



**BPA**  
Platform

Technical Overview

# Format as Flat File Tool

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# Introduction

The **Format as Flat File** tool takes a BPA Platform recordset and converts it into a flat file to be used by another task step or external program. The flat file output can be delimited or fixed width. You can also choose whether the flat file contains data for single or multiple record types.

At the time of writing, only BPA Platform recordsets can be formatted as flat files.

## What is a Flat File?

A flat file (also referred to as a "flat file database") stores unstructured data in plain text format. It does not contain:

- ▶ Any internal hierarchy
- ▶ Any links to other files
- ▶ Any word processing information or formatting

For BPA Platform, a flat file contains a single "table" of data, with one record per line. You specify the data type of each column and use delimiters to separate each column in a record.

## Features

The following features are available:











- ▶ Output a document used by other steps in the task
- ▶ Single or multiple document output
- ▶ New document created when data changes or for each new row
- ▶ Support for delimited and fixed width files
- ▶ Support for common and custom delimiters
- ▶ Support for common and custom end of row markers

## Working with Other Tools

The **Format as Flat File** tool can interact directly with the following tools:

### Consuming from Other Tools

The **Format as Flat File** tool can directly consume objects outputted by the following tools:

Icon	Tool Name	Tool Category
	<b>Call Stored Procedure (OLEDB)</b>	Input, Data Connectors, Output, and Execute
	<b>Database Query (ODBC)</b>	Input and Data Connectors
	<b>Database Query (OLEDB)</b>	Input and Data Connectors
	<b>Import Flat File</b>	Input
	<b>Import XML Document</b>	Input
	<b>Convert Recordset to XML</b>	Format
	<b>Convert XML to Recordset</b>	Format
	<b>Transform Data</b>	Format
	<b>Call Task</b>	Execute
	<b>Filter Data</b>	General

**NOTE:** The **Format as Flat File** can only consume from the **Call Stored Procedure (OLEDB)** tool when it is outputting recordsets.









## Objects Consumed



The **Format as Flat File** tool outputs the following objects which can be directly consumed by the above tools:

- ▶ **Recordset** — Tabular data from any BPA Platform tool capable of exposing such data (see above)

## Exposing to Other Tools

Objects exposed by the **Format as Flat File** tool can be directly consumed by the following tools:

Icon	Tool Name	Tool Category
	Print Document	Output
	Save File	Output
	Send Email (SMTP)	Output
	Send Fax (Tobit)	Output
	Send Text Message	Output
	Transfer File (FTP)	Output
	Call COM Object	Execute
	Run External Program	Execute

Icon	Tool Name	Tool Category
	Run VBScript	Execute
	Web Service Connector	Data Connectors

## Objects Exposed

The following objects are outputted by the **Format as Flat File** tool for the above tools to consume:

- ▶ **Documents (Text)** — Plain text documents
- ▶ **RecordSource** — If an **Input Recordset** has been selected (see [General tab](#)), this contains the columns included in the recordset
- ▶ **Step Properties** — Standard step properties are available allowing you to use statistical data of the tool

## Global Configuration

Global configuration is not required for the **Format as Flat File** tool.

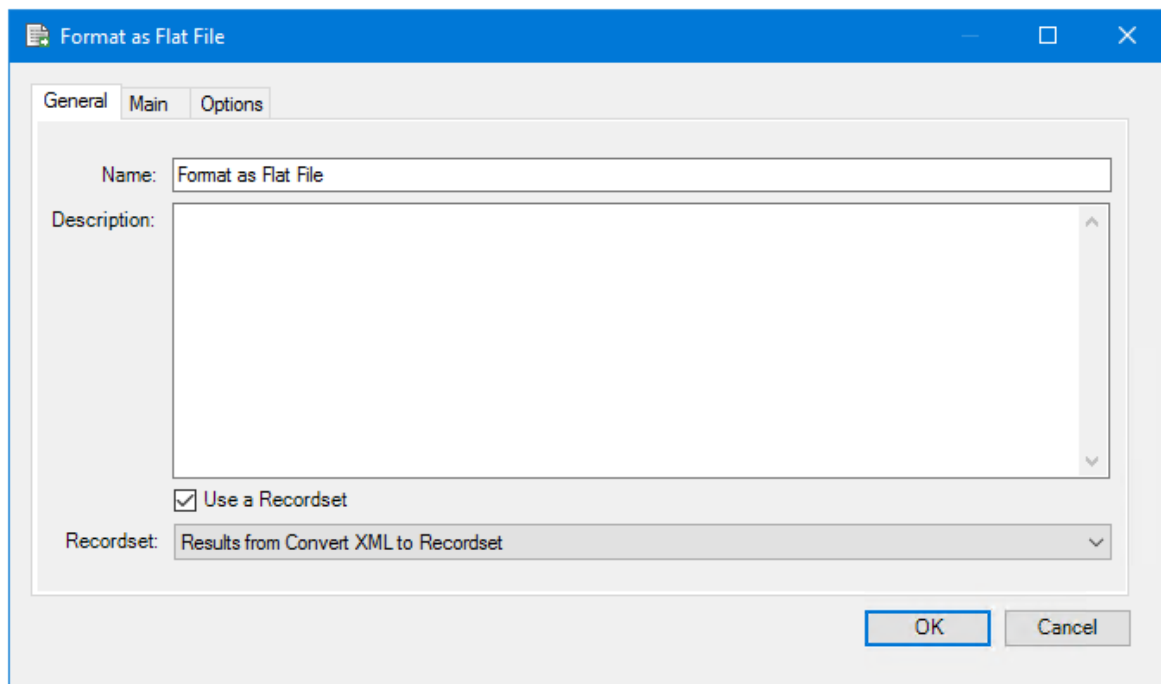
## Step Configuration

To add a new **Format as Flat File** step to an existing task, you either:

- ▶ Click and drag the **Format as Flat File** icon from the **Task Browser** to the task **Design** area.
- ▶ From the task's **Design** tab, right-click on empty space and select **New > Format > Format as Flat File**.

For a detailed description of how to create new tasks, refer to the product help.

## About the General Tab

The image shows a screenshot of a software dialog box titled "Format as Flat File". It has three tabs: "General", "Main", and "Options", with "General" being the active tab. In the "General" tab, there is a "Name:" label followed by a text box containing "Format as Flat File". Below that is a "Description:" label followed by a large, empty text area. At the bottom of the tab, there is a checkbox labeled "Use a Recordset" which is checked. Below the checkbox is a "Recordset:" label followed by a dropdown menu showing "Results from Convert XML to Recordset". At the bottom right of the dialog box are "OK" and "Cancel" buttons.

The **General** tab is used to enter the following details for the step:

- ▶ **Name** — Enter a meaningful name for the step

**TIP:** If this task instance makes use of two or more **Format as Flat File** steps, ensure the **Name** used is unique for each individual step.

- ▶ **Description** — If required, enter a description of this step

At the time of writing, the **Format as Flat File** tool can only consume recordsets from other steps. The data from this recordset make up the contents of the flat file.

- ▶ **Use a Recordset** — Enable this parameter if recordset data from a previous task step is required to form the document
  - ☐ **Input Recordset** — Contains all available recordsets from steps previously created in the task



## About the Main Tab

You use the **Main** tab to specify what data is extracted from the recordsets, and how the flat file is structured.

**TIP:** When configuring the flat file structure, remember it is to fit the consuming application or step rather than matching where it came from. For example, if an address field from the exposed recordset takes up 100 characters, but the application consuming the flat file only has a 50 character field, your configuration here should be for 50 characters only.

The **Main** tab is split into two sub-tabs: you use the **File** tab to determine the format of the flat file, and the **Output Columns** tab to determine the structure.

### Using the File Tab

The screenshot shows the 'Format as Flat File' dialog box with the 'Main' tab selected. The 'File' sub-tab is active, showing options for document generation, output generation, and separators.

**Document Generation Options**

- ☒ One Document
- ☐ New Document when column changes: EventID
- ☐ New document for each row

**Output Generation**

- ☐ Support Multiple Record Types in File
- Tag Column: EventID

**Separators**

- ☒ Include header row in File
- ☒ Delimited
  - Delimiter:
    - ☒ Comma
    - ☐ Semicolon
    - ☐ Tab
    - ☐ Space
    - ☐ Other
- ☐ Fixed Width

End of Row Marker: {CR}{LF}

Text Qualifier: "

☐ Suppress end of row marker on last row

☒ Use Source Column as Column Name

OK Cancel

From the **Document Generation Options** pane, you specify when a new document is generated:

- ▶ **One Document** — Generate a new document each time the **Format as Flat File** task step is run.
- ▶ **New Document when column changes** — Generate a new document each time the value in a specified column changes. Select the relevant column.
- ▶ **New document for each row** — Generate a new document for every record in the input recordset.

In the **Output Generation** panel, you specify the file structure:

#### *Supporting Multiple Record Types in File*

This type of flat file supports a different row structure for different data values.

Enable **Support Multiple Record Types in File**.

"Tag" is the name given to the data the **Format as Flat File** step acts upon. **Tag Column** is the input recordset column that the step monitors for the data. Tag record type, or value, is the recordset column contents the **Format as Flat File** step is monitoring for.

All other options are not used for this type of flat file and are greyed out.

#### *Using Separators or Fixed Width Formats*

To use this format of flat file, you configure the exact specifications of each column.

Do not enable **Support Multiple Record Types in File**

From the **Separators** panel, you choose how each column in the flat file is distinguished from its neighbours:

- ▶ **Include header row in File** inserts the header details into the top of the file.

Choose whether the columns in the flat file are:

- ▶ **Delimited** — Columns are separated with either a **Comma**, **Tab**, **Semicolon**, a **Space**, or a custom value of your choice (**Other**).
- ▶ **Fixed width** — Columns have a set number of characters (specified in the **Output Columns** tab). If the data in the column is less than the specified width, the column is padded with spaces up to the limit.

Choose the relevant **End of Row Marker**. You can also add custom markers by typing directly into the drop-down.

**Text Qualifier** indicates the start and end of a column. This is particularly important where the column data could also contain the chosen **Delimiter** as a legitimate character, for example, where lines of an address are separated by a comma, but the address is a single column in a CSV file. Again, custom qualifiers can be used here.

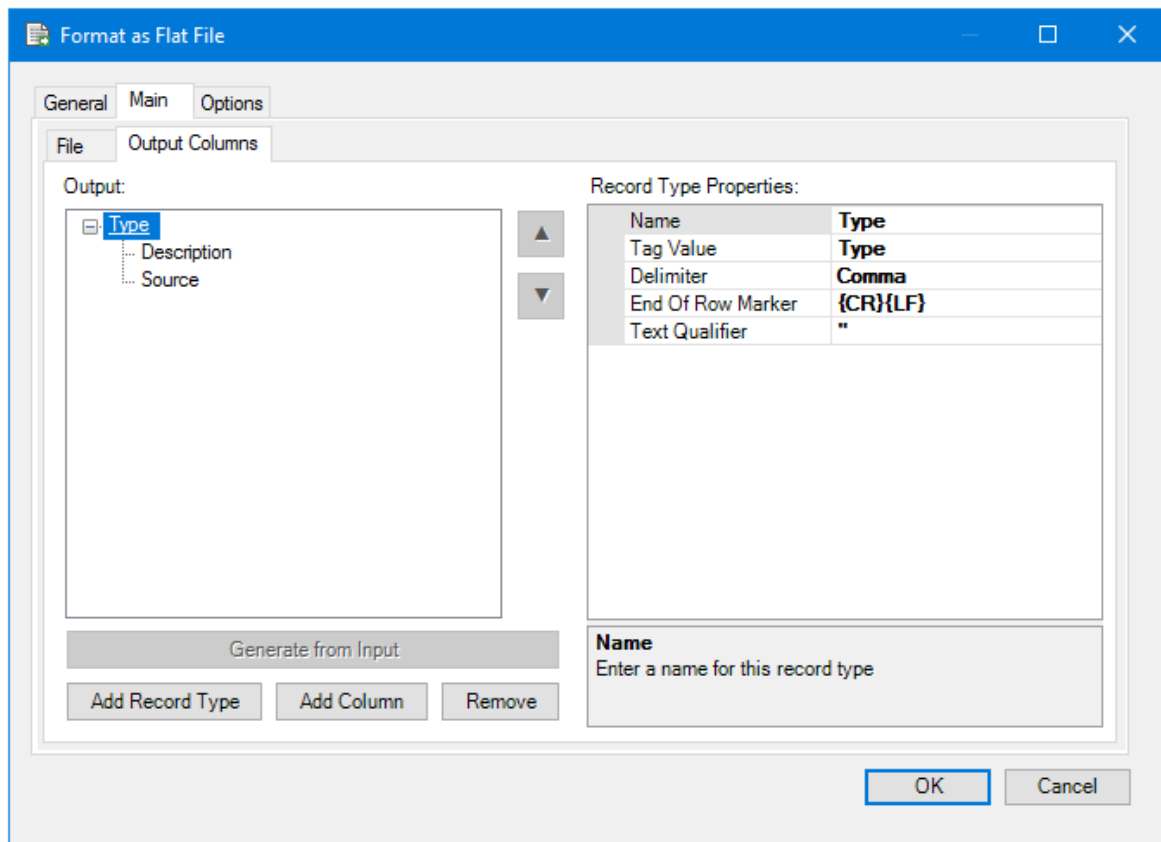
## Output Generation

Use **Suppress end of row marker on last row** if using this file in a program that does not require the last row of the file to be blank, for example, an external program such as Notepad, or even a BPA Platform tool such as **Print Document**.

Use **Use Source Column as Column Name** to have the output column names the same name as the source column. This saves time with re-keying field values.

## Using the Output Columns Tab

If you've chosen to **Support Multiple Record Types in File**, the **Output Columns** tab displays as:



Use **Add Record Type** to specify the tag (record type) that starts a new row, where:

- ▶ **Name** — The name of the record type.
- ▶ **Tag** — The record type value.
- ▶ **Delimiter** — The column separator, if required. Custom values are allowed.
- ▶ **End of Row Marker** — The marker for the end of row, if required. Custom values are allowed.
- ▶ **Text Qualifier** — The symbols for the start and end of a column, if required. Custom values are allowed.

Use **Add Column** to add the columns for the extracted data, where:

- ▶ **Name** — The name of the column. This value is used in the header row.
- ▶ **Source Column** — The column of the recordset.
- ▶ **Use Text Qualifier** — If required, you can choose to have a different text qualifier for this column to the rest of the row, even if no qualifier is used.
- ▶ **From** and **To** — If a **Fixed Width Delimiter** has been specified for this row, you must specify its start (**From**) and end (**To**) position in the row instead of the column length. For example, **From** position 25 **To** position 30, then the next column would start **From** position 31.
- ▶ **Alignment** — If a **Fixed Width Delimiter** has been specified for this row, choose whether the column data is aligned to the left (default) or to the right.
- ▶ **Padding Character** — By default, fixed width columns are padded with spaces if the data does not fill the whole width. You can choose a different symbol to pad out the column (**Space**, **Hyphens**, or **Zeros**). Custom values are allowed.
- ▶ **Date/Time Format** — If the **Source Column** contains date / time data, choose the output format for this column. You can either select a supplied format, or enter a custom date format — custom formats must adhere to the .NET implementation of date / time format strings, see <https://docs.microsoft.com/en-us/dotnet/standard/base-types/custom-date-and-time-format-strings>. Supplied formats include:

Date/Time Format	Example
d/M/yyyy hh:mm:ss	20/9/2018 09:30:00 (12 hour clock, without AM/PM notations)
M/d/yyyy hh:mm:ss	9/20/2018 09:30:00 (12-hour clock, without AM/PM notations)
d/M/yyyy h:mm:ss tt	20/9/2018 9:30:00 AM
M/d/yyyy h:mm:ss tt	9/20/2018 9:30:00 PM
d/M/yyyy HH:mm:ss	20/9/2018 09:30:00 (24-hour clock)
M/d/yyyy HH:mm:ss	9/20/2018 21:30:00 (24-hour clock)
d/M/yyyy	20/9/2018
M/d/yyyy	9/20/2018

Date/Time Format	Example
hh:mm:ss	09:30:00 (12-hour clock, without AM/PM notations)
h:mm:ss tt	9:30:00 AM
dddd, MMMM dd, yyyy	Thursday, September 20, 2018
dddd, MMMM dd, yyyy h:mm:ss tt	Thursday, September 20, 2018 9:30:00 AM
dddd, MMMM dd, yyyy hh:mm:ss	Thursday, September 20, 2018 09:30:00 (12-hour clock, without AM/PM notations)
yyyy'-'MM'-'dd'T'HH':'mm':'ss	2018-09-20T21:30:00 (24-hour clock) "T" is a delimiter between the date and time sections, and is a required character for this format.
yyyy'-'MM'-'dd HH':'mm':'ss'Z'	2018-09-20 21:30:00+0100 (24-hour clock) "Z" represents the time-zone offset from GMT. In the example above, it is 21:30 in the GMT+1 time-zone.

If you did not select **Support Multiple Record Types in File**, the **Output Columns** tab displays as:

**Format as Flat File**

General Main Options

File Output Columns

Output:

- EventCategory
- EventType**
- EventDesc
- EventSource
- EventTime

Generate from Input Add Column Remove

Column Properties:

Name	Event Type
Source Column	Event Type
Use Text Qualifier	False
From	
To	
Alignment	Left Alignment
Padding Character	Space
Date/Time Format	d/M/yyyy hh:mm:ss

**Name**  
Enter name of this field in the output

OK Cancel

Use **Generate from Input** to create a flat file that uses the same column names, in the same order.

**NOTE:** You still need to specify any text qualifiers, alignments, and column widths if using this option as this information is not available from the consumed recordset.

Use **Add Column** to add the columns for the extracted data.

From the **Column Properties** pane, specify the structure of each column in your output, where:

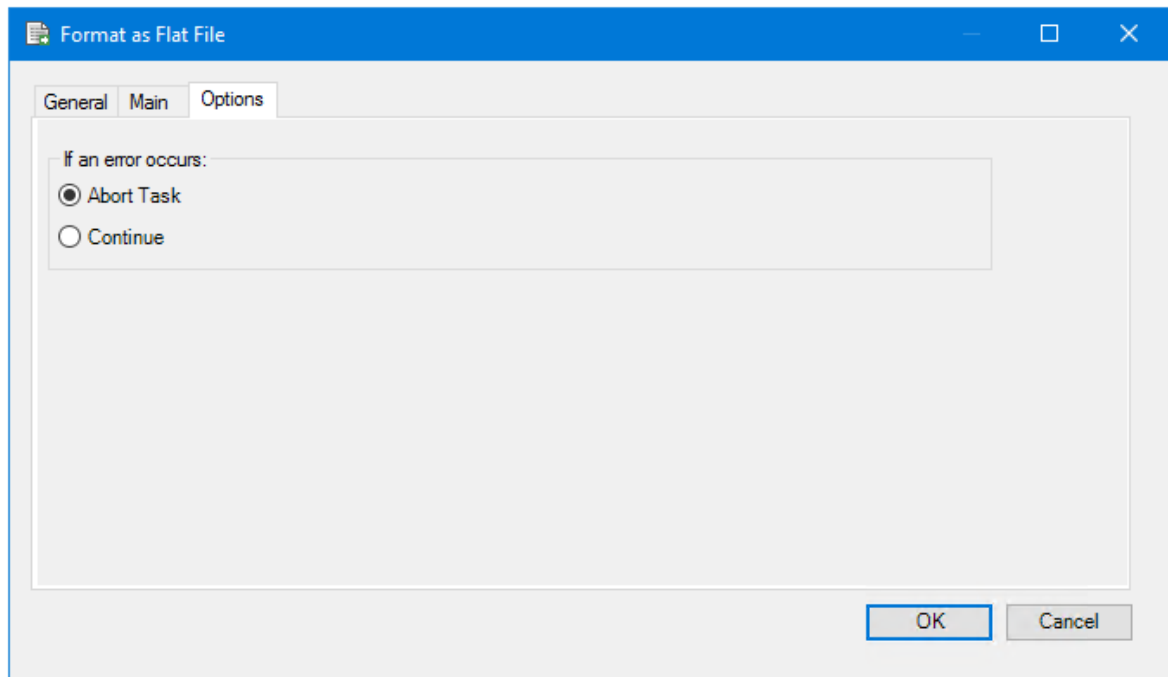
- ▶ **Name** — The name of the column. This value is used in the header row if enabled in the **File** tab.
- ▶ If **Use Source Column as Column Name** is enabled in the **File** tab, skip this field as it is automatically filled from the **Source Column** value.
- ▶ **Source Column** — The column of the recordset.
- ▶ **Use Text Qualifier** — If required, you can choose to have a different text qualifier for this column to the rest of the row, even if no qualifier is used.
- ▶ **From** and **To** — If **Fixed Width** has been specified for this flat file, you must specify its start (**From**) and end (**To**) position in the row instead of the column length. For example, **From** position 25 **To** position 30, then the next column would start **From** position 31.
- ▶ **Alignment** — If **Fixed Width** has been specified for this flat file, choose whether the column data is aligned to the left (default) or to the right.
- ▶ **Padding Character** — By default, fixed width columns are padded with spaces if the data does not fill the whole width. You can choose a different symbol to pad out the column (**Space**, **Hyphens**, or **Zeros**). Custom values are allowed.
- ▶ **Date/Time Format** — If the **Source Column** contains date / time data, choose the output format for this column. You can either select a supplied format, or enter a custom date format — custom formats must adhere to the .NET implementation of date / time format strings, see <https://docs.microsoft.com/en-us/dotnet/standard/base-types/custom-date-and-time-format-strings>. Supplied formats include:

Date/Time Format	Example
d/M/yyyy hh:mm:ss	20/9/2018 09:30:00 (12 hour clock, without AM/PM notations)
M/d/yyyy hh:mm:ss	9/20/2018 09:30:00 (12-hour clock, without AM/PM notations)
d/M/yyyy h:mm:ss tt	20/9/2018 9:30:00 AM
M/d/yyyy h:mm:ss tt	9/20/2018 9:30:00 PM

Date/Time Format	Example
d/M/yyyy HH:mm:ss	20/9/2018 09:30:00 (24-hour clock)
M/d/yyyy HH:mm:ss	9/20/2018 21:30:00 (24-hour clock)
d/M/yyyy	20/9/2018
M/d/yyyy	9/20/2018
hh:mm:ss	09:30:00 (12-hour clock, without AM/PM notations)
h:mm:ss tt	9:30:00 AM
dddd, MMMM dd, yyyy	Thursday, September 20, 2018
dddd, MMMM dd, yyyy h:mm:ss tt	Thursday, September 20, 2018 9:30:00 AM
dddd, MMMM dd, yyyy hh:mm:ss	Thursday, September 20, 2018 09:30:00 (12-hour clock, without AM/PM notations)
yyyy'-'MM'-'dd'T'HH':'mm':'ss	2018-09-20T21:30:00 (24-hour clock) "T" is a delimiter between the date and time sections, and is a required character for this format.
yyyy'-'MM'-'dd HH':'mm':'ss'Z'	2018-09-20 21:30:00+0100 (24-hour clock) "Z" represents the time-zone offset from GMT. In the example above, it is 21:30 in the GMT+1 time-zone.

## About the Options Tab

The **Options** tab allows you to define how errors in this step are handled at task runtime.



**If an error occurs**, you can decide whether the step should **Continue** processing, or terminate the step immediately (**Abort Task**).



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