radically, so has Clarion's directory structure. The first directory level looks familiar, with bin, lib, libsrc, and template directories. But expand the whole directory tree, as in Figure 22, and you'll see something much different.

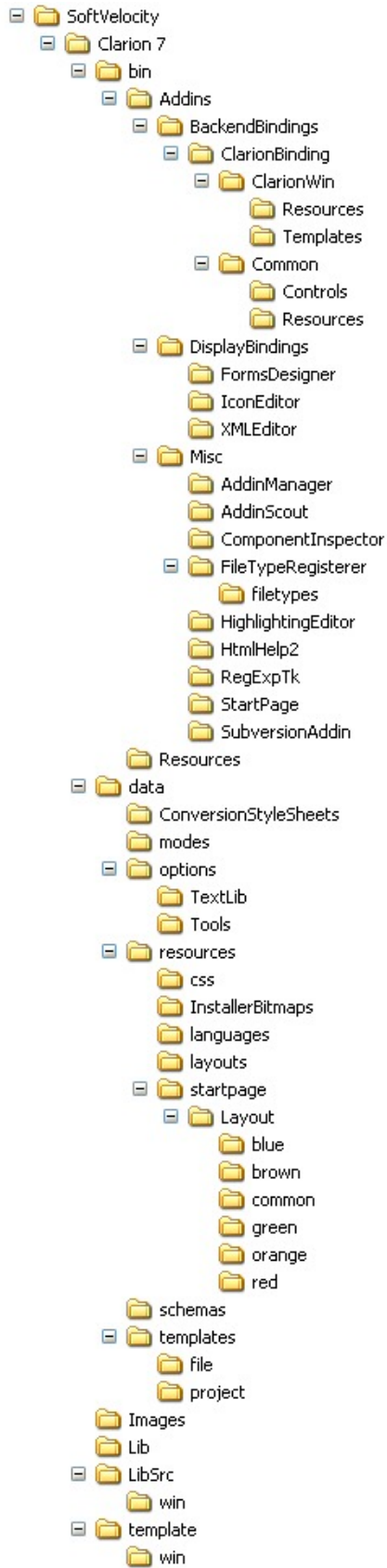


Figure 22. The C7 directory structure

There are a number of XML configuration files buried in that directory tree, along with the various binary

files that make up C7. As you can guess from the AddIns subdirectory the new IDE makes use of a number of pluggable products, none of which I've had a chance to explore yet. And there's plenty of room for more. C7 also uses XML for current configuration data; these files are stored under the Documents and Settings\Application Data\SoftVelocity\Clarion\7.0 directory and include such information as code folding settings for individual files, bookmarks, etc.

One thing you won't see in the directory tree in Figure 22 is the obj32 directory. That's because all compiled code is stored in a subdirectory under your application, much the same way as Visual Studio does it. This is a good move; although it means some duplication of standard object code, it also avoids recompiles whenever a compile setting for one app results in shared binaries which are incompatible with another app.

Next time

There's much more to cover, and in the [next installment](#) (which is also free access) I'll look in more detail at the new structure designer, which replaces the window and report formatters. In particular there are some very nice features there that will greatly ease the business of placing and moving controls. I'll also take a look at the process of converting a C6 application to run under C7 with visual styles.

[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](#)).

Clarion Magazine

Embedding The SQLite Engine In Clarion Applications

by John Taylor

Published 2007-02-27

Clarion programmers typically use ISAM drivers (such as TPS), or an SQL Accelerator (such as ODBC or the MSSQL driver) and sometimes ADO. Additionally some databases can be embedded, such as [SQLite](#) and [Firebird](#), both of which are free products (SQLite is in the public domain).

This article looks at embedding SQLite into a Clarion application. The sample code provides a simple SQLite data access class wrapper and a project (using the class) which runs some performance comparisons between the embedded SQLite engine and the TopSpeed file driver, and I'll discuss those results.

Embedding the SQLite engine is simply a matter of linking in the SQLite3.DLL so that you can make a few calls to the database engine. SQLite becomes part of your application, and there is no database backend.

What SQLite is and is not

As stated on <http://sqlite.org/>, "SQLite is a small C library that implements a self-contained, embeddable, zero-configuration SQL database engine." It implements most of SQL92 and has a reputation for a small footprint with impressive performance and strong reliability. It's well suited for embedded devices (such as PDAs, cell phones, etc).

SQLite is *not* designed for a client/server environment where a number of users would be updating the database concurrently. Multiple processes can read data concurrently, but if one process updates data, the database is locked until the update is complete. You also have the choice of creating tables on disk or in memory.

Because SQLite is essentially designed for single user access it does not have security provisions (there are no SQL Grant/Revoke commands). An SQLite [ODBC driver](#) is available, however.

The clever guy behind [SQLite](#) is [D. Richard Hipp](#), who offers consulting services to the many companies using SQLite.

Topspeed/SQLite performance comparisons

SQLite is fast, particularly on deletes as shown in Figure 1 and Table 1. These comparisons were run on my old laptop (single CPU, IDE drive, 512MB Ram, WinXP).

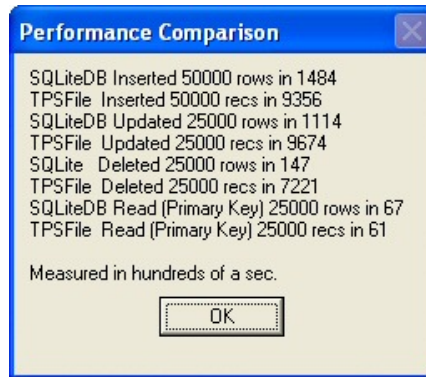


Figure 1. Pformance results

Operation	Rows	TPS (sec.)	SQLite (sec.)	Increase/ Decrease
Inserts (Gen)	50,000	93.56	14.84	+6.30
Updates (Gen)	25,000	96.74	11.14	+8.68
Deletes (Gen)	25,000	72.21	1.47	+49.12
Reads - Primary Key (Gen)	25,000	0.61	0.67	-1.10
Reads - Primary Key (Show)	25,000	0.60	0.67	-1.12
Reads - Complex Key (Show)	25,000	2.92	0.80	+3.65
Reads - Decimal Key (Show)	25,000	3.02	0.77	+3.92

Table 1. Performance comparison

Firstly, let me say these comparison tests are flawed, mainly because these are vastly different kinds of databases. One uses SQL, the other simple ADD, PUT and DELETE (with LOGOUT/COMMIT) commands. As well, SQLite has various settings with no equivalent in TPS. The comparisons are however useful as a rough performance guide. I used a single table with five keys/indexes (I guess the single table favors the TPS driver).

The results show the embedded SQLite database outperforming the TPS driver, except in the case of reading by the primary key where TPS is marginally quicker. Actually if you rip out the UTF-8 encoding from the supplied class then SQLite is also quicker reading by the primary key.

Some points to bear in mind when running the comparison tests (which are included in the source):

- Unload as many programs as possible (anti-virus/anti-spyware programs come to mind, they love to fire up CPU intensive background processes).
- If you can, repeat the same test a few times – Window caching plays a part.
- Avoid using too few records/rows.

You should however feel reasonably comfortable that the tests provide some sort of guide and that there is some consistency. It's also advisable to take a look and see how the tests are coded.

There are additional tweaks to SQLite that can further improve its performance. For instance, when performing a large number of updates/deletes you can up the cache size (see the Pragma cache_size command). I intended to do this for the delete test, but found it was not necessary.

In terms of database size, the resultant TPS file is quite a bit smaller than the SQLite database, but that's because the auto vacuum pragma is switched off (so it doesn't interfere with performance tests) and the VACUUM command has not been run. The VACUUM command is used to eliminate free pages, aligns table data to be contiguous, and otherwise cleans up the database file structure. A vacuumed SQLite database is about the same size as the equivalent TPS files. File size is normally not an issue for Windows-based systems, but you can certainly enable auto vacuum or use the Vacuum command if you wish.

So, will you ever get to use it?

Although SQLite has many uses, embedding SQLite into your Clarion application is not going to fit the bill for most Clarion projects, for two main reasons.

1. SQLite is not designed or suited for a multi user client server environment.
2. Templates rely heavily on the dictionary (and there is no native SQLite driver for Clarion).

However, if client server is not an issue and you are prepared to do some hand coding (this is normally the case when using a SQL database anyway), then you may want to consider using SQLite to gain the power of SQL without going to a fully fledged SQL engine (and with zero database setup). Or you may wish to take advantage of a specific SQLite feature, like high performance, or use it as a dynamic memory table without purchasing any Clarion add-on. Or maybe you are forced to use a SQLite database created in an external application.

With a little creativity you may find many reasons to embed SQLite in a Clarion app. For example, some systems which connect to a SQL backend also need a local (lightweight) database to hold a fair amount of data to operate in an offline mode.

SQLite is also a good way to handle large volumes of data efficiently and without much overhead. A couple of months ago I had a requirement to normalize data in a few hundred stores. There were some pretty large TPS files (100MB plus and more). The TPS driver proved really, really slow, particularly with a high volume of deletes on large files with loads of keys. Additionally, store systems don't always have a very big time window to run lengthy jobs and TPS files are not always ideal for intensive I/O operations. SQLite is a good choice for this kind of task.

And for those of us waiting for Clarion.NET there are already a number of [SQLite .NET wrappers](#).

SQLite class quick start

Included in the source zip is my SQLite class, which wraps up access to SQLite databases in a Clarion-friendly format.

The SQLite class has the THREAD attribute, so each thread gets its own instance of a SQLite object. The

class uses only a few SQLite API calls (there are actually over 100), and it has been coded to use Unicode UTF8 although SQLite also supports UTF16 (a number of API calls have UTF8 and UTF16 versions).

There are three main easy-to-use methods in the class:

- SQLite.OpenDB(String pDBName),Long
- SQLite.Exec(<String pSQL>,Long pUseFieldMatching=False),Long,Proc
- SQLite.CloseDB()

SQLite.OpenDB takes a string parameter which is the name of the database file. This string will be encoded as UTF8 by the method.

SQLite.Exec is used to perform SQL commands, which returns True (success) or False (failure). If there is a result set and you wish it to be populated into a queue, then you need to specify a queue. The queue can be correctly populated two ways:

1. By ensuring the order of the columns in the result set matches the order of the columns in the queue (the default and quickest way), or
2. By matching the result set column names to the queue column names (the pUseFieldMatching parameter must be set to True).

The following code retrieves the contents of MyTable which has a structure matching the queue definition:

```
DataQ      Queue
RecID      LONG
Char       BYTE
Str        CSTRING(64)
Dec        Decimal(15,3)
Real       Real
          End
Code
If SQLite.OpenDB('MySQLite.DB') <> True
  Message('Unable to open SQLite database')
  Return
End
SQLite.CallbackQ &= DataQ
SQLite.Exec('SELECT * FROM MyTable')
SQLite.CloseDB()
!DataQ has now been populated
```

Table 2 shows the performance comparison between populating the queue by ordinal sequence and by name matching, using both a SQLite disk and SQLite memory database.

	Rows	Ordinal Seq. (Sec.)	Name Matching (Sec.)	Ordinal Seq. Increase
SQLite Disk File	25,000	1.09	1.39	+1.27
SQLite Memory File	25,000	0.67	0.82	+1.22
Memory File Performance Increase		+1.63	+1.70	

Table 2. Comparison of ordinal and name matching

The following code shows how to attach to a second SQLite database and create a dynamic memory table:

```

If ~SQLite.OpenDB('SQLite.DB')
    Message('Unable to Open SQLite DB')
    Return
End
SQLite.Exec('ATTACH ":memory:" AS Mem')
SQLite.SQL = |
    'CREATE TABLE Mem.MySQLiteTable (RecID INTEGER PRIMARY KEY,|
    &' Char INTEGER NOT NULL, Str TEXT NOT NULL COLLATE NOCASE, '|
    &'Dec REAL NOT NULL)'
If ~SQLite.Exec()
    Return
End
SQLite.ProgressControl = ?ProgressBar
SQLite.Exec('BEGIN TRANSACTION;INSERT INTO Mem.MySQLiteTable '|
    &'SELECT RecID,Char,Str,Dec FROM SQLiteTable;COMMIT')
!*** Memory Table Populated ***!
! Remember to detach memory table when you're done
SQLite.Exec('DETACH "Mem"')

```

The class also provides a method to install a busy handler. This simply performs a delay (in milliseconds) to allow another process to complete an update and unlock the table, to hopefully prevent a SQLite Busy return code. You call the method like this:

```
SQLite.InstallBusyHandler(3000) !3 seconds
```

Inside the supplied SQLite Class

The class uses only a few of the SQLite API calls, as shown below. There are also some callbacks, as well as methods for UTF8 to ANSI and ANSI to UTF8 encoding.

```

Module('SQLite api')
  sqlite3_errmsg(Long),Long,C
  sqlite3_free(Long),C
  sqlite3_exec(Long,*cString,Long,Long,Long),Long,C,Raw
  sqlite3_close(Long),Long,C,Proc
  sqlite3_open(*cString,Long),Long,C,Raw
  sqlite3_progress_handler(Long,Long,Long,Long),C
  sqlite3_busy_timeout(Long,Long),Long,C,Proc
End

```

SQLite.OpenDB(String pDBName),Long

The database is opened (using `sqlite3_open`) and then some pragma commands are run. There is no `userid`, `password` or `server` when connecting to the database. The database may, or may not exist.

From the SQLite documentation:

Note to Windows users: The encoding used for the filename argument of `sqlite3_open()` must be UTF-8, not whatever codepage is currently defined.

Two important settings are made in this method.

- PRAGMA synchronous=0 (0=Off, 1=Normal, 2=Full)
- PRAGMA page_size=n

Both of these settings affect performance.

With synchronous OFF (0), SQLite continues without pausing as soon as it has handed data off to the operating system. When synchronous is FULL (2), the SQLite database engine will pause at critical moments to make sure that data has actually been written to the disk surface before continuing.

When synchronous is NORMAL, the SQLite database engine will still pause at the most critical moments, but less often than in FULL mode.

Before setting the page size, the code uses a Windows API call (`GetDiskFreeSpace`) to determine the cluster size (the default cluster size for NTFS is 4096). The page size is set to the cluster size (and must be a power of 2, ≥ 512 and ≤ 8192). You can only set the page size for a new database.

SQLite.CloseDB()

This method will be called by the destructor to ensure the database is always closed before the thread dies.

SQLite.Exec(<String pSQL>,Long pUseFieldMatching=False)

`SQLite.Exec` is a wrapper for `sqlite3_exec`. It's important to understand how the `sqlite3_exec` function works. You can optionally supply a callback to this function, which is how the result set is populated to a queue. The callback is fired for every row in the result set, on the same thread as the `sqlite3_exec` API call. When all the rows have been returned to the callback the `sqlite3_exec` API call completes. The callback can abort the process by returning a non-zero value.

If an error is encountered, this method will display the error message (and return False).

Please note that although more than one SQL command can be passed to this method, only one queue can be used to populate data. If a queue is specified and SQLite.Exec has multiple SQL commands it will attempt to append to the queue (I have not tried this).

The callback can also update a progress control but you need to set some properties:

```
SQLite.ProgressControl = ?MyProgressBar
SQLite.ProgressTotal = 5000
```

The sqlite3_exec c prototype is as follows:

```
int sqlite3_exec(
    sqlite3*,          /* An open database */
    const char *sql,   /* SQL to be executed */
    sqlite3_callback, /* Callback function */
    void *,           /* 1st argument to callback function */
    char **errmsg      /* Error msg written here */
);
```

The third parameter is where the callback is specified and that's fine, but ... the callback is part of the SQLite class, and remember that the first implicit parameter to a class method is Self. For this reason you ordinarily can't use a class method as a callback. The good news is that the fourth parameter is a void pointer (pointer to data of an unspecified type) which is passed as the first argument to the callback. If Address(Self) is used as the fourth parameter, the problem is solved. If the fourth parameter is set incorrectly the callback method (SQLite.Callback) would still be called, but statements inside the callback which use Self (such as Add(Self.CallbackQ)) could make bad things happen (i.e. a GPF). In fact all the SQLite callback functions seem to cater to this first argument, of a void pointer.

Of course you could code each callback separately, not using a class callback but a regular function callback. The prototype would need to change as follows (please remember to dereference the first argument with MemCpy):

```
SQLiteCallback(Long pAny,Long pArgC,Long pArgV,Long pCol),Long,C
...
Loc:Long Long
Code
MemCpy(Address(Loc:Long),pAny,4)
```

If you wish to update a progress control and there is no result set returned (as with a DELETE command), then the *experimental* sqlite3_progress_handler API call is used to install another callback which updates a non-calibrated progress control. The property for the progress control must be set.

SQLite.Callback (Long pArgC,Long pArgV,Long pCol),Long,C,Private

This callback method is specified in the sqlite3_exec API call, and it performs the following:

1. Populates the result set to a queue (UTF8 to ANSI encoding performed)

2. Updates the progress control (if required)

SQLite.Progress(),Long,C,Private

This callback method is specified in the `sqlite3_progress_handler` API call. It updates a progress control (not calibrated) and fires after N virtual machine opcodes. If it returns a value other than zero it will cause the current query to be aborted (and rolled back), in which case `sqlite3_exec` will return `SQLITE_ABORT`.

SQLite.ACPtoUTF8(*cString pInOut),Long,Private,Proc

This method translates a string from an ANSI code page to UTF8. Please note that `pInOut` must be long enough as some conversions can result in a longer string than the ANSI string. For example, if your computer is setup to use the Windows-1252 code page then the ANSI character for the Euro Symbol € is a single byte '<128>' (in hex 80). This translates to 3 bytes when UTF8 encoded '<226,130,172>' (in hex E2 82 AC). Also remember to allow for the CSTRING null terminator.

If the buffer is too small the method displays an error message and returns False.

SQLite.UTF8toACP(*cString pInOut),Long,Private,Proc

This method translates strings from UTF8 encoding to ANSI.

Conclusion

I hope this introduction to SQLite has given you some idea of when an embedded SQLite Clarion program is suitable. Performance comparisons against the TopSpeed driver only serve as a rough guide, but SQLite clearly offers some attractive performance gains, and the supplied class makes it easy to use the SQLite API. Whether you choose to write your own code, or use/extend this class, working with SQLite is a pretty painless operation.

[Download the source](#)

[Gregory John Taylor](#) has been working with Clarion forever (since DOS days) as well as with a good number of other languages. He spent seven years with JDA working on store systems and now offers his services as an independent contractor to various customers. You may spot him surfing (Durban SA) in the early hours of the morning, and if the surf is blown out he will settle for a bit of wakeboarding. His wife is still good to him after 20 years of marriage. He and his family are active members of the local church.

Reader Comments

Posted on Tuesday, February 27, 2007 by Jeffrey Slarve

I love this article. Thanks. And thanks for the wrapper.

Jeff Slarve

Posted on Wednesday, February 28, 2007 by John Dunn

I agree with Jeff. Excellent article. I'm already building an INI file replacement class using SQLite and your wrapper class to store application INI values. What are your thoughts about opening an SQLite database at program start and closing at program termination? Your example seems to imply that it is good practice to open the database, perform i/o tasks and then close the database.

Posted on Thursday, March 01, 2007 by John Taylor

John, no problem to open at program start and close at termination. You would need to call SQLite.OpenDB for each thread that requires access and the destructor should take care of closing just before the thread dies.

Posted on Thursday, March 01, 2007 by John Dunn

Hi John,

Thanks! That's what I am doing. At the start of each thread I instantiate my class object and, in my constructor, the sqlite object is instantiated and the sqlite.OpenDB method is called. The sqlite database stays open until the thread closes where the sqlite destructor takes care of closing the database.

Posted on Thursday, March 01, 2007 by kevin plummer

Hi John,

can you use this in a normal app with the normal Clarion ABC browses forms etc templates? If so what settings do you make in the dictionary.

Kevin

Posted on Friday, March 02, 2007 by John Taylor

Hi Kevin,

If you mean will this class make SQLite work using regular ABC browses / forms, the answer is no.

Cheers John

[Add a comment](#)

Clarion Magazine

Faster Newsgroup Access With Hamster

by Dave Harms

Published 2007-02-22

Most of the time I find the SoftVelocity newsgroups painfully slow. I don't mean the people are dense (although that happens often enough in chat), I mean it can take the better part of a minute for a message to load after I click on the header in Thunderbird. I don't know if that's a Thunderbird problem or a server problem, but I know I'm not alone. Ordinarily I wouldn't even notice as I prefer to set my newsreader to download all messages automatically, but Thunderbird, which I otherwise like a lot, has a "download all" feature that, for my purposes, is essentially useless and buggy to boot.

A few days ago Sean Cameron posted a message (which I eventually managed to read) saying that CapeSoft uses Hamster, a news and mail proxy server for Windows, to get around this problem.

I'm indebted to Sean. Since installing Hamster my newsgroup reading experience has been transformed. Now that I have a local cache of the SV server I never have to wait for a message to load.

There were, however, a few bumps on the road to Nirvana. In this article I'll show you how to set up Hamster and configure it to cache the SV news server.

Installing Hamster

The first thing is to make sure you're using the right version of Hamster. I started out with something called Hamster Playground from www.elbiah.de/hamster. I'm not going to make that link live, because I don't want you to go there accidentally. No, it isn't a porn site. Hamster Playground is in fact Hamster, but it appears to be some early version and it has an unbelievably convoluted user interface (not that I find the Hamster I use that much more intuitive, but anyway...). The main problem I had with Hamster Playground, once I figured out how to set it up, was that I couldn't get it to post to the SV news server. Instead I had to post all messages from Thunderbird directly to the SV news server, which was a bit of a hassle. Then I asked Jono Woodhouse how he'd set up posting to the SV server, and as soon as I got his screen shots I knew I had the wrong rodent in the house. Thanks, Jono!

The version you and I want is Hamster Classic 2.0 or later. I downloaded 2.1.0.11 from [SoftPedia](http://www.softpedia.com).

Installing Hamster is a breeze. It comes as a zip file, and you unpack it into whatever directory you like. A tip for those of you who travel: I occasionally sync my Thunderbird setup to my laptop, and to keep this process simple I put Hamster in a subdirectory of my Thunderbird data folder. You can install Hamster on your desktop machine or on another machine on your network; it really doesn't matter as long as you can access Hamster's port, which defaults to 119, the standard NNTP port.

Hamster comes with two executables: hamster.exe and ham.exe. Hamster.exe is the one you want to run, and you'll probably want to set up a shortcut as well.

The first time you run Hamster (see Figure 1) you'll see a bunch of warning messages about directories Hamster needed to create. You can safely ignore these warnings.

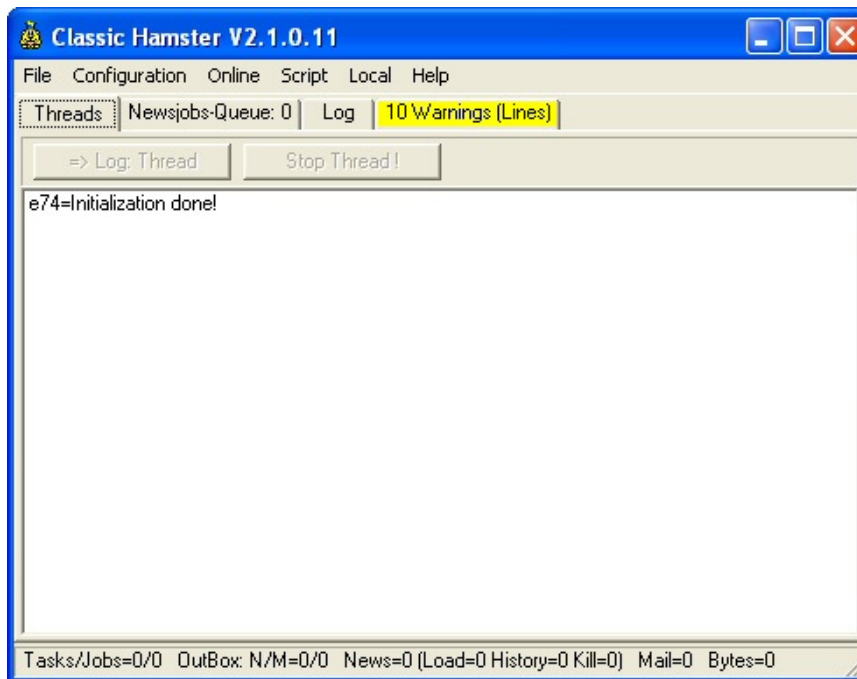


Figure 1. Hamster on startup

Next you need to set the admin password. As noted in the help, you won't be able to connect to Hamster with your newsreader unless you do this. Choose Configuration, Accounts & Passwords ..., highlight the second line (Hamster Administrator) and click on Edit. You'll see the window shown in Figure 2.

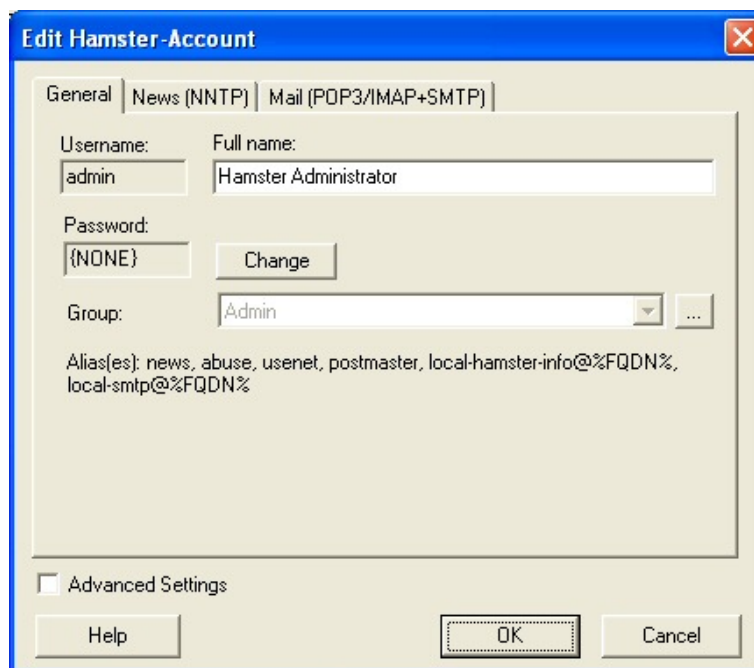
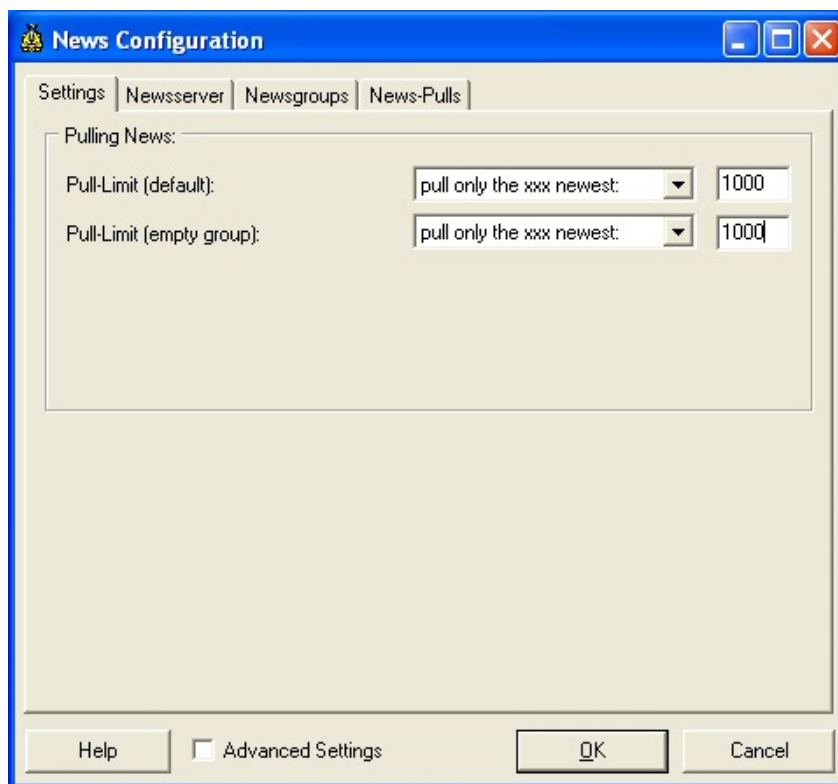


Figure 2. Changing the admin password

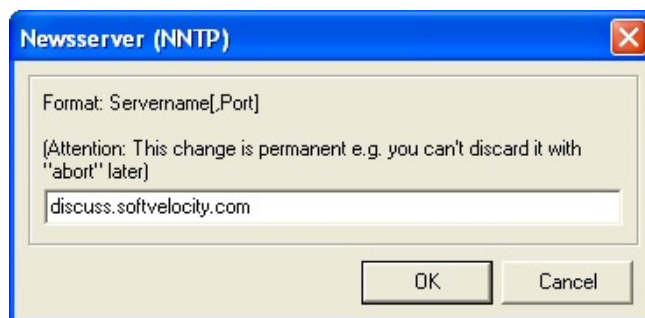
Click on Change to set a new password. You need this for your news server to access Hamster (and you'll need to tell your newsreader to use the userid admin and the password you specified).

Now go back to the main menu to create a news server record. Choose Configuration|News: Server, Groups, Pulls for the News Configuration window (see Figure 3).

**Figure 3. Setting the pull limits**

On the General tab the default settings, at least on the version I installed, are to pull only the 100 oldest items for each group. That makes no sense on the SV groups; change this to the newest items. I'm pulling the 1000 newest.

Now to go the Newsserver tab and click on Add. Enter the SV news server name as shown in Figure 4.

**Figure 4. Setting the server name**

Click OK and the server settings window appears (Figure 5).

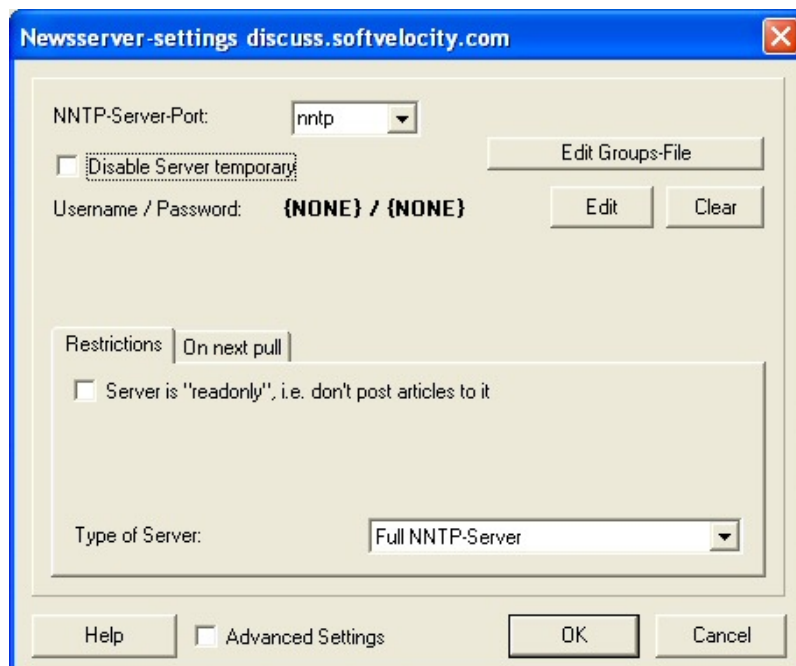


Figure 5. Server settings

If you're using a userid/password with the SV news server click on Edit to set those values.

At this point you've configured the news server but you don't yet have a list of newsgroups. To get those you have to go online. Go back to the main Hamster screen and choose Online|All NNTP-servers (or you can specify just the SV news server you set up). This tells Hamster to go online and do any waiting tasks (and like a good little rodent it knows that you need the list of newsgroups because you've just added the server).

Now you need to tell Hamster which of the newsgroups you want to pull from the SV server. Go to Configuration|News: Server, Groups, Pulls ..., make sure the SV news server is highlighted, and click on News-Pulls. Select the newsgroups you want to download and click on Subscribe selected groups (see Figure 6). Note the Show groups with drop list. The available options include matching on a regular expression, simple string matching, "begins with", and a really nifty one for anyone who uses newsgroups a lot, match on initials. For this last option "clc" would match comp.lang.clarion.

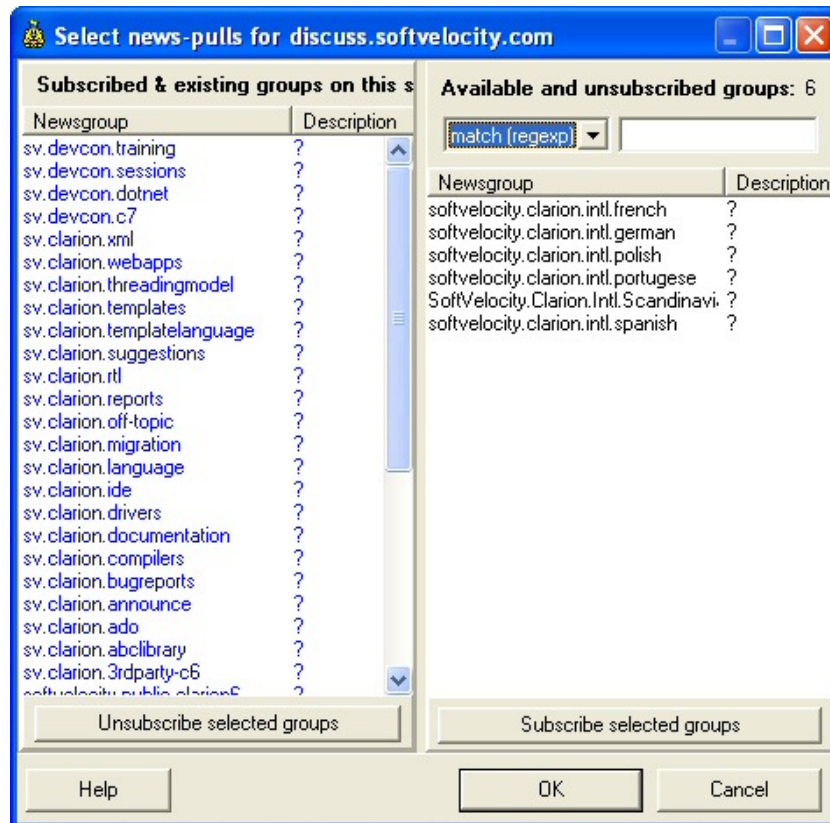


Figure 6. Selecting the newsgroups

With the groups selected you're now ready to download messages. Go to the main menu and once again choose Online| All NNTP-Servers. Depending on the Pull-limit options you specified earlier it may take a long time to download messages and get the database up to date.

To update the local cache you can do one of two things – repeat the last step of going online, which gets a bit tedious after a while, or set up an automated task to poll the SV news server.

Periodic news retrieval

If you want to automatically retrieve newsgroup messages at regular intervals you need to create a simple script. Choose Script|Manage scripts and modules ..., then click on the Scripts tag (Figure 7).

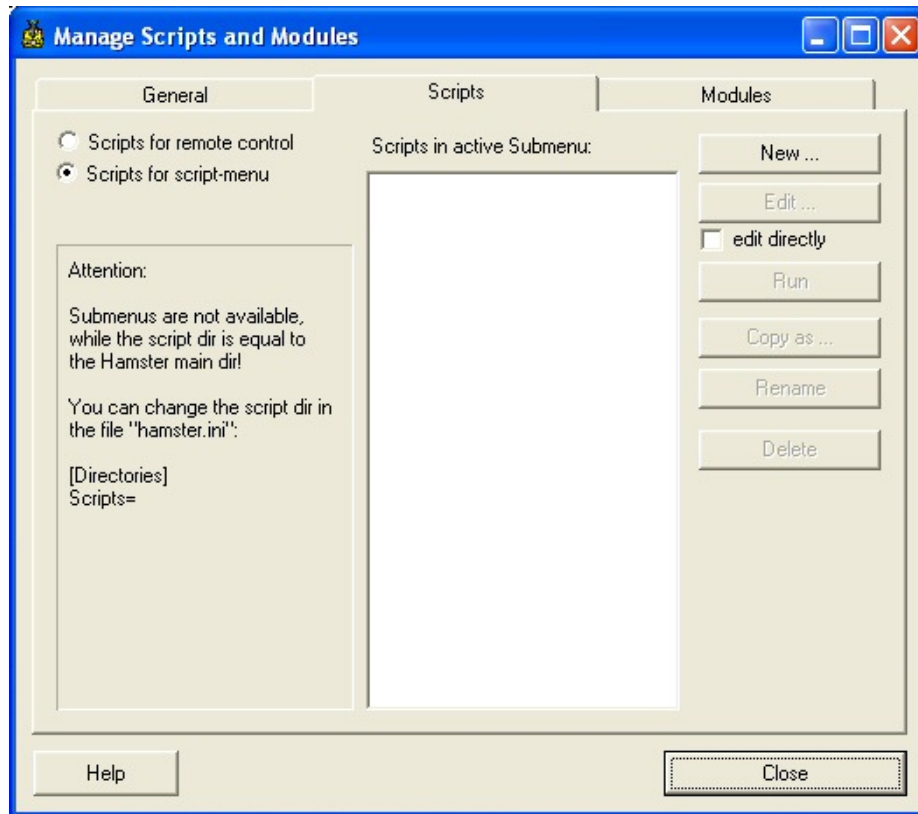


Figure 7. Managing scripts

Click on New and enter a suitable file name (Figure 8). You don't need to specify the .hsc extension.

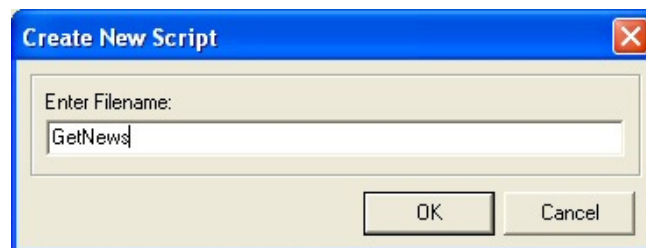


Figure 8. Creating a script

When you click OK Hamster opens notepad with a default script containing a comment and a quit statement. Delete these and paste in the following text:

```
#!hs2
while( true )
  HamNewsJobsClear
  HamNewsJobsPostDef
  HamNewsJobsPullDef
  HamNewsJobsStart
  HamWaitIdle
  sleep(300000 )
```



```

endwhile
quit

```

This script is an endless loop which posts and pulls newsgroup messages, waits until all tasks are done, and then sleeps for five minutes (sleep times are in milliseconds) before looping again.

Save the file and exit notepad; you should now see GetNews.hsc listed in the scripts list. Go back to the main menu.

To run the script immediately just select it from the Script menu where you'll now see it listed.

Running Hamster automatically

There are two more parts to fully automating Hamster: starting Hamster automatically, and starting the script automatically.

To run Hamster at startup just create a shortcut to Hamster.exe and copy it to your \Start Menu \Programs\Startup folder (at least under XP – I haven't tried this with Vista yet).

To tell Hamster to run the script automatically on startup choose Configuration|Automation and click on the Actions tab (Figure 9). Expand Hamster and click on Startup. In the Run script dropcombo choose GetNews.hsc.

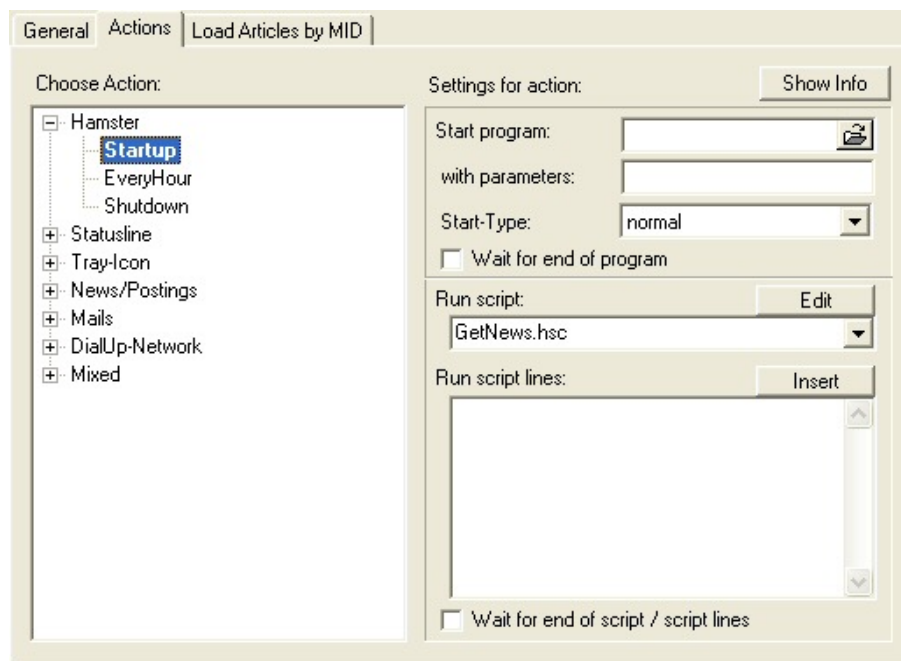


Figure 9. Setting the script to run at startup

Now you're all set. Hamster will run whenever you start Windows, and it will poll the SV news server for news items at the interval you specify in the script.

Hamster minimizes to the system tray so it's out of the way unless you need it. Sean Cameron says he's found Hamster to be a bit unstable and in occasional need of a restart. I haven't noticed any problems yet;

your mileage may vary.

Posting messages

Unlike my experience with Hamster Playground, I didn't encounter any problems posting messages back to the SV server using Hamster Classic. I didn't have to modify any other settings; Hamster simply accepts my messages and posts them to the SV server on the next iteration of the script.

However, as Jono Woodhouse has pointed out to me, there is a potential problem with using Hamster as a proxy for multiple users. Some of SV's groups are public access, and some require a password. If you're logging in, the server enforces the name that's in your login profile on the SV server. You can't change that simply by changing your newsgroup client settings. Because of this, all messages posted to the SV news server via a login account will appear to come from one user. For this reason Jono has set up two Hamster servers at CapeSoft, one for the public access newsgroups, and another for the subscriber-only newsgroups.

Summary

If like me you find the SoftVelocity newsgroups too slow, give Hamster a try. It's free, it's fairly easy to configure (once you know what to do) and it will give you lightning-fast access to newsgroup messages. Hamster even supports NNTP searches, something missing from the SV server.

Hamster also offers mail proxying (POP3, SMTP, and IMAP) if that's something you're after.

[Download Hamster](#)

[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](#)).

Reader Comments

Posted on Monday, February 26, 2007 by Dave Harms

I've updated the text with a correction - Jono pointed out to me that he's set up two news servers within Hamster, not two Hamster servers, as might have been construed from the text.

Dave

Posted on Wednesday, February 28, 2007 by Phillip Carroll

Well, it certainly sounded like a great idea. I guess "your mileage may vary" applies here.

Unfortunately, now the messages in TBird no longer match the headers. In fact, I have fewer messages than headers. Things are really

scrambled up!

In addition, I now get from TBird:

Error!

newsgroup server responded:no such article number in this group

Perhaps the article has expired

<A921.1168277462.10038@discuss.softvelocity.com> (41090)

[Click here to remove all expired articles](#)

I am now trying to get back to where I was with TBird. :(

Posted on Wednesday, February 28, 2007 by Dave Harms

I've had my share of troubles with TB as well which is one of the reasons I like Hamster - if TB blows up I can get the Hamster cache quite quickly.

Evidently you changed your existing account to use TB instead of setting up a new one. I can't think why that should present a particular problem since the message numbers are set by the SV server. But have you tried setting up a new newsgroup account for Hamster?

Dave

Posted on Wednesday, February 28, 2007 by Phillip Carroll

I have set up a new account with Hamster as the server, and subscribed to just the new private (Alpha) group. That seems to work fine.

However, flipping thru the Hamster group folders, I am finding a lot of inconsistency among the .INI files. It seems that when it has run into timeouts, it made a mess of the ini files. For instance, comp.lang.clarion had the following .ini file section:

[Ranges]

Local.Max=648

news.softvelocity.com.Min=1

news.softvelocity.com.Max=130977

news.softvelocity.com.Low=1

As a result of this local max limit, when I added c.l.c to the new TB account, all I got was 648 messages, which were basically a random sampling of the last 4 years of c.l.c. I reset these settings using the News Configuration|Newsgroups|Settings dialog.

The logs indicated I had a lot of timeouts. I have increased the timeout value to 5 minutes for data loading, and decreased the wait time in the script loop to 1.5 minutes. I think what was happening with the timeouts was that Hamster was telling the Clarion server it wanted 130k messages for c.l.c, and this caused the Clarion server to go think about this for awhile.

Note: My global settings were set to download all messages in each group. I have now gone back to News Configuration|Settings, Set the pull limits to 2000 newest for an empty group and 500 newest otherwise, and enabled splitting with the default values of 300 as the split threshold, and 250 entries in each part.

Hamster is now happily downloading all of c.l.c in nice little batches. (No timeouts or errors of any kind) So, these settings seem to be working.

BTW: I have Hamster on a network machine. TBird Tip: If you ever want to have more than one account go to the same server (I do this all the time), edit the Windows Hosts file. Add entries with different names, aliased to the same host. Use the alias names in TBird.

Posted on Wednesday, February 28, 2007 by Dave Harms

Phil, thanks for the TB tips and the timeout info. I also found it took quite a while to get everything downloaded and at first I seemed to get a random sampling, but after a while Hamster picked up all the messages.

Posted on Wednesday, February 28, 2007 by Phillip Carroll

Changing to xxx newest turned out to be a bad idea. It then ignores all older messages. I changed back to pull all, but left the splitting feature turned on, which I think is key. I had to go in and manually change the ini files to get it to go pick up the older messages.

Also, I changed the settings in Configuration|Local Servers|NNTP|Storage Settings to all zeroes (keep forever). Otherwise, it would start purging articles after 7 days.

I want a permanent database of these articles for searchnig purposes. Which reminds me: You mentioned that Hamster supports NNTP searching. How do I use that with TBird? The only way I have been able to do TBird searches of newsgroups in the past has been to enable offline for a group, then go offline to search the downloaded messages.

Posted on Thursday, March 01, 2007 by Dave Harms

Right-click on a newsgroup and choose Search. Unfortunately TB only searches this way on Subject and From. Dunno if that's an NNTP limitation or a TB limitation.

Dave

Posted on Thursday, March 01, 2007 by Charlie Anderson

Ever since we switched to GroupWise as our email and coloboration software, I have been unable to use the SV newsgroups effectively.

I followed these excellent instructions and GroupWise is suddenly a useful news reader; and my postings will comply with our archiving requirements.

Posted on Thursday, March 01, 2007 by Dave Harms

Charlie,

Cool, I'm glad it's been helpful!

Dave

Posted on Thursday, March 01, 2007 by Phillip Carroll

I solved the problem of NNTP searching on TBird. (I am using version 1.5.0.9) This is really kewl.

Whenever a group is selected, a search entry field appears in a header line just above the pane layout. (I use classic view) I don't remember this search field in the previous version. Whatever. If you click the magnifier (search) icon, a drop down list is presented that lets you choose what to search. "Entire message" is in the list. Choose "Entire message".

Select a group in an account attached to Hamster (where TB has downloaded only headers). Hint: It may a good idea to limit your view to a subset of the articles. I initiated a full text search of clc in its entirety (about 130k articles) and TB locked up. Possibly, the fact I

have Hamster on a network machine may exacerbate the problem, but evidently TB doesn't like hefty searches. On a smaller group (the new private group) I got instant results.

Enter a search value in the entry field. The entry field is an incremental locator. As soon as you enter something, the NNTP search will start, the hourglass icon will appear, and the list of headers will shrink to just those that contain the search argument. Select any of these headers, and the article will appear with all instances of the search text highlighted. Love it!

Note: Searches of groups in an account served directly by Clarion always come up empty. I guess because it does not support NNTP searching.

Posted on Thursday, March 01, 2007 by Dave Harms

Sweet! Thanks, Phil!

Posted on Friday, March 02, 2007 by George Riddell

How you get ThunderBird to work with Hamster.

The article was at the level that I expected to be connected to ThunderBird instead of NOTHINGH.

How do you connect? I've wasted too much time on this mindless matter.

Posted on Friday, March 02, 2007 by Phillip Carroll

I misspoke in my previous note. It turns out that in order to make use of the group search feature in TBird, the group must be selected for offline use, and (presumably) the messages must have been downloaded. (That is: File|Offline|Download/Sync Now) The search can be conducted with TBird in online mode, but it is not an NNTP search, it is a local search. I can't seem to find a TBird feature for auto-syncing at intervals. (Like the hamster script loop)

At this point, assuming I download/sync full articles into TBird for the search capability, it looks like the only potential value adds provided by Hamster are:

- 1) You can easily program filters into Hamster that are not possible with TBird (possibly useful for advanced twit filters)
- 2) It can presumably reduce WAN traffic when you have multiple newsgroup clients on a LAN. (They can all use a LAN-based Hamster server instead)

Since neither of these features is currently important to me, I will probably ditch Hamster. I suppose if I use a news client that supports nntp search, there may some value, depending on whether it has at least the features of TBird. But then again. I don't really know how much functionality there is in nntp search.

One thing I urgently need to do is move TBird's data folders off my C drive. It is really creaking...

[Add a comment](#)

Clarion Magazine

Apache As A Reverse Proxy For Clarion Web Servers

by Benjamin Krajmalnik

Published 2007-02-22

Third Party toolkits such as [Handy Tools](#) and CapeSoft's [NetTalk/Self Service](#) have enabled Clarion developers to write special purpose web servers. These servers, when deployed, must be bound to a specific IP address and a specific port, and that combination of address and port must be unique. If two web servers share the same IP address they must be on different ports, or if on the same port, they must be on different IP addresses. This gets complicated because by default the HTTP protocol assumes port 80, so if you want to run two web servers they either need to be on separate IP addresses or you have to specify a different port in the URL (i.e. <http://www.mydomain.com:8080>). Specifying a port number is messy; it's better if each domain has its own IP address.

What if you have more servers (and therefore more domains) than you have IP addresses, and you don't want to use port numbers in the URL? Is there a way to get around this problem? Yes there is: it's called server virtualization, and it's one of the many capabilities of the freely available Apache web server. In this article I'll explain how to use Apache's reverse proxy functionality to virtualize your server domains and run multiple domains on a shared IP address without the user having to specify the port number in the URL. As an added benefit, using Apache this way adds an additional security layer, as I'll explain later.

Network Architecture and Security

Keep in mind that hosting your own applications require more stringent security measures than you may be used to employing. I recommend installing a true firewall, preferably one that has the ability to segment your internal network into public zones and private zones. One such appliance, and the one which I recommend, is the [NetScreen SSG-5](#) (actually, I use the higher end models, but the smaller SSG-5 has the same functionality).

First, a quick security primer. You should never have a public IP address on any of the devices on your network, as this makes it easier for a hacker to scan for and exploit vulnerabilities. Always ensure you are performing network address translation either at your router (DSL/Modem) or at the firewall. Also, only allow explicit inbound traffic to the internal devices and ports which you are willing to make available to the outside world. These should be segregated from your LAN (internal infrastructure) and placed in its own zone (a demilitarized zone, or DMZ).

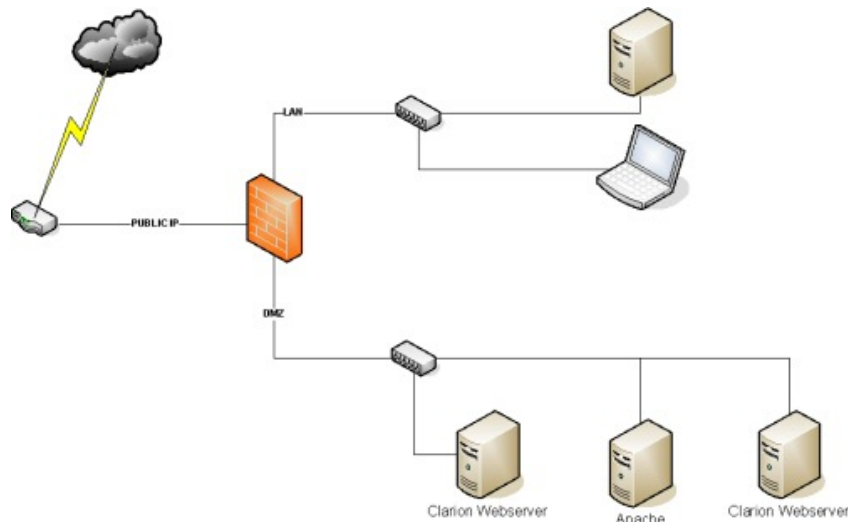


Figure 1. DMZ and LAN behind firewall/router

In the majority of cases, you will *not* allow traffic from the DMZ to the LAN. This way, even if a device on the DMZ gets compromised, it will not be able to propagate into your LAN. The network diagram in Figure 1 shows a router connected to a firewall. The external (WAN) port of the firewall will be bound to the public IP address (or addresses) which you have been assigned. In the case of hosting from home, you will more than likely be assigned that IP address via DHCP. The internal interfaces of the firewall are segmented onto your LAN and the DMZ.

Implementation

In this example, I will assume that I have a public IP address of 64.23.12.135 (a router/firewall) which is set up to implement forwarding of port 80 to a private IP address of 10.166.154.27 on port 80. This is the IP address of the computer running two Clarion Web Servers as well as the Apache web server.. The DNS entries for both of these hosts are set up to point to the public address, as shown below. Apache's job is to route the request to the appropriate IP address/port combination based on the domain name associated with the incoming request.

The two hosts to be proxied are as follows:

Host	Public IP Address	Internal IP Address	Bound Port
sales.mydomain.com	64.23.12.135	10.166.154.27	88
support.mydomain.com	64.23.12.135	10.166.154.27	89

Setting up Apache

Installing Apache on Windows is a very straightforward process if you use the [MSI installer](#), so I won't detail it here.

All of Apache's configuration information is contained in a file called httpd.conf. This file may also have one or more Include directives referencing other configuration files.

For this example there are two files which will need configuration: httpd.conf and httpd-vhosts.conf.

I'll assume you already have Apache operational.

Modifying httpd.conf

In the LoadModule section of httpd.conf make sure you have the following entries:

```
LoadModule proxy_module modules/mod_proxy.so
LoadModule proxy_connect_module modules/mod_proxy_connect.so
LoadModule proxy_http_module modules/mod_proxy_http.so
```

Search for "Virtual Hosts". You should see an entry like:

```
Include conf/extra/httpd-vhosts.conf
```

If this line is commented out, uncomment it.

Modifying httpd-vhosts.conf

The first scenario assumes that the Clarion web servers reside on the same machine as the Apache Web Server. The httpd-vhosts.conf file contains the settings for the virtual servers, that is those servers not bound to a public IP address. The file should look like this:

```
#
# VirtualHost example:
# Almost any Apache directive may go into a VirtualHost container.
# The first VirtualHost section is used for all requests that do not
# match a ServerName or ServerAlias in any <VirtualHost> block.
#
NameVirtualHost 10.166.154.27
<VirtualHost 10.166.154.27>
    AllowCONNECT 88
    ProxyPreserveHost On
    ProxyPass / http://127.0.0.1:88/
    ProxyPassReverse / http://127.0.0.1:88/
    ServerAdmin webmaster@mydomain.com
    ServerName sales.mydomain.com
</VirtualHost>
<VirtualHost 10.166.154.27>
    AllowCONNECT 89
    ProxyPreserveHost On
    ProxyPass / http://127.0.0.1:89/
    ProxyPassReverse / http://127.0.0.1:89/
    ServerAdmin webmaster@mydomain.com
```


ServerName support.mydomain.com

</VirtualHost>

Now, how are the Clarion Web Servers configured? Sales.mydomain.com is bound to 127.0.0.1 on port 88. Support.mydomain.com is bound to 127.0.0.1 on port 89.

You may ask yourself, why am I binding the Clarion web servers to IP address 127.0.0.1, or even "what the heck is 127.0.0.1"? Well, 127.0.0.1 is the local loopback interface, also known as localhost. It is an interface which is only accessible from the local machine. Since Apache, acting as a proxy, is also running on the local machine it can talk to the Clarion web servers via localhost. Even if your firewall is open to the entire world (or worse yet, if you have bound to a public IP address and you do not have a firewall!), your Clarion web servers will be inaccessible.

Now let's say that you need to deploy your Clarion web servers on different machines. You would simply point your proxy to the Clarion web server's machine's local IP address (not the loopback interface) and bind your Clarion Web Servers to that same address.

For the second scenario, where you have multiple Clarion web servers, the configuration is as follows:

Host	Public IP Address	Internal IP Address	Bound Port
sales.mydomain.com	64.23.12.135	10.166.154.28	80
support.mydomain.com	64.23.12.135	10.166.154.29	80

The virtual hosts configuration file will now look like this:

```
#
# VirtualHost example:
# Almost any Apache directive may go into a VirtualHost container.
# The first VirtualHost section is used for all requests that do not
# match a ServerName or ServerAlias in any <VirtualHost> block.
#
NameVirtualHost 10.166.154.27
<VirtualHost 10.166.154.27>
    AllowCONNECT 80
    ProxyPreserveHost On
    ProxyPass / http://10.166.154.28:80/
    ProxyPassReverse / http://10.166.154.28:80/
    ServerAdmin webmaster@mydomain.com
    ServerName sales.mydomain.com
</VirtualHost>
<VirtualHost 10.166.154.27>
    AllowCONNECT 89
    ProxyPreserveHost On
    ProxyPass / http://10.166.154.29:80/
```

```
ProxyPassReverse / http://10.166.154.29:80/  
ServerAdmin webmaster@mydomain.com  
ServerName support.mydomain.com  
</VirtualHost>
```

I can run as many virtual hosts as I want on the Apache Web Server, proxying the connections to any number of servers in the DMZ (on any IP addresses in the DMZ network), or even to remote locations if needed. I'm in Colorado, and I've tested Apache's proxying capabilities by routing traffic to a server on the east coast.

Another feature which can be incorporated when using Apache as a front end proxy is the [mod_rewrite module](#) which lets you manipulate/rewrite URLs on the fly. Together these two modules give you extreme flexibility to accomplish many tasks.

Summary

If you have more web server domains than IP addresses, you need a way to map domains to specific ports without requiring your users to specify the port in the URL. Apache's proxy capability handles the job nicely, and adds another layer of security.

Resources

- [Apache web server home page](#)
- [Download Apache](#)

[Benjamin Krajmalnik](#) is Vice President of [Illumen](#), an IT Solutions Provider based in Denver, CO. Benjamin has a degree in Aerospace Engineering from Texas A&M University. Before co-founding Illumen Benjamin worked in the Defense and Medical Device industry in Engineering, Quality Engineering, and Quality Management capacities. Benjamin has been programming in Clarion since 1990. Before that, most of his database programming was done with TAS.



Reader Comments

Posted on Monday, February 26, 2007 by Loren Gregg LaBaw

Great article, just one comment though and I could be wrong, but when using "Name-based virtual hosting" they cannot be used with SSL secure servers because of the nature of the SSL protocol.

Posted on Monday, February 26, 2007 by Benjamin Krajmalnik

The nature of SSL is that it is bound to an interface and therefore must be unique.

I believe this can be configured, but not via mod_proxy by itself. Apache will need to also be running mod_ssl. The default download form Apache does not have mod_ssl due to export restrictions. You can download Apache 2.2.3 with mod_ssl from:

http://smithii.com/apache_for_windows

mod_ssl has some SSL_Proxy directives which can accomplish this. I have not ever tried this, but I will do some digging and see what I can come up with.

If I find enough information and can get it working then I will do a write up on it.

Posted on Monday, February 26, 2007 by Benjamin Krajmalnik

I've just been looking at some of the documentation and I do not think it will be possible.

As soon as I get a chance (am in the middle of a fairly large deployment) I will revisit the issue, and if it is doable I will let you know.

I don't think the SSLProxy directives will allow us to do what we want, because I believe the certificate needs to be resolved first. In this case, we do not yet know which virtual named server it is, and therefore it will not be able to bind to the certificate. The SSL directives are configured under the virtual host, so it is probably a catch 22 situation.

Posted on Wednesday, February 28, 2007 by Poul Jensen

Great article.

I was wandering if anybody would care to comment on the vulnerabilities and risks exposed to the Nettalk server itself and the LAN if you are not using a DMZ but relying on the firewall in the router for protection.

Being a "custom" web-server and not a standard Apache or IIS the vulnerabilities should be much less. Or ????

Posted on Wednesday, February 28, 2007 by Benjamin Krajmalnik

From my standpoint, whereas your application itself may be less vulnerable, and therefore the potential for a machine being hijacked much less, if it were to get hijacked then your entire internal infrastructure is vulnerable, as opposed to limiting it to either a potential of the DMZ or even the single machine.

A typical security "trick" to keep away the script kiddies (let's face it, a dedicated hacker with enough knowledge will find a way to exploit any vulnerability) is to leave a "honey pot" on the DMZ. This "honey pot" is essentially an unprotected machine there to be hacked. When the script kiddie "infects" it, he thinks he has done the damage and moves on. At the firewall, you lock it down so that all outgoing traffic is denied, so it cannot corrupt anything.

To be truthful, I have Apache running on over 20 production servers both in-house and at client sites (as a matter of fact I am just now building 2 FreeBSD 6.2 servers which will work in an active-passive mode for one of our clients), and I have yet to have a single one of them compromised. The only instance where one was "compromised" dealt with a phpBB injection where they rerouted traffic to their site.

I have never seen a buffer overflow attack ever take place. In my case, I run the Suhosin patch on PHP, which hardens it significantly. Also, the introduction of "Deep Packet Inspection" (also known as Intrusion Detection and Prevention) in the newer firewalls (as opposed to pure stateful inspection) cuts down the possibility of a vulnerability exploit.

What deep packet inspection does is not only allow traffic to a destination ip/port based on rulesets, but it also analyzes the content of the packets, looking for specific types of attacks. When they are detected, the connection is closed and the packets not forwarded. The main problem with this is that you have to spend some time tweaking them, since by default they are overly aggressive.

Call me overly sensitive, but I do not consider the built-in firewall capabilities in the typical carrier provided routers acceptable. Entry level firewalls have become so commoditized that, to me, they are a no brainer. From all of the firewalls which we have tested, I prefer the Juniper NetScreen firewalls. I have found some of the competition to have many "bells and whistles" but fail miserably when a complex topology is required. However, in a home environment, most of them should work ok.

If you are intent on hosting from home, regardless of whether you use a proxy or not, do yourself a favor and set up a DMZ. That way, you can control the traffic going from the DMZ to your LAN, allowing only what is needed.

Posted on Wednesday, February 28, 2007 by Carl Barnes

The below article shows a security measure of using Http 1.1 headers which contain the requested HostName + IP + Port. If the request does not contain a host name and port 80 then route it to a deadend / honey pot server. Hackers scan IP ranges and not host names.

<http://www.microsoft.com/technet/technetmag/issues/2005/01/hackerbasher/?related=/technet/technetmag/issues/2005/01/hackerbasher>

Posted on Thursday, March 01, 2007 by Poul Jensen

Thanks for your comments - will keep them in mind.

[Add a comment](#)

Clarion Magazine

Get Ahead Of Your Competition With Vista And Office 2007

by Mark Riffey

Published 2007-02-14

Please make it stop.

Stop shaking, that is. See, I've been shaking my head a lot. Shortly after the Vista and Office2007 gold releases came out on MSDN there were some discussions in the Clarion newsgroups about the difficulty of running Clarion applications on Vista, installing applications on Vista, and the compatibility of Office-enabled Clarion applications with Office 2007.

The best of these conversations have been going on in the SetupBuilder newsgroup, primarily because Friedrich clearly recognized some time ago that when Vista was ready for the general population his products had to be ready to properly run *and* install a program under Vista. His comments (and not just the technical ones) showed that it was very clear to him how important Vista-compatibility was to his business. I doubt there is anyone reading this that thinks that Friedrich doesn't get it.

One thing really stunned me about these conversations: The number of developers who not only weren't ready for Vista and O2007, but also hadn't even *seen* these two products. It follows that a fairly substantial portion of those participating in the conversations had done very little testing on Vista or O2007 – and the scary thing was that most admitted that they hadn't done *any* testing. To go a step further, a Clarion Magazine survey indicated that a fair number of people hadn't even seen the O2007 [ribbon interface](#), much less knew what it was, did, or looked like.

Rose colored glasses

If you're looking at Vista and O2007 as just another giant hassle cooked up by the friendly folks in Redmond (you know, because it's their job to make your life miserable), try again. Frankly, if Vista truly makes your life miserable, your business model could use some work, but that's a story for another column.

Ok, wise guy...

So how do *I* think you should view Vista and O2007? In my view, these products present a huge opportunity for some vendors right now, and a pretty good opportunity for most everyone else for the next year. Why? Because one thing that sets any business apart from others (it's not like a software company is "different") is doing things that competitors are too stupid, too ignorant, or too lazy (or some combination of all three) to do.

Here's why I think Microsoft's new products present an opportunity:

If you're ahead of the competition, the last thing you want to do is slack off and coast because you're

the leader. The more things you do that your competitors are too lazy, ignorant, unimaginative, or unwilling to do, the more likely they will fall farther and farther behind you.

If you're in the hunt for the lead, but not yet the leader, you are apparently doing a number of things right, or at least you're no worse off than the rest of the leading vendors in your market. You still need to differentiate yourself from the leader, unless you like your view of the lead dog. Being first to market with an app that is tested and ready for Vista and O2007 is one way to do this, and demonstrates several things.

- It shows that you are the up and coming vendor to watch. You are the first to market.
- It shows that the leader is being complacent, compared to you.
- It (more or less) forces your competitor to consider altering their development plans, or face the pleasure of having you "poke the bruise" about being the new leader in the. Either way you win because when they react they have to divert resources and alter their plans. Meanwhile, you are moving forward *as planned*, not as a reaction.

If you're substantially behind the competition, do you really expect to catch up with them by doing the same thing they do? I doubt it. You have to stand out. You have to be better than they were in every way you can conceive, and you have to invent new ways to be better. You have to create apple-orange comparisons, because you can't (yet) win the apple-apple comparison. Being lazy is no way to catch up, much less take and keep the lead.

A not-so-short Clarion bedtime story

Finally, let me tell you a true story that illustrates why your choices in dealing with these new releases during the beta cycle (or otherwise) matter.

A few years ago when Windows XP was in beta, I installed it on my laptop as soon as it became available on MSDN. My primary development machine was a desktop at my office so this wasn't a huge inconvenience to me, but it still provided plenty of testing opportunities in the evening and on weekends when I was working with Office, messing around on the 'net, or coding.

I took that laptop home in the evenings, and I always kept it in sync with my desktop, at least as far as Clarion and my source code were concerned. This gave me an extra offsite backup, a ready-to-use development center in case of a fire, theft or other disaster at the office, and it allowed me to work from home or out of town as necessary on an exact copy of the current "gold" code.

The lessons learned and fixes made during the beta cycle on that laptop allowed my company to be ready for XP the day that the gold release was put up on MSDN, a full two months before it came back from manufacturing and became available to the public. It also allowed us to tell clients who also were testing XP betas that we were testing, we were ready, and not to worry. Those clients were the ones calling to ask what we were doing and if we had said "waiting for XP Gold" that would have left them wondering about how serious we really were about our business.

Why should I care if my clients worried? I don't know about you, but I care about my clients' worry level a lot. I look at it this way: If my products and services cause my customer to lose sleep, or cause them to wake up at 2 am thinking about me, I'm in big trouble. You don't ever want to be that vendor.

Payday

The payoff came at a trade show during the XP Beta 2 cycle. My laptop was also used for driving the demonstrations that we performed in the booth at trade shows. We were in Biloxi doing a show and a prospect came up and started crowing to my salesperson about his use of XP Beta 2 and how he was ahead of his competition and so on. I heard this and since we hadn't started the demo yet, I decide to have a little fun. While he was talking to a salesperson I quietly switch the XP beta into "Windows 2000 mode", i.e. no pretty menus, no big red X in the corner of the screens, etc.

The demo started and soon the prospect began to complain about all the software vendors at the show, how they were so lame because they couldn't tell him when they would be ready for XP and so on. Finally he started riding me about it, because I was "obviously" doing a demo on Windows 2000 just like all the other lame vendors.

I let him dig his hole for a few more minutes, and as he started to rag on me a little bit more about XP I asked him to hold on for a moment. I hopped over to the control panel and told Windows to start running XP in "pretty mode" (the red X, fading menus and all that). I shared with him that I've been testing with XP since Beta 1 and that we will be there with a new build the first day that XP Gold is available on MSDN, two months before most people would even have XP. All along he thought we were in Windows 2000, but in fact we had been demoing all weekend in XP Pro Beta 2. He started doing a little dance in the booth. No, there wasn't any music.

As you might expect, I got that guy's two grand and change right then and there, plus he brought other friends (who were also in the same business) back to our booth to show them how smart he was to buy from the only vendor who was ready for XP before it was even released.

The good part?

The good part is that this client became an unpaid evangelist. Everywhere he went, it was "us, us, us". Sure, he wanted his peers to know that he was smarter than them, but we were the real beneficiary of his evangelism, evidenced by the number of people who mentioned his name when they spoke with us.

The point

If you are waiting, waiting, waiting and thinking "well, none of my competition is ready, so I don't have to be either" or "all my clients are still running windows 98 and 2000 so I don't care", you need to turn that logic around. It really wasn't that hard to turn a negative (having to retest everything, redo all the screen shots in my docs to include that red X, etc.) into a big positive and a competitive advantage. Set yourself substantially apart from your competition as the "vendor that is always ready, so we don't have to worry".

Rub your hands together

Maybe 95% of your clients are on Windows98 right now, but what happens when that request for 2000 seats comes in? You know, the one that requires Vista support? It does happen. Your reaction is either <expletive deleted>, or "heeheehee" followed by rubbing your hands together because you know your stuff is the only product that matches the requirements.

I'm absolutely *not* suggesting that you upgrade every machine in your shop to Vista right now. That's not

the approach to take. I'm suggesting that your lead developer (or your only developer) switch to Vista and O2007 on at least one of the machines they use regularly so that they can start learning the issues, feeling the pain and solving the problems *before* they become problems to your clients.

The bigger picture

You are more than a software vendor of a product or system to your clients, or at least you should be. You should be the vendor they ask first about changes in the industry because they simply assume that you are ready, based on your past behavior. You must become known as an authority in your industry, because if you aren't, someone else will be. Position yourself through your behavior as the indispensable expert and you become the one whose solutions everyone thinks they have to have. Or you could be the other vendor. It's your choice.

This isn't about being the smartest person in the newsgroups. You simply have to be better prepared, more experienced and more up to date on what's new and what's coming around the bend than any client *or* prospect. There's an old saying that describes the situation perfectly: "In the land of the blind, the one-eyed man is king." There's a lot of opportunity in being the only vendor who is ready for Vista, ready for O2007 and so on.

Preparation has several other benefits:

- If your competition is one of those "wait and see" vendors who will test Vista when they start getting complaints about it (maybe), then you have another slight edge with which to weaken their pitch and strengthen yours.
- It's not just about Vista or O2007, but about being there for your clients in general. You're the vendor who makes sure that your stuff works when your client has to buy a new PC that comes with Vista and O2007 on it.
- You're the vendor who can proactively give your customers purchasing advice and talk about your experiences with Vista and O2007 in your newsletter (and you have to have a newsletter, even if it's just an emailed one), giving them the clear impression that you are on top of things in your industry and eventually, the only one to trust.

Keeping on top of important software releases like Vista and Office 2007 gives your customers confidence, confirms to them that they made the right choice, and makes it easy to get that next year's support/upgrade contract payment.

[Mark Riffey](#) has been in the software business in one form or another since the early 1980s. His background includes software development for two internationally known enterprise software vendors, the world's premier information systems services company and a Fortune 100 manufacturer. After leaving the ranks of the gainfully employed, he bought a nearly-dead vertical-market software company and grew it to the award-winning market leader in its niche. After selling that company in 2005, he now runs [Rescue Marketing, Inc.](#), a marketing, business and technology advisory firm. His business philosophy is simple: Be fair to your customers and yourself; surround yourself with brilliant people who can take a

joke, work hard, be a good listener and have a little fun. Mark and his wife Jacki have two boys, Alex and Jonathan. Mark's other interests include Boy/Cub Scouting, backpacking/hiking and almost anything else outdoors, classic blues guitar, golf and photography.

Reader Comments

[Add a comment](#)

Clarion Magazine

Eliminating Circular DLL Calls

by George Lehmann

Published 2007-02-13

Common wisdom has it that lazy programmers are good programmers, because they'll find the most efficient way of accomplishing a given goal just to create the least amount of work for themselves. But sometimes common wisdom just isn't as wise as it might seem. A case in point is the (hopefully) unintentional practice of cross-linking, or circular references between DLLs. You know how it goes. You're creating a new function for X.DLL and you need a procedure that does some task. You realize you already have a procedure that does that in Y.DLL, so you just check the export box, recompile, call that procedure and you're done. Sometime later you need a function in Y.DLL that's in X.DLL. Do that over and over across multiple DLLs and you'll very soon have a tangled web of DLLs that call up, down, and across what you used to call your "hierarchical tree-structured application."

Programmers universally agree that circular calling is bad practice. But in the same breath most of them will also tell you they've been doing it for years with no problems and have no plans to eliminate these circular references. Usually the biggest aggravation is that you have to make two passes the first time through a compile of all the modules (if you don't have the .lib files already) in order to get things to work. After that, you're usually quite unaware of the existence or the extent of cross-linking between your various DLLs.

For reasons I don't fully understand but which are suggested to be linked to the new threading model, this picture evidently changed radically for the worse with Clarion 6.x. It seems now that mutually dependent DLLs can wreak major havoc with memory de-allocation, particularly at thread shutdown time, resulting in various "memory could not be read/written" errors during program execution. Bob Zaunere, in a news group posting on 4/29/05, stated "If DLLs are mutually dependent, the order of calls to their thread detaching code is undefined at the OS level. ...instances of data in the first DLL can be killed before the destructors using them are called in the second DLL." Sounds pretty bad to me.

I decided, in an effort to eliminate some recurring but impossible to reproduce GPFs with this very "memory could not be read" error, to take the 30+ app files that comprise our program and spend a couple of days untangling the years of circular references between DLLs. Ten days later, it still seemed like a worthy thing to have done, but if I'd have known the level of effort involved I might have found something more fun to do, like getting a root canal without Novacaine.

Getting started

My first attempt was to try drawing a map of the relationships between various DLLs. I took a blank piece of paper and started drawing circles for each DLL and then drawing arrows from one circle to another, trying to create a hierarchical tree of the program. After about the 6th DLL, the lines started crossing over each other and I knew this was a hopeless approach, even if I could come up with software to do the drawings.

Then I found an article in Clarion Magazine titled "[Who Calls Who – Keeping Track Of DLL Calling Order](#)" by Steffen Rasmussen. This is a wonderful article describing just the hell I was going through, and

it provided a key concept for finding these problems in compile order. Steffen's spreadsheet matrix approach clearly identified circular references between DLLs and gave me a tool for evaluating changes to compile order and DLL dependency. My first attempt at mapping the compile order I was using is listed below in Figure 1. By counting the items in the upper half of the matrix (where they shouldn't be), I could compare the relative worth of any given ordering, with this initial stab scoring a terrible 29. As in golf, the lower your score the better, but unlike that sport my very realistic goal here was to get a perfect score of zero.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF			
1	Module	Compile #	Globals	Utilops	Util2	Acctutil	Acctpayb	Acctrcv	Aircraft	CC_Settl	Checking	Charter	Closing	Concierng	Credcard	Custreps	Dispatch	Fitschl	Genledg	Invoice	Invoreps	Inventry	Inutil	Lops	Mrlking	Payroll	Reps1	Shopodr	Specrep	Useredit	Utility	TFBOCN			
2	Compile #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30				
3	Globals																																		
4	Utilops																																		
5	Util2																																		
6	Acctutil																																		
7	Acctpayb																																		
8	Acctrcv																																		
9	Aircraft																																		
10	CC_Settl																																		
11	Checking																																		
12	Charter																																		
13	Closing																																		
14	Concierng																																		
15	Credcard																																		
16	Custreps																																		
17	Dispatch																																		
18	Fitschl																																		
19	Genledg																																		
20	Invoice																																		
21	Invoreps																																		
22	Inventry																																		
23	Inutil																																		
24	Lops																																		
25	Mrlking																																		
26	Payroll																																		
27	Reps1																																		
28	Shopodr																																		
29	Specrep																																		
30	Useredit																																		
31	Utility																																		
32	TFBOCN																																		

Figure 1. First compile order ([view full size image](#))

I started by moving some of the apps up or down in the compile order just to eliminate false positives from my naïve ordering. Within a couple of passes I had the score down to 25, but even using a spreadsheet quickly proved overly burdensome. Every time I changed something I'd have to start over and fill in all those x's from scratch. After making the fifth or sixth chart I decided I had to try something different to be able to efficiently evaluate the changes I was making.

Automating the evaluation process

Along came a tip to try a TXA analyzer written by Bob Campbell. (It's available from the Download Center at Par2.com if you want to look at the original form of this program.) I modified Bob's code to pick apart the TXA files to find procedure references. See the accompanying download for my compile order analyzer with accompanying documentation.

Looking at some sample TXA files, I was able to deduce that external module declarations always had this form:

```
[MODULE]
NAME 'Acctutil.lib'
```

where the value following the NAME tag was always the name of the module being referenced. If the module was an ordinary source module, I'd see this pair of lines:

```
[MODULE]
[COMMON]
```

Finally, the procedure name declaration would follow the [MODULE] declaration looking like this:

```
[COMMON]
FROM ABC ExternalDLL
[PROMPTS]
[PROCEDURE]
NAME selectcustomer
```

In the case of a procedure declared within a source module, I'd see Generated instead of the ExternalDLL tag as show above.

So, taking the information about module names, procedure names, and export lists from the TXA files, I could now quickly generate lists of procedures, including what module they were defined in and what module(s) they were being referenced from.

Trying to find an optimum ordering

Now that I could quickly and accurately see the changes I made to procedure declarations it was time to start looking at what was in each module and how they related to each other.

The first thing I discovered was that of the 507 external references in the program, about 30 of them were declared as coming from the wrong module! It seems Clarion is perfectly content to allow declaring a procedure as coming from X.DLL even though it really comes from Y.DLL, as long as both X.DLL and Y.DLL are included in the modules referenced by the current DLL. Whether or not this caused problems is unclear, as these have obviously been in my program for years. The cure was very simple: I just changed the external lib selection setting on the offending modules.

What I wanted was some way to predict the best compile order (i.e. produce the lowest number of circular references) given the current module declarations. It turns out that this is a lot easier to imagine than it is to actually program. I'm guessing that somewhere out there is a math wizard that can turn a set of topological cross-references like this into an optimally ordered set, but it's clear this is not going to be me. The first idea I came up with was to tackle the problem by brute force, trying literally every combination possible to see which one scored the lowest. This was a bad idea, as the number of passes required is $n!$ (n factorial if you don't remember high-school algebra), and the number of ways to order 20 + modules quickly climbs into the gazillions ($20!$ is roughly 2×10^{18} or two quintillion). Even on my fastest machine I could process no more than 30,000 passes a minute. This might take a while...

So I came up with a heuristic approach that reduced the total number of passes required significantly by starting the list with those modules that have no external references at all (such as the typical 'globals' dll or an interface dll). Then after each pass I would save the first consecutive set of modules that had zero errors (see Figure 2) to start the list for the next pass. Thus I'd only have to try random combinations of the modules that still showed errors from their current ordering. It turned out in the end that if there was a possible ordering with zero errors it would only take the new routine a few hundred passes at most to find a workable ordering. But if there are circular reference errors, even this improved brute force method fails, so I added a manual cap at 1,000 passes. In practice I found that if a perfect ordering was not found in a

1,000 passes, millions more would likely not make any difference.

Module Name	Error Score
GLOBALS	0
UTILOPS	0
CUSTREPS	0
USEREDIT	0
UTIL2	0
ACCTUTIL	0
LLOPS	3
MRKTING	0
SHOPORDR	6

Figure 2. Consecutive modules with no errors

I then created a gridded report from the 'best-run' data that looked like Steffen's Excel spreadsheet so I could graphically see where the best ordering so far was failing. By looking at the printout, it was obvious that some optimizations could be forced by hand to improve the score. I devised another list to capture the best order so far, allow manual re-ordering, and then added a checkbox to force the ordering of the first n modules to be locked in position. I'd now taken my compile order analysis as far as it could go without actually modifying my app files.

Modifying the program

It was time for the part I was dreading even before I started working on this whole project. I was going to take a functional program and spend an unknown amount of time tearing it apart a little bit at a time and rebuilding it in a different order in the hope of making it more stable. In spite of the nagging issues with the sporadic GPFs, this certainly seemed like a classic case of "if it ain't broke, don't fix it."

	GLOBALS	UTILOPS	CUSTREPS	USEREDIT	UTIL2	ACCTUTIL	LLOPS	MRKTING	SHOPORDR	AIRCRAFT	FLTSCHL	ACCTPAYB
GLOBALS												
UTILOPS	1											
CUSTREPS	1	1										
USEREDIT	1	1										
UTIL2	1	1										
ACCTUTIL	2	1	1		1				1			
LLOPS	3	1	1			1						1
MRKTING	1	1					1					
SHOPORDR	6	1	1			1			1			
AIRCRAFT	3	1	1			1	1		1			
FLTSCHL	2	1	1		1	1			1			
ACCTPAYB	2	1	1			1	1		1			

Figure 3. Cross-referenced modules

I started by randomly picking a '1' that appeared above the diagonal line on my unsuccessful compile order report and finding out what caused it to be there. In the example in Figure 3 you can see the LLOps module and the AcctPayb module both have references to each other. When I looked at the procedures being called in both modules, it turned out that AcctPayb wanted to call a label-printing routine in LLOps, and LLOps in turn wanted to call a browse in AcctPayb to select a vendor for which to print a label. This is a very common scenario when reports are separated from the data entry functions, something I've practiced for a long time. In this case the solution was to change the LLOps procedure to call a

new SelectVendor browse instead of the general browse used to update vendors, and to move the simple SelectVendor browse into a separate vendor utility module. This wound up fixing several errors at once as several other modules had this same back and forth relationship with the AcctPayb module.

In general, these improper orderings fell into three basic classifications:

1. A procedure is defined in one module but doesn't have to be in that module, and is called from another module which in turn has procedures which are called from the first module.
2. Like #1, but a procedure is referenced both by other procedures in the defining module and multiple other modules.
3. Two or more major procedures call each other from different modules.

Case #1 is the simplest to deal with. To illustrate, consider the following procedures:

- Module A
 - Proc A1 Generated, calls B1
 - Proc B1 External from B
- Module B
 - Proc B1 Generated, but not called by anything in B.
 - Proc B2 Generated, calls A1
 - Proc A1 External from A

The best example of this is B1 being a browse of some sort which is called from the application's main frame menu, but neither B1 nor any of its children are called by any other procedures in module B. The simplest solution here is to move procedure B1 (and any children) from DLL B into DLL A, and eliminate A's dependence on B altogether. Now A can compile in front of B and the world is happy.

Case #2 is more complex simply because the "other modules" now have multiple cross-references themselves and it is not possible to simply move one procedure to another DLL to make the world happy. The easiest solution here is to create a new DLL and move the commonly-referenced procedures to the new DLL, then adding this new DLL to all the other modules that previously looked for the procedure in the old cross-referenced DLL. The AcctPayb/LLops case mentioned earlier falls into this category.

The important thing with cases 1 and 2 is to not move any more procedures than you have to. Any procedure that does not have the External attribute can be moved between DLLs without consequence (unless it's being called by procedures that are staying behind), but moving a procedure with the External attribute could possibly make the inter-dependencies worse than they already are. In the process of my detanglement, I wound up creating half a dozen DLLs that had only 2 or 3 procedures in them. So be it.

Case #3 is the most difficult to deal with, and it happens more than you would think. In my program, I had several of these to deal with.

One was where a customer update form had a child procedure that allowed selecting multiple aircraft for linking to the customer account, while the aircraft browse used for selecting the aircraft had a call (in the update form) to the customer browse to allow selecting which customer an aircraft could be linked to. Another case was a charter quote generation screen which had a button to call up a scheduling window, while the scheduling window had code to create and edit a charter dispatch (which was in the same module with the charter quote and referenced the charter quote browse as well).

Let's look at the charter quote problem. I had two choices in this case: Combine three modules together,

which would have implications on the compile order for other modules, or change program functionality. While I was reluctant to penalize my users just because I wanted to optimize my compile order, after several attempts to combine the three modules I decided it was in their best interest to do just that. The changes I made reduced the ready access to certain functions (such as a button on the charter screen to call up scheduling), but in the end it did not take any program functionality away since they could always go back to the menu to get to the program function in question.

Summary

Now that it's done, you can bet I'm going to be a lot more careful in the future about creating references between DLLs. And when I do I'll be analyzing the effect on compile order before I release the changed program.

Was it worth it? I easily spent 80+ hours on this (at least half of that was developing the tools), and enlarged my program from 1838 procedures and 507 external references in 30 app files to 1848 procedures and 556 external references in 41 app files. Compile time for the whole program increased about 20%, and the total disk space image of all the compiled DLL files increased by about 800,000 bytes or about 1.5%.

The reward was at the user sites. The removal of circular references, and this alone, completely eliminated those "memory could not be read" GPFs in our program. Yes, I slept well after that.

[Download the source](#)

[George Lehmann](#) is Vice President of [Horizon Business Concepts, Inc.](#), which he co-founded in 1988 to develop PC-based software for aviation businesses. George has a Master's Degree in Computer Science from the University of Illinois at Urbana-Champaign, and has been programming in Clarion since 1998. For relaxation he says nothing can beat an afternoon on the highway with his wife Leann and their Harley Road King.

Reader Comments

Posted on Tuesday, February 13, 2007 by Dave Harms

Source code zip updated - the original was missing the DCT. If you are still getting the zip without the DCT do a Save As or delete the original download.

Posted on Tuesday, February 13, 2007 by TonyTetley

George,

Nice article. I went through a similar process a few months ago and experienced similar results at the customer sites.

Tony

[Add a comment](#)

Clarion Magazine

Source Code Library Goes Gold!

Clarion Magazine is more than just a great place to learn about Clarion development techniques, it's also home to a massive collection of Clarion source code. Clarion subscribers already know this, but now we've made it easier for subscribers and non-subscribers alike to find the code they need.

The Clarion Magazine Source Library is a single point download of all article source code, complete with an article cross-reference.

[Subscribe to the source code library now](#)

What isn't changing

Source code will still be available via individual articles. Nothing's going away. This is an added feature, not a replacement for how you get source code now.

Pricing

If you **do not have** a regular [Clarion Magazine subscription](#) you pay **\$64.95** for a one year source library subscription.

If you **do have** a regular [Clarion Magazine subscription](#) you pay just pay just **\$39.95** for a minimum one year library subscription, plus you get **free upgrades** for as long as you have a current magazine subscription. In other words, you pay a **one time fee** of \$39.95.

If you wish to subscribe to Clarion Magazine and buy the source library subscription at the same time, the [store](#) will give you the magazine subscriber pricing on the source library.

What do I get?

When you complete your [purchase](#) you'll receive a confirmation email telling you to log in to [My ClarionMag](#) where you'll find your link to the source library download. The zip file contains a signed, [SetupBuilder](#)-powered installer which will set up the source code library on your computer. The C3PA compatible installer will detect your Clarion version and by default will install the Source Code Library under your Clarion 3rdparty directory. Please use the default location for [Clarion Desktop](#) compatibility. See below for a partial list of included source.

Hundreds of source files and examples

At present there are well over 300 zipped source examples included in the library. The download is in excess of 30 megabytes.

Terms of Use

As a subscriber to the Clarion Source Code Library you are entitled to use the source code and examples without restriction in your own applications. You may not, however, distribute the source code or use it to produce third party products without the permission of [CoveComm Inc](#), publisher of Clarion Magazine.

Upgrades

You are entitled to free upgrades as follows:

- for one year from the date of purchase, **or**
- as long as you have a current Clarion Magazine subscription

Log in to [My ClarionMag](#) to download the latest release.

Included source code (as of December 31 2006)

The following is a partial list of articles containing source code included in the library, from newest to oldest. Articles with source posted after December 31 2006 are not listed here.

Source for: Manifests for Hand Coded Apps (updated)
Date: 2006-12-30
Summary: Clarion 6 includes support for XP manifests in APPs. But what about hand coded programs? Mark Riffey shows how to add a manifest to your PRJ. Updated with a Vista screen shot, courtesy of Carl Barnes.

Source for: Printing a "No Records" Report
Date: 2006-12-22
Summary: The standard behavior for a Clarion, ABC, report, if there is no data, is to pop up a message which says "No records". Suppressing this message is easy, but what if you want to print a report that says "No records"? Bruce Johnson shows how it's done.

Source for: A Callback Technique for Capesoft's FileManager2

Date: 2006-12-21

Summary: CapeSoft's FileManager2, and its more recent incarnation FileManager3, are amazing products: they completely automate the process of upgrading client databases, whether local or across a network, and make it easy to do file maintenance. Randy Rogers shows how to add a callback procedure to FM2 to provide user feedback during startup.

Source for: No! You Can't Cancel

Date: 2006-12-13

Summary: Clarion developers are a nasty bunch. They do not want to let their end users cancel forms. At least it seems so from the frequency with which questions are asked about trapping the Escape key or Windows' red X. Dr. Parker shows how it's done.

Source for: A Customized Deep Assign Function

Date: 2006-12-12

Summary: The deep assign operator (:=) is a powerful tool, but it doesn't work in all circumstances. Alan Telford shows how to extend deep assign functionality using WHO and WHAT.

Source for: Controlling Controls

Date: 2006-11-30

Summary: Steve Parker has a customer browse which must indicate whether a customer has an email address, and if the email address is present, allow the user to send an email. But as usually seems to happen, the obvious solutions don't apply.

Source for: Solving Problems With Finite State Machines

Date: 2006-11-24

Summary: Finite State Machines are a useful technique for many programming tasks, including text searching. If you've ever done any complex text parsing you may even have used one of these without knowing it. John Christ explains.

- Source for:** Adding Arrays To Generic Queues With HOWMANY
- Date:** 2006-11-17
- Summary:** Alan Telford uses Excel to view queue data, as explained in an earlier article. That version of his generic-queue-to-CSV exporting procedure couldn't handle arrays in queues, but Clarion 6's new HOWMANY function makes arrays in generic queues usable.
- Source for:** Threads: When START Starts
- Date:** 2006-11-10
- Summary:** You may think that when you START a procedure, it immediately starts. This is not, however, true. Steve Parker shows how to exercise control over when a STARTed procedure actually begins to run on its own thread.
- Source for:** Recursive Adds
- Date:** 2006-10-26
- Summary:** "Heads down data entry" makes the ability to add multiple records without having to return to a browser desirable. Even customers in lighter duty situations want it. Dr. Parker shows how to deliver the goods.
- Source for:** Classes For Background Processes
- Date:** 2006-10-20
- Summary:** C6 introduced true threading, and threads are a great way to handle background tasks. But threads seem very procedural - you start some code running, and it runs until it ends. What if you want to use threads in an object-oriented environment? Is it even possible to have a class that runs on its own thread? How do you control threads in an object-oriented environment? David Harms demonstrates one approach to threading classes.
- Source for:** Throwing Users Out: Methods of Computation
- Date:** 2006-10-17
- Summary:** Having determined, in the previous episode, how to throw a user out of a window, Steve Parker returns to the problem of knowing when to throw the user out.

Source for: Replicating IDLE: Throwing Users Out

Date: 2006-10-12

Summary: "When the user hasn't done anything for x minutes (or seconds), I want to close the window. How can I do this?" This question comes up fairly frequently. As is so often the case using Clarion, there are a number of ways to accomplish the goal of throwing the user out.

Source for: Solving Sudoku Puzzles With Clarion, Part 2

Date: 2006-09-27

Summary: Jon Waterhouse explains his Sudoku solver, written in Clarion. This program uses a deductive approach as much as possible, and falls back on guessing only where deduction is impossible. Part 2 of 2.

Source for: Solving Sudoku Puzzles With Clarion, Part 1

Date: 2006-09-21

Summary: Jon Waterhouse explains his Sudoku solver, written in Clarion. This program uses a deductive approach as much as possible, and falls back on guessing only where deduction is impossible. Part 1 of 2.

Source for: Roll Your Own Web Search Engine

Date: 2006-09-14

Summary: Jim Albrecht shows how you can create your own web search engine in Clarion using Skip Williams' WebFetch DLL.

Source for: Storing GROUPs in INI Files

Date: 2006-09-08

Summary: Jeff Slarve demonstrates a small function that stores any group as field/value pairs in an INI file, and can also restore data from an INI file.

Source for: Improving On The Non-Related Lookup Template

Date: 2006-07-17

Summary: Clarion ships with a template that allows you to do a lookup from a table that is not related to the primary table. While very useful, it offers room for improvement, as Nardus Swanevelder demonstrates.

Source for: Beautifying Clarion Applications

Date: 2006-07-13

Summary: Beauty may only be GUI deep, but that's no reason to hide your beautiful code with an ugly shell. Roel Abspoel shows how to dress up your apps with that "glass panel" look.

Source for: Another Single Browse For Multiple Lookups

Date: 2006-07-10

Summary: Several years ago Clarion Magazine published an article on using a single browse for multiple lookups. Nardus Swanevelder looks at the subject again, and comes up with some improvements.

Source for: A Class Wrapper for the SimpleOCR API

Date: 2006-07-06

Summary: While developing a document management system, John Dunn faced a requirement for scanned documents. To reduce data entry time and increase the accuracy of the indexed data he decided to add Optical Character Recognition (OCR) capabilities to the program.

Source for: Global Variables, Threads, Critical interSections and the Dangers of Unprotected Sets, Part 2

Date: 2006-06-29

Summary: Inspired by the "CapeSoft Clowns" at the recent Aussie DevCon, John Morter sets out to create an easier way to manage thread-safe variable assignments under Clarion 6. In this concluding part John explains the class source.

Source for: Global Variables, Threads, Critical interSections and the Dangers of Unprotected Sets

Date: 2006-06-22

Summary: Inspired by the "CapeSoft Clowns" at the recent Aussie DevCon, John Morter sets out to create an easier way to manage thread-safe variable assignments under Clarion 6. Part 1 of 2.

Source for: External Business Rules with the In-Memory Driver

Date: 2006-06-21

Summary: Towards the end of 2004 Nardus Swanevelder wrote a series of articles on Clarion's Business rules, and how they could be configured at runtime. In this update, Nardus shows how to use configurable business rules with the In-Memory Driver. SOURCE LINK UPDATED!

Source for: Using RMChart with Clarion

Date: 2006-06-15

Summary: After researching several charting alternatives, Al Randall happened upon RMChart, a free, lightweight wrapper around Microsoft's GDIPLUS graphics library. Al shows how to create charts in Clarion using the DLL version.

Source for: Nifty Window Tricks And Smart DLL Loading

Date: 2006-04-20

Summary: It's an age old question: "How do I use a Windows API function that is not available in all versions of Windows?" The simple answer is that you only call the function if it's available at runtime. You do this by attempting to dynamically load the module where the function resides, and if that succeeds you call the function by address. If you can successfully load the module and get the address of the procedure, it exists in this version of Windows. There's no need to try to identify the version of Windows; either the function exists or it doesn't. In this article Larry Sand demonstrate this technique with some API calls that are only available in Windows 2000 and later, and which allow you to gradually fade in a window and make an area transparent or opaque.

Source for: Aesthetically Pleasing Recursive Updates

Date: 2006-04-17

Summary: Clarion makes it easy to do recursive inserts, where you continue to insert records without going back to the browse each time. It is a matter of but a few mouse clicks. But how about recursive updates? Henry Plotkin looks at the ugly way, and the pretty way.

Source for: Mixing Clarion With.NET, Part 6

Date: 2006-04-13

Summary: In the concluding part of this series, Wade Hatler shows how to make COM and C++ wrappers, and demonstrates some nifty ways to spruce up a standard Clarion window via .NET.

Source for: Updating Hot Fields

Date: 2006-04-11

Summary: On a browse window, Hot Fields significantly extend the display of information. Fields for which there is no space in the list control, data from other files (related or not), run time computed data are all nicely handled with Hot Fields. But when Steve Parker experiments with read-only entry fields on a browse, he finds out his users now want to use these fields update values.

Source for: Using DOS Files To Send Printer Codes

Date: 2006-03-31

Summary: If your applications need to talk directly to printers on parallel ports, or to serial devices, you can use the Windows API. Or, as Olivier Cretey explains, you can simply use a Clarion DOS file.

Source for: The Easiest Way To Write To A Printer Port

Date: 2006-03-30

Summary: In the last less-than-action-packed installment, Steve Parker said that he was not going to create a template for the write-directly-to-port wrapper procedure discussed. There is a very good reason for not creating that template. It's been done already. At least twice.

Source for: Clarion Challenge Results - Remove Links

Date: 2006-03-23

Summary: The results for the March 2 "Remove Links" Clarion Challenge are in! And we have detailed analysis courtesy of CapeSoft's Profiler, plus a .NET surprise.

Source for: Print Directly to Printer Made Easier

Date: 2006-03-20

Summary: In his last adventure in API land, Steve Parker explored sending control codes directly to a printer port. In this installment he wraps that code up into a function call.

Source for: PROP:SQL And Embedded Single Quotes

Date: 2006-03-10

Summary: If you use MS-SQL with your Clarion programs, and you write your own SQL statements, then you've probably run into problems with quote characters. SQL statements use quote characters to delimit streams, and if you have quotes inside your strings you need to double them up so MS-SQL doesn't treat them as the end of the string. This article by John Griffiths will show you a few quoting tricks, and will also provide you with a handy function - SingleQuoteDoubler()

Source for: Writing To A Printer Port: Sending Escape Codes

Date: 2006-03-08

Summary: The problem: How to send a control code (a.k.a. escape sequence or printer control) to a printer? The Clarion report structure no longer supports sending embedded control codes. There is no Clarion statement that allows sending them, at least not since CDD. Steve Parker explores the mystery of talking directly to Windows printers.

Source for: Encrypting Data With Number Base Conversion

Date: 2006-03-02

Summary: Most programmers are familiar with base 2 (binary) numbers, base 10 (decimal) and base 16 (hex). But using arbitrary number bases can also be a useful way to encrypt data for transmission by phone or other voice methods. Dermot Herron shows how he applies this technique to transfer vital information to customers.

Source for: Anyone Home on the Network?

Date: 2006-01-20

Summary: IsNetworkAlive, IsDestinationReachable, GetLastError, FormatMessage, GetDriveType, WnetGetConnection - the odyssey to know the status of the network began with a printer error. It was the most peculiar printer error Steve Parker and Henry Plotkin had ever seen.

Source for: Next Month Anniversary Date Function

Date: 2006-01-19

Summary: Inspired by Carl Barnes Better Date article, John Griffiths offers up this function to get anniversary dates on specific days of the month.

Source for: Edit-In-Place: Getting User Confirmation

Date: 2006-01-13

Summary: No good deed, it is said, goes unpunished. And now Henry Plotkin comes to realize that Edit-in-place is ready, willing and able to punish the good-deed-doing Clarion developer. Perfectly willing.

Source for: A Better DATE Function

Date: 2006-01-09

Summary: Carl Barnes improves on the standard Clarion DATE function with a version that corrects a bug and works with negative month and day values.

Source for: IsNetworkAlive: When You Don't Need to Know *That* Much

Date: 2005-12-23

Summary: Steve Parker's colleague Henry Plotkin recently examined ways of checking whether a client PC was able to talk to another, named, PC on the network. Henry liked the IsDestinationReachable API, but as Steve shows, IsNetworkAlive still has its uses.

Source for: Translating Mapped Drives To UNC

Date: 2005-12-23

Summary: Steve Parker recently objected to having to translate mapped drive letters to UNC names in order to check whether or not network resources were available. Paul Attryde, with his characteristic unstinting help, pointed Steve to a fairly easy and very solid solution.

Source for: Modifying The Frame Background - A 10 Minute Template, Part 2

Date: 2005-12-16

Summary: Someone asked recently on the newsgroups if there was an easy way to change the background color of an application frame. This is a question Geoff Bomford frequently asked himself, and never found a satisfactory answer. He happened to find a solution that was good enough to turn into a simple template. Part 2 of 2.

Source for: Using GetLastError and FormatMessage to Check the Network

Date: 2005-12-15

Summary: As Henry Plotkin discovered in his previous article, IsDestinationReachable is a less-than-perfect API call for detecting network problems. In this installment, Henry expands his analysis with the GetLastError and FormatMessage calls.

Source for: Hello, Server?

Date: 2005-12-12

Summary: If Henry Plotkin's application runs across a network, he wants to know if that network is working or not. If the network drops while the program is trying to access files, the user might get an error message. Or they might not. Or they might get a "Save As" dialog, as happened recently. If they do get a message, it is unlikely that they will comprehend it. Something more user friendly is in order.

Source for: Modifying The Frame Background - A 10 Minute Template

Date: 2005-12-08

Summary: Someone asked recently on the newsgroups if there was an easy way to change the background color of an application frame. This is a question Geoff Bomford frequently asked himself, and never found a satisfactory answer. He happened to find a solution that was good enough to turn into a simple template. Part 1 of 2.

Source for: A FileDropBox With Conditional Content

Date: 2005-11-30

Summary: There are always situations where the contents of a FileDropBox, either a FileDropListBox or a FileDropCombo, is dependant on some criteria, usually the contents of an entry field or another FileDropBox. But a FileDropBox is always file loaded, and this loading is done when the form opens; after that the FileDropBox remains pretty static. Maarten Veenstra shows how to change the FileDropBox's content at runtime.

Source for: Memory Mapped Files in Clarion

Date: 2005-11-18

Summary: Sometimes you need a secure way to communicate between applications, as Marty Honea discovered when he wanted a single login for multiple EXEs. After considering a variety of schemes, Marty found that Memory Mapped Files fit the bill perfectly.

Source for: A Tree in a Page Loaded Browse: The Sequel, Part 3

Date: 2005-11-11

Summary: Browse boxes formatted as trees are handy for all sorts of things. File loaded trees are easy; page loaded trees, however, can be a nightmare. In this series David Podger and Deon Canyon build on an earlier approach demonstrated by Ronald van Raaphorst. This final installment looks at cutting and pasting.

Source for: A Tree in a Page Loaded Browse: the Sequel, Part 2

Date: 2005-11-04

Summary: Browse boxes formatted as trees are handy for all sorts of things. File loaded trees are easy; page loaded trees, however, can be a nightmare. In this series David Podger and Deon Canyon build on an earlier approach demonstrated by Ronald van Raaphorst. Part 2 of 3.

Source for: Exporting APPs and DCTs to XML

Date: 2005-10-28

Summary: XML is everywhere these days; everywhere, that is, but in your DCTs and APPs. But as Harley Jones shows, exporting your APP or DCT to XML can be a great benefit, for documentation, and for other purposes. Part 1 of 2.

Source for: Internationalization Tools Standards: Learning from an ABC Calendar Workaround

Date: 2005-10-20

Summary: Anyone who has internationalized a large application knows that one of the more time consuming tasks is dealing with third party products which attack internationalization in ways that do not allow languages choices at run time. Even in a pure ABC context, creating multi-language applications is challenging but generally possible, although there is a notable exception in the ABC calendar classes. Phil Will shows how to prepare your code for translation, using the misbehaving calendar classes as an example.

Source for: Mixing Clarion With .NET, Part 4

Date: 2005-09-29

Summary: September's focus on .NET continues with Wade Hatler's series on using Clarion and .NET together. In this installment Wade shows how to pass string, date, time and decimal parameters from .NET to Clarion.

Source for: Mixing Clarion with .NET, Part 3

Date: 2005-09-21

Summary: September's focus on .NET continues with Wade Hatler's series on using Clarion and .NET together. In this installment Wade shows how to call Clarion procedures from inside .NET applications.

Source for: Mixing Clarion with .NET, Part 2

Date: 2005-09-15

Summary: Now that you know how to call methods in .NET, it's time to put some WinForms objects inside of Clarion windows. It's surprisingly easy once you know a few tricks, as Wade Hatler demonstrates.

Source for: Mixing Clarion with .NET, Part 1

Date: 2005-08-31

Summary: The .NET framework is extremely large, growing and very well supported. Right out of the box the framework has hundreds of classes that are well thought out and which integrate seamlessly with .NET applications. These classes cover a very wide range of the things you might want to do, once Clarion.NET arrives. But there's no need to wait. In the first article in this series, Wade Hatler looks at calling .NET classes from Clarion code.

Source for: Fetching A Web Page With WinInet

Date: 2005-08-23

Summary: There are a few different tools you can use to get a web page from a server, and one readily available solution is to use Windows' own WinInet DLL. Skip Williams shows how it's done.

Source for: Speeding Development With Defaults And Small Templates

Date: 2005-08-16

Summary: Faced with a conversion of a DOS application to Clarion 6.2, Phil Will came up with of two simple things to do with templates and the defaults file that saved a tremendous amount of time in development, and greatly eased application maintenance.

Source for: Using Local Classes Instead Of Local Routines

Date: 2005-08-11

Summary: Local classes are often touted as a replacement for procedure routines. But what are local classes, why do you need them, and what can you do with them? Nardus Swanevelder answers these questions, and shows how easy it is to use local classes.

Source for: Online Mapping And Routing In Clarion

Date: 2005-06-22

Summary: Online mapping is a useful and increasingly popular tool for personal and business use. Colin Wynn shows how easy it is to interface to MSN mapping and routing with a Clarion application.

Source for: A Multi-Threaded Queue Of Queues

Date: 2005-06-21

Summary: Queues make all kinds of data handling fast and easy. With Clarion 6, queue access gets a little more complicated, since queues by themselves are not thread safe. And what if you use queues of queues? Svetlana Zusman shows how to lock nested queues for thread safety and maximum efficiency.

Source for: Generic DLLs The Template Way

Date: 2005-05-26

Summary: A truly generic DLL can be difficult to achieve using the standard templates. Hand-coding the DLL, as Jeff Slarve recently described, is one option; another is to use a specialized template to manage the creation of the export file. Bjarne Havnen shows how it's done.

Source for: A Better DosFileLookup

Date: 2005-05-13

Summary: When some standard Clarion functionality doesn't meet your need, what do you do? First, you embed some code. Then, when you need that code elsewhere, you start thinking about how to avoid duplicating the embeds. As Dave Harms shows, often the easiest solution is to create a custom, derived ABC class, and tell the templates to use your class instead of the ABC original.

Source for: Modifying the Common Dialogs: How Hard Could It Be?
Date: 2005-05-12
Summary: Have you ever wanted to add a button or other control to one of the built-in common dialogs for opening a file, saving a file, or printing? Jim Kane thought it would be nice to add a multi-page TIFF preview button to the file open dialog. How hard could it be?

Source for: Version Control with CVS and Clarion 6.x, Part 2
Date: 2005-04-21
Summary: Recently, Nardus Swanevelder introduced the open source CVS version control system to ClarionMag readers. Now Bernie Groperrin advances this topic, showing how to use CVS with Clarion 6.x. Part 2 of 2.

Source for: Version Control with CVS and Clarion 6.x
Date: 2005-04-15
Summary: Recently, Nardus Swanevelder introduced the open source CVS version control system to ClarionMag readers. Now Bernie Groperrin advances this topic, showing how to use CVS with Clarion 6.x. Part 1 of 2.

Source for: Limit An App To A Single Instance: DDE Strikes Back
Date: 2005-04-12
Summary: In days of old, when programmers were bold and DDE was the ultimate tool, if one wished to limit one's application to a single instance, it was quite easy. But Microsoft has deprecated DDE, and has done its best to move programmers to other solutions. As a result, that old DDE instance-limiting code doesn't always work as expected. Unless you add a modern twist, as Steve Parker shows.

Source for: Compiling C with the Clarion IDE, Part 3: Naming and Mangling
Date: 2005-03-28

Summary: Ever find some C source on the Internet that does exactly what you need? So you rewrite and convert it to Clarion code, then try to get it to work again. Carl Barnes will show you how easy it is compile C modules with your Clarion code. One small change to the C header, create a Clarion include file and, Bob Z's your uncle, you're calling the C function. Part 3 of 3.

Source for: Compiling C with the Clarion IDE, Part 2: Calling C from Clarion

Date: 2005-03-22

Summary: Ever find some C source on the Internet that does exactly what you need? So you rewrite and convert it to Clarion code, then try to get it to work again. Carl Barnes will show you how easy it is compile C modules with your Clarion code. One small change to the C header, create a Clarion include file and, Bob Z's your uncle, you're calling the C function. Part 2 of 3.

Source for: Progress Bars for Queues: Using The ABC QueueProcessManagerClass

Date: 2005-03-18

Summary: What do you do if you have a queue to process, and you want to display a progress bar to the user? You can write your own code, or, as Bjarne Havnen shows, you can use the undocumented ABC QueueProcessManagerClass.

Source for: Compiling C with the Clarion IDE, Part 1: It's Easier Than You Think

Date: 2005-03-17

Summary: Ever find some C source on the Internet that does exactly what you need? So you rewrite and convert it to Clarion code, then try to get it to work again. Carl Barnes will show you how easy it is compile C modules with your Clarion code. One small change to the C header, create a Clarion include file and, Bob Z's your uncle, you're calling the C function. Part 1 of 3.

Source for: Enriching The User's Experience With RTF Displays

Date: 2005-03-11

Summary: Text is becoming more and more of a requirement for applications, and large text fields have never displayed comfortably within the Clarion list box. Stephen Bottomley shows how easy it is to use RTF to create a custom display format for your data.

Source for: Converting TPS Files To A New Layout Part 2

Date: 2005-03-04

Summary: No matter how hard you plan your database design; sooner or later you will want to change the layout of your application's TPS data files. In this second of two parts, Abe Jimenez describes the actual data conversion.

Source for: Converting TPS Files To A New Layout

Date: 2005-02-24

Summary: No matter how hard you plan your database design; sooner or later you will want to change the layout of your application's TPS data files. Clarion has a mechanism for converting files in the dictionary editor, but it doesn't work on files that contain BLOBs or arrays. It also doesn't help if your application is installed in multiple sites, where the Clarion dictionary editor is not available. If you make changes to the file's structure and then distribute your application, your end users will get that dreaded error 47. That is, unless you do what Abe Jimenez does.

Source for: When Edit-In-Place Bites Back Some More

Date: 2005-02-11

Summary: Henry Plotkin really thought he had a pretty clever solution to a problem when he submitted When Edit-In-Place Bites Back to Clarion Magazine. When a reader pointed out further problem with EIP and the use of the mouse, Henry went back to the drawing board.

Source for: Creating An Invoice Application Using C6.1 Legacy Edit-In-Place

Date: 2005-01-21

Summary: Invoicing is a common requirement for Clarion business applications. Bill Rollins shows how to create a useful edit-in-place invoice using Clarion 6.1 and the legacy (Clarion) templates.

Source for: Understanding Clarion Templates Part 6: Using #GROUPs

Date: 2005-01-20

Summary: Dave Harms continues his template writing series with an explanation of #GROUP structures, which are really template language procedures.

Source for: When Edit-In-Place Bites Back

Date: 2005-01-17

Summary: Users have a way of discovering problems even the most rigorous testing cannot uncover, as Henry Plotkin finds out.

Source for: Embedding Fonts In Clarion Apps

Date: 2005-01-14

Summary: Embedding resources into a program is common practice in Windows programming. Surely, Clarion must be able to use the Windows Resource file system to access a font stored away as a binary resource. But how does Clarion handle this? David Bratovich explains.

Source for: Mysteries of the iPod

Date: 2005-01-14

Summary: In honor of the new PlanetClarion podcasts, Vince Du Beau divulges some of the hidden information on the iPod, Apple's highly successful digital music player.

Source for: Using Arrays in Databases

Date: 2004-12-23

Summary: Arrays in databases? You can't in SQL and you shouldn't in TPS! But there are times when arrays really do make sense. Dermot Herron shows how to use OVER to get the benefits of arrays with non-arrayed file layouts.

- Source for:** Calling the Skype API
- Date:** 2004-12-22
- Summary:** By now you've probably heard of Skype, the free internet telephony service that makes the Planet Clarion podcast possible. But Skype is much more than just a free phone call. David Harms shows how to call the Skype API to manage calls, send instant messages, and much more.
-
- Source for:** A Copy/Paste Popup Menu
- Date:** 2004-12-10
- Summary:** Clarion entry controls may have support for Ctrl-C and Ctrl-V for copy and paste, but what do you do when a client asks for the Copy/Paste popup menu? If you're Nardus Swanevelder, you start writing some code.
-
- Source for:** An Introduction to Hand-Coding Reports
- Date:** 2004-12-09
- Summary:** Dermot Herron continues his series for the beginning Clarion programmer with a look at how to easily manage complex reports by using the report template and a little hand code.
-
- Source for:** Managing Report Page Breaks With The C6 Break Manager
- Date:** 2004-11-26
- Summary:** Geoff Bomford shows how to use the new BreakManagerClass to get control over report page breaks. This comprehensive article is a great introduction to this important new technology.
-
- Source for:** A Configurable Expression Editor, Part 2
- Date:** 2004-11-19
- Summary:** Since Clarion does not have a good integral tool for defining an expression at runtime, Tim Phillips went ahead and built one, using his Basic Editor as the foundation. In this second of two parts Tim shows how the code works.
-
- Source for:** A Configurable Expression Editor, Part 1

Date: 2004-11-05

Summary: Since Clarion does not have a good integral tool for defining an expression at runtime, Tim Phillips went ahead and built one, using his Basic Editor as the foundation. Part 1 of 2.

Source for: Using Clarion's Business Rules, Part 2

Date: 2004-10-29

Summary: In Part 2 of this series, Nardus Swanevelder explains the inner workings of the RulesManager class.

Source for: Critical Procedures: Synchronization for the Lazy

Date: 2004-10-29

Summary: To protect data that's shared across threads, you can use a Critical Section, but if you fail to release the Critical Section when you're done with it, you have a Critical Problem. The solution: use a Critical Procedure instead.

Source for: Extending the FileManager Class: Shorthand Fetches

Date: 2004-10-29

Summary: One of the most commonly used commands in Clarion is GET, which can retrieve records from both files and queues. The ABC equivalent is the FileManager.Fetch method, which isn't necessarily easier to use. Mike Hanson shows how to make your fetches quick and easy.

Source for: Implementing a Critical Section: Fast and Effective

Date: 2004-10-21

Summary: The Critical Section is the construct most commonly used to protect reading and writing non-threaded, static data in multi-threaded applications. And using Critical Sections is easier than you think.

Source for: Using Clarion's Business Rules, Part 1

Date: 2004-10-21

Summary: Nardus Swanevelder begins a new series of articles explaining how to use Clarion's business rules capability to make your data validation flexible and configurable.

Source for: DevCon Pre-Conference Training: Day 3

Date: 2004-09-30

Summary: While Day 1 and 2 of the pre-conference training sessions focused on new functionality provided by C6, Day 3 focused on taking advantage of capabilities available to us since Clarion 4 introduced Object Oriented Programming (OOP) and the Application Building Classes (ABC).

Source for: Dynamic Table-Based Tagging

Date: 2004-09-17

Summary: Sometimes a simple tagging solution is the ideal solution, and sometimes you need something a bit more robust. When his users began requiring features not included in a readily available tagging class, Chris set out to create his own tagging functionality using a highly flexible, table-based approach.

Source for: Handling Nullable Fields in an ABC Application

Date: 2004-09-17

Summary: It's no secret that Clarion doesn't handle nullable fields very well. In keeping with the ideal of simplicity, Clarion considers the value of a Null string to be blank, and a Null number to be zero. And in most cases, this is fine, and can make your code easier to use and maintain. But there are occasions when you have a Nullable field that really needs to be Null.

Source for: Break Dancing With Clarion

Date: 2004-09-16

Summary: Clarion 6.1 has introduced some improvements to the report designer. These aren't the sort of changes that will, on their own, make you want to run out and upgrade to C6.1, but they are important advances nevertheless. In the first article in this review Geoff Bomford covers the use of pre-Clarion 6.1 techniques for performing some common report break tasks, and in the next article will discuss the use of the BreakMgr Class, a new tool in Clarion 6.1 for handling the same tasks a little better!

Source for: Generating A Unique Registration Code

Date: 2004-07-26

Summary: Registering software usually involves entering some sort of registration code. But how do you go about creating such a code to give to your customers, and then how do you validate in the customer's application? Vince Du Beau demonstrates a registration scheme using a product type code and a user name.

Source for: Recording Audio: An Introduction To OCXs, Part 3

Date: 2004-07-14

Summary: OCX technology has been around for years, but not that many Clarion developers use OCX components. Ben Brady shows how to use a readily-available OCX to record and encode audio. Part 3 of 3.

Source for: Recording Audio: An Introduction To OCXs, Part 2

Date: 2004-07-08

Summary: OCX technology has been around for years, but not that many Clarion developers use OCX components. Ben Brady shows how to use a readily-available OCX to record and encode audio. Part 2 of 3.

Source for: Recording Audio: An Introduction To OCXs, Part 1

Date: 2004-07-08

Summary: OCX technology has been around for years, but not that many Clarion developers use OCX components. Ben Brady shows how to use a readily-available OCX to record and encode audio. Part 1 of 3.

Source for: Migrate Your TopSpeed Application To Firebird, Part 2

Date: 2004-06-07

Summary: Faced with a conversion from TopSpeed to Firebird, Jimmy Rogers wrote an extensive template to automate the process as much as possible. Part 2 of 2.

Source for: AutoComplete In An On-Demand Drop Down Combo

Date: 2004-06-07

Summary: Why would you want to learn how to code AutoComplete into a Drop Down combo when a Drop Down Combo already does that? The big answer is speed. If you have a number of Drop Down Combos (DDCs) on a page, each referencing a file that has a growing number of records, then even just opening the window will become very slow. Stuart Andrews demonstrates his approach to coding on-demand drop down combos.

Source for: Migrate Your TopSpeed Application To Firebird, Part 1

Date: 2004-05-27

Summary: Faced with a conversion from TopSpeed to Firebird, Jimmy Rogers wrote an extensive template to automate the process as much as possible. Part 1 of 2.

Source for: Cryptography and Clarion: Using the MSCrypto API Part 2

Date: 2004-05-26

Summary: Cryptography is the study of mathematical techniques related to aspects of information security such as confidentiality, data integrity, entity authentication, and data origin authentication. Increasingly, cryptography is important to software developers, and with the US government having lifted restrictions on the export of strong encryption, a solution is now widely available to Windows developers. In this two-part article Ron Webb explains what cryptography is all about, and introduces a Clarion class wrapper for the MS Crypto API. Part 2 of 2.

Source for: Cryptography and Clarion: Using the MSCrypto API

Date: 2004-05-21

Summary: Cryptography is the study of mathematical techniques related to aspects of information security such as confidentiality, data integrity, entity authentication, and data origin authentication. Increasingly, cryptography is important to software developers, and with the US government having lifted restrictions on the export of strong encryption, a solution is now widely available to Windows developers. In this two-part article Ron Webb explains what cryptography is all about, and introduces a Clarion class wrapper for the MS Crypto API.

Source for: Understanding Clarion Templates Part 5: Enhancing Code Templates

Date: 2004-05-21

Summary: In this installment on code templates, David Harms shows how to properly display text in a template, and conditionally generate code.

Source for: Detecting Drive Types

Date: 2004-05-14

Summary: Rumors to the contrary, SneakerNet is not dead! Sometimes you still need to copy data to physical, removable media. As Andrew Guidroz shows, there are some API calls that can help.

Source for: Understanding Clarion Templates Part 4: Writing Code Templates

Date: 2004-05-11

Summary: David Harms continues his series on learning the template language with an introduction to writing code templates.

Source for: Generating MS SQL Server Side Triggers

Date: 2004-04-30

Summary: Although Ayo Ogundahunsi finds the new client side triggers bold and ingenious, he still prefers the traditional way of using server-side triggers. In this article he demonstrates how to use a custom template to create server side triggers for database auditing.

Source for: Burning COM: How To Write CDs in Windows XP With ICDBurn

Date: 2004-04-29

Summary: When Andrew Guidroz's article idea was made redundant by Mark Riffey's article on popping up the Windows XP CD burn wizard, Andrew decided to grab COM by the horns and figure out just how to use the ICDBurn COM interface in Clarion. He ended up with two examples, one using Jim Kane's COM classes, the other using SoftVelocity's COM classes.

Source for: A Hunka-Hunka Burnin' CD Data, or Two Steps Forward, One Step Back(up)

Date: 2004-04-15

Summary: An integrated backup system can be a great way to provide complete service to your customers. But what happens when your users want to back up to CD? Mark Riffey explains a technique that makes use of the Windows XP burn wizard.

Source for: System Tray Popup Windows

Date: 2004-03-31

Summary: Shortly after installing Outlook 2003 Jim Kane noticed small windows appearing in the tray area when a new email message came in. He found these very useful, so he set about creating the same kind of popup messages in Clarion.

Source for: Compiled Reports From Report Writer

Date: 2004-03-31

Summary: As far as Henry Plotkin is concerned, the best thing about Clarion Report Writer is the ability to set up the finished page without having to adjust the position of each individual band. The next best thing about Report Writer is that report testing is much faster. It does not require a compile-link cycle. It does not require minimizing Clarion, starting the application and navigating to the report. Wouldn't it be nice to be able to design reports in Report Writer, and then just copy them into a Clarion report procedure? Actually, it can be done, and fairly easily.

Source for: A Class Wrapper for Brice Schagane's Menu Buttons

Date: 2004-03-26

Summary: Nik Johnson gets his copy of Tips & Techniques and quickly discovers a solution to his screen real estate problem: Brice Schagane's menu button. For easier re-use, Nik shows how to convert Brice's code into a class.

Source for: Validating Credit Card Numbers

Date: 2004-03-02

Summary: Credit card processing is a common requirement in application development. And before you submit a credit card number to your bank for processing, it helps to make sure it's a well-formed number. Abe Jimenez explains the code you need to do the job.

Source for: How To Stop Trashing The Template Registry

Date: 2004-03-02

Summary: How many times have you run a second instance of Clarion, without turning on multi-user development, only to have your registry trashed? In this article Danie de Beer describes a utility by Mark Goldberg that makes trashed registries a thing of the past.

Source for: Template Styles in Clarion 6

Date: 2004-02-27

Summary: When Clarion 6 first became available to Early Access Program participants, there were many changes to the templates, but there were also some significant changes to the template *language*. Russ Eggen looks at how to use these changes to improve the appearance of your templates, while maintaining backward compatibility.

Source for: Creating Derived ABC Classes With a Template

Date: 2004-02-27

Summary: In this article Harley Jones explains some of the behind-the-scenes magic that Clarion performs on ABC windows and controls, and how you can do the same with custom templates.

Source for: Auto-Complete Files And URLs With SHAutoComplete

Date: 2004-02-26

Summary: Ever wonder how you can add an auto-complete feature like that used in Internet Explorer to your applications? Carl Barnes shows how to use IE's code, via the SHAutoComplete API function.

Source for: Browse Greenbars in Clarion 6

Date: 2004-02-05

Summary: Giving a presentation on Clarion 6 can be a tricky thing, when the topic everyone wants to know about, in this case greenbars, is the one thing you haven't prepared. Under intense pressure and close scrutiny, Carl Barnes and Steve Parker discovered just how this new feature works.

Source for: Porting to the C6 Threading Model: The AutoLog Example Part 2

Date: 2004-01-22

Summary: Clarion C6 has gone gold and so it's time to start getting serious about porting applications. In this series of articles Carl Barnes looks at porting some of the C55 example applications to C6. Part 2.

Source for: Porting to the C6 Threading Model: The AutoLog Example

Date: 2004-01-16

Summary: Clarion C6 has gone gold and so it's time to start getting serious about porting applications. In this series of articles Carl Barnes looks at porting some of the C55 example applications to C6.

Source for: Accessing Version Resource Information

Date: 2004-01-13

Summary: It's often useful to know the version of a particular EXE or DLL your customer is using, and Windows EXEs and DLLs do have a standard format for version information. There are tools readily available to put this information in your Clarion apps, and now Brian McGinnis demonstrates how to extract that information at runtime.

Source for: Save and Restore Window Size and Location

Date: 2003-12-31

Summary: Nardus Swanevelder goes on a template-writing quest to blend window size and location saving with the IceTips Cowboy SQL Templates and Ingasoftplus's Easy Resize and Split templates.

Source for: Creating Utilities For MS SQL 2000

Date: 2003-12-31

Summary: Clarion's PROP:SQL is an often under-appreciated language statement. As Bernie Groperrin shows, you can use PROP:SQL for lots of things, including creating SQL utilities for MSSQL. This task is made even easier with Dan Pressnell's clever "Query from Queue" mechanism.

Source for: A Simple Versions And Annotations Template

Date: 2003-12-05

Summary: Recently Ronald van Raaphorst realized he needed some kind of annotation system for his Clarion app. The result was this template that lets a developer record changes in any procedure, and print an overview of all annotations per procedure or application.

Source for: NAME() Becomes Irrelevant

Date: 2003-12-04

Summary: NAME has been an important attribute of the FILE statement for a long time. In Clarion 6, however, there is a new feature that makes PROP:NAME irrelevant in many situations, as Henry Plotkin shows.

Source for: Moving Applications to Oracle: RI And AutoNumbering Part 2

Date: 2003-11-28

Summary: Jon Waterhouse takes a detailed look at the differences between relational integrity and autonumbering in TopSpeed databases and Oracle databases. Although specifically about Oracle, this series also contains useful general information about converting to SQL. Part 2.

Source for: The Windows API: Downloading Files Part 3

Date: 2003-11-28

Summary: The Windows API offers numerous benefits to Clarion developers, including performance improvements and productivity gains from leveraging existing, reliable code. In this series Veronica Chapman demonstrates how to use the Windows API to connect to the internet and download (and optionally expand) files. Conclusion.

Source for: Moving Applications to Oracle: RI And AutoNumbering Part 1

Date: 2003-11-21

Summary: Jon Waterhouse takes a detailed look at the differences between relational integrity and autonumbering in TopSpeed databases and Oracle databases. Although specifically about Oracle, this series also contains useful general information about converting to SQL. Part 1.

Source for: The Windows API: Downloading Files Part 2

Date: 2003-11-21

Summary: The Windows API offers numerous benefits to Clarion developers, including performance improvements and productivity gains from leveraging existing, reliable code. In this series Veronica Chapman demonstrates how to use the Windows API to connect to the internet and download (and optionally expand) files. Part 2 of 3.

Source for: The Windows API: Downloading Files Part 1

Date: 2003-11-14

Summary: The Windows API offers numerous benefits to Clarion developers, including performance improvements and productivity gains from leveraging existing, reliable code. In this series Veronica Chapman demonstrates how to use the Windows API to connect to the internet and download files. Part 1 of 3.

Source for: Data Structures and Algorithms Part XXIV - Floyd's All Pairs Algorithm

Date: 2003-10-30

Summary: Alison Neal discuss Floyd's All Pairs algorithm, which provides the shortest path between all pairs of nodes in a graph.

Source for: Trees, Recursion, and Many to Many Checkboxes

Date: 2003-10-17

Summary: Most of the data you deal with probably fits nicely into a parent/child, relational data structure. But sometimes you have data that works better as a self-join, where data in one table relates back to other data in the same table. Randy Long shows how to use trees, recursion, and many-to-many checkboxes to manage this kind of data.

Source for: Data Structures and Algorithms Part XXIII - Dijkstra's Shortest Path Algorithm

Date: 2003-10-06

Summary: Have you ever needed to work out the shortest path between two locations? Alison Neal shows how to do this in Clarion, using Dijkstra's Shortest Path Algorithm

Source for: Translation, Clarion Style: Selected Topics

Date: 2003-09-18

Summary: Nardus Swanevelder continued his translation series with a look at screen design issues, third party applications, and changing languages at runtime.

Source for: Translation, Clarion Style: Runtime Issues

Date: 2003-09-18

Summary: Nardus Swanevelder complete the runtime translation discussion with examples of loading translation strings from a database, and applying this translation to a multi-DLL application.

Source for: Translation, Clarion Style: Currencies And Measurement

Date: 2003-09-12

Summary: Nardus Swanevelder continues his series on translation with a template to convert currencies and measurements, and a brief look at dynamically created text, controls, and windows.

Source for: A Basic Editor For Text Fields: Conclusion

Date: 2003-09-11

Summary: Clarion's TEXT control is versatile and useful, but has next to no word processing capabilities. But as Tim Phillips shows, it's relatively easy to add capabilities like search/replace, block reformatting, and more. Part 2 of 2.

Source for: A Basic Editor For Text Fields: Introduction

Date: 2003-09-04

Summary: Clarion's TEXT control is versatile and useful, but has next to no word processing capabilities. But as Tim Phillips shows, it's relatively easy to add capabilities like search/replace, block reformatting, and more. Part 1 of 2.

Source for: Translation, Clarion Style

Date: 2003-08-13

Summary: Ever wonder how multi-language support really works in Clarion? In part 2 of this series, Nardus Swanevelder shows how to translate standard Clarion messages.

Source for: Data Structures and Algorithms Part XXII - Critical Path Analysis

Date: 2003-08-13

Summary: Alison Neal's algorithms series resumes this week in Clarion Magazine, with a discussion of critical path analysis software.

Source for: Translation, Clarion Style

Date: 2003-08-07

Summary: Ever wonder how multi-language support really works in Clarion? In part 1 of this series, Nardus Swanevelder shows how to add basic translation capabilities to you applications.

Source for: Breaking Reports On Computed Fields

Date: 2003-07-17

Summary: Henry Plotkin is assigned a new report, "Open invoices, aged by date." Only the Invoice file contains fields for invoice number, date, amount, previous balance, payments and debits. No "open" flag. No "age." Henry ponders how to filter, order and group the report records without having those fields at hand.

Source for: String Flinging Part 2

Date: 2003-07-15

Summary: What uses most of the memory in typical Clarion applications? Strings, most probably. And you may not realize that you're wasting a lot of memory by how you handle those strings. Jim Gambon digs into strings and comes up with some memory- and time-saving tips and techniques. Part 2 of 2.

Source for: String Flinging Part 1

Date: 2003-07-11

Summary: What uses most of the memory in typical Clarion applications? Strings, most probably. And you may not realize that you're wasting a lot of memory by how you handle those strings. Jim Gambon digs into strings and comes up with some memory- and time-saving tips and techniques. Part 1 of 2.

Source for: Clarion, COM, Soap, and HTTP

Date: 2003-07-10

Summary: Recently Shane Vincent wanted to add a no-cost solution to the credit card authorization process. His solution involved a couple of open source COM components, Jim Kane's COM interface generator, and a couple of Clarion wrapper classes.

Source for: A String To CString Converter

Date: 2003-06-26

Summary: Sometimes you need to pass CSTRINGs to a function, and it's inconvenient to create variables for the purpose - you just want to pass in string literals. But Clarion (at least through version C6 EA4-5) all literal strings are STRINGS. So how do you do it? With a class, of course.

Source for: Creating XML Files With The Clarion 6 DOM Parser

Date: 2003-06-26

Summary: Clarion 6 ships with class wrappers for the CenterPoint XML library, which includes SAX and DOM parsers. Although there is as yet no documentation for the Clarion class wrappers, they're actually quite easy to use. David Harms shows how to use the DOM classes to write an RSS XML file.

Source for: How to Display An Image In A ListBox Header (Part 2)

Date: 2003-06-25

Summary: Have you ever wished that you could place an image on a listbox header? In this article Randy Rogers explains how to use subclassing to place little triangles in the header, like those used in Microsoft Outlook to display a column's sort order. Part 2 of 2.

Source for: How to Display An Image In A ListBox Header (Part 1)

Date: 2003-06-23

Summary: Have you ever wished that you could place an image on a listbox header? In this article Randy Rogers explain the first of two techniques (that is, hacks) that he uses to place little triangles in the header, like those used in Microsoft Outlook to display a column's sort order. Part 1 of 2.

Source for: Clarion Magazine's RSS Feeds

Date: 2003-06-20

Summary: Wondering what those new XML icons are on the ClarionMag home page?
They're RSS feeds, and in combination with an RSS reader they make it possible for you to get notification of articles and news items when they appear on the web site. No more waiting for the weekly update emails!

Source for: Creating An XML RSS Web Site Summary With Clarion 6 (Part 2)

Date: 2003-06-13

Summary: Ever wonder how easy or difficult it is to work with XML? Consider the RSS specification, which is used to create summaries of items on a web site. In this second of two parts, David Harms looks in detail at the code.

Source for: Creating An XML RSS Web Site Summary With Clarion 6 (Part 1)

Date: 2003-06-06

Summary: Ever wonder how easy or difficult it is to work with XML? Consider the RSS specification, which is used to create summaries of items on a web site. With relatively little work, you can create RSS files in Clarion, using some of the new XML capability in Clarion 6. In this installment, David Harms looks at the RSS specification and presents some Clarion source. Part 1 of 2.

Source for: A Tree In A Page Loaded Browse

Date: 2003-05-30

Summary: Clarion has a template for building a tree list control (RelTree). One of the disadvantages of this control is that the maximum tree level is fixed by the number of files you use in it. In this article, Ronald van Raaphorst outlines a simple idea for a non-level-limited, page loaded tree, using a standard browse control.

Source for: Veronica's Short History Of The Windows Operating Systems (Part 2)

Date: 2003-05-28

Summary: It is true that the Clarion environment tends to, or tries to, hide as much of Microsoft's OS as possible. This is good for beginners, but bad for the experienced programmer. Sooner or later beginners (if they don't become discouraged) gain a certain amount of experience and want more. In this series, Veronica Chapman surveys the history of the Windows operating system(s), and provides an introduction to Clarion's Windows API capabilities, including a nifty example app and an updated LIBMaker. Part 2 of 2.

Source for: Finding Source With Enhanced Templates

Date: 2003-05-23

Summary: Although templates are wonderful they can also be the source of great frustration. Something like a small change in the dictionary can create havoc when you try to compile the program associated with that dictionary, and it can be very difficult to locate the offending source. As Steffen Rasmussen shows, some template modifications can make finding that problem source code a lot easier.

Source for: Veronica's Short History Of The Windows Operating Systems (Part 1)

Date: 2003-05-22

Summary: It is true that the Clarion environment tends to, or tries to, hide as much of Microsoft's OS as possible. This is good for beginners, but bad for the experienced programmer. Sooner or later beginners (if they don't become discouraged) gain a certain amount of experience and want more. In this series, Veronica Chapman surveys the history of the Windows operating system(s), and provides an introduction to Clarion's Windows API capabilities. Part 1 of 2.

Source for: Mutexes: Serializing File Access

Date: 2003-04-04

Summary: Steve Parker finishes up his look at Clarion 6 synchronization objects with the mutex. Part 2 of 2

Source for: A Naïve Look at The Mutex

Date: 2003-04-03

Summary: Steve Parker finishes up his look at Clarion 6 synchronization objects with the mutex. Part 1 of 2

Source for: Demystifying C6 Threading (Part 3)

Date: 2003-03-28

Summary: Mutexes, semaphores, critical sections, reader/writer locks; all of these things are part of Clarion 6, and they all have to do with the new support for unlocking Clarion threads so they run like real operating system threads. Should you care? If you write any embedded code, yes, you should. Should you worry? That all depends on what kind of embedded code you write. Part 3 of 3.

Source for: My First Function Library

Date: 2003-03-21

Summary: If you've never created a function library, Alan Telford wants to talk to you. You will make your first function library. And yes, it will be important to you! You will enjoy it! You will remember it for life!

Source for: Post-mortem Debugging: How I stopped fearing the GPF

Date: 2003-03-14

Summary: Sometimes, when you're testing that almost completed application, it crashes. No rhyme or reason, and inspection of the last code changes reveal nothing out of place. Re-run and it crashes again. Where do you go? To the debugger for a quick post mortem. Russ Eggen shows how to track down those tricky GPFs.

Source for: Menu Buttons In Clarion

Date: 2003-03-11

Summary: If you've ever used Intuit's Quicken software, you will have seen Menu Buttons in action. Instead of a standard menu bar across the top of the window, Quicken uses what appear to be flat, transparent buttons, which display a popup menu when clicked. Brice Schagane shows how to get the same effect in a Clarion application.

Source for: Debugging Queues With Excel

Date: 2003-02-27

Summary: Like a lot of Clarion programmers, Alan Telford thinks queues are the greatest thing since sliced bread. But it isn't always easy viewing queue data when you're tracking down a queue data-related bug. To solve this problem, Alan created a procedure that makes it easy to export queue data to Excel, which is an excellent tool for viewing tabular data.

Source for: Data Structures and Algorithms Part XVI - The Huffman Compression Algorithm (Part 2)

Date: 2003-02-25

Summary: In her latest installment, Alison Neal discusses the Huffman compression algorithm, which is the same compression algorithm that is used by PkZip. The algorithm yields approximately 40% compression for text files. The test application included with the article reduces the provided test file from 20kb to 12kb in size, and then decompresses it back to its original state. Part 2 of 2.

Source for: Data Structures and Algorithms Part XVI - The Huffman Compression Algorithm (Part 1)

Date: 2003-02-21

Summary: In her latest installment, Alison Neal discusses the Huffman compression algorithm, which is the same compression algorithm that is used by PkZip. The algorithm yields approximately 40% compression for text files. The test application included with the article reduces the provided test file from 20kb to 12kb in size, and then decompresses it back to its original state. Part 1 of 2.

Source for: Interfaces Everywhere

Date: 2003-02-03

Summary: Some time ago Jim Kane created the OLETCL class to use COM objects with a VB-like syntax. OLETCL relied on a quirk in Clarion's COM and thread handling, but with Clarion 6's new threading model OLETCL will no longer work. That prompted Jim to finish a COM interface generator he'd started many years earlier.

- Source for:** Data Structures and Algorithms Part XV - Priority Q
- Date:** 2003-01-30
- Summary:** In this second of two parts, Alison Neal continues her examination of traditional (i.e. not Clarion) Queues. This week's subject: the Priority Queue.
-
- Source for:** Getting Dynamic With Report Writer
- Date:** 2003-01-30
- Summary:** This action packed episode picks up where Ben Brady ("Integrating Clarion Report Writer Into Your Applications") leaves off. Ben showed how to integrate the Report Writer engine into standard Clarion apps. In this article, Dr. Parker shows how to add more flexibility to the process of using Report Writer from an app.
-
- Source for:** A Calculator Class And Template
- Date:** 2003-01-24
- Summary:** Nardus Swanevelde's search for a free XP-like Clarion calculator was fruitless, but he found some free Clarion 4 source code. Nardus shows he converted that source into a class and templates.
-
- Source for:** Debug De Program With Debugger
- Date:** 2003-01-23
- Summary:** Looking for another way to debug your programs? Skip Williams' Debugger class (yes, that's how it's spelled) logs system messages, detects duplicate messages, and will even conditionally invoke the Clarion debugger.
-
- Source for:** Integrating The Clarion Report Writer Into Your Applications (Part 2)
- Date:** 2003-01-16
- Summary:** The Clarion Report Writer is a great tool for creating standalone or ad-hoc reports, and is not only for developers, but for end users armed with a copy of the Clarion Report Writer and enough technical savvy about your database schema to use the tool as well. And as Ben Brady shows, it's easy to integrate Report Writer reports into your application. Part 2 of 2.

Source for: Integrating The Clarion Report Writer Into Your Applications (Part 1)

Date: 2003-01-06

Summary: The Clarion Report Writer is a great tool for creating standalone or ad-hoc reports, and is not only for developers, but for end users armed with a copy of the Clarion Report Writer and enough technical savvy about your database schema to use the tool as well. And as Ben Brady shows, it's easy to integrate Report Writer reports into your application.

Source for: Calling A Clarion Application With PHP

Date: 2003-01-06

Summary: PHP is a hugely popular scripting language used mainly for web development; Clarion is a Windows language used mostly for business software development. What do they have to do with each other? In this article, Ville Vahtera shows how to create a Clarion application which can be executed from, and have its output captured by, PHP.

Source for: DNA for Clarion: Manipulating Browse Cells With A VLBPROC (Part 2)

Date: 2002-12-20

Summary: Virtual List Boxes (VLBs) are one of the least-understood and most under-appreciated features of the Clarion language. In this two-parter, Stephen Bottomley explains VLBs, and introduces a class that you can use standalone, or to control the display of an existing browse. Part 2 of 2.

Source for: Web Validation From Your Clarion App Using NetTalk

Date: 2002-12-20

Summary: Recently, Mark Riffey had a need to for one of my Clarion programs to access a SQL database, hosted on the web, in order to determine if the customer's access to a service had expired. It was a fairly simple task using CapeSoft NetTalk, as Mark demonstrates.

Source for: CLASSy ASCII File Importing

Date: 2002-12-20

Summary: Earlier this month Steve Parker wrote an article on importing ASCII files into a database using Konrad Byers' ASCII file class. In this article, Steve describes a class by Dave Harms that makes fixed record length ASCII importing configurable at runtime.

Source for: Data Structures and Algorithms Part XIII - Trie Hard

Date: 2002-12-19

Summary: In her last installment, Alison Neal introduced a data structure called the Trie, which is used for storing strings in computer memory. In this article Alison continues her discussion of the Trie, and covers some of the other methods that are contained in the Trie Class, namely the Search, Print and Kill methods.

Source for: DNA for Clarion: Manipulating Browse Cells With A VLBPROC (Part 1)

Date: 2002-12-19

Summary: Virtual List Boxes (VLBs) are one of the least-understood and most under-appreciated features of the Clarion language. In this two-parter, Stephen Bottomley explains VLBs, and introduces a class that you can use standalone, or to control the display of an existing browse. Part 1 of 2.

Source for: Parsing Strings In ASCII Files

Date: 2002-12-05

Summary: Konrad Byers' recent article on a class for accessing and processing ASCII files really spoke to Steve Parker. In this article, Dr. Parker combines that class with some string parsing code to extract field data from an ASCII file record.

Source for: Data Structures and Algorithms Part XII - Trie This

Date: 2002-12-04

Summary: In this article Alison Neal introduces a data structure known as the Trie, which is basically a type of general tree, containing words rather than numbers. The Trie is an immensely useful data structure when storing strings in memory. The Trie has been used for such things as computerized Boggle and Yahtzee games, and file compression algorithms.

Source for: Clarion SOAP Revisited

Date: 2002-11-28

Summary: The Simple Object Access Protocol (SOAP) has been covered before in Clarion Magazine, but only from the Clarion end. In this article, Radventure's Erik Pepping shows how to create the server in C# and the client in Clarion.

Source for: Determining Gender With Clarion (Part 2)

Date: 2002-11-19

Summary: Inspiration can come from the strangest sources. An automatic complaint letter generator sends Geoff Robinson on a quest to create a gender guessing function using regular expressions. Part 2 of 2.

Source for: Determining Gender With Clarion (Part 1)

Date: 2002-11-14

Summary: Inspiration can come from the strangest sources. An automatic complaint letter generator sends Geoff Robinson on a quest to create a gender guessing function using regular expressions. Part 1 of 2.

Source for: Quick COM Using A Windows Script Component

Date: 2002-11-13

Summary: Everyone knows that Clarion can do COM, but did you know that you can interface a Clarion program *to*COM? Wayne Price shows how to use a Windows Script Component to create a Clarion program that's usable by any programming language that can call COM objects.

Source for: A Class For The ASCIIing

Date: 2002-11-08

Summary: ASCII files are commonplace in programming, but their use in Clarion is generally more complicated than in other languages because Clarion can only do ASCII file I/O via an ASCII file driver declared file. Declaring such a file can become quite a nuisance, and breaks Konrad Byers' golden rule of never having to program the same thing twice. Enter the any ASCII file class.

Source for: Data Structures and Algorithms Part XI - Binary Search Tree Indexing

Date: 2002-11-08

Summary: Have you ever wanted to key index a text file so that you can fetch a single record directly? In this article Alison Neal shows how you can do this using a Binary Search Tree.

Source for: Receiving Email With MAPI (Part 2)

Date: 2002-10-30

Summary: MAPI email has been discussed in previous Clarion Magazine articles, but for the most part these articles cover sending email. In this series, Konrad Byers shows how to receive email with MAPI. Part 2 of 2.

Source for: Data Structures And Algorithms Part X - Going Out Of Your Tree?

Date: 2002-10-24

Summary: In the previous installment in this series, Alison Neal discussed the AVL Tree or Height Balanced Tree; in this article Alison continues her discussion of the AVL Tree and shows how to delete an individual item while still maintaining the sub tree heights.

Source for: Receiving Email With MAPI (Part 1)

Date: 2002-10-23

Summary: MAPI email has been discussed in previous Clarion Magazine articles, but for the most part these articles cover sending email. In this two-part series, Konrad Byers shows how to receive email with MAPI.

Source for: Clarion Challenge Results: ContainsMatch

Date: 2002-10-17

Summary: We received a record number of entries for the Clarion Challenge to create a ContainsMatch function. Gordon Smith has analyzed and benchmarked the code, and provides illuminating commentary. And yes, we do have a winner.

Source for: How Not To Ignore The Form Template

Date: 2002-10-04

Summary: In the previous episode, Steve Parker began "ignoring" the Form template, having previously ignored the report and browse templates. He stated that while he ignores the Form template's prompts the most, he ignores the Form template the least. In this final installment in the series, Steve explores what really matters about forms.

Source for: A Template For Exporting Classes

Date: 2002-09-20

Summary: Lee White has previously written about creating a template wrapper for classes. That template worked fine, but only in single EXE applications. What about multi-DLL apps? This time around Lee shows how to create a wrapper that handles the tricky business of exporting, and handling exported, classes.

Source for: A Tool For Understanding Template Symbols

Date: 2002-09-19

Summary: To be an effective template programmer, you need to know what values various template symbols contain at code generation time. Steffen Rasmussen presents a code template that you insert at any embed point, and which prints out all (or selected) currently available template symbol values.

Source for: TopSpeed INI Files

Date: 2002-09-13

Summary: INI files are handy, but not always the best way to store initialization information in an already database-enabled application. As it turns out, it's not that difficult to use TPS (or other database files) as drop-in replacements for text INI files in ABC applications. In this article Tim Phillips explains how you can extend the ABC IniClass with just 25 lines of code, and drop in your own INI file handler.

Source for: OLE Drag & Drop

Date: 2002-09-06

Summary: If you want to drag a URL from Internet Explorer and drop it onto, say, a Clarion text box, regular drag and drop won't do the trick. You need OLE Drag and Drop. Clarion Magazine's resident master of all things OLE, Jim Kane, shows how it's done.

Source for: Data Structures and Algorithms Part VII - Up a Tree

Date: 2002-08-29

Summary: In this installment of this series on data structures and algorithms, Alison Neal talks about the Tree data structure (which is not the same thing as a Clarion tree control).

Source for: Adding Page Of Pages To A Clarion Report

Date: 2002-08-16

Summary: For many years now it has been difficult to add a Page of Pages variable to a Clarion report. It has also been difficult to print more than one copy of a report without clicking on the print/report button twice, or using the printer properties to specify multiple copies. Inspired by Bruce Johnson's ABC book, and some conversations at ETC III, Nardus Swanevelder finds a solution to both problems.

Source for: Class Wrapper Templates The Easy Way

Date: 2002-08-15

Summary: In earlier releases of ABC, class wrapper templates were difficult to create. After creating his first class, Lee White, inveterate hand coder and template writer, went searching for a way to create a template wrapper for that class. What he found was a pleasant surprise.

Source for: Finding Field Names
Date: 2002-08-14
Summary: Ever find yourself looking through generated file declarations for certain fields?
Here's a quick template by Andrew Guidroz that will help.

Source for: Custom Queue Sorting
Date: 2002-07-24
Summary: Clarion queues have two basic sorting methods built in - numeric, and alphabetical. But there are times when neither of those will suffice. Gordon Smith shows how to implement a custom queue sorting procedure.

Source for: A Single Browse For Multiple Lookups
Date: 2002-07-05
Summary: There have been a few threads in the newsgroups lately regarding techniques for handling a multitude of lookup tables in an application. Randy Rogers recently faced this situation, and came up with an efficient solution.

Source for: Creating A Dynamic Option Box
Date: 2002-07-05
Summary: Creating an option box is straightforward: select the option box, populate the radio buttons, compile and run. But users often want changes to option boxes that require a recompile. Steffen Rasmussen offers up a dynamically configurable option box, based on a list control.

Source for: The RanDum Phrase Generator
Date: 2002-06-21
Summary: Here's a neat little program by Lee White that generates random phrases, suitable for security applications such as automatically generated passwords.

Source for: The Checkbox Class Performance Upgrade
Date: 2002-06-20

Summary: Last year David Harms wrote an article about using browse checkboxes to manage many-to-many relationships. Faced with using this code on a remote database via an Internet connection, he found the performance unacceptably slow. This redesigned class dramatically reduces network traffic.

Source for: Interfacing With An Interface

Date: 2002-06-12

Summary: Interfaces are becoming increasingly important in the evolution of ABC. In this article, Phil Will shows how to implement the WindowComponent interface to make the currently selected control more visible to the user.

Source for: Positioning List Box Totals

Date: 2002-06-11

Summary: Sometimes you'll want to place total fields below list boxes, and in some cases those totals need to be positioned exactly below a column. This is easy if the user doesn't resize any columns, but what if you do allow resizing? Brice Schagane shows how to align the total fields with the columns at runtime.

Source for: Data Structures and Algorithms Part II - The List

Date: 2002-05-17

Summary: How many times have you been asked to write a list? Lists are everywhere: there are shopping lists, to do lists, lists of people's contact details, and lists of appointments. The List is so pervasive and so valuable that many people have spent many years discovering how to effectively represent this structure in computer memory with the greatest efficiency.

Source for: Look Out, It's Outlook! (Part 2)

Date: 2002-05-14

Summary: The subject of interfacing with MS Outlook comes up regularly on the newsgroup. Mark Riffey takes a second look at his Outlook code, and discovers unexpected help in MS Word. Part 2 of 2.

- Source for:** Look Out, It's Outlook! (Part 1)
- Date:** 2002-05-09
- Summary:** The subject of interfacing with MS Outlook comes up regularly on the newsgroup. Mark Riffey takes a second look at his Outlook code, and discovers unexpected help in MS Word. Part 1 of 2.
-
- Source for:** Accessing TPS Files Via ASP
- Date:** 2002-05-08
- Summary:** In this article Brian Staff provides an introduction to Active Server Pages, or ASP, for Clarion developers. With ASP you can use the TopSpeed ODBC driver to display a TPS file (or any ODBC compliant data) in a browser.
-
- Source for:** Required Fields Times Two
- Date:** 2002-04-26
- Summary:** A lot has been written lately in Clarion Magazine about validating required fields. Carl Barnes validates the notion that there's no such thing as too much Clarion knowledge, and lays out his approach to required field handling.
-
- Source for:** It's an XML World!
- Date:** 2002-04-25
- Summary:** XML is everywhere, as Jim Kane is beginning to see. In this article Jim shows how to use the MS DOM XML parser to manage XML documents.
-
- Source for:** Data Structures and Algorithms Part I: The Dynamic Stack
- Date:** 2002-04-19
- Summary:** On the newsgroups it happens time and time again: a Clarion newbie asks: "How do I implement a Tree in Clarion?" or "How do I implement a List in Clarion?" These aren't questions about tree controls or list boxes; they're about established, standard data structures. Here is the first article in a series by Alison Neal outlining how to implement standard data structures and algorithms in Clarion.
-
- Source for:** OCX Controls: Web Browser, Media Player, and pcAnywhere

Date: 2002-04-11

Summary: OCXs are a quick and sometimes easy way to add a lot of functionality to your applications. Peter Rabolt shows how he used web browser, media player, and remote control OCXs to beef up one of his apps.

Source for: Secondary Forms (Part 2)

Date: 2002-03-20

Summary: Sometimes there are too many fields to place on a single window. Sometimes fields can be grouped according to a logical division of data types. Sometimes, spreading fields so that not all of them are displayed simultaneously makes the data easier to digest. Sometimes the user wants multiple screens and sometimes it just looks better to use multiple pages to display data.

Source for: Secondary Forms (Part 1)

Date: 2002-03-15

Summary: Sometimes there are too many fields to place on a single window. Sometimes fields can be grouped according to a logical division of data types. Sometimes, spreading fields so that not all of them are displayed simultaneously makes the data easier to digest. Sometimes the user wants multiple screens and sometimes it just looks better to use multiple pages to display data.

Source for: Using Real Icons In The Listbox Header - Part 2

Date: 2002-02-26

Summary: For quite some time Steffen Rasmussen has been working with the idea of sorting listboxes by clicking on the header, and showing the sort order with an icon. His previous solution (described in Clarion Magazine) used characters in the header to show sort orders; in this series, Steffen shows how to use real icons via buttons.
Part 2 of 3.

Source for: Using Real Icons In The Listbox Header - Part 1

Date: 2002-02-22

Summary: For quite some time Steffen Rasmussen has been working with the idea of sorting listboxes by clicking on the header, and showing the sort order with an icon. His previous solution (described in Clarion Magazine) used characters in the header to show sort orders; in this series, Steffen shows how to use real icons via buttons.
Part 1 of 3.

Source for: The CASE Statement Revisited

Date: 2002-02-19

Summary: When you have complex program logic, nested IF statements can easily get out of hand. Brian Staff finds another way using a non-traditional CASE statement syntax.

Source for: Running Totals: A Reader's Perspective

Date: 2002-02-14

Summary: Steffen Rasmussen revisits Steve Parker's article on Running Totals, and contributes a template.

Source for: Using KEYSTATE For Backdoors And Other Tricks

Date: 2002-02-01

Summary: The Clarion KEYSTATE function returns the status of the "shift type" keys (Shift, Ctrl, Alt), the lock keys (Caps Lock, Num Lock, Scroll Lock), and the Insert key (overwrite or insert). It might sound like KEYSTATE isn't good for much more than displaying information on the status bar, but in fact this function is a great tool for detecting unusual keystroke combinations (including when the numeric keypad has been used), which you can use to implement hidden features in your applications.

Source for: Getting A Handle On The System Tray

Date: 2002-01-30

Summary: One main benefit of Windows programming is being able to have multiple applications open at once. The problem with this is that if you have ten programs active at once, you have ten programs cluttering up your task bar, and ten icons to Alt-Tab through to land on your desired application. So - the system tray to the rescue! This article by James Cooke (not Gordon Smith, as earlier indicated - my apologies James! ed.) covers the basic steps required for parking an app in the system tray, and responding to events on that icon.

Source for: Interfacing With C++ Part 2

Date: 2002-01-21

Summary: In this second of two parts, Gordon Smith concludes his demonstration of how Clarion interfaces and C++ abstract base classes can be freely interchanged between Clarion, TopSpeed C++ and Microsoft Visual C++.

Source for: Interfacing With C++ Part 1

Date: 2002-01-18

Summary: This article demonstrates how Clarion interfaces and C++ abstract base classes can be freely interchanged between Clarion, TopSpeed C++ and Microsoft Visual C++. Not only does this provide a convenient conduit for mixed language development, it also allows objects to be shared across languages. In practice it is possible to build a very powerful C++ library by simply wrapping existing or third party code within a Clarion compatible interface. Part 1 of 2.

Source for: Write A Word Processor In Five Minutes

Date: 2002-01-17

Summary: Inspired by a 30 page tutorial on creating a text editor in Delphi, Vince Du Beau decided to see how he could improve on the example in Clarion. The result: a word processor in five minutes.

Source for: Handling COM Events - Part 2

Date: 2002-01-16

Summary: The one area of COM that the Clarion OLE control is particularly weak in is receiving events. When the OLE control works, it works very well and is very simple to use. However, more often than not, it does not work, and in a case like that you'll need Jim Kane's OLE event code. Read on. Part 2 of 2.

Source for: Handling COM Events - Part 1

Date: 2002-01-11

Summary: The one area of COM that the Clarion OLE control is particularly weak in is receiving events. When the OLE control works, it works very well and is very simple to use. However, more often than not, it does not work, and in a case like that you'll need Jim Kane's OLE event code. Read on. Part 1 of 2.

Source for: The Clarion Advisor: Sizing Windows

Date: 2001-11-28

Summary: Clarion is a great tool for writing custom apps. And every once in a while, Andrew Guidroz II has a requirement from a customer for a window that is as unique as the individual's desktop. But how to know what size to make the window?

Source for: Checkboxes For Many-to-Many Relationships: The Source Code

Date: 2001-11-15

Summary: There are a lot of ways to show many-to-many relationships between two tables, and some take more work on the part of the user than others. This week Dave Harms explores the inner workings of a derived browse class to manage these relationships.

Source for: Checkboxes For Many-to-Many Relationships

Date: 2001-11-09

Summary: There are a lot of ways to show many-to-many relationships between two tables, and some take more work on the part of the user than others. Dave Harms shows how to create a linking record between tables with a single mouse click.

Source for: Optimizing DLL Loading - Rebasing Your DLLs

Date: 2001-11-06

Summary: If you create DLLs with Clarion, then you'll definitely want to read this series of articles. By default, Clarion 32 bit DLLs load more slowly than they need to, and are not sharable between processes. In this installment Carl Barnes shows how to easily rebase your own application's DLLs.

Source for: Controlling Printers With DevMode (Part 2)

Date: 2001-10-30

Summary: A customer's request to save printer bin selections sent Jim Gambon off on an exploration of the printer DevMode structure. In this two part series Jim explains how to create a 16/32 bit DevMode that really works, and how to use it to get full control of your printers. Part 2.

Source for: Controlling Printers With DevMode (Part 1)

Date: 2001-10-24

Summary: A customer's request to save printer bin selections sent Jim Gambon off on an exploration of the printer DevMode structure. In this two part series Jim explains how to create a 16/32 bit DevMode that really works, and how to use it to get full control of your printers.

Source for: Report Redirection

Date: 2001-09-25

Summary: This week Steve Parker takes on report redirection. Although there are excellent third party products available (and Dr. Parker isn't shy about making recommendations), there's something to be learned by reinventing the wheel.

Source for: Designing Crosstab Reports In Clarion (Part 2)

Date: 2001-09-13

Summary: One of the more common and useful reports is the crosstab report, which can be defined as any report that summarizes data in a two dimensional grid, such as breaking down sales data into monthly or quarterly sales. Other report writing tools often supply a wizard to guide the user through the process of creating this type of report. Clarion, however leaves the programmer to his or her own devices to create this standard summary. Part 2 of 2.

Source for: Designing Crosstab Reports In Clarion (Part 1)

Date: 2001-09-11

Summary: One of the more common and useful reports is the crosstab report, which can be defined as any report that summarizes data in a two dimensional grid, such as breaking down sales data into monthly or quarterly sales. Other report writing tools often supply a wizard to guide the user through the process of creating this type of report. Clarion, however leaves the programmer to his or her own devices to create this standard summary. Part 1 of 2.

Source for: Normal Files, Normal Display

Date: 2001-09-10

Summary: One of the basic concepts of normalization is that every record in a file or row in a SQL table should be uniquely identified. Steve Parker addresses two aspects of unique IDs: the generic motivation for using them, and the difficulties they can present when displayed to the end user.

Source for: Finding A File Using Template Code

Date: 2001-08-31

Summary: The Clarion template language is more powerful than most developers realize. In this article Kevin Erskine shows how he wrote template code to locate and parse the Clarion redirection file so he could parse his own class includes at generation time.

Source for: Migrating The Inventory Application To SQL Server (Part 3)

Date: 2001-08-28

Summary: In this three part series, Ayo Ogundahunsi takes the Clarion example Inventory application from a flat file TPS database to a MS SQL database, focusing on portability, business rules, relational integrity, and Clarion as an interface tool.

Source for: Running Totals

Date: 2001-08-21

Summary: Running totals come in two flavors. The first is the constant updating of an account balance in real time, such as a running total in a checkbook application. The other kind is, well, the subject of this 100th article by Steve Parker.

Source for: Migrating The Inventory Application To SQL Server (Part 2)

Date: 2001-08-20

Summary: In this three part series, Ayo Ogundahunsi takes the Clarion example Inventory application from a flat file TPS database to a MS SQL database, focusing on portability, business rules, relational integrity, and Clarion as an interface tool.

Source for: Migrating The Inventory Application To SQL Server (Part 1)

Date: 2001-08-15

Summary: In this three part series, Ayo Ogundahunsi takes the Clarion example Inventory application from a flat file TPS database to a MS SQL database, focusing on portability, business rules, relational integrity, and Clarion as an interface tool.

Source for: Internal Help - An Alternative To Commercial Help Systems

Date: 2001-08-09

Summary: At its most basic, application Help is just a display of a specific block of text when a button is pressed. This is a lot like displaying the memo of a record upon demand, something that Clarion can do easily. That was the starting point for Tim Philips' integrated 'internal' help system.

Source for: When Clarion COM Will *Not* Do

Date: 2001-07-24

Summary: Jim Kane reviews some COM fundamentals, and then shows how you can take matters into your own hands and extend Clarion's COM abilities for those times where Clarion's native COM will not do what you want.

Source for: Recovering Deleted Records

Date: 2001-07-19

Summary: Fans of the old Clarion (DAT) file format know that unless you use the RECLAIM attribute, deleted records still exist in the data file. That isn't the case for most other drivers. Here's how to make records recoverable, using two new methods in Clarion 5.5.

Source for: "Sometimes" Lookups

Date: 2001-07-06

Summary: Clarion's ability to validate data with lookups is great, but what happens when you want to only do the lookup sometimes? Steve Parker tells all.

Source for: Using MATCH In Filters and Regular Expressions

Date: 2001-07-03

Summary: Filters for reports and browses seem to get increasingly complicated over time. In this article Carl Barnes show a trick you can do with MATCH() that will let you create more powerful filters, and which do not require any more code than a simple INSTRING() but can search for multiple substrings.

Source for: Creating #AT Statements The Easy Way

Date: 2001-06-29

Summary: Writing templates can be tricky, especially when it comes to creating #AT statements that correspond to ABC virtual method embeds. Here's a template that makes that task easy.

Source for: Extending ABC's Edit In Place - Part 2

Date: 2001-06-22

Summary: Russ Eggen has heard it all when it comes to Edit In Place (EIP). Well, here's a dirty little secret: ABC's EIP features are *fully functional*. Part 2 of 2.

Source for: Extending ABC's Edit In Place - Part 1

Date: 2001-06-15

Summary: Russ Eggen has heard it all when it comes to Edit In Place (EIP). Well, here's a dirty little secret: ABC's EIP features are *fully functional*. Part 1 of 2.

Source for: Reading Tables With ADO

Date: 2001-05-21

Summary: Have you ever wanted to write a generalized utility to work with a data file which may exist on more than one backend database? Do you need a utility to handle a file when you don't have/or want a DCT layout? Have you ever wanted to use ADO (ActiveX Data Objects) in Clarion as a standard way of managing your data? Here's how to get started.

Source for: Creating ODBC Data Sources At Runtime

Date: 2001-05-09

Summary: One of the drivers that comes with Clarion is the ODBC driver. Although Clarion deals with most of the problems of translating your file access code (e.g. OPEN, CLOSE, NEXT) into calls to the particular ODBC driver that looks after your data file, there is one area where Clarion ignores a potentially useful set of features of the ODBC design. These are the administration functions, which are required before you can access any data source through ODBC.

Source for: Replicating IDLE: All Quiet on the Keyboard?

Date: 2001-05-03

Summary: Needing to have two inactivity timers running at the same time, Steve Parker goes in search of an IDLE equivalent.

Source for: Clarion and Multi-Edit: Together At Last

Date: 2001-04-24

Summary: Clarion's own source code editor, although functional, isn't as feature-rich as some other programmers' editors, like American Cybernetics' Multi-Edit. Multi-Edit integrates with any popular programming tools, and as Vince Du Beau explains, you can use Multi-Edit with Clarion too.

Source for: Web Splash Screens

Date: 2001-03-20

Summary: It's common for a Windows application to need to open a browser window to display a web page. The easy way to do that is by passing a URL to ShellExecute(), but as Carl Barnes shows there are a few tricks you can use to make ShellExecute even more productive.

Source for: The Clarion Challenge Results: Useless Tab Text

Date: 2001-03-14

Summary: Several weeks ago I tried to plumb the meaning of inverted text on sheet tabs, and in the process came up with a small but useless application that sent tabs scurrying around all four sides of a sheet. I posted my code and challenged ClarionMag readers to fix a glaring bug in the code, write the code more compactly, and finally to come up with a real application for inverted tab text.

Source for: COM: Getting Easier By The Minute
(Part 3 of 3)

Date: 2001-02-22

Summary: COM? Easy? Well, easier, at least. In this three-parter, Jim Kane, Clarion Magazine's resident guru of Microsoft component object technology, shows how to call COM objects with the new COM-compatible INTERFACE in Clarion 5.5. As Jim says, if VB programmers can use COM, so can you!

Source for: COM: Getting Easier By The Minute
(Part 2 of 3)

Date: 2001-02-13

Summary: Easy? Well, easier, at least. In this three-parter, Jim Kane, Clarion Magazine's resident guru of Microsoft component object technology, shows how to call COM objects with the new COM-compatible INTERFACE in Clarion 5.5. As Jim says, if VB programmers can use COM, so can you!

Source for: COM: Getting Easier By The Minute
(Part 1 of 3)

Date: 2001-02-06

Summary: COM? Easy? Well, easier, at least. In this three-parter, Jim Kane, Clarion Magazine's resident guru of Microsoft component object technology, shows how to call COM objects with the new COM-compatible INTERFACE in Clarion 5.5. As Jim says, if VB programmers can use COM, so can you!

Source for: Give It a Nudge: Adjusting Report Position at Runtime

Date: 2000-10-31

Summary: As good as printers now are, there are inevitable differences between brands and models that make it difficult to consistently print within the bounds of the printable area. Lee White and Steve Parker have the answer: Give that report a nudge.

Source for: An Introduction To Writing Templates: Part 2

Date: 2000-10-17

Summary: Writing templates is easier than you think; John Morter explains his borrow-and-adapt approach to becoming productive quickly. Part 2 of 2.

Source for: An Introduction To Writing Templates: Part 1

Date: 2000-10-10

Summary: Writing templates is easier than you think; John Morter explains his borrow-and-adapt approach to becoming productive quickly. Part 1 of 2.

Source for: The Nuts And Bolts Of Passing Parameters: Part 2

Date: 2000-09-15

Summary: Any time you divide a program up into procedures, you need a way for those procedures to communicate. In this two part article, James Cooke explores the many facets of passing parameters.

Source for: The Nuts And Bolts Of Passing Parameters: Part 1

Date: 2000-09-12

Summary: Any time you divide a program up into procedures, you need a way for those procedures to communicate. In this two part article, James Cooke explores the many facets of passing parameters.

Source for: Creating An MS Outlook-Style Menu In Clarion

Date: 2000-08-29

Summary: Microsoft Outlook uses an innovative menu style that's become quite popular. Now Steffen Rasmussen shows how to create the same style of menu in a Clarion application.

Source for: Five Rules for Managing Complexity: Part 1

Date: 2000-08-22

Summary: Tom Ruby kicks off a five part series on managing application complexity with a rule about repeating fields.

Source for: Please Mr. Postman: Calling External Functions By Address

Date: 2000-07-05

Summary: Steve Bottomley explains how to call an external procedure by address when the procedure isn't exported from the DLL.

Source for: Cloning List Boxes Part 2

Date: 2000-04-25

Summary: There are many occasions when it is useful to have list boxes that are clones of each other. Jon Waterhouse updates a previous Clarion Online article with a new template and generalized classes. Part 2 of 2.

Source for: Cloning List Boxes Part 1
Date: 2000-04-18
Summary: There are many occasions when it is useful to have list boxes that are clones of each other. Jon Waterhouse updates a previous Clarion Online article with a new template and generalized classes. Part 1 of 2.

Source for: Doodling Bitmaps
Date: 2000-04-04
Summary: Clarion does a reasonable job of handing graphics, but sometimes you need a bit more horsepower.

Source for: Subclassing With A Twist
Date: 2000-03-28
Summary: Subclassing doesn't always mean OOP - sometimes it means intercepting Windows messages to do things Clarion wouldn't otherwise let you do.

Source for: Edit-In-Place:Lights, Camera, Action...Take Two, Part Two!
Date: 2000-02-15
Summary: There's more than one way to add edit-in-place to a browse. James Cooke lays the groundwork for making a form look like EIP. Part 2 of 2.

Source for: Edit-In-Place:Lights, Camera, Action...Take Two!
Date: 2000-02-08
Summary: There's more than one way to add edit-in-place to a browse. James Cooke lays the groundwork for making a form look like EIP. Part 1 of 2.

Source for: Skeleton Basics III: Colors and Backgrounds
Date: 2000-01-25
Summary: When you think of customizing a web page, colors and background images are probably among the first things that come to mind. In his 75th Clarion article (not all for Clarion Magazine), Steve Parker explains how it's done.

Source for: WebBuilder Skeleton Basics II: Logos and Fonts

Date: 2000-01-18

Summary: In Part 2 of his weekly WebBuilder series Steve Parker explains how to control fonts and logo placement.

Source for: A Class Wrapper For Files

Date: 1999-12-21

Summary: Imagine you've been asked to write just one piece of cost estimating code that can be used on several quite different sets of files. Jim Kane shows how it's done.

Source for: Edit-In-Place CheckBoxes Done Right

Date: 1999-12-21

Summary: ABC has a lot of edit-in-place functionality, but EIP check boxes are a bit quirky. Pete Halsted shows how make your browse's checkboxes look and act they way they should.

Clarion Magazine

The ClarionMag Blog

Get automatic notification of new items! [RSS feeds](#) are available for:

[XML](#) All blog entries

[XML](#) All new items, including blogs

Blog Categories

- [»All Blog Entries](#)
- [»Clarion 7 Clarion.NET](#)
- [»Future Articles](#)
- [»News flashes](#)
- [»Nifty Stuff](#)

C7: It's a real IDE, folks

Direct link

Posted Friday, February 23, 2007 by Dave Harms

I'm running the new C7 IDE (which will also be the Clarion.NET IDE) and I'm a bit stunned already. This, folks, is a real IDE. Yeah, I know, AppGen won't be there until Phase 4. And you might *think* that without AppGen there isn't much there.

If you think that, boy are you wrong.

[Read all about it.](#)

More embed analysis, new articles, and The Sale!

Direct link

Posted Tuesday, February 13, 2007 by Dave Harms

I've had a tremendous response to my request for TXAs for embed analysis, and I'm working a few bugs out of the analyzer and setting up a new database. The first time around I used the ClarionMag server's MySQL database, and that was fine, if a bit slow, for the few dozen TXAs I was parsing. I'm using SQL because of the ease of doing ad-hoc queries.

Now, however, I have over 300 TXAs, or half a gig of data to process! A remote server isn't going to cut it (at least I can't wait that long for the processing to complete) so I've set up a local PostgreSQL database. It's a while since I've looked at Postgres, which is one of the few truly free, truly SQL databases, and at some point I'll be posting an article on my experiences with the latest Windows version.

Meanwhile, keep an eye out for Mark Riffey's bulletproof argument for why you should be running Vista and Office 2007 *now*. And remember to renew/subscribe this week, as our Eighth Anniversary sale ends Friday!

C7 on Vista

[Direct link](#)

Posted Tuesday, February 06, 2007 by Dave Harms

Over at the SV blog site Bob Foreman has [posted a screen shot](#) of C7 running on Vista. Here's a downsized version, but take a look at the [original](#).

