



*First View*TM

Volume 1, Number 1

March 2001

Welcome to the premier issue of *First View*. This quarterly newsletter will keep the Clarify world informed of what's happening at First Choice Software, what new products are available, and what's coming in the near future.

Our customers have been asking for something like *First View* for quite some time. Honestly, we've been so busy in the last two years that it has been difficult to find the time to write this newsletter. But we've realized that there's no time like the present, so here is the first issue. We expect to have a new newsletter available once each quarter. We hope that you will enjoy reading it, and will also get value from it.

We plan on having information for a variety of readers. For managers and planners, we will include information about upcoming products and offerings. For the technical people, we plan on including at least one technical article in each issue. In this issue, we have included the following:

- [Information about our newest products and services](#)
- [Information about First Choice's new Class Offerings](#)
- [An announcement about our new partnership programs](#)
- [Details of our new pay-per-incident support service](#)
- [A listing of products you will see soon from First Choice](#)
- [A technical customization article](#)
- [A proposal for a user group](#)
- [Employee profile](#)
- [Upcoming event news](#)
- [Details of our recent move to our new facility](#)

If you know of someone who you think would enjoy a copy of *First View*, please feel free to share it with them. Also, have them send an email to add-firstview@fchoice.com. Make sure they include their name, phone number, and email address. We'll make sure to send them future editions of the newsletter.

If you do not wish to receive future copies of *First View* (and we have a hard time imagining it!!), please send an email to remove-firstview@fchoice.com. Make sure that your email address is either in the title or body of the email. We'll remove you from the list of future newsletters immediately.

What's New

This section will detail, in each issue, what new products and services are available from First Choice Software. For more information about any of the items listed, please contact us at <http://www.fchoice.com> or sales@fchoice.com.

New Products

There are a number of new products available at First Choice. In the past two months we have completed ten new products. Here are the highlights:

Customization Replicator

First Choice is excited to offer new customization technology for Clarify. The Customization Replicator (CR) is a set of tools that allow you to extract your customization from a Clarify database, and to immediately install that customization in multiple other databases, all with one simple command! You will never have to touch schema files again, nor will you have to use other tools to implement and install your customizations. This tool handles all aspects of the data schema, ClearBasic code, resource configurations, forms, user-defined and Clarify lists, stored procedures (as well as every other item you need for a customization).

Browser-Based On-Line Tools

Developers rely on Clarify's data dictionary. But the one shipped with Clarify does not detail your schema customizations. First Choice now makes available a web-based tool that will display a hyperlinked version of your data schema, including your custom objects. Every piece of information you could want is available in just a couple of clicks. In addition, the tools include First Choice's "Forms Dictionary." This set of web pages allow you to see and access every piece of information you could want about Clarify forms, both Clarify and user-defined.

Business-Object (COM) API Toolkits

For almost six years Clarify customers have come to First Choice to help them develop their Clarify systems. Our ClearBasic API toolkits have been used at well over 100 of Clarify's largest customers. First Choice is pleased to announce the availability of 6 different Business Object toolkits with all of the same functions and features as our ClearBasic versions. Business Object API toolkits are now available for ClearSupport, SFA, Field Operations, ClearQuality, ClearLogistics, and Interfaces.

Enhanced Email Out for Clarify

If you're anything like us, you've always wanted some improvements in the base Clarify "Log Email" function. Well now they're available in this new workflow product. This product is a replacement form for the base Clarify Log Email form. It looks and acts just like an

Outlook mail message. It includes features such as: subject line, blind carbon copies, unlimited attachments, full commitment data (not just one line of text), duplicate email address removal, and an address book that can access both Outlook data and the Clarify contact list.

Flashes Anywhere

This new product allows you to add flashes easily to any object in the Clarify system. You can have flashes on cases, parts, change requests (or any other object). You can also associate a flash to as many objects as you want. For example, you might want to have one flash for five different sites and for an account. If you change the text of the flash, it will be changed for all of the objects at once! Finally, you can display flash information on any form in the Clarify system.

New Services

First Choice Software is excited to announce several new services that will enhance your Clarify experience.

First Choice HelpDesk: Clarify-based Support

First Choice has been known, for many years, as a company that provides fast turnaround on the support of our products. We believe that if someone should call, that they need to speak to someone quickly, and have their question or issue addressed promptly. Many of our customers have asked us to provide that same support for Clarify questions that have nothing to do with our products.

We are pleased to announce that we will be offering pay-per-incident support for Clarify questions starting in early April. If you need a question answered right away, or need a small bit of code to show you how to get over that hump, you now have a way to do it, without having to engage consulting services.

Just one phone call to get your questions answered. We will also be offering savings with 5-pack and 10-pack options.

Please contact us for more information and to set up your incident profile.

Training Classes

First Choice has been asked, for many years, to offer a regular line-up of scheduled classes. We can do that now, thanks to the extra space in our new NW Austin facility. We will be offering regular classes in both Advanced ClearBasic programming, and Clarify Business Object programming. Please see our web site for more details and a class schedule.

Custom Training

Need a specialized class tailored just for your company? Contact us to see what we can put together for you.

Web Site

We're pleased to announce that (at long last) our new web site will be up and running in mid-April. Stop by at <http://www.fchoice.com> to see the new look and feel. It includes many new exciting features, including streaming video demos of our products.

Credit Card Orders

Effective in early April, First Choice will accept Master Card and Visa for your orders for pay-per-incident, classes, or products. Many times, particularly for training classes, customers have requested the ability to pay via credit card. Now you can. Please contact our sales department (sales@fchoice.com) for more details.

New Office

We're pleased to announce that in late February we moved to our new facility. It has a lot more space, and allows us to offer in-house training and mentoring services. For those visiting our offices, it is conveniently located across the street from two hotels. Our new address is listed on our web site. More importantly, our phone number and URL haven't changed.

New Partnership Programs

First Choice is introducing a family of new partnership programs called the **Advantage Partner™** programs.

As First Choice has grown (we now have 47 add-on products for Clarify), we have come to realize that some of our customers need more from First Choice than just a vendor that writes great products. And we are expanding our offerings to create programs that reflect the importance of our customer's needs and their increasing investments in First Choice.

As an **Advantage Partner** you can expect benefits such as:

- Discounts on FC products
- Priority customer support, with guaranteed service levels
- Access to "partner-only" products and services, such as the exciting **Interface Builder**
- Discounts on First Choice training classes
- First access to First Choice consulting services
- Partner pricing on First Choice help desk services
- Ability to schedule customized training classes
- A dedicated account manager who is responsible for all aspects of your relationship
- A direct pipeline into our product development process to make your ideas our products

There are different levels of partnership available to allow you to pick the products and services you need. There are also different programs available for end customers and system integrators. Please contact us at sales@fchoice.com for more details of the program that best fits your company and their needs.

What's Coming

This article will focus on the products and services that will be available in the near future from First Choice. We want to make sure that the Clarify community is aware of these items, so they can plan appropriately. For more information about the availability of these items, please contact us.

New Business Object Toolkits

With the release of Clarify 10.0, Nortel has ventured in the JavaBeans world for Clarify Business Objects. Utilizing that base, First Choice plans, in the next two quarters to make our best-selling APIs available on these platforms. We plan on ordering the release of these toolkits based on customer need. So if you have an urgent need for one or more of these toolkits in a particular timeframe, please contact us to help us schedule them to fit your needs.

Multi-Version Upgrade Utility

Have you ever had the need to upgrade multiple versions of Clarify at one time? It can be quite time-consuming, and is error prone. Having to run multiple upgrade scripts is just not something that anyone ever wants to do. And if you ever need to change database systems (Oracle -> SQL Server, or SQL Server -> Oracle), the whole thought of upgrading may make you a little weak in the knees.

First Choice is looking to remove these worries from migrations.

We are currently looking for customers who need to perform such an upgrade to work with First Choice on requirements so we can complete this new tool. If you are interested in participating in this process, please contact us at sales@fchoice.com.

Interface Builder

This exciting new tool, currently in test, will allow you to describe a Clarify customization in our new GUI. You will be able to show data sources, map data, describe validations, all with a few simple screen operations. Then, press a button, and the program will generate the interface for you. Interfaces will support data migrations in or out of Clarify, and the product supports multiple language formats.

Events

This section describes upcoming events where First Choice Software will participate.

First Choice Software will be participating at the partner area of INFORM™ (the Nortel worldwide user group). Come see us at the Sands Convention Center of the Venetian hotel from April 10-12.

We'll be showing the latest applications from First Choice, and look forward to seeing you there.

One lucky reader of this issue of *First View* who is attending INFORM will win a free product from First Choice Software. If you are going to be at the show, just stop by our booth in the partner area, mention this promotion and give us your business card. At the end of the show we'll draw one lucky winner, and they will win a free Clarify add-on product from First Choice Software.

We will announce the winner in the next issue of *First View*.

New Ideas

The idea behind this section is simple. At First Choice Software we are constantly discussing new ideas that we think might be interesting and fun for the Clarify community. We often discuss these ideas with some of our customers, but publishing *First View* gives us an opportunity to get a wider range of feedback on these ideas.

In each version of this newsletter we will present an idea or two that we have been thinking about. Please let us know what you think of these ideas by dropping us an email note at ideas@fchoice.com. If you have an idea that you think would be good for this article, please feel free to email that to us too.

This quarter, we want to get your thoughts about a possible First Choice User Group focused, of course, on using Clarify.

This would be an opportunity for customers to get together for two or three days to discuss issues and ideas about Clarify products, systems, customizations, implementations, First Choice products, etc.

We would intend this user group to be fairly technical – our experiences tend to make us believe that Clarify customers are really looking for such a forum.

We will make sure that there are a large number of technically proficient people attending so that the content will be of huge value to customers. The agenda would be customer-driven, but might include many of the following:

- Customization sessions on how to do what you need
- Programming tutorials for both ClearBasic and Business Objects
- Peer discussions. What issues are important to customers. How to solve them

- Moderated “Birds of a feather” sessions about specific topics of interest to customers
- Performance tuning sessions
- Upgrade issues and how to overcome them
- Case studies of successful customers/implementations
- And, of course, a session on new First Choice Software products

Employee Profile: Gary Sherman

Gary recently joined us from Nortel, where he was a Principal Consultant with the Clarify PSO for the past four years. His focus has been technical consulting, where he specialized in all aspects of customization, including Clear Basic, Clarify Business Objects, Email Management, WebSupport, and Web application development.

Gary implemented some of Clarify's biggest customers, including LendingTree, IBM, Compaq, Sprint PCS, AT&T, and Best Buy.

Prior to joining Clarify, Gary worked for The MathWorks, where he was known as “the Clarify guy,” responsible for all aspects of their Clarify implementation, including system administration, customizations, and upgrades.

With over six years of real-world Clarify experience, Gary brings a wealth of knowledge to First Choice, and we're really excited that he's joined our team. We hope you'll be lucky enough to work with him too.

Technical Corner

This article will contain, in each issue of *First View*, a tip, example, or technique that we have found to be useful at First Choice Software. We will include them, with code examples where appropriate, in the hope that you will find them useful as well.

UDTs: Friend or Foe?

Since the inception of Clear Basic, Clarify has provided the capability for programmers to use a *User-Defined Type*, or UDT. Many customers use UDTs every day, and they can be extremely useful. However, there are some issues involving UDTs that every Clarify programmer should know about. If you don't, you can end up with Clarify GPF'ing often without knowing why. In the worst cases, it can cause data corruption problems.

If you use UDTs, or are planning on querying data from external systems (or from the Clarify ADP tables), you should absolutely read the rest of this article.

Clarify UDTs are very similar to Visual Basic's Types. In fact, they use much of the same syntax. For example, the following is a valid UDT declaration:

```
Type person_type
  first_name As String * 40
  last_name  As String * 40
  phone     As String * 20
  e_mail    As String * 60
End Type
```

Note: The asterisk and number after the String declaration above is the length of the field.

You can now declare variables of this type. For example:

```
Dim a_person      As person_type      \ create a single UDT
Dim my_class(25) As person_type      \ create an array of UDTs

Dim big_group     As New List         \ create a list of UDTs
big_group.ItemType = "person_type"
```

UDTs are useful for a number of tasks in Clarify. The three most common are:

- 1) To group together dissimilar pieces of data into one logical group.
- 2) To query, via SQL, a non-Clarify table. For example, a database table in another system. This is a so-called "reach-through".
- 3) To query the Clarify ADP tables to retrieve and display schema data. Even though Clarify defines the ADP tables, they are not traditional Clarify tables, and cannot be queried via the BulkRetrieve object. First Choice queries the ADP tables routinely in the administrative GUIs for our products.

UDTs are very convenient. You can treat them very much the way you treat the ClearBasic *Record* datatype. You can create them, put them in lists, find them, and use them for grids. The methods you use for UDTs do vary a little bit from the similar methods for database records. The main difference you will see is that the UDT is not set as a return value of the method, but instead is an argument to the method. The other (and perhaps more visible) difference is that the UDT methods all start with the word "get".

For example, if you have the list of UDTs defined above, and you wanted to get the 3rd item from the list and put it in a variable of type *person*, you would use the following statement (remember, lists in Clarify start with index 0):

```
big_group.GetItemByIndex 2, a_person
```

So, let's look at a real-time reach-through example (the 2nd one listed above). The example we'll describe is taken from a real customer that First Choice Software helped go live about two years ago.

The customer is a very large Telco. They have an external customer database with between 30-35 million customers (and it was growing). The external database is the customer master for all of their operations. They were implementing Clarify to deal with their external customer support.

They estimated that very few (maybe 100,000) customers would ever request service in Clarify, and did not want to continually update and store all 35 million contacts in their Clarify database. Thus, they wanted to have a real-time interface from Clarify to the other system. This interface would be called every time they performed a Find Caller operation. It would find all of the matching contacts in the other system, and display them in a grid. The user could select the contact they wanted, and it would then be added to Clarify (or updated if it was already present).

Using the Clarify *SQLDB* object (a standard object used to query external databases), you could write a bit of code to get the data, and place it in a grid:

```
Public Sub get_data(first As String, last As String)

    Dim other_db As New SQLDB           \ DB to connect to
    Dim sql_stmt As String               \ SQL to execute
    Dim ret_list As New List            \ Data list returned

    \ Connect to the DB
    \ Set up the list
    \ Set up SQL
    \ Do the query
    \ Results in grid
    \ Disconnect

    other_db.Connect "server", "db", "user", "password"
    ret_list.ItemType = "person_type"
    sql_stmt = "select first, last, phone, email from " & _
              "customer where first like '" & _
              first & "%'" and last like '" & _
              last & "%'"
    other_db.Select sql_stmt, ret_list
    Cobj_MY_GRID_SOURCE.Fill ret_list
    other_db.Disconnect
End Sub
```

Note: This is a very simplified example to make it not too large for this newsletter. In the real world you would need to perform additional coding (including error trapping).

This all looks very good, and very simple. And it does work. The only problem is that if you use a UDT in this fashion, you're just looking for problems. And you **will** find them.

Since Clarify 4.0 (and the introduction of ClearBasic), the UDT methods have been buggy. The problem is that they are not *extremely* buggy, and it is sometimes hard to connect that your UDT methods are causing the corruption and crash problems that you have elsewhere in your Clarify client. Many of the methods, particularly the methods that involve filling grids, selecting rows from grids, and updating grids, both leak memory, and sometimes overwrite memory areas.

If a memory overwrite happens to write to an area of memory you are not using, you are unlikely to see a problem. If the overwrite occurs in an area that contains your data, you can end up with a data corruption. If the overwrite occurs (as it often does) in the stack area, you can easily have a GPF. These GPFs often occur when you are either loading or unloading a form, or when you leave Clarify.

The big problem with these crashes is that they are brutally difficult to debug. They keep happening in different places, and they can often be sporadic, defying regular debugging methods.

So, the question is: If the UDT methods are the only good way to get external data, and they can be quite buggy, how can you get the external data?

The answer is: Quite easily. If you use a very simple trick, getting external data is a breeze. It's not an idea that occurs to a lot of programmers, but it works and is very easy to implement.

The trick is to make the source of your grid not a list of UDTs, but a list of *records*. Now, of course the data you have does not map to a Clarify table's schema, but it doesn't really have to. You are not really going to copy these records into the database, you're just using them as a place to hold (and display) data in the grid.

All you need to do is to pick a record type from the Clarify database (or from your user-defined tables) that has enough fields (of the right types and of the right lengths) to be able to hold all your data. Then you define the source contextual object for the grid to be of that record type. When you get the data from the SQLDB.Select call (a method that thankfully does **NOT** have memory issues), you simply iterate through the list of returned records, build up a list of new database records, and then fill that list into the grid.

The database record type you pick is arbitrary. To illustrate that point, I will use the *address* record in my example (clearly, the contact table would make more sense in a real-world implementation). Assume that we've defined the contextual object for the source of the grid to be of type address. The following code could be used to fill it:

```
Public Sub get_data(first As String, last As String)

    Dim other_db As New SQLDB           \ DB to connect to
    Dim sql_stmt As String               \ SQL to execute
    Dim ret_list As New List            \ Data list returned
    Dim addr_rec As Record              \ Addr rec for list
    Dim addr_lst As New List            \ List for grid
    Dim loop_int As Integer             \ Looping integer
    Dim a_pers As person_type           \ Each UDT from DB

                                        \ Set up list type
                                        \ Connect to the DB
                                        \ Set up return list
                                        \ Set up SQL
                                        \ Do the query

    addr_lst.ItemType = "record"
    other_db.Connect "server", "db", "user", "password"
    ret_list.ItemType = "person_type"
    sql_stmt = "select first, last, phone, email from " & _
              "customer where first like '" & _
              first & "%'" and last like '" & _
              last & "%'"
    other_db.Select sql_stmt, ret_list

                                        \ For each person...
                                        \ Get from results
                                        \ Build new address
                                        \ Set fields
                                        \ Add to addr list

    For loop_int = 0 To ret_list.Count - 1
        ret_list.GetItemByIndex loop_int, a_pers
        Set addr_rec = New Record
        addr_rec.RecordType = "address"
        addr_rec.SetField "address", Trim$(a_pers.first_name)
        addr_rec.SetField "state", Trim$(a_pers.last_name)
        addr_rec.SetField "city", Trim$(a_pers.phone)
        addr_rec.SetField "address_2", Trim$(a_pers.e_mail)
        addr_lst.AppendItem addr_rec
    Next loop_int

                                        \ Results in grid
                                        \ Disconnect

    Cobj_MY_GRID_SOURCE.Fill addr_lst
    other_db.Disconnect
End Sub
```

While this is a bit more code than the first example, and it takes a little bit longer (but not too much!!), because you have to iterate through the returned results to build up the list of addresses, it is safe, and will keep your application from crashing.

It also seems a bit silly to put the first name in the address field, and the phone number in the city field, but why not?? It works just great, and the user cannot tell the difference. After all, the (fake) address records are never going to be put into the database, so there is no harm whatsoever.

Note: Each time through the loop you must allocate a new address record, and set the fields for it before putting it into the list. If you don't do this, you could end up with only one record in the list!!

Remember, that when you get records from the grid (for example, when someone double-clicks a row) that you are getting a record of type *address*. You must use the *GetField* method to get the appropriate data.

Hopefully this little trick will help you either now or in the future. Our rule of thumb about UDTs at First Choice is this: If you need to use a UDT to get data, get it out of the UDT as quickly as you can, and into a record.

If you would like to download a working copy of the customization described in this article, you may do so from <http://www.fchoice.com/download/firstview1.zip>.

Clarify is a registered trademark of the Nortel Networks Corporation.