



*First View*TM

Volume 4, Number 1

March 2004

Welcome to the first issue in 2004 of *First View*. Our objective, as always, is to keep you informed of developments here at First Choice Software, and to recount what we've been up to since the last issue. As always, we will do that in this issue; more importantly though, we are pleased to announce the 3rd annual Connections Technology and Solutions Forum in Austin, Texas, June 7th, 8th, and 9th.



This issue of *First View* discusses:

[Connections Technology and Solutions Forum 2004](#)
[From the CEO's Desk: Rolling out First Choice's Strategy](#)
[FCFL: A Technical Overview](#)
[Employee Profile](#)
[Product News](#)

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From the CEO's Desk: Rolling out First Choice's Strategy

2004 promises to be a great year for First Choice. We continue to experience substantial success following last year's successive quarterly growth. For this fiscal year 2004 we had planned to double last year's revenue. However, after just two months we've already achieved nearly 25% of our annual goal, and our pipeline continues to grow rapidly.

I attribute much of our success to the growing number of companies adopting our **FCFL** platform and *fcClient* applications. By combining **FCFL**'s performance and extensibility with *fcClient*'s ease of customization and integrated productivity features we deliver rapid implementation times and demonstrable return on investment. We also enable new and existing customers to increase the value of CRM investments they've already made.

We recently initiated a Premium Value Program for Clarify that makes it much easier for companies to transition to *fcClient*. Under this program First Choice customers can implement the *fcClient* solution at absolutely no increase in current annual Clarify CRM license and maintenance expenditures. The combination of great products and innovative licensing is steadily bringing new customers into the **FCFL** framework.

In last quarter's *First View* I commented that we had drafted our growth strategy and would soon be communicating specifics. Over the next few months we will be meeting one on one with selected customers to discuss our strategy, and expect these meetings to help us refine our plans based on direct customer feedback. This is the final step in preparation for what we believe is the "must see" event of the year.

We are excited and pleased to announce the 3rd annual Connections user conference, scheduled for June 7th-9th, 2004, in Austin, Texas. Attendees have called past Connections the most worthwhile Clarify event offered. The agenda we've created for this year's event is guaranteed to be just as effective in providing insight into ways to dramatically improve the value of the Clarify environment.

Analysts are forecasting a strong resurgence in CRM spending as companies seek to better connect with their customers. At this year's Connections we will announce significant new First Choice products and services, which will enhance the value of Clarify user's investments and propel First Choice into a leadership position in the rapidly changing business of customer support and logistics management automation solutions.

If you only attend one CRM event this year, Connections must be "The One." I'll see you in June.

Connections Technology and Solutions Forum 2004

First Choice is pleased to announce the 3rd annual Connections Technology and Solutions Forum in Austin, Texas, June 7th, 8th, and 9th. Connections will be held at the Marriott hotel in downtown Austin, close to many of Austin's most popular sites and attractions. For more information or to register, visit www.fchoice.com/connections04.

The Connections Forum was initiated in 2001 by First Choice to provide a venue for Clarify users to exchange information, learn about new products and technologies that enhance the Clarify environment, and share techniques on how to best address issues that arise in the use of Clarify. Our philosophy from the onset was to make Connections a place where users would first and foremost gain technical knowledge useful to their ongoing development and maintenance efforts. This year will be no different. While First Choice has chosen this year's Connections to share a number of exciting new products and developments that we believe will dramatically enhance the value of your Clarify investment, we intend to stay focused on delivering technical and application content that offers real value for each of our attendees.

We will publish a complete agenda on our web site in the near future but here's a few of the topics and sessions planned for this year's Connections Forum. A more complete list of topics can be found on our web site under the agenda tab or at www.fchoice.com/connections04/agenda.asp.

First Choice Strategic Direction – Find out where First Choice is going in the next year, and what products and technologies you can expect to see and use. This talk will focus on our current development plans and directions. In a related panel, First Choice will solicit customer feedback on these plans to ensure we are aligned with your needs.

Planning a Thick to Thin Migration – Moving your existing investment in thick client Clarify applications to a browser-based environment can be an expensive and harrowing experience. This session will highlight the key components of a thick → thin migration, and will list many of the common traps that await the implementer. The session will focus on the planning steps required for a successful migration, including:

- Planning for thin clients
- Project management and execution tips
- Training requirements to maximize staff productivity
- Tools and techniques to greatly reduce conversion time
- Effective testing of Clarify customizations

Case Study: Migrating a Thick Client Page – This “how-to” session will focus on a specific (and common) thick client customization. Step-by-step instructions will take you from Clarify/ClearBasic to a working Javascript web page!

A Fast/Scalable Rules Engine – How do you process event-based notifications quickly in a robust CRM environment? How do you allow for individuals to specify their own rules without having to involve the system administrator? Come and see a demonstration of the new First Choice Super-Scalable Rules Engine, which combines the best features of Rule Manager and the First Choice Personal Business Rules products. The 2nd half of this session will solicit feedback on what event-engine features customers need in their implementations.

FCFL.NET: A New World – This session will discuss, in depth, the new object programming environment from First Choice Software for the .NET world. The talk will focus on what **FCFL.NET** is, and what it can do for you. The talk will also highlight the ability of **FCFL.NET** to operate seamlessly with previously written thin client applications, as well as the performance, scalability, object-oriented behavior, and multi-threaded nature of **FCFL.NET**. In a companion session we will also preview some of the summer’s upcoming thin client releases, based on the **FCFL.NET** architecture.

Object Programming in a Clarify Environment – Several in-depth programming sessions will be devoted to a variety of topics in object programming. Some of the projected sessions are:

- Object Programming 101 – The basics
- Object Programming 201 – More advanced concepts
- Case Study: Writing a Thin Client customization in just a few minutes
- Programming efficiently with high-level APIs
- Object Programming in the .NET world

Evaluating Future Clarify Projects – Customers routinely have to make decisions on spending the money and time involved in rolling out new features and functions to their user community. This session will discuss many of the decisions and tradeoffs that can be made in this process, including:

- Developing new features, enhancements, and customizations using FCFL vs. Clarify thick-client applications
- The trade-offs of upgrading to a new Clarify version
- New licensing models that can reduce Clarify costs
- Can alternatives to Clarify deliver real return on investment?

Advanced ClearBasic Programming – Several sessions will be offered that will demonstrate, with working code samples, how to perform a variety of useful tasks. In addition we will have a session that highlights **Hidden Tricks in ClearBasic**.

Ask the Experts – Bring all of your Clarify questions, issues, and concerns and challenge a panel of experts (as well as other customers) to come up with solutions.

Customer Sharing Sessions – Come and discuss with other customers the most important topics that affect your implementations. Two sessions will concentrate on the following topics this year: Where is your Clarify implementation headed? What are the best customizations that you have developed?

First Hand Customer Experiences – One of the cornerstones of Connections is customer involvement and sharing. First Choice plans a substantial number of sessions to be presented by customers and partners in which first hand experiences, challenges, and rewards will be presented on a number of topics, including:

- Implementing Thin Clients using FCFL
- Upgrading the Clarify environment
- Strategies, tools, and techniques for managing data quality
- Rapid customization approaches
- Extending the Clarify environment
- Enterprise application integration
- Wireless Clarify enablement

One of the reasons Connections is able to consistently offer real value to Clarify customers is the involvement of customers, expert Clarify developers, and experienced practitioners. We invite you to be an active part of this year's agenda by becoming a presenter. If you have a topic you would like to present at Connections, please [submit an abstract](#) (< 250 words please) of a talk or talks you would like to present. We are actively soliciting your ideas. Remember, all speakers at Connections attend the conference for free! Abstracts will be accepted on a first-come basis, so please submit your ideas quickly. Abstract are due by April 15th, 2004.

We encourage you to visit the Connections web site, www.fchoice.com/connections04, for more details. Remember to bookmark this address and return often, as we will be updating the site regularly. We encourage you to register early to qualify for discounts and special offers.

We are excited to be able and host the 3rd annual Connections Technology and Solutions Forum and guarantee if you are going to attend only one Clarify event this year, Connections is the one you won't want to miss.

We look forward to having the opportunity to interact with each one of you as we collectively strive to improve the Clarify environment and enhance the value of your investment. See you in June!

FCFL: A Technical Overview

In the last issue of *First View* we discussed the business motivations for the **F**irst **C**hoice **F**oundation **L**ibrary (or **FCFL**). In this issue we will discuss the technical architecture of the system - what it does, and how it does it.

Overview

Before delving into the specifics of **FCFL**, we thought it would first be helpful to give a short overview of **FCFL**, including the general environment in which **FCFL** runs.

FCFL addresses the many needs that we heard expressed by customers in 2000-2002. Many Clarify customers were asking for a programming environment that met several basic goals:

Performance. They required a system with superior performance,

Clarify version compatibility. Many customers asked for a system that would work on *any* version of Clarify, and any database system. One **FCFL** DLL works with Clarify 6-12, and with Sybase, SQL Server, and Oracle,

Ease of use. Customers wanted a very simple programming interface, similar to what they were used to with ClearBasic,

Web enablement. The customers would use a new environment for many different purposes, but the primary requirement was for a system that made it easy and quick to write and customize Clarify-based web pages,

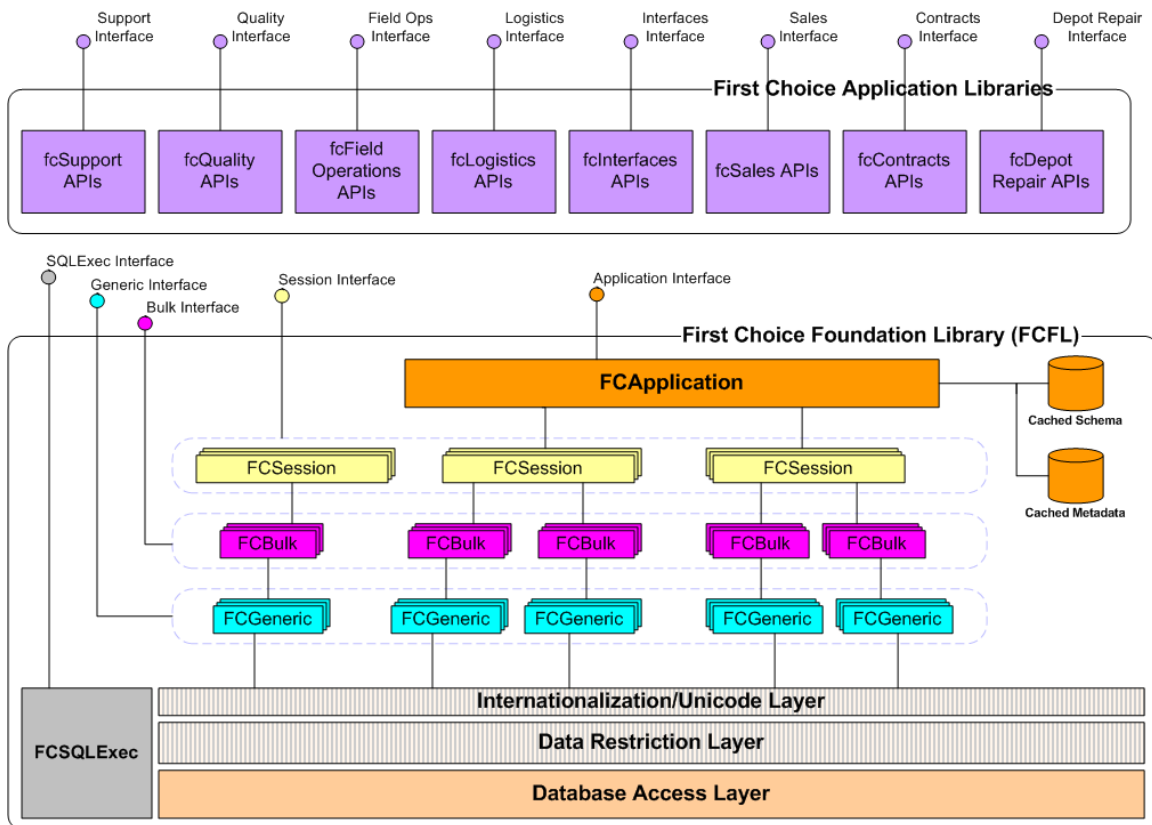
Conversion tools. The customers asked for automated tools to convert as much of their existing ClearBasic investment to the new paradigm as possible.

FCFL accomplishes all of this, and much more. It is internationalized and localized, supports Unicode, provides full data restriction, and provides a sophisticated XML-based caching mechanism.

FCFL is also 100% Clarify-compliant. It does all of the Clarify “isms” that customers require from a programming environment. For example, objid generation, relations, case sensitivity (for Oracle users), Null handling, exclusive relations (and more) are all handled automatically by **FCFL**. There is no need to ever worry that the data is going into your Clarify database “wrong” from writing an **FCFL** program.

The specifics of the **FCFL** environment are these: It is written using COM and ADO. First Choice chose these standards because they are more commonly used than any other in the world, and are constantly being improved. To run an **FCFL**-based application, you simply need a PC machine. No additional 3rd party software (such as Tuxedo) is required for **FCFL**. Note that there is no problem running **FCFL** applications against UNIX database servers – it is only the application server machine that is required to be a PC.

The Objects



FCFL is comprised of six COM objects. Only four of those objects are truly critical and will be discussed here. The other two objects (*fcSQLExec* and *fcList*) are fully described in the First Choice **FCFL** documentation.

fcApplication Object

The first object that most programmers encounter is the *fcApplication* object. There is one and only one *fcApplication* object created for each application. For example, a web server running *fcSupport* would create one *fcApplication*. A command-line application (such as the upcoming *Super-Scalable Rules Engine*) would create another *fcApplication* object. But each application environment only requires one *fcApplication*.

So what does an *fcApplication* do? The *fcApplication* performs two primary functions:

It caches useful information such as schema data, lists, geography data (countries, states, time zones, etc), global color choices, localized strings, data restriction information, and more,

It is used to create and maintain individual user sessions.

The *fcApplication* logs in (usually using an *fc.env* file, but there are other ways to specify login information). Then it will load the cache data into memory for later use. Normally, the cache information is then stored in XML files on the application server, for later loading (if/when the *fcApplication* is restarted).

One of the major enhancements that **FCFL** has made over any other available programming system for Clarify is the simplicity and intuitive nature of the calls you make to the *fcApplication* object to retrieve cached data. The calls are very simple and easy to use. For example, to get the items from the *Case Type* list, and then get the default item, you would simply write two lines of code such as:

```
lstCaseType = FCApp.GetGbstList('Case Type');  
strCTDef = FCApp.GetGbstDefault('Case Type');
```

fcSession Object

The next major object in the system is the *fcSession* object. One *fcSession* is created for each user login. For example, in a web environment, one *fcSession* object will be created for each web user that logs in.

The newly created session object performs several key tasks:

It validates the login information to ensure that the login is valid for the specified type (**FCFL** supports both user and contact logins),

It caches any user-specific data. This includes data about the login user, their site, individual color choices, and data restrictions for that user,

It is used to create and hold references to the other **FCFL** objects such as generics, bulks, and SQLExecs.

An important performance consideration for **FCFL** is that while each login creates a new *fcSession* object, it does **not** create a dedicated connection to the database for each login. Rather, **FCFL** uses *connection pooling* to share database connections amongst the different sessions. This can greatly increase both scalability and performance of your system.

fcGeneric Object

The *fcGeneric* object is truly the heart of **FCFL**. Each *fcGeneric* object represents one table or view in Clarify. An *fcGeneric* can query the database, and store the (zero or more) rows returned from that query. You may update or delete rows in the *fcGeneric*, and then commit all of the changes. You may also add new rows into the *fcGeneric*, and have this insert rows into the Clarify data table.

In simple terms, the *fcGeneric* object contains all of the functionality of both the ClearBasic *BulkRetrieve* and *BulkSave* objects, all wrapped up into one object.

The *fcGeneric* is a **very** low-level object. With it, you manipulate individual rows, fields, and relations – just like in ClearBasic. To perform higher-level operations (such as Create Case), you use the API Objects described below.

If, for example, you wished to create a case object, you would define a generic object for the case object, one for the condition object, one for the multiple activity log objects, etc. Each of these *fcGeneric* objects would contain one or more rows to insert, update, or delete in the database.

The *fcGeneric* object allows you to commit changes to individual rows, or to commit changes to all modified rows in the generic all at the same time. The choice is up to the programmer.

The *fcGeneric* object contains literally hundreds of features that are useful to the programmer. Clearly there is not space to describe them all here. But we will list a few of them to illustrate the level of flexibility and control that the *fcGeneric* object affords the programmer:

You may specify the exact fields **and** relations that you wish to include in a query. This allows you to greatly reduce the amount of unnecessary data queried and brought back from Clarify. If you don't wish to specify the exact fields, you may always request "all fields", or "all relations", or any combination,

fcGeneric provides query limitation. You may specify for one query (or all queries) the maximum number of rows to retrieve. If that number is exceeded by your query, you can either have *fcGeneric* return back the first *n* rows, or return back no rows (but tell you how many rows the query would have returned),

You can have an *fcGeneric* automatically convert Null strings to the empty string (""), or leave them as Nulls,

fcGeneric field references automatically handle server/client time zone conversions for you,

fcGeneric can automatically handle Unicode fields. And unlike baseline Clarify, you can specify which fields you wish to be Unicode-enabled, rather than forcing every string field in the database to be Unicode.

fcBulk Object

The *fcBulk* object allows the programmer to have complete transactional control over their programming. Consider the example listed above. If you were to really create a case object in Clarify, it is *crucial* that all of the rows to be inserted are either all inserted, or all rolled back. If only some of the rows were inserted (and others failed to be created in the database), you would have a database corruption. **FCFL** does not allow this. The mechanism that is used to prevent this is the *fcBulk* object.

You can specify a bulk name for each *fcGeneric* object. Then, you can tell **FCFL** to commit the bulk, rather than committing a specific generic object. **FCFL** then makes sure to place the proper transactional wrappers around your objects to force SQL to commit or rollback the entire transaction. **FCFL** also uses the *fcBulk* objects to minimize the number of database round-trips required for a specific transaction.

High-Level API Objects

FCFL, much like ClearBasic, provides a fairly low-level interface into your Clarify database (although **FCFL** is a very robust low-level interface). But most users want a higher level of abstraction for writing their web pages (or other applications).

FCFL provides a complete library of over 500 high-level APIs to allow you to perform virtually any Clarify-related task in a single one-line function call. Using the API technology written by First Choice Software over the past 7 years, the **FCFL** high-level APIs are available for the following products:

- Support
- Quality
- Logistics (Order Ops and Spares Manager)
- Contracts
- Interfaces (all common objects such as sites, contacts, solutions, parts, etc.)
- Field Operations
- Depot Repair (Q2 2004)
- Sales (2H 2004)

Each API is simple to call, and contains many optional arguments, which allow the programmer the full flexibility they need. You can specify an unlimited number of extra ("x_") fields with almost all of the APIs, which allows you to customize the APIs to meet your specific implementation's needs.

Each API validates **ALL** necessary information, and returns all errors and warnings (as well as success) as a documented integer return code.

The following code snippet (taken from our *fcClient* thin client environment) illustrates how simple it is to perform even complex tasks with the **FCFL** high-level API objects:

```
var ret_int = fcinter.create_contact_list(  
    first_name, last_name, phone, primary_site_id,  
    role_name, fax_number, e_mail, mail_stop, title,  
    hours, salutation, fld_list, type_list, val_list);
```

Summary

Clearly we cannot describe all of the features or architecture of a system as sophisticated as **FCFL** in one condensed article. Nevertheless, we hope that this article has shown you how simple, yet powerful **FCFL** truly is. We also hope that the article has answered some questions for you. But we're always happy and willing to answer any other questions you might have.

If you would like to speak to us more about **FCFL**, and the entire family of thin client solutions and command-line applications based on this robust architecture, please feel free to contact us at sales@fchoice.com.

Employee Profile: Chad Myers



Chad Myers, a former Java and current .NET software engineer, joined First Choice this past December as a senior member of the .NET development group.

Chad is responsible for the development of First Choice's .NET technology strategy. Microsoft's .NET will play a key role in First Choice's future products and we are very fortunate to have Chad, one of the best and brightest .NET experts, join us to lead these critical developments.

Chad has held senior engineer and architect positions focused on the delivery of innovative products based on technologies such as COM+, Java/J2EE, and C++. Prior to joining the team of First Choice, Chad worked as a consultant on .NET and ASP.NET software projects serving as an architect and project lead. He helped deliver flexible application platforms from which clients could launch new projects and features for fractions of the cost of alternative methodologies. Chad frequently contributes to the greater .NET and C# community by posting on the Microsoft newsgroups and giving presentations and lectures at local .NET user group meetings. He frequently reviews books from major publishers on the .NET Framework and is currently authoring a book about core components of .NET. Chad was recently nominated to be a Microsoft MVP for C# and Windows Server - a prestigious title of recognition in the IT community.

Chad attended Purdue University in Fort Wayne, IN majoring in Computer Information Services. He was one of the first 2,500 early adopters of the new Microsoft Certified Solution Developer/Architect certification for the .NET Framework - an honored title in the IT community, of which only around 5,000 people have passed. Chad is married with 2 children. He looks forward to helping First Choice deliver its new high performance **FCFL.NET** library and other .NET-based products.

Product News

As you can probably tell from other articles in this issue of *First View*, much of our development focus since the previous issue has been on the .NET port. We had intended to add an article on **FCFL.NET** in this edition but we felt *First View* would have become excessively long. We will be distributing this article in separate communications, in the near future. A quick update is in order, however, as we have made considerable progress on that project:

- The application and session objects have been completed
- Cache manager objects have been completed
- License manager objects have been completed
- Development is well underway on the generic and bulk objects
- Work has commenced on the compatibility layer

We have also begun work on several other projects that will take full advantage of the .NET environment, including:

- Super Scalable Rule Manager
- dbBuilder, the foundation for a new DB maintenance utility

We just completed an extensive but customer-specific initial version of *fcContracts* using the **FCFL**-based API Toolkit, and are exploring how best to transform this into a product for general release. We would welcome your feedback on any specific requirements you may have for such a product.

And we've not forgotten about Depot Repair; both an **FCFL**-based API Toolkit and an *fcLogistics* client for Depot Repair are in the works.

Finally, several useful features were added to existing products:

- The *fcClient* can now dynamically sort queues, WIPbins, and *fcQuery* results locally on the client, enhancing performance

- The *fcClient* now provides an option on the user profile to sort objects in WIPbins and queues by type (e.g., Cases, then Subcases, then CRs) or "all", which allows types to mix

- The *fcAdmin* tool now supports configuration items

As you can see, we're on track with our development plans and anticipate the **FCFL.NET** platform will allow us to make even faster progress in the future.

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