

Introduction

The BoxSoft SuperImportExport templates allow you include ad hoc import and export support in your applications. This provides a simple interface to your users for importing new data to your system from another file format, or exporting existing data for use in other software packages. The real benefit is that your users can control which fields are import and exported, the order of the fields, and their format pictures. The file format is the standard comma-delimited ASCII (*.CSV), made popular by the BASIC programming language. It is equivalent to Clarion's BASIC file driver. Here is a sample export file:

```
"Inv:Date", "Inv:CusNo", "Inv:Address1", "Inv:Address2", "Inv:Address3"
" 1/01/95",1,"123 Main St.", "Unit 10", "Toronto"
" 1/02/95",1,"15 Park Street", "", "North York"
" 1/03/95",2, "", "", ""
```

There is also an extension template that you can use in conjunction with Clarion's Process procedure template to quickly and easily setup a copy operation from one file to another. This can be used to export, archive, etc.

ABC and Legacy Template Chains

This documentation pertains to both the ABC and Legacy (a.k.a. "Clarion") Super Template sets. In some situations we've implemented features in ABC that are not in Legacy, primarily because the old template chain was to be phased out. Due to customer pressures, however, Soft Velocity decided to reinstate support for the Legacy/Clarion chain.

Some of the Super Template features that are only in the ABC chain would be very difficult to implement in the legacy chain. However, we'll attempt to do this wherever it seems feasible to us. We apologize if this causes you any inconvenience. Please feel free to contact us if there's a particular feature in ABC that you would like to see in the Legacy chain, and we'll see if your needs can be accommodated.

For more information, see the following topics:

- [Adding SuperImportExport to your Application](#)

 - [Global Extension Template](#)

 - [ImportBasic Procedure Template](#)

 - [ExportBasic Procedure Template](#)

 - [FileCopy Extension Template](#)

- [Example Programs](#)

- [Function Reference](#)

RTFM Warning!!!

It is very important that you read this documentation. If you follow the instructions step-by-step, then the usage is very simple. It is almost IMPOSSIBLE if you try to do it on your own!

Installation

Install the Files

Once you've finished running the installation program, you should see the following structure under your Clarion directory:

```
C:\CLARION
+-BIN          ST_*.HLP, ST_*.CNT, STAB_CNV.DLL
+-TEMPLATE    STAB_*.TPL, STAB*.TPW          (ABC templates)
|             STCL_*.TPL, STCL*.TPW          (Clarion templates)
+-LIBSRC      STAB*.INC, STAB*.CLW, STAB*.TRN  (ABC templates)
|             STCL*.INC, STCL*.CLW, STCL*.TRN  (Clarion templates)
+-CONVSRC     STAB_CNV.*
`-SUPER
  +-DOC       *.HST (Revision History), ST_*.PDF (Documentation)
  +-IMAGES    *.ICO, *.CUR, *.WMF
  +-SRC_ABC   *.TXD, *.TXA, *.DCT (Source)      (ABC templates)
  +-SRC_CLA   *.TXD, *.TXA, *.DCT (Source)      (Clarion templates)
  +-EX_ABC    *.DCT, *.APP, *.TPS (Examples)    (ABC templates)
  +-EX_CLA    *.DCT, *.APP, *.TPS (Examples)    (Clarion templates)
```

Product Abbreviations for Filenames

AEQB	Super QuickBooks-Export (i.e. Accounting-Export QuickBooks)
BRW	Super Browse
DIA	Super Dialer
FF	Super Field-Filler
IE	Super Import-Export
INV	Super Invoice
LIM	Super Limiter
PCD	Super Passcode
QBE	Super QBE
SEC	Super Security
TAG	Super Tagging
MHSTF	Super Stuff (a.k.a. The "MikeHanson" Templates)

Update the Redirection File

After the files are installed, you must update your Redirection file to update the *. * entry. You can do this using the "Setup / Edit Redirection File" pulldown menu option. The entry should look like this:

```
*. *      = .; %ROOT%\examples; %ROOT%\libsrc; %ROOT%\images;
           %ROOT%\template; %ROOT%\convsrc;
           %ROOT%\super\images
```

There *.RED examples in the SUPER\DOC directory.

Register the Template

Clarion allows you to have multiple template sets accessible in the same application. It does this with the Template Registry. To use a Super Template, you must register it first.

1. Load Clarion, then select the "Setup / Template Registry" pulldown menu option.
2. Press the [Register] button.
3. Select C:\CLARION\TEMPLATE\STAB_*.TPL (ABC) or STCL_*.TPL (Clarion). The directory name may not exactly match your system.

Assuming this all went without a hitch, you're ready to start using the template.

Adding Import and Export to your Applications

The SuperImportExport templates are actually a combination of templates and functions. The templates should handle all interfacing with the functions, so you should never have to call them yourself. If you are adventurous, though, you can certainly give it a try. (For more information on this, see [Function Reference](#).)

To add the SuperImportExport templates to your application, you must begin by adding the [Global Support](#) extension template. (If you are only using the FileCopy extension in a given APP, then you don't need this global extension.)

Once you've done this, you can proceed to add one or more of the [ImportBasic](#), [ExportBasic](#), and [FileCopy](#) templates.

Global Extension Template

This template generates the `S_IMPEXP.CLW` module. There are various options you can use to control the behavior of the system. If you are creating a multi-APP system, then most of these options will be available only in the base APP.

General Tab

Maximum Limits - These limits control internal variables used by the functions. The smaller you can make them, the smaller your program will be.

Record Size - This is the largest allowable import/export record. The maximum is 64,000. The default is 16,000. Remember that this is a variable length record, so information takes less space than it would in a corresponding fixed length record.

Field Size - This is the largest allowable field. The maximum is 16,000. The default is 4,000.

Field Count - This is the largest number of export fields. The default is 255.

Delimiters - These entries control how the BASIC record is formatted. You can specify a constant string, or a variable preceded by an exclamation point. The record delimiter is a CR+LF, and cannot be changed.

Field Delimiter - This separates the individual fields. The default is a comma (,). There is no field delimiter before the first field or after the last field.

Quote Character - This is used to surround alpha-numeric fields and formatted picture fields (like dates). The default is a double quote (").

Use Quotes for exporting all field types - Do you want all fields (including numbers) surrounded by quotes?

International Support:

Use Comma for Decimal - This is a conditional expression. If you want comma used for decimal points, this expression should be True. The default is "False". If this is true, all numbers will be exported enclosed in quotes, to prevent confusion with virtually all programs that read CSV files.

Import Message Tab

Import File Dialog - This dialog is presented to the user if you don't specify a specific import file when you create an ImportBasic procedure. The user is allowed to use the standard `FILEDIALOG()` to choose the input file. You can control the title, as well as the file type description and masks for "Import Files" and "All Files". The default mask for import files is `"*.CSV"`.

"File is Empty" Message - This message is displayed if the file that the user chooses is empty.

Export Message Tab

Export File Dialog - This dialog is presented to the user if you don't specify a specific export file when you create an ExportBasic procedure. The user is allowed to use the standard `FILEDIALOG()` to choose the output file. You can control the title, as well as the file type description and masks for "Export Files" and "All Files". The default mask for export files is `"*.CSV"`.

AskPicture Message Tab

"Enter Picture" Window - This window is presented to your user when they press the "Picture" button on the ImportBasic and ExportBasic windows. All @S pictures are treated as unformatted strings with an unlimited length, and all @N pictures are treated as unformatted numbers. The only error checking that the system does is to see that the first character of the picture is an "at" sign (@).

You may specify the title for the screen, the field prompt, and the text for the OK, Cancel and Help buttons.

The Help button will be generated only if you specify a "Help Topic". This must be a topic within your own help file. The easiest thing to do is to cut and paste the text from the existing Clarion help files.

"Picture Needs @" Error Message - This message box is displayed if the user attempts to enter a picture that doesn't have the "at" symbol (@) as the first character.

User-controlled Import from a BASIC file

(ImportBasic Procedure Template)

This procedure template allows your users to import data from a comma-delimited ASCII file into one of your data files. The field assignments are decided by the user at run-time. They can also specify the deformatting picture.

The user can preview import records to determine which import fields are to be matched to the target fields. They can also strip the first record, in case it contains field names. If the output came from the same program and the field names match, then you can also "auto assign" the import fields to the target fields using the values from the first import record.

NOTE: When adding the new procedure, be sure to select the procedure template from the "Default" tab.

Once you have created your ImportBasic procedure, you must specify the target file. You do this using the [Files] button on the procedure properties window. Related secondary files are not supported by this template.

The default window contains the following controls:

Import Field List Box - This list box contains a separate entry for each field found in the import file. Beside each field is the picture. (For @S fields they will see "Alpha-num", for @N fields they will see "Numeric", and for all others they will see the actual "@..." picture.) Beside the picture is the value of the field in the current import record. If the first record in the import file contains field names, then the first values that the user sees will be these names. This can make it very handy for assigning the import fields to the target fields. They can press the [Next] button to view other records in the import file. As you move the highlighter bar over Import Fields that have been assigned to Target Fields, the Target Field list box will move its highlighter bar to the corresponding entry. You should not remove this list box.

Target Field List Box - This list box shows which import fields will be assign to which target fields. (The fields that are available here are controlled by the Include and Exclude options behind the [ImportBasic Properties] button on the procedure properties window). As you move the highlighter bar over Target Fields with assigned Import Fields, the Import Field list box will move its highlighter bar to the corresponding entry. You should not remove this list box.

[Next] Button - This button causes the next record to be read from the import file and displayed in the "Import Fields" list box. If the user reaches the end of the file, then the [Next] button is disabled. If desired, you may remove this button.

"Rec #" and "RecordNumber" Strings - These display the current import record number. This is for information purposes only, and it has no effect on the import process. If desired, you may remove these strings.

[Picture] Button - This button calls the picture entry window for the currently highlighted Import Field. This picture will be used to deformat the import field. This is especially useful if the import field is a formatted date. If desired, you may remove this button.

[Assign] Button - This assigns the currently highlighted Import Field to the currently highlighted Target Field. You should not remove this button.

[Auto] Button - The full name for this button is "Auto Assign". It is only available when the first import record is displayed. If the field names from the import header record happen to

match your target fields, then you can automatically assign anything that matches. If desired, you may remove this button.

[Unassign] Button - This button clears the assignment for the currently highlighted Target Field. You should not remove this button.

"Strip header record (field names)" Check Box - This controls whether the first record of the import file is ignored. If the user presses the [Auto] button, then this defaults to true. You should not remove this control.

[OK] Button - This begins the import process. You should not remove this control.

[Cancel] Button - This cancels the import process. You should not remove this control.

[Help] Button - This calls the help window. You must set-up the help topics yourself. If desired, you may remove this control.

The rest of the settings are behind the [ImportBasic Properties] button on the main Procedure Properties window. They are as follows:

Import File Tab

Import Filename - You can allow the user to choose the filename at run-time, or you can specify the filename yourself. If you specify the filename here, you can provide a constant string, or a variable preceded by an exclamation point.

Quick-Scan Records - Turning this on will speed up the import. The file is opened ReadOnly+DenyWrite, so there is almost no benefit to turning it off.

Record Filter - This filter expression is tested after the import fields have been assigned, but before the record has been added. If the expression is false, then the record is skipped.

"No Import Fields Selected" Message - This message is displayed if the user presses the [OK] button before assigning any of the import fields to the available target fields.

Target File Tab

Always empty target before starting - If you turn this on, then the target file will be emptied every time you run the import. You can specify whether the file should be closed, created then re-opened, or locked, emptied then unlocked.

Prime fields using Dictionary settings - Do you want to enforce the dictionary priming settings for the file?

Handle Insert (or Update) code manually - If you turn this ON, you'll be expected to issue the necessary Insert/ADD statement yourself (or update existing records if applicable). It will be left completely up to you. The template will continue to process the import records and assign the field values, but the rest is left up to you.

Handle errors manually with TryInsert - This is similar to the previous setting, except that the template will attempt to add the record with TryInsert, and then you're responsible for handling any errors.

Determine new auto-numbers for target - If you turn this on, then the template will use the dictionary information to auto-number each new record added to the target file.

Depending on your settings above, a bit of sample code will appear. You can use this to help determine which combination of settings best suits your needs.

Include Tab

Here you can specify individual fields from the target file that will be presented to the user. This overrides your settings for "dictionary auto-populate" and "exclude groups" on the "Exclude" Tab. The template automatically includes all fields, so this is necessary only as an override against automatic exclusions.

If you want to specify a dimensioned field, it is treated like a group in the pop-up window. You must expand its tree node before selected the desired array element.

Exclude Tab

Use "Auto-populate" options from dictionary - This tells the template to check your dictionary to determine which fields that the user shouldn't see. Individual fields can be overridden on the "Include" tab.

Automatically exclude GROUPs - This tells the template to exclude any GROUP fields that it finds in your file. Individual groups can be overridden on the "Include" tab.

Individual Fields - This list box contains any additional fields that you wish to exclude. If you want to specify a dimensioned field, it is treated like a group in the pop-up window. You must expand its tree before selected the desired array element.

User-controlled Export to a BASIC file

(ExportBasic Procedure Template)

This procedure template allows your users to export data from your system to a comma-delimited ASCII file. The user can specify the fields to be exported, the field order within the record, and the formatting picture. They can also specify whether to include a header record with the field names.

This procedure template is actually a superset of Clarion's Process procedure template. All of the same settings and embeds are available. This means that you can specify a series of related files under your primary file to create a complex view of your system (e.g.: Customer-Invoice-InvItem-Product-Supplier). The main difference is that there is one extra object: the WindowManager is regular one (like a Form), while the ExportManager plays the part of the ProcessManager. The ExportManager is not called until the WindowManager tells it to proceed.

NOTE: When adding the new procedure, be sure to select the procedure template from the "Default" tab.

The default window contains the following controls:

All Fields List Box - This is a list of all fields available for export. The fields that are available here are controlled by the Include and Exclude options behind the [ImportBasic Properties] button on the procedure properties window. This list box supports the complete windows style marking for highlighting fields. You should not remove this control.

Export Fields List Box - This is a list of the fields that will be exported, in order of placement within the export record. As you move from entry to entry, the "Picture" box will display the output format. This list box supports the complete windows style marking for highlighting fields. You should not remove this control.

[Add ->] Button - This button copies the currently highlighted fields from the "All" list box to the "Export" list box. If some of the fields are already in the Export list box, then they will be left in their pre-existing positions, although they will be highlighted after the operation. You should not remove this control.

[Remove] Button - This button removes the currently highlighted fields from the "Export" list box. You should not remove this control.

[Shift Up] Button - This button shifts the currently selected Export field up one position. If desired, you may remove this button.

[Shift Down] Button - This button shifts the currently selected Export field down one position. If desired, you may remove this button.

[Picture] Button - This button calls the picture entry window for the currently highlighted Export field. This picture will be used to format the field in the export file. This is especially useful if the import field is a formatted date. If desired, you may remove this button.

Picture Box and String - This displays the format picture for the currently highlighted Export field. If desired, you may remove these two controls.

"Include header record with field names" Check Box - This controls whether the first record of the export file will be populated with the field names. You should not remove this control.

[OK] Button - This begins the export process. You should not remove this control.

[Cancel] Button - This cancels the export process. You should not remove this control.

[Help] Button - This calls the help window. You must set-up the help topics yourself. If desired, you may remove this control.

There are a number of settings behind the [Process Properties] button. These are identical to a regular "Process".

The rest of the settings are behind the [ExportBasic Properties] button on the main Procedure Properties window.

General Tab

Export Filename - You can allow the user to choose the filename at run-time, or you can specify the filename yourself. If you specify the filename here, you can provide a constant string, or a variable preceded by an exclamation point.

"No Export Fields Selected" Message - This message is displayed if the user presses the [OK] button before adding any fields to the export fields list.

Include Tab

Here you can specify which fields from the source view will be presented to the user. This overrides your settings for "dictionary auto-populate" and "exclude groups" on the "Exclude" Tab. The template automatically includes all fields, so this is necessary only as an override against automatic exclusions.

You can also specify an alternate description for the field. This will be shown at run-time instead of the field name itself.

Exclude Tab

Use "Auto-populate" options from dictionary - This tells the template to check your dictionary to determine which fields that the user shouldn't see. Individual fields can be overridden on the "Include" tab.

Automatically exclude GROUPs - This tells the template to exclude any GROUP fields that it finds in your file. Individual groups can be overridden on the "Include" tab.

Individual Fields - This list box contains any additional fields that you wish to exclude.

Classes Tab

This contains the standard ABC class settings. As a default, the ExportManager is called "Export".

Copy Records from One File to Another

(FileCopy Extension Template)

This template is used to extend Clarion's Process template to copy records from one file to another. The source is the view (primary and secondary files) specified for the process. The target is a single file from your dictionary.

This template has two major benefits which make it much faster than hand-coding:

1. All matching field names are automatically assigned. This is especially helpful if you add new fields to the source and target files, but forget to edit your source code. The template doesn't forget to add the new fields.
2. Auto-numbering of the output is fully supported. This can be very complicated to write by hand.

Remember that you are working within a process template. This means that you can use this to archive records by telling the Process to DELETE the source records. Or you could set an "Archive" field in your source file and tell the process to PUT the source records.

Once you add the FileCopy extension to your Process, you must specify the target file behind the [Files] button. After that, you can go onto the FileCopy extension's various settings:

General Tab

Always empty target before starting - If you turn this on, then the target file will be emptied every time you run the process. You can specify whether the file should be closed, created then re-opened, or locked, emptied then unlocked.

Prime fields using Dictionary settings - Do you want to enforce the dictionary priming settings for the file?

Handle Insert (or Update) code manually - If you turn this ON, you'll be expected to issue the necessary Insert/ADD statement yourself (or update existing records if applicable). It will be left completely up to you. The template will continue to process the import records and assign the field values, but the rest is left up to you.

Handle errors manually with TryInsert - This is similar to the previous setting, except that the template will attempt to add the record with TryInsert, and then you're responsible for handling any errors.

Determine new auto-numbers for target - If you turn this on, then the template will use the dictionary information to auto-number each new record added to the target file.

Include Tab

Automatically match field names - This tells the system to look for matching field names between the source and target fields. For any fields that don't match, you can manually assign them using the Individual Fields list box, or the "After Assign Target Fields" embed point.

Individual Fields - This list box contains any additional fields that you wish to include. This overrides the "exclude groups" setting if the field is a group.

For each field you specify both the source and target, so you can use this to manually override a field assignment, when two fields have the same name but do not contain the same information.

If you want to specify a dimensioned field, it is treated like a group in the pop-up window. You must expand its tree before selected the desired array element.

Exclude Tab

Automatically exclude GROUPs - This tells the template to exclude any GROUP fields that it finds in your file. Individual groups can be overridden on the "Include" tab.

Individual Fields - This list box contains any additional fields that you wish to exclude. This overrides any fields automatically matched by name.

If you want to specify a dimensioned field, it is treated like a group in the pop-up window. You must expand its tree before selected the desired array element.

Example Program

There is an example program in the `SUPER\EXAMPLES\IMPEXP` directory. It demonstrates all of the ImportExport templates using two data files: Invoice and ArchiveInvoice. The ArchiveInvoice has one extra field, ArchiveDate. Other than that, the two files are identical.

First take a look at the contents of the Invoice and ArchiveInvoice files. Then use the FileCopy sample to copy records from Invoice to ArchiveInvoice. This example does not delete the records from the Invoice file.

Then use the ExportBasic sample to create a TEST.CSV. Load TEST.CSV into Notepad to see what it looks like.

Finally, use the ImportBasic sample to import the TEST.CSV back into the Invoice file. As you browse the Invoice records, you'll see that the new records have been assigned their own auto-numbers.

Function Reference

There are six functions generated by the SuperImportExport template:

ImportBasic_OpenFile (<Filename>), LONG

This function opens the import file and issues the SET command. If the optional filename is omitted, then the user will be presented with the `FILEDIALOG()` to choose a file. The function returns the file size, in bytes. If the file cannot be found, the function returns zero (0).

ImportBasic_CloseFile ()

This procedure closes the currently open import file.

ImportBasic_ResetFile (QuickScan)

This procedure issues the SET command on the currently open import file to reset processing to the beginning of the file. If the QuickScan parameter is True, then quickscan will be turned on.

ImportBasic_NextRecord (), LONG, PROC

This function reads the next record from the import file into the import record buffer. It is not yet parsed. The return value is the number of bytes read. If the record is not available (i.e.: end of file or error), the function returns zero (0). This function can also be called as a procedure (if you already know that the record is there).

ImportBasic_ResetRecord ()

This procedure resets the field parser to the beginning of the record (i.e.: field #1).

ImportBasic_NextField, BYTE ()

This function parses the next field from the import record buffer. The current state of the field is unformatted (i.e.: the picture has not been applied). The function returns one (1) if it's a string field, two (2) if it's a number, or zero (0) if there are no more fields. The field's value is stored in `G::ImportExport_Field`.

ImportBasic_DeformatField (Picture)

This procedure deformats the field buffer using the picture parameter. The resulting value will be stored in `G::ImportExport_Field`. Only pictures other than @S and @N are applied. Repeatedly calling `ImportBasic_DeformatField()` for a single field has no additional effect.

ExportBasic_OpenFile (<Filename>), BYTE

This function creates the export file, opens it, then issues the SET command. If the optional filename is omitted, then the user will be presented with the `FILEDIALOG()` to choose a new file. The function returns True (1) if the operation is completed, or zero (0) if the file cannot be opened or the user aborted.

ExportBasic_CloseFile ()

This procedure closes the currently open export file.

ExportBasic_ClearRecord ()

This procedure clears the export record to begin formatting individual fields.

ExportBasic_AppendField (Field, Picture, <IsFieldName>)

This procedure appends a formatted field to the existing export record. If the picture is "@S...", then no formatting is performed (other than bracketing with the quote characters). If the picture is "@N...", then no formatting is performed. (The quote character are not added to a number field.) Otherwise, the picture is used with the FORMAT command, and the result is surrounded with the quote characters. If you are formatting a header record with field names, you can include "True" as the third parameter to convert array punctuation [,] to a more standard format.

ExportBasic_AddRecord (), BYTE

This function writes the current export record buffer to the file. If successful, it returns True (1). Otherwise, it returns False (0).

ImportExport_AskPicture (OldPicture), STRING

This function presents the "Enter a Picture" window so that the user can enter a new picture for the currently highlighted import or export field. The parameter is the old picture. The return value is the new picture, or an empty string (") if the user aborts. The only validity checking that is performed is to ensure that the picture begins with the "at" sign (@). For more information, see [Global Support Extension Template](#).

Troubleshooting

Problem: After creating a new ImportBasic or ExportBasic procedure, there is no default Window structure.

Solution: When adding the new procedure, be sure to select the procedure template from the "Default" tab.

Contacting Technical Support

If you have any troubles with this product, then please contact:

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