UNIT 4 BUSINESS SOFTWARE

EMBRACING CHANGE
Business World Custom Solutions

Generic Export File Creator

Configuration Guide

Version March 2018

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1 Introduction

This document provides a guide for the configuration of the Generic Export File Creator (GFC) on a 'UNIT4 Business World' (Business World) system.

Installation of this customisation is detailed in a separate Installation Guide.

As the name suggests GFC is utility for creating export files in various formats with user-definable content. This utility is implemented as three Business World server processes.

Each of the functions available in this customisation is classified as "basic usage", "advanced usage" or "restricted usage". The restricted usage functions are so called because any exports created using them may or may not be supported by UNIT4.

The following paragraphs describe these functions regardless of how they are classified.

 Note that on a Business World system provided as "Software as a Service" (SaaS) some of GFC's functions are either not available or operate differently, due to restrictions imposed by UNIT4 on a SaaS-hosted system for quality assurance purposes.

You can define the content of the file (or "data-source") by:

- An Business World Browser template
  - You define which browser template to use.
  - Each visible column in the results tab of the template will be a field in the file.
  - The fields will be in the same order as the columns in the results tab of the template.
  - When field names are required they will be the same as the column headings of the results tab of the template, except that the names of descriptions will appear as "*columnName* Text" rather than the more usual "*columnName* (T)".
  - In some cases the values stored on the 'SearchC' tab of the template can be overridden when it is executed
- A database table or view
  - You define the name of the table or view to use.
  - You can define:
    - That each column in the table or view will be a field in the file, except that in the case of a table you can say that you don't want the "agrtid" column to be included or,
    - The list of columns from the table or view that will be fields in the file.
  - The fields will be in the same order as the columns in the table or view, or the column list that you provide.
  - User-specified criteria can be supplied to limit the table or view rows that will appear in the file.
  - A user-specified sort order can be supplied to write the table or view rows to the file in a particular order
  - When field names are required they will be the same as the column names of the table or view.
- An Business World AG16 query
  - This is not available on a SaaS-hosted Business World system.

- You define the AG16 query and which table created by the query to use as the data-source.
- Each column in the table will be a field in the file, except that you can say that you don't want the "agrtid" column to be included.
- The fields will be in the same order as the columns in the table.
- A user-specified sort order can be supplied to write the table rows to the file in a particular order
- When field names are required they will be the same as the column names of the table.
- **N.B.** Please read the warnings in sections 5 and 5.1 regarding the using of AG16 queries.

The export file created:

- Can be suppressed if it would contain no data apart from header records and/or footer records.
- Will be either:
  - A "snapshot" that contains a line for each row in the data-source
  - Or a "delta" that only contains lines for those rows in the data-source that are new or have changed since the last run. Rows that have been deleted (a rare occurrence in Business World) are only indicated by their absence from the file.
- Will have user-specified "character encoding": this can be any valid "code page", but "ASCII", "UTF-8" and "UTF-16" are provided as shortcuts to three of the most popular code pages:
  - If "UTF-8" or "UTF-16" encoding is used then a Byte Order Mark (BOM) can optionally be included,
  - If "UTF-16" encoding is used then the encoding can be either Little-Endian or Big-Endian: http://en.wikipedia.org/wiki/UTF-16#Byte_order_encoding_schemes.
- Can have an optional first line containing the field names.
- Can have an optional header record.
- Will contain one line for each eligible (see "snapshot" or "delta" above) row in the data-source.
- Will have on each line one field for each column in the data-source. Every line in the file will have the same number of fields on it, the only exceptions being:
  - Header and footer records,
  - XML files in which empty nodes are being omitted.
- Can have an optional footer record.
- Will have a user-definable name.
- The header record, footer record and file name can optionally include "tags" to allow elements that are available at runtime to be included, such as 'client', 'orderno', process parameters, etc.

The format of the data in the file can be:

- A Character-Separated-Value file ("csv")
  - You can specify that the first line of the file contains the field names or a header record.

- You can define the character by which field values will be separated.
- You can define the character that the values of fields that are defined as CHAR, VARCHAR or STRING are enclosed in, the default is a speech mark (").
- You can specify that this text enclosing character is only used on field whose value contains one or more field separating characters or text enclosing characters (emulating Microsoft Excel's "CSV" file format), e.g.

A value of	abcde123	will not be enclosed.
A value of	abc,de12	will be enclosed if the separating character is a comma.
A value of	abc"de12	will be enclosed if the enclosing character is " (the treatment of the " depends on the setting in the next bullet, in Excel they are "doubled-up").

- If a text field value (or column name) contains the character that it is enclosed in then the embedded characters can either be removed or "doubled up", e.g.

database value	O'Reilly
enclosing character	'
field value	either 'OReilly' or 'O''Reilly'.

- If no text enclosing character is being used you can specify what to replace field separating characters embedded in text fields with. This can be a single character or a zero-length string, the latter will remove the offending character(s).
- You can specify that the last line of the file contains a footer record.

- A Tab-Separated-Value file ("tsv")
  - You can specify that the first line of the file contains the field names or a header record.
  - Field values will be separated by the non-printing "$^{H}_{T}$" (or Tab) character, for the avoidance of confusion this is the character whose ASCII code is 9.
  - No changes will be made to field values or field names.
  - You can specify that the last line of the file contains a footer record.
- A Fixed-Width-Value file ("txt")
  - You can specify that the first line of the file contains the field names or a header record. Note that if the first line contains field names and a field's name is longer than its width then its name will be truncated.
  - Each field will be the same width on each line; these widths are defined by the column information in the data-source.
  - No changes other than truncation will be made to field values or field names.
  - You can specify that the last line of the file contains a footer record.
- An Extensible-Markup-Language file ("xml")
  - You can specify the name and attributes (if any) of the "root" node of the XML.
  - You can specify a header record.
  - You can specify the name and attributes (if any) of the "line" node which will be wrapped around each line of the file.

- Each line will contain an element for each field, whose name is the column name in the data-source.

 There are strict rules[1] about what makes a valid XML element name. So if your data-source contains one or more columns whose names would not be valid element names then GFC will rename these elements in an attempt to make them valid.

- You can specify a footer record.
- A file generated by this customisation could therefore look something like this

```
<?xml version="1.0" encoding="UTF-8"?>
<Root xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
<Header />
<Line><Col1>Value11</Col1><Col2>Value21</Col2></Line>
<Line><Col1>Value12</Col1><Col2>Value22</Col2></Line>
<Line><Col1>Value13</Col1><Col2>Value23</Col2></Line>
<Footer RecordCount="0003" />
</Root>
```

Where

  - "`Root xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"`" is the name and attribute of the root node that was provided.
  - "`Header`" is the value of the header record provided, if no value is specified then this line will not appear in the file
  - "`Line`" is the value of the line node used if one is not provided by you.
  - "`Col1`" and "`Col2`" are the names of the two columns in the data-source.
  - "**`Value11`**", "**`Value12`**" and "**`Value13`**" are the values of `Col1` on each of the three rows in the data-source.
  - "**`Value21`**", "**`Value22`**" and "**`Value23`**" are the values of `Col2` on each of the three rows in the data-source.
  - "`Footer RecordCount="<recCount 4>"`" is the value of the footer record provided, if no value is specified then this line will not appear in the file

- Element values will have any XML reserved characters converted to their entity equivalents to avoid the XML becoming badly-formed due to the data stored in it:

Character	Entity
&	&amp;
<	&lt;
>	&gt;
"	&quot;
'	&apos;

- You can specify that nodes with no value can be shown either:
  - In verbose form e.g. "`<Col2></Col2>`",
  - In compressed form e.g. "`<Col2/>`",

[1] See section 4.6 for more details

        - Or omitted completely.
    - You can also specify an 'Extensible Stylesheet Language Transformations' (XSLT) file that can transform the generated "simple" XML into something else, such as: XML with a more complex structure, HTML, text files with complex structures, etc.

 Please read the warnings in sections 5 and 5.2 regarding the use of XSLT.

A "history table" can be created in the Business World database to record the data exported by each run of the export, for auditing purposes. This table is optional if "snapshot" files are being created and mandatory if "delta" files are being created. The history table will record a user-definable number of days of history.

An optional "specification file" can be generated for the file being exported; this file will give you a document that describes various aspects of the file created. Although this document is written in XML, if you open it in a web browser, you will see a user-friendly rendition of it. Although specification files are written in XML they can describe export files in any of the four supported formats (csv, tsv, txt or xml), see section 4.9 for details.

You can also edit a generated specification file and "feed" it back into the GFC variant that created it in order to modify certain aspects of files created subsequently, i.e.

- The number of fields in the file,
- The order in which the fields appear in the file,
- The width of the fields in the file,
- The format of the fields in the file.

2 Initial Configuration

Before using this customisation for the first time you must carry out certain set up activities in your Business World system.

This activity falls into the following categories:

- Connect the customisation to the Query Engine web service,
- Restrict access to the personal menu items.

2.1 Connect the Customisation to the Query Engine

This customisation uses the standard web service 'Query engine service V2006 (.Net)' to run Business World Browser templates, so if you wish to use the **Personal Menu ► Generic export file creator ► Create export file from a browser template** process (GFC01) then you must carry out the actions in this section, otherwise jump to section 2.2.

In order to use the Query Engine web service the following things need to be done:

1. Determine the address (or endpoint) of the web service and make sure it has been published.
2. Elect an ABW user that will be used to call the web service.
3. Give that user access to the web service.
4. Tell the customisation the endpoint of the web service and the name and password of the user to use.

2.1.1 Determine the Endpoint of the Web Service

It is probably best if you ask your system administration team to do this for you. However if you have unrestricted access to your system you may be able to determine this yourself as follows:

Carry out the following tasks in the Business World Management Console on the Business World Web Server

1. Log in to the appropriate Backoffice DataSource.
2. Navigate to ***datasourcename*** **► Features ► Web Applications ► Default Web Site ► BusinessWorld-webservices** (or similar), if there is no 'BusinessWorld-webservices' node then you must ask your system administration team to create one.
3. Starting at the 'BusinessWorld-webservices' node navigate to **Web Services** and look for a row for '**QueryEngineV200606DotNet**' in the 'Web Services' pane in the centre , if there is no 'QueryEngineV200606DotNet' row then you must ask your system administration team to publish this web service.
4. Click on the 'QueryEngineV200606DotNet' row and in the 'Actions' pane on the right pane you will see a 'Test' button.
5. Click on the 'Test' button in the 'Action'pane.
6. Your internet browser will open on the web page of the web service which will contain a large amount of XML (the web service's WSDL) but this is not relevant to this exercise, the page's address (or URI) will be in the browser's address bar (in the top-left-hand corner of most browsers).

7. The endpoint is that part of the URI value that appears before the question-mark, e.g. if the URI is
   "http://localhost/BusinessWorld-webservices-slot5/service.svc?QueryEngineService/QueryEngineV200606DotNet"
   then the endpoint is "http://localhost/BusinessWorld-webservices-slot5/service.svc". Make a note of this for use later.

2.1.2 Elect an ABW User That Will be Used to Call the Web Service

For security reasons it makes sense to create a user that has access to the web services but not to any menus in either the Desktop Client or the Web Client.

N.B. In order to be able to see the user in the AG68 screen in the next section you have to tick their 'Menu access' box and give them access to at least one company (but no roles) in the **Settings ► System Administration ► Users and access ► User master file** screen (TAG064).

Unless you consider that it would constitute an additional security risk it makes sense to give this user access to all the web services so that any future customisation that needs to use a web service can make use of these settings, as this can be, potentially, a little "fiddly" to set up.

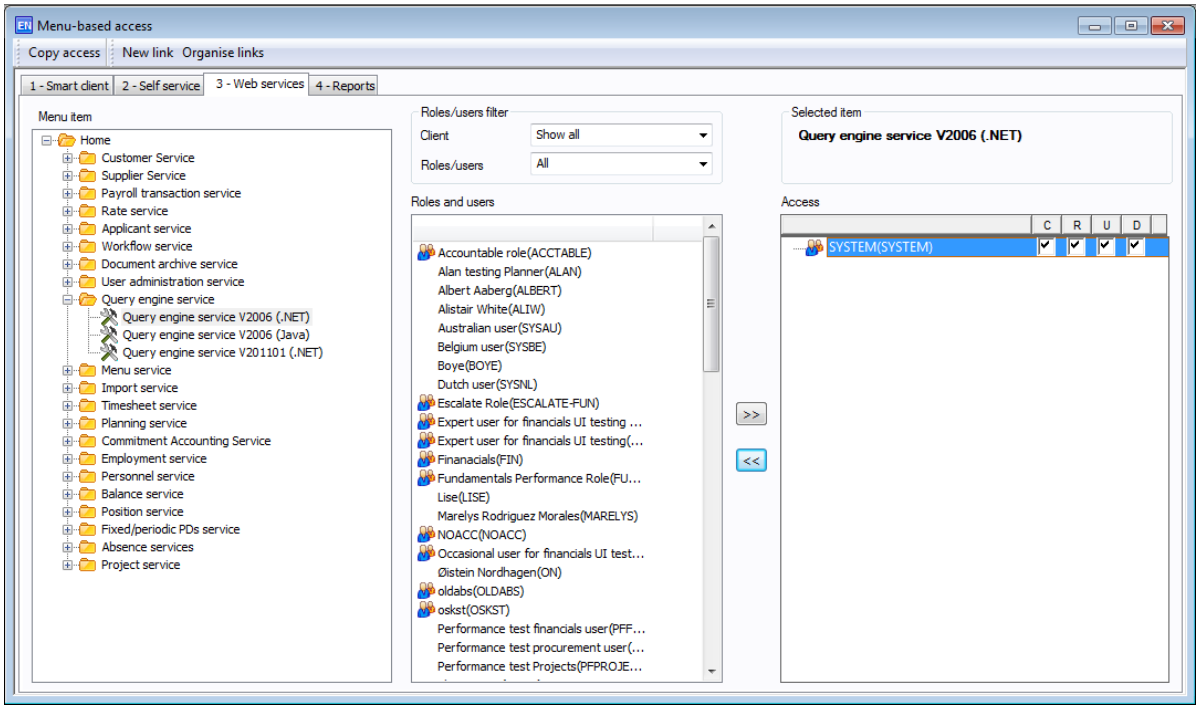
2.1.3 Give the Chosen User Access to the Web Service

Having decided which user you will use, and created it if necessary; you need to use the **Settings ► System Administration ► Users and access ► Menu based access** screen (AG68) to assign access rights to that user. Move to the 'Web services' tab and in the 'Menu item' panel of the screen either:

- Click on the 'Home' node if you are going to allow this user to access all the web services.
- Navigate to and click on the 'QueryEngineV200606DotNet' node if you are only going to allow this user access to the Query Engine web service.

In the 'Roles and users' panel click on the row containing the user you have decided to use and click the  button.

The screen should now look similar to this (but **DO NOT** elect to use the user "SYSTEM" in a live system).



Click on 'Save' and click on the 'Yes' button when asked "Apply access rights to subsections".

2.1.4 Tell the Customisation the Endpoint of the Web Service and the Name and Password of the Elected User

You have four choices as to where you can store this information and if you wish you can store the endpoint in a different place to the chosen user and their password, but you must store the user's password in the same location as the user's name. These four locations are:

1. In the process parameters of each process as clear text.
2. In the values of three system parameters as clear text.
3. In the 'RunServer.exe.config' file in Business World's 'Bin' folder on the Business Server as clear text.
4. In the values of three system parameters as encrypted text.

Saving the values as clear text means that this is readable by anyone who has access to that location, which in the case of the user's name and password is a potential security risk:

In summary:

Location	Pros	Cons
Process parameters	• Easy to set up. • Easy to modify when, for instance the user's password changes.	• No security. • Must be set up for each server process and variant. • GFC will not allow the user's name and password to be stored here on a SaaS-hosted Business World system.

Location	Pros	Cons
Clear system parameters	• Easy to set up. • Easy to modify when, for instance the user's password changes.	• No security. • GFC will not allow the user's name and password to be stored here on a SaaS-hosted Business World system.
RunServer.exe.config	• Somewhat better security, because this file is in Business World's 'Bin' folder which only a system administrator should have access to.	• Difficult to set up. • Difficult to modify when, for instance the user's password changes. • Mistakes made in editing may cause all Business World server processes to fail. • Modifying files on the Business Server Bin folder is not allowed on a SaaS-hosted Business World system.
Encrypted system parameters	• High security. • Easy to set up. • Easy to modify when, for instance the user's password changes. • Compatible with the SaaS version of Business World.	

The valid combinations are:

Location	SaaS-hosted	Not SaaS-hosted
Process parameters	Endpoint only	All
Clear system parameters	Endpoint only	All
RunServer.exe.config	None	All
Encrypted system parameters	All	All

UNIT4 recommends using the encrypted system parameters to store all three the web service's end point, user's name and password.

2.1.4.1 Using the Process Parameters

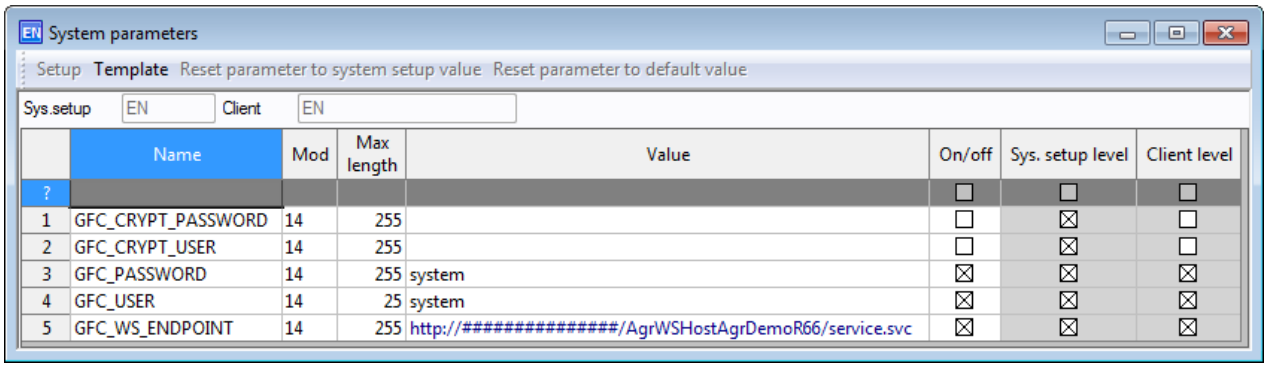
See section 3.1 for details.

2.1.4.2 Using the Clear Text System Parameters

Use the **Personal Menu ► Generic export file creator► Fixed registers ► System parameters** screen (AG07) and assign values as follows, not forgetting to switch them on:

System Parameter	Content
GFC_PASSWORD	The login password of the user you have elected to use in section 2.1.2. **Note** that if this user's password is changed, for instance after it has expired, then this parameter's value will have to be changed each time this occurs
GFC_USER	The **name** (not ID) of the user you have elected to use in section 2.1.2, i.e. the content of the 'User name' field in the 'User master file' screen (TAG064)
GFC_WS_ENDPOINT	The endpoint of the web service that you obtained in section 2.1.1

Here is a screenshot from an UNIT4 test system:



I repeat:

- **DO NOT** elect to use the user "system" in a live system.
- If you wish you can store the web service's endpoint in a different place to the chosen user and their password.

2.1.4.3 The 'RunServer.exe.config' File

Edit the "RunServer.exe.config" file in the "*BW Bin*" folder on the Business Server using a text editor (Notepad will do).

The path of the "*BW Bin*" folder referred to above will vary depending on:

- Which Business World version you are installing GFC
- On versions where it is an option whether the processes will be running on a 32bit or 64bit server queue.

Version Name	Version No	Queue	Path
Milestone 3	5.6.3	32bit	*x*:\Program Files (x86)\Agresso Route 66\Bin
Milestone 4	5.7.1	32bit	*x*:\Program Files (x86)\Agresso 5.7.1\Bin
Milestone 5	5.7.2	32bit	*x*:\Program Files (x86)\Agresso 5.7.2\Bin
		64bit	*x*:\Program Files\Agresso 5.7.2\Bin
Milestone 6	6.0.0	32bit	*x*:\Program Files (x86)\UNIT4 Business World M6\Bin
		64bit	*x*:\Program Files\UNIT4 Business World M6\Bin

Where *x* is the letter of the drive where Business World has been installed (usually the "C" drive).

In the unlikely event that your Business Server is not running a 64bit version of Microsoft Windows then:

- 64bit server queues are not possible.
- There will not be a “Program Files (x86)” folder, only a “Program Files” folder.

If you have decided to store the endpoint of the web service here then uncomment the “wsHostEndPoint” key and put the following value in it:

Key name	Content
wsHostEndPoint	The endpoint of the web service that you obtained in section 2.1.1

If you have decided to allow this user to access all ABW web services then uncomment the “wsHostCredentialsUser” and “wsHostCredentialsPassword” keys and put the following values in them:

Key name	Content
wsHostCredentialsUser	The **name** (not ID) of the user you have elected to use in section 2.1.2, i.e. the content of the ‘User name’ field in the ‘User master file’ screen (TAG064)
wsHostCredentialsPassword	The login password of the user you have elected to use in section 2.1.2. **Note** that if this user’s password is changed, for instance after it has expired, then this key’s value will have to be changed each time this occurs

If however you have decided that you will restrict this user to only access the Query Engine web service then uncomment the “queryEngineCredentialsUser” and “queryEngineCredentialsPassword” keys and put the following values in them:

Key name	Content
queryEngineCredentialsUser	The **name** (not ID) of the user you have elected to use only for the Query Engine web service use in section 2.1.2, i.e. the content of the ‘User name’ field in the ‘User master file’ screen (TAG064)
queryEngineCredentialsPassword	The login password of the user you have elected to use only for the Query Engine web service use in section 2.1.2. **Note** that if this user’s password is changed, for instance after it has expired, then this key’s value will have to be changed each time this occurs

Here is a screenshot from a UNIT4 test system, where the “all web services” option has been taken, note that in Notepad you will not get any “syntax colouring”.

RunServer.exe.config

```
<?xml version="1.0" encoding="utf-8" ?>
<configuration>
    <runtime>
        <generatePublisherEvidence enabled="false"/>
    </runtime>
    <!-- Define any app settings for the process -->
    <appSettings>
        <add key="wsHostEndPoint" value="http://WIN-UU1AABING7G/AgrWSHostAgrDemoR66/service.svc" />
        <add key="wsHostCredentialsUser" value="system" />
        <add key="wsHostCredentialsPassword" value="system" />
        <!-- If you want to have a user specifically for the QueryEngine web service uncomment these
        <add key="queryEngineCredentialsUser" value="" />
        <add key="queryEngineCredentialsPassword" value="" />
        -->
    </appSettings>
</configuration>
```

You can see that to uncomment the 'wsHostEndPoint' key the

"<!—Agresso Web Services — URL " line

has been removed from before the

"<add key="wsHostEndPoint" value="" />" line

and the

"→" line

has been removed from immediately after the

"<add key="wsHostEndPoint" value="" />" line.

You can also see that to uncomment the user and password keys the line starting

"<!—If you want to have a single user who has access to all …"

has been removed from before the

"<add key="wsHostCredentialsUser" value="" />" line

and the

"→"line

has been removed from immediately after the

"<add key="wsHostCredentialsPassword" value="" />" line.

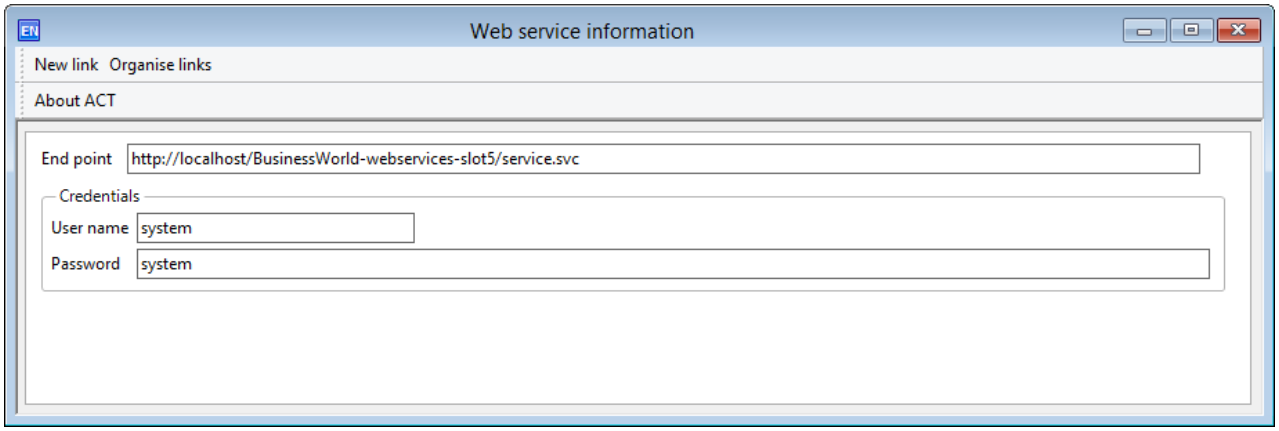
A similar exercise would be carried out to uncomment the other user and password keys.

I repeat:

- **DO NOT** elect to use the user "system" in a live system.
- If you wish you can store the web service's endpoint in a different place to the chosen user and their password
- If you change this file so that the syntax of the XML in it becomes invalid then this will cause all Business World server processes to crash until the error is rectified.

2.1.4.4 The Encrypted System Parameters

Use the **Personal Menu ► Export File Creator ► Fixed registers ► Web service information** screen (TGFC04) to maintain the values.



When the screen opens the current values of the endpoint, user's name and password are displayed. For this reason you should only give certain "trusted" roles or users access to this screen.

1. In the 'End point' field enter the endpoint of the web service that you obtained in section 2.1.1.
2. In the 'User name' field enter the **name** (not ID) of the user you have elected to use in section 2.1.2, i.e. the content of the 'User name' field in the 'User master file' screen (TAG064).
3. In the 'Password' field enter the login password of the user you have elected to use in section 2.1.2.
   Note that if this user's password changes, for instance after it has expired, then this parameter's value will have to be changed each time this occurs.
4. Click on 'Data | Save' or its corresponding toolbar button.

The values will be encrypted and stored in three system parameters:

System Parameter	Content
GFC_CRYPT_PASSWORD	The encrypted value entered in the 'Password' field.
GFC_CRYPT_USER	The encrypted value entered in the 'User name' field.
GFC_CRYPT_WS_ENDPOINT	The encrypted value entered in the 'End point' field.

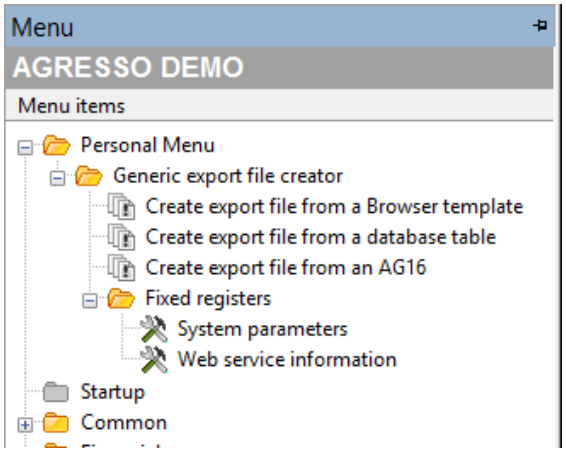
These system parameters will be visible in the **Personal Menu ► Generic export file creator► Fixed registers ► System parameters** screen (AG07) but their values must not be changed in that screen.

I repeat:

- **DO NOT** elect to use the user "system" in a live system.

2.2 Restrict Access to the Personal Menu Items

The installation script will have created a new menu in the "Personal Menu" which looks like this for a user with full access:



You must use the **Settings ► System Administration ► Users and access ► Role/user-based access** screen (AG66) or **Settings ► System Administration ► Users and access ► Menu-based access** screen (AG68) to define which roles or users should have access to these menu options.

As mentioned in section 2.1.4.4 access to the **Personal Menu ► Export File Creator ► Fixed registers ► Web service information** screen (TGFC04) should be limited to a small number of trusted users.

The use of AG16 queries is not allowed on a SaaS-hosted Business World system so on such a system to the **Personal Menu ► Export File Creator ► Create export file from an AG16** process (GFC03) should be hidden from all users.

3 Basic Usage

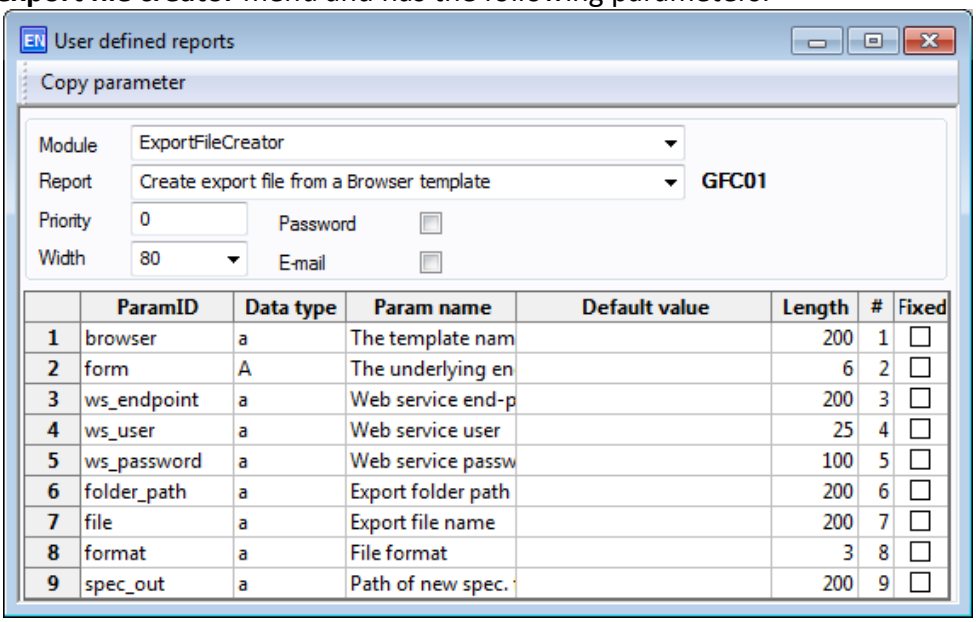
In this section the process parameters that are set up automatically by the installation script are described. When you wish to create a permanent extract file creation process then create a variant of the GFC01 or GFC02 process with the parameters set to the desired values. You create and amend variants for user-defined processes using the 'Tools | Create report template' command in the "order form" for the process.

If you set the value of any of these parameters in the definition of one of these two reports using **Settings ► System administration ► Reports ► User defined reports** screen (AG35) then these values will be lost if the Installation script is rerun, for instance when you install a new version of the customisation.

In "Basic Usage" mode many of the export file's properties are given default values in a context-specific way, these can be overridden by adding additional parameters, see section 4 for more details.

3.1 Create Export File from a Browser Template

This process is called "GFC01", can be found on the **Personal Menu ► Generic export file creator** menu and has the following parameters:



	ParamID	Data type	Param name	Default value	Length	#	Fixed
1	browser	a	The template nam		200	1	☐
2	form	A	The underlying en		6	2	☐
3	ws_endpoint	a	Web service end-p		200	3	☐
4	ws_user	a	Web service user		25	4	☐
5	ws_password	a	Web service passw		100	5	☐
6	folder_path	a	Export folder path		200	6	☐
7	file	a	Export file name		200	7	☐
8	format	a	File format		3	8	☐
9	spec_out	a	Path of new spec.		200	9	☐

ParamID	Description
browser	The name of the browser template to run.
form	The name of the underlying standard enquiry screen.
ws_endpoint	If you have chosen option one in section 2.1.4 then enter the endpoint of the web service that you obtained in section 2.1.1
ws_user	If you have chosen option one in section 2.1.4 then enter the **name** (not ID) of the user you elected to use in section 2.1.2

ParamID	Description
ws_password	If you have chosen option one in section 2.1.4 then enter the login password of the user you elected to use in section 2.1.2. **Note** that if this user's password is changed, for instance after it has expired, then this parameter's value will have to be changed each time this occurs
folder_path	The path of the folder that you want the file to be stored in. The path has to be from the perspective of the Business Server. If this is left blank then the value of the 'AGRESSO_EXPORT' environment variable will be used. On a SaaS-hosted Business World system the path of the folder must equal or start with the value of the 'AGRESSO_EXPORT' environment variable, **DO NOT TRY TO WORK AROUND THIS RESTRICTION** because Business World server processes have very limited access to the server's file system on a SaaS-hosted system!
file	The name of the file to create, with or without a file-type suffix. Various "tags" can be included in the file name to add variable elements to its name, see section 0 for details.
format	The format of the file that you wish to create. Valid values are: • "csv" Character-Separated-Value, • "tsv" Tab-Separated-Value, • "txt" Fixed-Width-Value, • "xml" Simple XML. If the value of the 'file' parameter does not already have a file-type suffix then this value will be used as the file-type suffix of the file.
spec_out	Optional: The name or full path of the file in which you wish to create a file specification. If you only supply the name of the file then it will be created in the folder defined by the 'AGRESSO_EXPORT' environment variable on the Business Server. If you supply a full path then it has to be from the perspective of the Business Server. The tags "<i>" and "<e>" can be used to represent the values of the 'AGRESSO_IMPORT' and 'AGRESSO_EXPORT' environment variables respectively. See section 4.9 for more details on specification files.

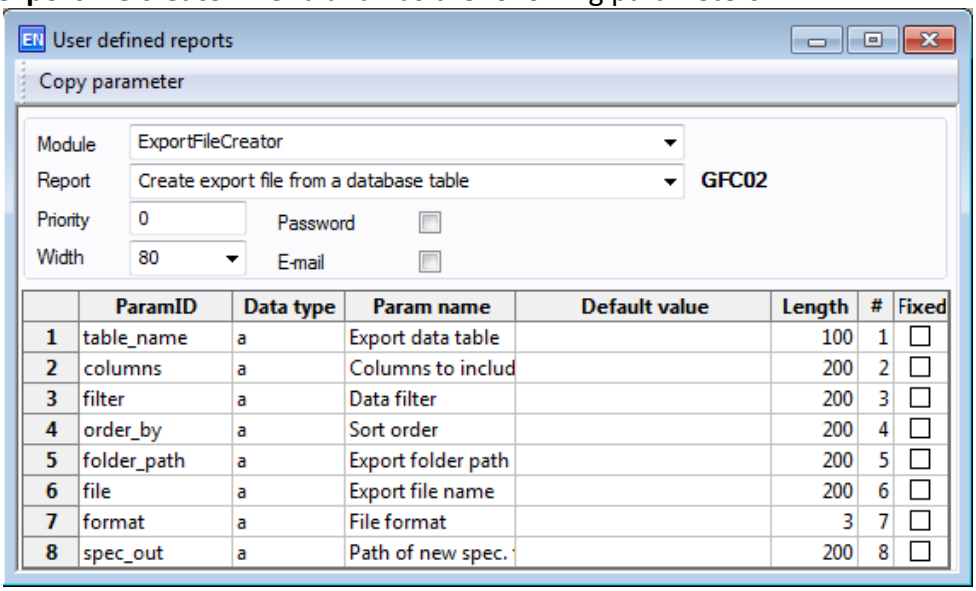
On recent versions of Business World you have to give the web service user access to the 'form' on which the Browser template is based using the **Settings ► System Administration ► Users and access ► Role/user-based access** screen (AG66) or **Settings ► System Administration ► Users and access ► Menu-based access** screen (AG68).

By default the web service will “time out” after one minute and forty seconds, so if you have a query that takes longer than that to run you need to increase the timeout value for this export, see the ‘ws_timeout’ parameter in section 4.1 for details.

If ‘format’ = “xml” then if your data-source contains one or more columns whose names would not be valid element names then GFC renames these elements in an attempt to make them valid (see section 4.6). However this renaming is not guaranteed to be 100% successful so it is strongly advised that you open the generated XML file using an application that allows you to check for valid XML syntax at least once during the development of any XML extract file.

3.2 Create export file From a Database Table

This process is called “GFC02”, can be found on the **Personal Menu ►** **Generic export file creator** menu and has the following parameters:



	ParamID	Data type	Param name	Default value	Length	#	Fixed
1	table_name	a	Export data table		100	1	☐
2	columns	a	Columns to includ		200	2	☐
3	filter	a	Data filter		200	3	☐
4	order_by	a	Sort order		200	4	☐
5	folder_path	a	Export folder path		200	5	☐
6	file	a	Export file name		200	6	☐
7	format	a	File format		3	7	☐
8	spec_out	a	Path of new spec.		200	8	☐

ParamID	Description
table_name	The name of the database table or view to use.
columns	An optional list of the table’s (or view’s) columns to be included in the export file, leaving this blank will include all columns, but see ‘inc_agrtid’ in section 4.3.
filter	A fragment of a SQL WHERE clause (without the “WHERE”) containing criteria for including only qualifying rows in the export file. Various “tags” can be included in the SQL to add variable elements, see section 0 for details, especially **example three**. Note that the customisation will automatically include “client = '*current client*' ”, but see ‘no_cli_fltr’ in section 4.3.
order_by	A fragment of a SQL ORDER BY clause (without the “ORDER BY”) containing the columns by which to sort the rows in the export file, the “DESC” keyword can be used if desired

ParamID	Description
folder_path	The path of the folder that you want the file to be stored in. The path has to be from the perspective of the Business Server. If this is left blank then the value of the 'AGRESSO_EXPORT' environment variable will be used. On a SaaS-hosted Business World system the path of the folder must equal or start with the value of the 'AGRESSO_EXPORT' environment variable, **DO NOT TRY TO WORK AROUND THIS RESTRICTION** because Business World server processes have very limited access to the server's file system on a SaaS-hosted system!
file	The name of the file to create, with or without a file-type suffix. Various "tags" can be included in the file name to add variable elements to its name, see section 0 for details.
format	The format of the file that you wish to create. Valid values are: • "csv" Character-Separated-Value, • "tsv" Tab-Separated-Value, • "txt" Fixed-Width-Value, • "xml" Simple XML. If the value of the 'file' parameter does not already have a file-type suffix then this value will be used as the file-type suffix of the file.
spec_out	Optional: The name or full path of the file in which you wish to create a file specification. If you only supply the name of the file then it will be created in the folder defined by the 'AGRESSO_EXPORT' environment variable on the Business Server. If you supply a full path then it has to be from the perspective of the Business Server. The tags "<i>" and "<e>" can be used to represent the values of the 'AGRESSO_IMPORT' and 'AGRESSO_EXPORT' environment variables respectively. See section 4.9 for more details on specification files.

 If 'format' = "xml" then if your data-source contains one or more columns whose names would not be valid element names then GFC renames these elements in an attempt to make them valid (see section 4.6). However this renaming is not guaranteed to be 100% successful so it is strongly advised that you open the generated XML file using an application that allows you to check for valid XML syntax at least once during the development of any XML extract file.

3.3 Runtime Value Tags

The 'file' parameter of all the processes, the 'filter' parameter of GFC02 and the "Advanced Usage" parameters 'header_rec', 'footer_rec', 'ws_search_*n*', 'xml_root' and 'xml_line' can contain a mixture of fixed text and "tags" whose values will be replaced at runtime. Except

where specifically stated otherwise in its 'Description', any of these tags can be added to the value of any of the five process parameters named above.

Tag names are case-sensitive and the following tags are currently supported:

Tag	Description	Examples
<client>	The code of the client in which the process is running.	EN
<counter *m n*>	The next available number from the client-counter whose module is *m* and name is *n*.	51
<counter *m n l*>	The next available number from the client-counter whose module is *m* and name is *n* padded to *l* digits. The value of *l* must be greater than zero.	00051 or 012735
<dd>	The day (in two digit format) on which the process started running.	21
<ddd>	The day (in abbreviated format) on which the process started running.	Tue
<DDD>	The day (in abbreviated format) in upper-case on which the process started running.	TUE
<dddd>	The day (in full format) on which the process started running.	Tuesday
<DDDD>	The day (in full format) in upper-case on which the process started running.	TUESDAY
<hh>	The hour (in 12 hour format) in which the process started running.	05
<HH>	The hour (in 24 hour format) in which the process started running.	17
<mm>	The month (in two digit format) in which the process started running.	07
<mn>	The minute in which the process started running.	23
<mmm>	The month (in abbreviated format) in which the process started running.	Jul
<MMM>	The month (in abbreviated format) in upper-case in which the process started running.	JUL
<mmmm>	The month (in full format) in which the process started running.	July
<MMMM>	The month (in full format) in upper-case in which the process started running.	JULY
<orderno>	The order number of the process.	23 or 624
<orderno *l*>	The order number of the process padded to *l* digits. The value of *l* must be greater than zero.	00023 or 0634
<proParam *x*>	The value of process parameter *x*.	
<recCount>	'header_rec' and 'footer_rec' only: The number of data lines added to the file.	3
<recCount *l*>	'header_rec' and 'footer_rec' only: The number of data lines added to the file padded to *l* digits. The value of *l* must be greater than zero.	00003 or 072
<ss>	The second in which the process started running.	56

Tag	Description	Examples
<sysParam *x*>	The value of system parameter *x*.	
<tt>	The AM/PM indicator for the hour in which the process started running.	PM
<yy>	The year (in two digit format) in which the process started running.	15
<yyyy>	The year (in four digit format) in which the process started running.	2015

A CAUTIONARY NOTE on using <counter…>
This tag uses the same database table (acrcounter) as many standard Business World counters such as the **Agresso Financials ► Bank Reconciliation ► Fixed registers ► Statement ID number range** screen (CS13) so it is important to avoid using any standard combinations of 'module' and 'name'. It is probably best to use 'module' "00" as there are no rows with this value present in an unmodified Business World system.

Also note that every time <counter *m n*…> is referenced it will be incremented, so if you use the same values of *m* and *n* in 'header_rec' and 'footer_rec' say, then it will show two different values in the file.

Example One

If the process has its 'file' parameter set to
"st_<client><orderno 4>t"
and it is run in client "EN" and its order number is 85 then the name of the file created will be "st_EN0085.*xxx*" (where *xxx* is the value of the process' 'format' parameter).

Example Two

If the process has its 'file' parameter set to
"REMIT<yyyy>-<mm>-<dd>"
and it is run on 19/04/2014 then the name of the file created will be "REMIT2014-04-19.*xxx*" (where *xxx* is the value of the process' 'format' parameter).

Example Three

If a GFC02 process has it's 'filter' parameter set to
"account = '<proParam account>' AND status = 'N'"
and it has a new parameter

ParamID	Data type	Param name	Default value	Length
account	A	Account to export		25

Then the account code entered by the user in 'account' when they order the process will be inserted into the 'filter' parameter's value at run time. This is much less prone to error than the user having to modify the 'filter' parameter's value.

Example Four

If a GFC01 process has it's 'ws_search_1' parameter set to
"Account|<proParam account>"
and it has a new parameter

ParamID	Data type	Param name	Default value	Length
account	A	Account to export		25

Then the account code entered by the user in ‘account’ when they order the process will be inserted into the ‘ws_search_1’ parameter’s value at run time. This is much less prone to error than the user having to modify the ‘ws_search_1’ parameter’s value.

4 Advanced Usage

In this section additional process parameters are described that you can manually add to a variant of GFC01, GFC02 or GFC03 (see section 5.1 for details of GFC03). Except where specifically stated otherwise in its 'Description', any of these parameters can be added to variants of GFC01, GFC02 and GFC03.

You create and amend variants for user-defined processes using the '*Tools | Create report template*' command in the "order form" for the process.

 If you add any of these parameters to the definition of one of these three reports using the **Settings ► System administration ► Reports ► User defined reports** screen (AG35) then the parameters you have added will be removed if the Installation script is rerun, for instance when a new version of the customisation is installed.

4.1 Behavioural Parameters

ParamID	cr_mt_file
Data type	b
Param name	Create file if empty
Length	1
Description	If no data records are going to be written to the file, then unchecking this parameter will stop the file being created.
Default value in basic mode	Checked, i.e. empty files will be created

ParamID	delta_file
Data type	b
Param name	Create a delta file
Length	1
Description	Check this box if you want the file to only contain changes since the last run. Uncheck the box if you want the file to contain all rows in the data-source. When creating a delta file you must also give the history table parameters values.
Default value in basic mode	Unchecked, i.e. a "snapshot" file

<table>
<tr><td>ParamID</td><td>ws_search_n (where n is a number starting from 1, with no gaps)</td></tr>
<tr><td>Data type</td><td>a</td></tr>
<tr><td>Param name</td><td>First SearchC value</td></tr>
<tr><td>Length</td><td>200</td></tr>
<tr><td>Description</td><td>GFC01 only: In some cases it is possible to change the values saved on the ‘SearchC’ tab of the browser template. If your template has the following on its ‘SearchC’ tab
<table>
<tr><th>Column name</th><th>Type</th><th>Macro</th><th>Value</th></tr>
<tr><td>Period</td><td>like</td><td>☒</td><td>$CURR_PERIOD</td></tr>
<tr><td>Account</td><td>between</td><td>☐</td><td></td></tr>
<tr><td>Company</td><td>like</td><td>☒</td><td>$CLIENT</td></tr>
</table>
Then these can be given values as follows:
<table>
<tr><th>ParamID</th><th>Default value</th><th>Comment</th></tr>
<tr><td>ws_search_1</td><td>Period|201603</td><td>Only one value is provided on a “like”</td></tr>
<tr><td>ws_search_2</td><td>Account|1030|1032</td><td>Two values are provided on a ‘between’</td></tr>
</table>
Various “tags” can be included in this parameter’s value to add variable elements, see section 3.3 for details, especially example four.

You cannot add additional condition rows to those saved on the template.</td></tr>
<tr><td>Default value in basic mode</td><td>The saved search criteria will be used.</td></tr>
</table>

ParamID	ws_cert_err
Data type	B
Param name	Ignore certificate error
Length	1
Description	GFC01 only: If you have configured your web services in the Management Console to use “HTTPS” then your web server must have a valid certificate otherwise you will not be able to use the web service. If you wish to ignore the invalid or missing certificate and use the web service anyway (not recommended in a live environment) then check this box.
Default value in basic mode	The default timeout period will be used.

ParamID	ws_timeout
Data type	n
Param name	Web service timeout
Length	8
Description	GFC01 only: By default the web service will “time out” after one hundred seconds, so if you have a query will take longer than one minute and forty seconds to run you need to increase the timeout value for this export by setting this parameter to the required number of seconds.
Default value in basic mode	The default timeout period will be used.

4.2 File Encoding Parameters

ParamID	big_endian
Data type	b
Param name	Big-Endian UTF-16 files
Length	1
Description	If the character encoding scheme is “UTF-16” check this box if you want the encoding to be big-endian, otherwise it will be little-endian
Default value in basic mode	Unchecked

ParamID	char_encode
Data type	A
Param name	Character encoding
Length	7
Description	Which character encoding scheme should the file be written with. Valid values are: “ASCII” “Traditional” 7-bit ASCII “UTF-8” UCS Transformation Format—8-bit “UTF-16” UCS Transformation Format—16-bit “CP*n*” Where *n* is a valid code page number (see section 4.8 for details). Note that if you wish to use one of the several 8-bit “Extended ASCII” schemes then you must use a “CP*n*” value to define the scheme to be used If this is left blank then its basic mode value is used.
Default value in basic mode	If the ‘format’ parameter = “xml” then “UTF-8”, otherwise “ASCII”

ParamID	has_bom
Data type	b
Param name	Include BOM in UTF files
Length	1
Description	If the character encoding scheme is “UTF-8” or UTF-16” check this box if you want the first character of the file to be a “Byte Order Mark”
Default value in basic mode	If the ‘char_encode’ parameter = “UTF-8” or UTF-16” then checked, otherwise unchecked

4.3 File Content Parameters

ParamID	col_heads
Data type	b
Param name	Write column headings
Length	1
Description	For “csv”, “tsv” and “txt” format files: Check this box if you want the first line in the file to contain the file names.
Default value in basic mode	If the ‘format’ parameter = “xml” then Unchecked, otherwise Checked

ParamID	csv_sepchar
Data type	a
Param name	CSV field separator
Length	1
Description	If the 'format' parameter = "csv": The character to separate the fields with. If this is left blank then its basic mode value is used.
Default value in basic mode	A comma ","

ParamID	footer_rec
Data type	a
Param name	Footer record
Length	200
Description	The content of an optional footer record to add to the file. Various "tags" can be included in this parameter's value to add variable elements, see section 0 for details. For "xml" format files: • The footer record will appear between the last "</Line>" and the "</Root>" • Do not type the "<" prefix and " />" suffix, the process will do this automatically. If this is left blank then its basic mode value is used.
Default value in basic mode	Blank, i.e. no footer record

ParamID	header_rec
Data type	A
Param name	Header record
Length	200
Description	The content of an optional header record to add to the file. Various "tags" can be included in this parameter's value to add variable elements, see section 0 for details. Do not specify a header record in the same process as a checked 'col_heads' parameter For "xml" format files: • The header record will appear between "<Root>" and the first "<Line>" • Do not type the "<" prefix and " />" suffix, the process will do this automatically. If this is left blank then its basic mode value is used
Default value in basic mode	Blank, i.e. no header record

ParamID	inc_agrtid
Data type	b
Param name	Include ‘agrtid’ column
Length	1
Description	Not used in GFC01: Check this box if you want the ‘agrtid’ column to be included in the export file
Default value in basic mode	Unchecked

ParamID	no_cli_fltr
Data type	b
Param name	Suppress ‘client =’ test
Length	1
Description	GFC02 only: Check this box if you are selecting from a table with a ‘client’ column and you want to export data for more than the current client.
Default value in basic mode	if the table being used has a client column then only data for the current client will be exported

ParamID	spec_in
Data type	a
Param name	Path of spec. to use
Length	200
Description	The name or full path of the file that contains the file specification that you wish to use. If you only supply the name of the file then it will be looked for in the folder defined by the 'AGRESSO_EXPORT' environment variable on the Business Server. If you supply a full path then it has to be from the perspective of the Business Server. The tags "<i>" and "<e>" can be used to represent the values of the 'AGRESSO_IMPORT' and 'AGRESSO_EXPORT' environment variables respectively. The specification file will replace the use of the following process parameters: 'big_endian' 'header_rec' 'char_encode' 'history_days' 'col_heads' 'history_keys' 'cr_mt_file' 'history_iu' 'csv_sepchar' 'history_tab' 'csv_text_qot' 'inc_agrtid' 'csv_text_sep' 'int_fmt' 'csv_textchar' 'money_fmt' 'date_fmt' 'no_cli_filter' 'delta_file' 'rpl_min_date' 'footer_rec' 'x_val_*n*' 'format' 'xml_line' 'float_fmt' 'xml_mt_node' 'has_bom' 'xml_root' And also the number, order, width and formatting of the fields in the file. See section 4.9 for more details on specification files.
Default value in basic mode	Blank, i.e. do not use a specification file

ParamID	x_val_*n*' (where *n* is a sequence number starting at one)
Data type	a
Param name	Change column value #1
Length	200
Description	If a field in your export file needs to contain values derived from the Business World value of the source column then this is done via a process called "transformation". If you wish to transform the values of column in the exported file (e.g. change 'status' value "N" to "Active", "P" to "Parked" etc.) then define one of these parameters for each column whose values need transforming. The first such parameter must be called 'x_val_1', the second 'x_val_2', and so on and no gaps must be left in the series. The 'default value' of each parameter takes one of two forms: 1. An odd number of comma separated values: *column_name*,*col_value_1*,*new_value_1*,… In this form if the column's value does not appear in the list then it is left unchanged 2. An even number of comma separated values: *column_name*,*col_value_1*,*new_value_1*,…,*default_value* In this form if the column's value does not appear in the list then it is set to the *default_value*. In either form you can supply as many "*col_value_n*,*new_value_n*" pairs as you wish. The specified column name must exist in the data-source, in other words GFC will not create the field, only change its value. So to give an example if you wish the 'status' column to be set to "Active", "Closed", "Parked" or "Terminated" then you would use: status,N,Active,C,Closed,P,Parked,T,Terminated If however you wish it to be set to "Active" or "Closed" then you would use: status,N,Active,Closed N.B. If you include spaces on either side of a comma, these will be included in the transformed value i.e. if you type "status, N, Active, Closed" then the values in the file will be " Active" and " Closed" not "Active" and "Closed".
Default value in basic mode	Blank, i.e. no transformation of column values will take place

ParamID	xml_line
Data type	a
Param name	Name of XML line node
Length	200
Description	For “xml” format files: The name of the “line” node of the file. Various “tags” can be included in this parameter’s value to add variable elements, see section 0 for details. If this is left blank then its basic mode value is used.
Default value in basic mode	If the ‘format’ parameter = “xml” then “Line”, otherwise blank

ParamID	xml_root
Data type	a
Param name	Name of XML root node
Length	200
Description	For “xml” format files: The name of the root node of the file. Various “tags” can be included in this parameter’s value to add variable elements, see section 0 for details. If this is left blank then its basic mode value is used.
Default value in basic mode	If the ‘format’ parameter = “xml” then “Root” , otherwise blank

4.4 Field Formatting Parameters

ParamID	csv_text_qot
Data type	A
Param name	CSV quotes in text treat
Length	1
Description	If the ‘format’ parameter = “csv”: If ‘csv_textchar’ is not set to “no” then how to treat embedded enclosing characters (see ‘csv_textchar’ below), valid values are: “D” Double-up the characters “R” Remove the characters. If this is left blank then its basic mode value is used.
Default value in basic mode	“R” for remove

ParamID	csv_text_sep
Data type	a
Param name	CSV sepchar in text treat
Length	3
Description	If the 'format' parameter = "csv": If 'csv_textchar' is set to "no" then the single character to replace embedded field separator characters with in text fields(see 'csv_sepchar' above), if you wish to remove them completely then set this to "no" If this is left blank then its basic mode value is used.
Default value in basic mode	No default

ParamID	csv_textchar
Data type	a
Param name	Text field enclosing char
Length	3
Description	If the 'format' parameter = "csv": The single character in which to enclose text field values, if you do not want to enclose text field values then set this to "no". If you wish to only use the enclosing character when necessary (i.e. when the field contains either 'csv_sep_char' or 'csv_textchar' characters the append "-o" to the single character being used It must not have the same value as 'advanced-usage parameter 'csv_sepchar'. If this is left blank then its basic mode value is used.
Default value in basic mode	If the 'format' parameter = "csv" then a speech mark (")

ParamID	date_fmt
Data type	a
Param name	Format for 'date' fields
Length	30
Description	The formatting of any date fields in the export file, see section 4.7.1 for details. If this is left blank then its basic mode value is used.
Default value in basic mode	If the 'format' parameter = "xml" then "yyyy-MM-dd", otherwise "yyyyMMdd"

ParamID	float_fmt
Data type	a
Param name	Format for ‘float’ fields
Length	40
Description	The formatting of any ‘float’ fields in the export file, see section 4.7.2 for details. If this is left blank then its basic mode value is used.
Default value in basic mode	“0.00000”

ParamID	int_fmt
Data type	a
Param name	Format for ‘int’ fields
Length	40
Description	The formatting of any integer fields in the export file, see section 4.7.2 for details. If this is left blank then its basic mode value is used.
Default value in basic mode	“0”

ParamID	money_fmt
Data type	a
Param name	Format for ‘money’ fields
Length	40
Description	The formatting of any money fields in the export file, see section 4.7.2 for details. If this is left blank then its basic mode value is used.
Default value in basic mode	“0.00”

ParamID	rpl_min_date
Data type	b
Param name	Blank out MIN_DATE values
Length	1
Description	If you want date fields that contain the minimum value (01/01/1900 00:00:00) blanked out in the file, then check this field otherwise such fields will contain “01/01/1900 00:00:00” (formatted as you have specified)
Default value in basic mode	If the ‘format’ parameter = “xml” then Unchecked, otherwise Checked

ParamID	xml_mt_node
Data type	A
Param name	XML empty node treatment
Length	1
Description	If the 'format' parameter = "xml": XML nodes that have no value can be treated in one of three ways: "C" Use this value if you want empty nodes to be shown in their compressed form, i.e. "<col2/>". "O" Use this value if you want empty nodes to be omitted from the export file completely. "V" Use this value if you want empty nodes to be shown in their verbose form i.e. "<col2></col2>". If this is left blank then its basic mode value is used.
Default value in basic mode	"V" for verbose

4.5 History Table Parameters

ParamID	history_days
Data type	n
Param name	Keep days of history
Length	4
Description	The number of days to keep in the history table: • "-1" All exports • "0" Last run only • Greater than zero The number of days to keep Note that in all cases except "0" if multiple exports are done on the same day then they are all deleted at the same time
Default value in basic mode	"0" for last run only

ParamID	history_keys
Data type	a
Param name	History table key list
Length	200
Description	If the 'delta_file' advanced-usage parameter is checked: A comma delimited list of the column names in the data-source that provides a unique "key" to a row, this is used to retrieve the last exported values of a line for comparison
Default value in basic mode	Blank, i.e. snapshot file with no history table

ParamID	history_iu
Data type	A
Param name	Insert/update column spec
Length	200
Description	If the 'delta_file' advanced-usage parameter is checked: The name of a column in the file that will contain a value indicating whether this is the first export of a row or a subsequent export caused by one or more changed values. The 'Default value' must be set as follows: *column_name,insert_value,update_value* The specified column name must exist in the data-source, in other words GFC will not create the field, only change its value. N.B. If you include spaces on either side of a comma, these will be included in the transformed value i.e. if you type "status, New, Exists" then the values in the file will be " New" and " Exists" not "New" and "Exists".
Default value in basic mode	Blank, i.e. snapshot file with no history table

ParamID	history_tab
Data type	a
Param name	Name of history table
Length	50
Description	The name of a database table that will be used to record the data exported by this variant of GFC01, GFC02 or GFC03. The table will be created automatically the first time the export is run and can only be used by this export. If an existing table is used that was not created for this particular export then SQL errors will almost certainly result! If advanced-usage parameter 'delta_file' is checked then the content of this table is used to determine whether data has changed since the last run. If advanced-usage parameter 'history_keys' is blank then this table will be created with a non-unique index of "client, orderno", if it is not blank then a unique index containing "client, orderno" and the columns listed in the 'history_keys' parameter's value will be created.
Default value in basic mode	Blank, i.e. no history table

4.6 XML Element Names

All three processes can create an XML file. The XML standard includes strict rules on what constitutes a valid element name, and when creating an XML export file GFC will attempt to change the names of column names in the data-source that it knows are invalid.

The rules are:

1. Element names can contain letters, digits, hyphens, underscores, and periods (full stops)
2. Element names cannot contain spaces
3. Element names must start with a letter or underscore

4. Element names cannot start with the letters "xml", "XML", "Xml", etc.

So GFC does the following:

- Rule 1: The following characters are replaced by a full stop:
  ¬ ¦ ! " £ $ € % ^ * & * ( ) = + [{] } ; : ' @ # ~ \ | , < > / and ?
- Rule 2: Spaces are replaced by an underscore
- Rule 3: If the name does not start with a letter or underscore an underscore is inserted at the beginning
- Rule 4:If the name starts with "xml", "XML", "Xml", etc. an underscore is inserted at the beginning

This means that whilst the element names in the XML file are not the same as the column names in the data-source they are valid XML.

In some cases the resulting element name can be quite unrecognisable. A good example of this is that your data-source is a Browser template and it includes the "#" column (a transaction's sequence no.) because of rule one and rule three this column will be mapped to an XML element with the name "_.".

If you wish to stop GFC from renaming any of the XML elements then:

- If your data-source is a Browser Template (GFC01) then rename any columns in that template that break the rules so that they no longer do so.
- If your data-source is a database table (GFC02) then create a view of that table that provides column aliases that do not break the rules and use that view instead of the table.
- If your data-source is a database view (GFC02) then ensure that none of the column aliases break the rules.
- If your data-source is an AG16 (GFC03) then ensure that none of the column names in the help-table break the rules.

4.7 Data Type Formats

All processes have optional 'date_fmt', 'float_fmt', 'int_fmt' and 'money_fmt' parameters which can be used to override the default formatting of values in 'date-time', 'float', 'integer' and 'amount' fields respectively.

4.7.1 Date Fields

These formats follow standard .NET date formatting, i.e.:

Specifier	Description
dd	day–in-month two digit number
ddd	abbreviated day-in-week name
hh	two digit hour number (12 hour format)
HH	two digit hour number (24 hour format)
mm	two digit minutes
MM	two digit month number
MON	abbreviated month name in upper case, e.g. "JAN"
MMM	abbreviated month name in mixed case, e.g. "Jan"
ss	two digit seconds number
tt	AM/PM indicator for the hour

Specifier	Description
yy	two digit year number
yyyy	four digit year number

Note:

- For technical reasons the .NET date format specifiers “dddd” (full day-in-week name) and “MMMM” (full month name) are not allowed in this parameter.
- “MM” is month number and “mm” is minute number.
- All Business World date columns have a time component, but with the notable exception of ‘last_update’ (‘Updated’ in the user interface) these are normally set to 00:00:00.

4.7.2 Numeric Fields

These formats follow standard .NET number formatting, e.g.:

Specifier	Description	Example Format	Format of “-1234.56”
0	Zero placeholder	`00.000`	-1234.560
#	Digit placeholder	`#.##`	-1234.56
-	Sign placeholder	`0-`	1234-
.	Decimal point placeholder	`0.0`	-1234.6
,	Thousand separator	`0,0`	-1,235
%	Percentage	`0%`	-123456%

Note:

- Using the “%” specifier implicitly multiplies the value by 100.
- There are other specifiers that can be used but these are less useful or are “culture dependant”.

In addition a semi-colon (;) can be used to provide a multi-part format:

- If you provide two parts these are for positive and negative numbers respectively, zero values are treated as positive numbers in this circumstance
- If you provide three parts then these are for positive, negative and zero numbers respectively.

For example:

Format	Positive numbers	Negative numbers	Zero
“`0.00;0.00-`”	Two decimal places	Two decimal places and a trailing minus sign instead of a leading one	The same as positive numbers
“`£#,##0.00;(£#,##0.00)`” all on one line	Thousands separator, two decimal places and a leading “£” symbol	Thousands separator, two decimal places and a leading “£” symbol, inside brackets instead of with a minus sign	The same as positive numbers
“`0;0; `”	No decimal places	No decimal places and a leading minus sign	Spaces
“`0;0-;blank`”	No decimal places	No decimal places and a trailing minus sign	The word “blank”

4.8 Code Page Numbers

The following table contains a list of all valid code page numbers and their meanings:

Code Page	IANA[2] Name	Full Name
37	IBM037	IBM EBCDIC (US-Canada)
437	IBM437	OEM United States
500	IBM500	IBM EBCDIC (International)
708	ASMO-708	Arabic (ASMO 708)
720	DOS-720	Arabic (DOS)
737	ibm737	Greek (DOS)
775	ibm775	Baltic (DOS)
850	ibm850	Western European (DOS)
852	ibm852	Central European (DOS)
855	IBM855	OEM Cyrillic
857	ibm857	Turkish (DOS)
858	IBM00858	OEM Multilingual Latin I
860	IBM860	Portuguese (DOS)
861	ibm861	Icelandic (DOS)
862	DOS-862	Hebrew (DOS)
863	IBM863	French Canadian (DOS)
864	IBM864	Arabic (864)
865	IBM865	Nordic (DOS)
866	cp866	Cyrillic (DOS)
869	ibm869	Greek, Modern (DOS)
870	IBM870	IBM EBCDIC (Multilingual Latin-2)
874	windows-874	Thai (Windows)
875	cp875	IBM EBCDIC (Greek Modern)
932	shift_jis	Japanese (Shift-JIS)
936	gb2312	Chinese Simplified (GB2312)
949	ks_c_5601-1987	Korean
950	big5	Chinese Traditional (Big5)
1026	IBM1026	IBM EBCDIC (Turkish Latin-5)
1047	IBM01047	IBM Latin-1
1140	IBM01140	IBM EBCDIC (US-Canada-Euro)
1141	IBM01141	IBM EBCDIC (Germany-Euro)
1142	IBM01142	IBM EBCDIC (Denmark-Norway-Euro)
1143	IBM01143	IBM EBCDIC (Finland-Sweden-Euro)
1144	IBM01144	IBM EBCDIC (Italy-Euro)
1145	IBM01145	IBM EBCDIC (Spain-Euro)
1146	IBM01146	IBM EBCDIC (UK-Euro)
1147	IBM01147	IBM EBCDIC (France-Euro)
1148	IBM01148	IBM EBCDIC (International-Euro)
1149	IBM01149	IBM EBCDIC (Icelandic-Euro)
1200	utf-16	Unicode
1201	unicodeFFFE	Unicode (Big-Endian)
1250	windows-1250	Central European (Windows)
1251	windows-1251	Cyrillic (Windows)

[2] Internet Assigned Numbers Authority

Code Page	IANA[2] Name	Full Name
1252	Windows-1252	Western European (Windows)
1253	windows-1253	Greek (Windows)
1254	windows-1254	Turkish (Windows)
1255	windows-1255	Hebrew (Windows)
1256	windows-1256	Arabic (Windows)
1257	windows-1257	Baltic (Windows)
1258	windows-1258	Vietnamese (Windows)
1361	Johab	Korean (Johab)
10000	macintosh	Western European (Mac)
10001	x-mac-japanese	Japanese (Mac)
10002	x-mac-chinesetrad	Chinese Traditional (Mac)
10003	x-mac-korean	Korean (Mac)
10004	x-mac-arabic	Arabic (Mac)
10005	x-mac-hebrew	Hebrew (Mac)
10006	x-mac-greek	Greek (Mac)
10007	x-mac-cyrillic	Cyrillic (Mac)
10008	x-mac-chinesesimp	Chinese Simplified (Mac)
10010	x-mac-romanian	Romanian (Mac)
10017	x-mac-ukrainian	Ukrainian (Mac)
10021	x-mac-thai	Thai (Mac)
10029	x-mac-ce	Central European (Mac)
10079	x-mac-icelandic	Icelandic (Mac)
10081	x-mac-turkish	Turkish (Mac)
10082	x-mac-croatian	Croatian (Mac)
12000	utf-32	Unicode (UTF-32)
12001	utf-32BE	Unicode (UTF-32 Big-Endian)
20000	x-Chinese-CNS	Chinese Traditional (CNS)
20001	x-cp20001	TCA Taiwan
20002	x-Chinese-Eten	Chinese Traditional (Eten)
20003	x-cp20003	IBM5550 Taiwan
20004	x-cp20004	TeleText Taiwan
20005	x-cp20005	Wang Taiwan
20105	x-IA5	Western European (IA5)
20106	x-IA5-German	German (IA5)
20107	x-IA5-Swedish	Swedish (IA5)
20108	x-IA5-Norwegian	Norwegian (IA5)
20127	us-ascii	US-ASCII
20261	x-cp20261	T.61
20269	x-cp20269	ISO-6937
20273	IBM273	IBM EBCDIC (Germany)
20277	IBM277	IBM EBCDIC (Denmark-Norway)
20278	IBM278	IBM EBCDIC (Finland-Sweden)
20280	IBM280	IBM EBCDIC (Italy)
20284	IBM284	IBM EBCDIC (Spain)
20285	IBM285	IBM EBCDIC (UK)
20290	IBM290	IBM EBCDIC (Japanese katakana)
20297	IBM297	IBM EBCDIC (France)

Code Page	IANA[2] Name	Full Name
20420	IBM420	IBM EBCDIC (Arabic)
20423	IBM423	IBM EBCDIC (Greek)
20424	IBM424	IBM EBCDIC (Hebrew)
20833	x-EBCDIC-KoreanExtended	IBM EBCDIC (Korean Extended)
20838	IBM-Thai	IBM EBCDIC (Thai)
20866	koi8-r	Cyrillic (KOI8-R)
20871	IBM871	IBM EBCDIC (Icelandic)
20880	IBM880	IBM EBCDIC (Cyrillic Russian)
20905	IBM905	IBM EBCDIC (Turkish)
20924	IBM00924	IBM Latin-1
20932	EUC-JP	Japanese (JIS 0208-1990 and 0212-1990)
20936	x-cp20936	Chinese Simplified (GB2312-80)
20949	x-cp20949	Korean Wansung
21025	cp1025	IBM EBCDIC (Cyrillic Serbian-Bulgarian)
21866	koi8-u	Cyrillic (KOI8-U)
28591	iso-8859-1	Western European (ISO)
28592	iso-8859-2	Central European (ISO)
28593	iso-8859-3	Latin 3 (ISO)
28594	iso-8859-4	Baltic (ISO)
28595	iso-8859-5	Cyrillic (ISO)
28596	iso-8859-6	Arabic (ISO)
28597	iso-8859-7	Greek (ISO)
28598	iso-8859-8	Hebrew (ISO-Visual)
28599	iso-8859-9	Turkish (ISO)
28603	iso-8859-13	Estonian (ISO)
28605	iso-8859-15	Latin 9 (ISO)
29001	x-Europa	Europa
38598	iso-8859-8-i	Hebrew (ISO-Logical)
50220	iso-2022-jp	Japanese (JIS)
50221	csISO2022JP	Japanese (JIS-Allow 1 byte Kana)
50222	iso-2022-jp	Japanese (JIS-Allow 1 byte Kana - SO/SI)
50225	iso-2022-kr	Korean (ISO)
50227	x-cp50227	Chinese Simplified (ISO-2022)
51932	euc-jp	Japanese (EUC)
51936	EUC-CN	Chinese Simplified (EUC)
51949	euc-kr	Korean (EUC)
52936	hz-gb-2312	Chinese Simplified (HZ)
54936	GB18030	Chinese Simplified (GB18030)
57002	x-iscii-de	ISCII Devanagari
57003	x-iscii-be	ISCII Bengali
57004	x-iscii-ta	ISCII Tamil
57005	x-iscii-te	ISCII Telugu
57006	x-iscii-as	ISCII Assamese
57007	x-iscii-or	ISCII Oriya
57008	x-iscii-ka	ISCII Kannada
57009	x-iscii-ma	ISCII Malayalam
57010	x-iscii-gu	ISCII Gujarati

Code Page	IANA[2] Name	Full Name
57011	x-iscii-pa	ISCII Punjabi
65000	utf-7	Unicode (UTF-7)
65001	utf-8	Unicode (UTF-8)

Note that the code pages of the following combinations of the process parameters 'char_encode' and 'big_endian'

char_encode	big_endian	Code Page
ASCII	n/a	20127
UTF-8	n/a	65001
UTF-16	Unchecked	1200
UTF-16	Checked	1201

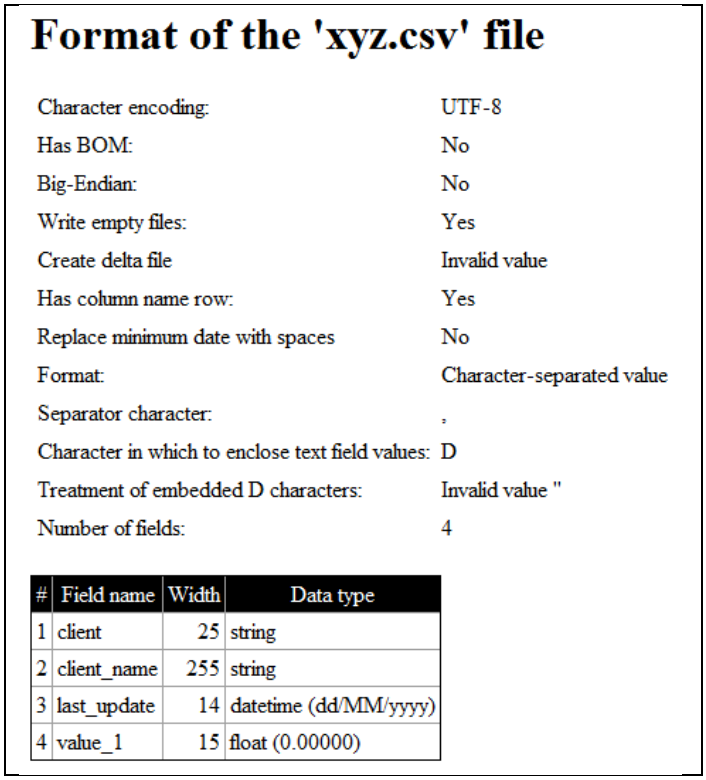
4.9 File Specification

If you put a value in the "Basic" parameter 'spec_out' then the process will create an additional file containing the specification of the export file that is being created. This specification will be written in XML and will look something like this:

```
<?xml version="1.0" encoding="UTF-8"?>
<?xml-stylesheet type="text/xsl" href="specification.xsl"?>
<ExportFile name="xyz.csv">
  <encoding>UTF-8</encoding>
  <hasBom>0</hasBom>
  <utf16BigEndian>0</utf16BigEndian>
  <fileFormat>csv</fileFormat>
  <csvFieldSeparator>,</csvFieldSeparator>
  <csvTextEnclosingChar>D</csvTextEnclosingChar>
  <rootNode>Root</rootNode>
  <lineNode>Line</lineNode>
  <xmlEmptyNodeTreatment>C</xmlEmptyNodeTreatment>
  <createEmptyFile>1</createEmptyFile>
  <writeColHeadings>1</writeColHeadings>
  <replaceMinDateWithSpaces>0</replaceMinDateWithSpaces>
  <fields>
    <field>
      <name>client</name><width>25</width><type>S</type>
    </field>
    <field>
      <name>client_name</name><width>255</width><type>S</type>
    </field>
    <field>
      <name>last_update</name><width>14</width><type>D</type><format>dd/MM/yyyy</format>
    </field>
    <field>
      <name>value_1</name><width>15</width><type>F</type><format>0.00000</format>
    </field>
  </fields>
</ExportFile>
```

Not all elements will be present in any given file.

The stylesheet referenced on line two (which is also generated by the server process) will render this as HTML, so if you open the file in a web browser it will look something like this:



Format of the 'xyz.csv' file

Character encoding:	UTF-8
Has BOM:	No
Big-Endian:	No
Write empty files:	Yes
Create delta file	Invalid value
Has column name row:	Yes
Replace minimum date with spaces	No
Format:	Character-separated value
Separator character:	,
Character in which to enclose text field values:	D
Treatment of embedded D characters:	Invalid value ''
Number of fields:	4

#	Field name	Width	Data type
1	client	25	string
2	client_name	255	string
3	last_update	14	datetime (dd/MM/yyyy)
4	value_1	15	float (0.00000)

Any of the following XML nodes can be modified:

Node name	Description
createDeltaFile	Has the same function and values as the 'delta_file' advanced-usage process parameter, "1" is 'checked' and "0" is 'unchecked'.
createEmptyFile	Has the same function and values as the 'cr_mt_file' advanced-usage process parameter, "1" is 'checked' and "0" is 'unchecked'.
csvFieldSeparator	Has the same function as the 'csv_sepchar' advanced-usage process parameter.
csvEnclosingCharTreatment	Has the same function and values as the 'csv_text_qot' advanced-usage process parameter.
csvSeparatorTreatment	Has the same function and values as the 'csv_text_sep' advanced-usage process parameter.
csvTextEnclosingChar	Has the same function and values as the 'csv_textchar' advanced-usage process parameter.
encoding	Has the same function and values as the 'char_encode' advanced-usage process parameter.
footerRecord	Has the same function and values as the 'footer_rec' advanced-usage process parameter
fileFormat	Has the same function and values as the 'format' basic-usage process parameter.
hasBom	Has the same function and values as the 'has_bom' advanced-usage process parameter, "1" is 'checked' and "0" is 'unchecked'.

Node name	Description
headerRecord	Has the same function and values as the 'header_rec' advanced-usage process parameter
historyDaysToKeep	Has the same function and values as the 'history_days' advanced-usage process parameter
historyInsUpdField	Has the same function and values as the 'history_iu' advanced-usage process parameter
historyTableKeys	Has the same function and values as the 'history_keys' advanced-usage process parameter
historyTableName	Has the same function and values as the 'history_tab' advanced-usage process parameter
includeAgrTid	Has the same function and values as the 'inc_agrtid' advanced-usage process parameter, "1" is 'checked' and "0" is 'unchecked'.
replaceMinDateWithSpaces	Has the same function and values as the 'rpl_min_date' advanced-usage process parameter, "1" is 'checked' and "0" is 'unchecked'.
suppressClientFilter	Has the same function and values as the 'no_cli_fltr' advanced-usage process parameter, "1" is 'checked' and "0" is 'unchecked'.
transformValues	This contains a repeating node "transform" each one of which represents a column whose values need to be transformed before they are added to the export file.
transform/specification	Has the same function and values as one of the 'x_val_*n*' advanced-usage process parameters.
utf16BigEndian	Has the same function and values as the 'big_endian' advanced-usage process parameter, "1" is 'checked' and "0" is 'unchecked'.
writeColHeadings	Has the same function and values as the 'col_heads' advanced-usage process parameter, "1" is 'checked' and "0" is 'unchecked'.
xmlEmptyNodeTreatment	Has the same function and values as the 'xml_mt_node' advanced-usage process parameter.
xmlLine	Has the same function and values as the 'xml_line' advanced-usage process parameter
xmlRoot	Has the same function and values as the 'xml_root' advanced-usage process parameter
fields	This contains a repeating node 'field' each one of which represents a field in the export file, these fields will appear in the export file in the same order that they appear in this list. In this respect it is similar to but more powerful than the 'columns' process parameter on GFC02.
field/name	The name of the field, a column with this name must appear in the data-source of the export (i.e. Browser or database table).

Node name	Description
field/width	The maximum number of characters that the field can hold in the export file, and if 'format' = "txt" the actual width of the field.
field/format	The data format of the field (see section 4.6).

Please note that modifying the value of the 'fields/field/type' element will have no effect on the export file created.

The stylesheet has some validation rules built into it, so after making any modifications it's a good idea to open your amended file in a web browser to check if there are any obvious mistakes. Passing this test does not necessarily mean that the server process will be able to use your file.

Once you have modified the specification file you can tell the file creation process to use it by putting its name or full file path into the 'spec_in' advanced-usage process parameter.

As with the 'folder_path' process parameter if a file path is supplied in either 'spec_out' or 'spec_in' then this must be from the perspective of the Business Server.

5 Restricted Usage

Please note that that any exports created using the additional functionality described in this section may not be supported by UNIT4's Customer Support Department.

5.1 Create Export File from an AG16

In this section the process parameters that are set up automatically by the installation script are described. When you wish to create a permanent extract file creation process then create a variant of the GFC03 process with the parameters set to the desired values. You create and amend variants for user-defined processes using the 'Tools | Create report template' command in the "order form" for the process.

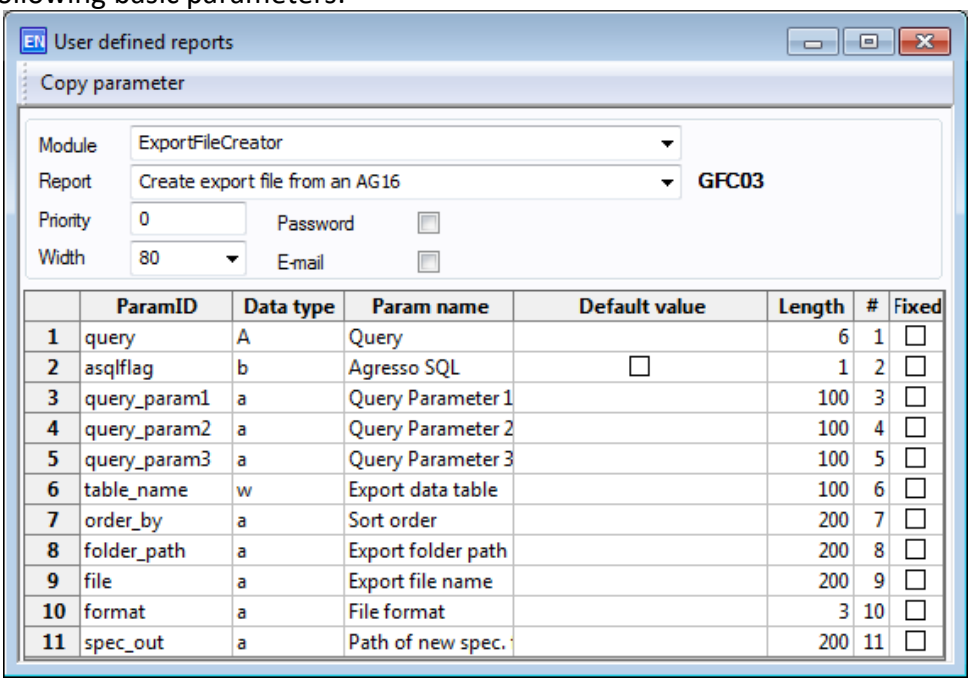
This process uses an AG16 query to extract the data to be exported and:

- On a SaaS-hosted Business World system the use of AG16 queries is not permitted so this process cannot be used.
- Because AG16 queries are not automatically supported by UNIT4's Customer Support Department, this means that any export using this process will inherit the same level of support as the AG16 query on which it is based.

If you set the value of any of these parameters in the definition of one of these two reports using **Settings ► System administration ► Reports ► User defined reports** screen (AG35) then these values will be lost if the Installation script is rerun, for instance when you install a new version of the customisation.

In "Basic Usage" mode many of the export file's properties are given default values in a context-specific way, these can be overridden by adding additional parameters, see section 4 for more details.

This process can be found on the **Personal Menu ► Generic export file creator** menu and has the following basic parameters:



	ParamID	Data type	Param name	Default value	Length	#	Fixed
1	query	A	Query		6	1	☐
2	asqlflag	b	Agresso SQL	☐	1	2	☐
3	query_param1	a	Query Parameter 1		100	3	☐
4	query_param2	a	Query Parameter 2		100	4	☐
5	query_param3	a	Query Parameter 3		100	5	☐
6	table_name	w	Export data table		100	6	☐
7	order_by	a	Sort order		200	7	☐
8	folder_path	a	Export folder path		200	8	☐
9	file	a	Export file name		200	9	☐
10	format	a	File format		3	10	☐
11	spec_out	a	Path of new spec.		200	11	☐

ParamID	Description
query	The name of the AG16 query to run.
asqlflag	Check this box if the AG16 query is written in ASQL.
query_param1	An extra parameter that can be referenced in the query, additional parameters can be manually created.
query_param2	See 'query_param1'.
query_param3	See 'query_param1'.
table_name	The name of the table from the query that contains the data to be exported, this can be a permanent table e.g. "my_temp_table" or a temporary table e.g. "$*tab1".
order_by	A fragment of a SQL ORDER BY clause (without the "ORDER BY") containing the columns by which to sort the rows in the export file, the "DESC" keyword can be used if desired
folder_path	The path of the folder that you want the file to be stored in. The path has to be from the perspective of the Business Server. If this is left blank then the value of the 'AGRESSO_EXPORT' environment variable will be used.
file	The name of the file to create, with or without a file-type suffix. Various "tags" can be included in the file name to add variable elements to its name, see section 0 for details.
format	The format of the file that you wish to create. Valid values are: • "csv" Character-Separated-Value, • "tsv" Tab-Separated-Value, • "txt" Fixed-Width-Value, • "xml" Simple XML. If the value of the 'file' parameter does not already have a file-type suffix then this value will be used as the file-type suffix of the file.
spec_out	Optional: The name or full path of the file in which you wish to create a file specification. If you only supply the name of the file then it will be created in the folder defined by the 'AGRESSO_EXPORT' environment variable on the Business Server. If you supply a full path then it has to be from the perspective of the Business World Business Server. The tags "<i>" and "<e>" can be used to represent the values of the 'AGRESSO_IMPORT' and 'AGRESSO_EXPORT' environment variables respectively. See section 4.9 for more details on specification files.

When you wish to create a permanent extract file creation process then create a variant of the GFC03 process with the parameters set to the desired values. You create and amend variants for user-defined processes using the 'Tools | Create report template' command in the "order form" for the process.

If 'format' = "xml" then if your data-source contains one or more columns whose names would not be valid element names then GFC renames these elements in an attempt to make them valid (see section 4.6). However this renaming is not guaranteed to be 100% successful so it is strongly advised that you open the generated XML file using an application that allows you to check for valid XML syntax at least once during the development of any XML extract file.

5.2 Additional File Formatting Parameter

This parameter can be added to the variant of any of the three processes that is creating an XML export file.

ParamID	xml_xslt
Data type	a
Param name	Stylesheet for output XML
Length	200
Description	If the 'format' parameter = "xml": The full path of a file containing 'Extensible Stylesheet Language Transformations' (XSLT) that will convert the generated "simple" XML into something else. The path has to be from the perspective of the Business Server. If this is left blank then no transformation will take place.
Default value in basic mode	Blank, i.e. no transformation will take place.

XSLT files are written in a language called 'Extensible Stylesheet Language' (XSL) so:

In order to use this function you will need access to someone who is able to write XSL.

An XSLT is effectively a separate piece of customisation and unless written by UNIT4 is unlikely to be covered by a maintenance agreement with UNIT4, so any exports using this parameter will inherit the same level of support as the XSLT file that is being used.

If an XSLT is being used to manipulate a very large export file this can be a slow process because the file is first written in "simple XML" and then read and rewritten by the XSL, so UNIT4 strongly advises that requirements of this type are reviewed by a UNIT4 Technical Consultant because it is likely that a custom file creation process is a more appropriate, efficient and maintainable solution than using GFC.

If an XSLT is being used to extensively change the format of an output file this can be difficult to both develop and support, so UNIT4 strongly advises that requirements of this type are reviewed by a UNIT4 Technical Consultant because it is likely that a custom file creation process is a more appropriate, efficient and maintainable solution than using GFC.

6 Troubleshooting

This section contains some possible error messages, their reasons and remedies.

If you run any of the three 'Create export file from …' server processes you could get the following error in the log file:

1. Message (all on one line):
   Error (-99999) Unable create .NET Server Program AgressoUK.FileCreator.GFC01 in assembly agressouk.filecrtr. Reason: Could not load file or assembly 'agressouk.filecrtr' or one of its dependencies. The system cannot find the file specified.
   Reason:
   The installation of the ACT assembly was not successfully carried out.
   Remedy:
   Reinstall the ACT assembly.

If you attempt to open the **Personal Menu ► Export File Creator ► Fixed registers ► Web service information** screen (TGFC04) screen you could get one of these errors:

1. Message:
   Object reference not set to an instance of an object…
   Reason:
   The installation of the TopGen screen definition was not successfully carried out.
   Remedy:
   Reinstall the TopGen screen definition for TGFC04.
2. Message:
   UseCase Assembly and/or UseCase Interface is undefined for screen TGF04.
   Reason:
   The installation of the ACT assembly was not successfully carried out.
   Remedy:
   Reinstall the ACT assembly.
3. Message (all on one line):
   A serious error occurred while processing the 'Agresso.TopGen.Common.StartPageCommand' event.
   Reason:
   The version of GFC for a different customer has been installed during an upgrade.
   Remedy:
   Obtain a version of GFC for your organisation and reinstall it.
   Reason:
   A user has modified one or more of the values of the 'GFC_CRYPT_PASSWORD', 'GFC_CRYPT_USER' or 'GFC_CRYPT_WS_ENDPOINT' system parameters using the **Personal Menu ► Generic export file creator► Fixed registers ► System parameters** screen (AG07).
   Remedy:

Use the AG07 screen and use the ‘Tools | Reset parameter to system setup value’ command on each of the three parameters, click on ‘Save’ and then re-enter the correct values of these parameters using the TGFC04 screen.