BarTender®
BY SEAGULL SCIENTIFIC

What's New in BarTender 2019

WHITE PAPER

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Introduction

With BarTender® software by Seagull Scientific, organizations around the world can improve safety, security, efficiency, and compliance by creating and automating the printing of labels, barcodes, RFID tags, plastic cards, and more. Thousands of companies in manufacturing, chemicals, health care, food and beverage, aerospace, pharmaceuticals, supply chain/logistics, and other industries trust BarTender with the labeling and marking processes that keep their businesses running.

With the release of BarTender 2019, Seagull Scientific continues to enhance your design and printing experience and provide easier ways to manage and administer your operation. This document describes the most significant features that were added or improved in BarTender 2019.

Improvements in the BarTender Suite were made in response to customer feedback and requests and can be found in many areas of the software.

Templates

BarTender 2019 introduces new and improved features to help you create your document templates.

New Text Editor

Look for the following features to improve your experience when you create and edit text objects for your BarTender documents.

New WYSIWYG Text Editing

A new WYSIWYG on-screen edit mode for text objects makes editing these items easy and intuitive, even for rotated and transformed text objects. To do this, simply select the text that you want to edit, and then enter your changes.

The following example shows that a text object that has the wave transform applied can be edited directly in the text object itself.

You can use the **text toolbar** to apply the available font styles to the selected embedded data. You can also use the context menu for the selected embedded data to open the **Fonts** dialog, which you can use to quickly edit the font style and formatting. (The font attributes that you specify affect only the current selection.)

Because each data source can have only one font style, you can use this functionality to split a single data source into two or more data sources by changing the font style of one data source. For example, if your current data source is the embedded text "sample text," you can change the font style of the word "sample" to make that word a separate data source from the word "text." Similarly, you can merge data sources in an object by changing the font of a data source to match the font of the adjacent data sources.

Data Source Editing

The expanded BarTender on-screen editing functionality includes the following improvements to data source creation and editing:

- New support for dragging items from the Toolbox to perform the following actions:
    - Create a text object that has a specific data source.
    - Add a data source to an existing object at the cursor position.
    - Replace an object's existing data source.
    - Open relevant dialogs automatically when you drag a data source from the Toolbox to the template. For example, when you drag the Visual Basic Script data source to the template, the Visual Basic Script Editor automatically opens.

- Additional data source options in the Toolbox, including the following:
  - **Date** and **Time**: These data types of the Clock data source are now listed separately.
  - **Serial Number**: Easily add a serialization component to the template.
  - **Table Data Fields**: This list displays the data fields that are associated with a table object's source data.
  - **Data Entry Field**: This list displays the existing data entry controls on the data entry form. When you drag a data entry field to the template, a text object is created that has an embedded data source that is linked to the control.
  - **Print Job Field**: Easily add a Print Job Field data source to the template.
- Improved on-screen data source editing that makes it easier to edit objects that contain multiple data sources. To use the new on-screen edit mode, click within an object. Embedded data is displayed as editable text, and discrete data sources are displayed as discrete entities.

  Discrete data sources include the following:
  - All data sources that are not an Embedded Data data source
  - Embedded Data data sources that meet one or more of the following conditions:
    - Have a data source transform applied
    - Are a data type other than Text
    - Are linked to a data entry control

  When you click embedded data, the cursor is placed at the location where you clicked. When you click a discrete data source, it is selected as a whole.

  When you use this on-screen edit mode, you can do the following:
  - Add or delete characters of the existing embedded data at the cursor position.
  - Move the cursor between different data sources in the object.
  - Edit the data source properties by opening property-specific dialogs from a data source's context menu.
  - Select portions of embedded data for selective text formatting by using the **Fonts** dialog. which you can access from the context menu. When you do this, you create a separate Embedded Data data source.
  - Use cut, copy, and paste functions on an existing data source to create additional data sources in another object or to create a new object when no existing object is selected.

New Text Formatting Options

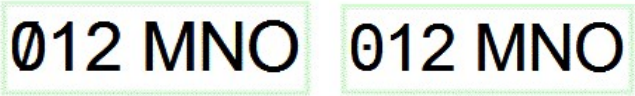
In BarTender 2019, you can use the following new text formatting options:

- Subscript and superscript

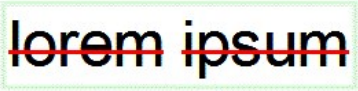
  $C_6H_{12}O_6$ $X^6 + Y^3$

- Small caps

- Slashed-zero and dotted-zero options to differentiate the letter "O" from a zero

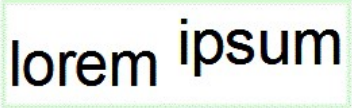


- Style and color options for the text strikethrough format and an option to apply the strikethrough formatting to words only



- Style and color options for the text underline format and an option to apply the underline formatting to words only

- Baseline offset, which you can use to specify how far above or below the text's baseline you want selected text to appear



Additionally, the "single line" and "multi line" text objects have been renamed to "Normal" and "Normal Wrapped."

New Text Wrapping and Autofit Features

BarTender 2019 introduces a new design experience for wrapping and fitting text within an object.

Text Wrapping

BarTender 2019 supports new wrapping functionality that wraps text to multiple columns, around one or more objects, inside objects, inside the label border, and inside the object's own border (if such a border is used). You can also wrap text around adjacent objects.

Auto Fit

The improved Auto Fit feature (which replaces Auto Size) gives text objects the flexibility to fit into nearly any space on the template. By using Auto Fit, you can fit text within the template even when the text object exceeds the template's boundaries. The values for font point size, font scale width, character spacing, and line spacing are measured by relative percentages instead

of absolute values, which makes the Auto Fit functionality work better for objects that have mixed point sizes. You can automatically fit text into an object by adjusting any combination of these values.

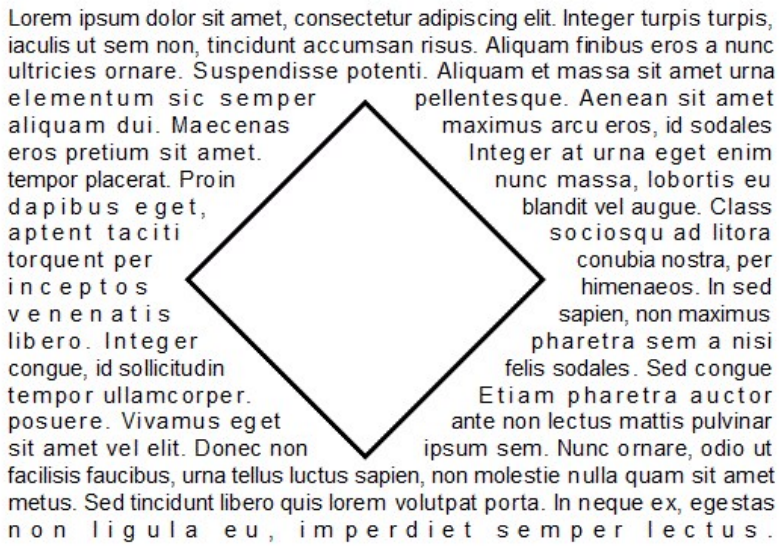
Auto Fit also makes it possible to link adjustments between objects in a group, so that you can automatically size multiple text objects at the same time by using the same settings. When you use this option, you can ensure that the font appearance is consistent across multiple fields.

For example, an address label may have four separate text objects. One of the objects may need to be rendered at 90 percent width in order to fit on the label. When you use the linked adjustments option and specify the same group name for the objects, that 90 percent width value is automatically applied to the other objects to make them all appear to be in the same size font.

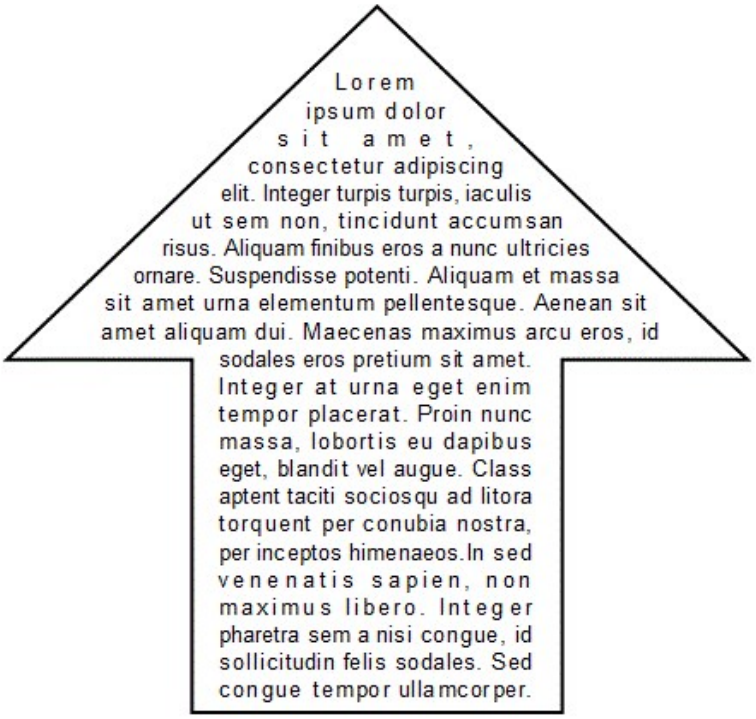
Using Text Wrapping with Auto Fit

You can combine Auto Fit with the improved text wrapping to implement advanced scenarios such as auto-fitting text within an irregular shape.

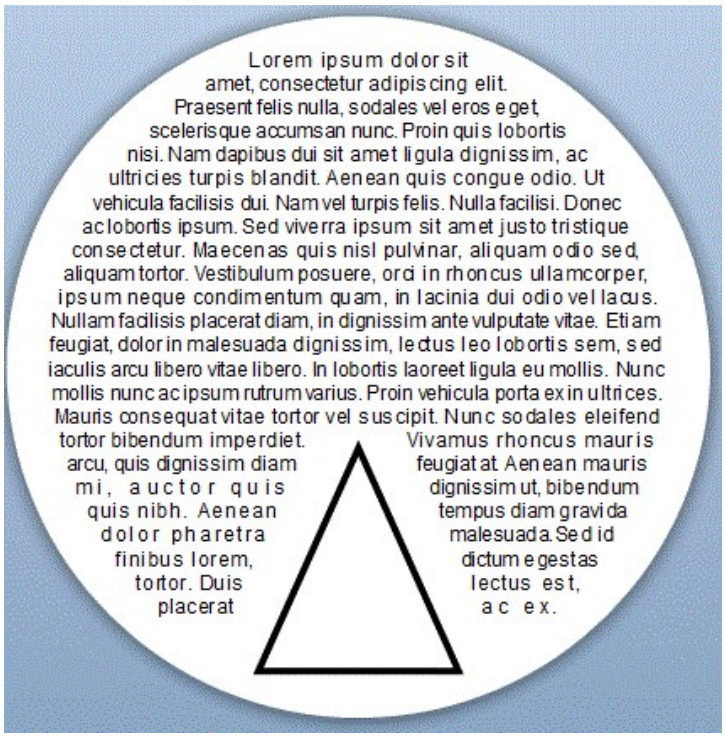
For example, you can use the wrapping and Auto Fit features together to easily wrap text around a shape object, as shown.



You can automatically fit text inside a shape object, as shown.



You can automatically fit text on circular and elliptical labels and also simultaneously wrap the text around a shape object, as shown.



New Text Transforms

BarTender 2019 adds a collection of new transforms that you can apply to text objects, which change the shape of the text. Click **Text** on the **object toolbar** to view the default transform configurations, as shown, and then point to a transformed text object to see a tooltip that displays the name of the object type. Click the transformed text object that you want on the **Text** menu, and then click the template to add the object to the template. You can then customize the transform by using the text object's **Text Format** property page.

The new transformed text objects support rotation to the same extent as other template objects. They also support columns and multiple lines of text, including tab, justification, and indentation options.

The following new transforms are available:

- Arc, with included configurations for the following text effects:
    - Arc up
    - Arc down
- Bend, with included configurations for the following text effects:
    - Bend up
    - Bend down
- Curve, with included configurations for the following text effects:
    - Curve up
    - Curve down
    - Inflate
    - Deflate
- Skew, with included configurations for the following text effects:
    - Slant up
    - Slant down
    - Slant left
    - Slant right
    - Fade right

    - Fade left
    - Fade back
- Wave, with an included configuration for the following text effect:
    - Standard wave

Improved Arc Text Transform

The arc text transform support has been improved to include the following features:

- Rotation of an arc to the same extent as other template objects
- Support for columns and multiple lines of text, including tab, justification, and indentation options
- Control points to adjust the radius and center point of the arc

Improved Typographic Precision

Precision for font point sizes is now available in increments of 0.1 point (pt). This is an improvement over the previously available 0.5 pt increments.

Layout Grid Object

You can now add a layout grid object to your template when you want to position other template objects within a grid format. This object supports dynamic designs, with rows and columns that are resized automatically in response to the size and presence of the objects that are contained within the grid cells.

You can, however, manually specify minimum and maximum height for individual rows and minimum and maximum width for individual columns. You can also specify that the height of certain rows and/or the width of certain columns are fixed while others are calculated dynamically and can change size.

The layout grid object also includes a **Resize objects to fit cell when possible** option, which automatically sizes an object to fit the grid cell.

You can also use the **Span** options to make a cell and its object span more than one row and/or column.

The following graphic illustrates these features.

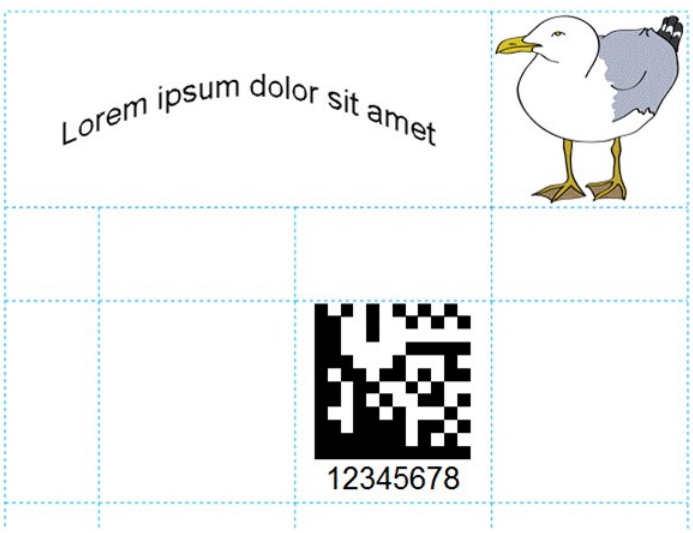
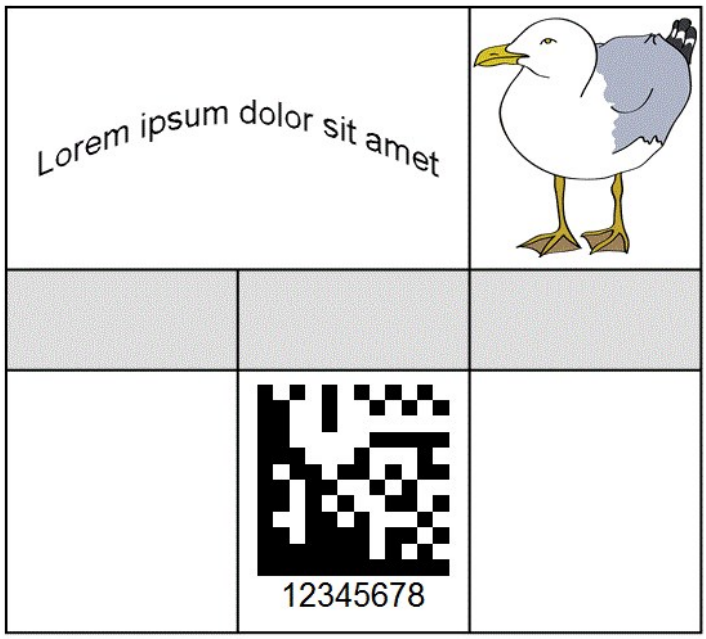


Table Object

You can now add a table object to your template when you want to position other template objects within a table format. Similar to the layout grid object, the rows and columns of the table object are resized automatically in response to the size and presence of the objects that are contained within the table cells, and you can manually specify the height and width of cells, specify that objects are resized automatically to fit into cells, and use the **Span** options to span rows and/or columns. The table object, however, includes properties for table, column, and cell borders, shading, and backgrounds.

The following graphic illustrates these features.

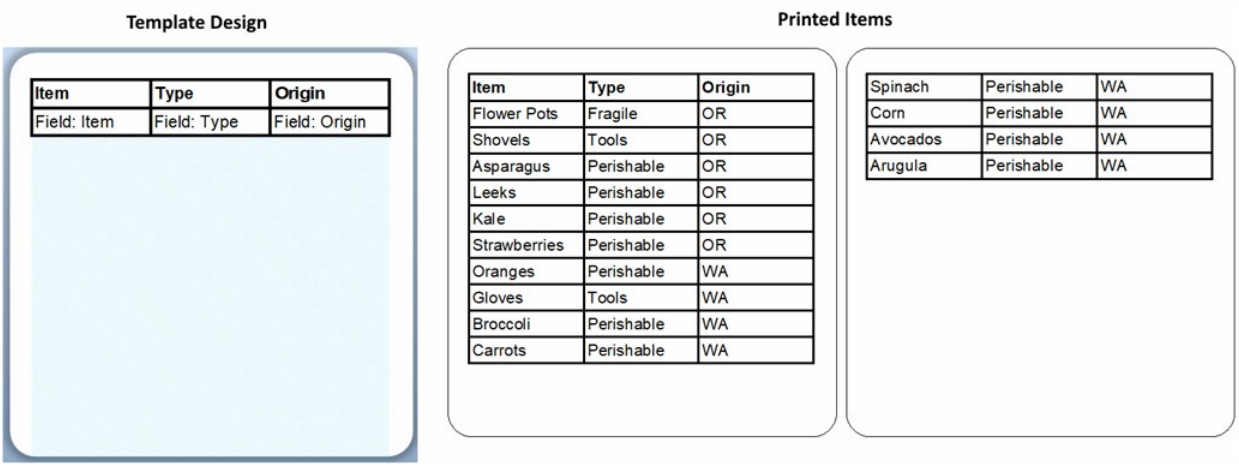


Support for Dynamic Data

When you add a table object to your template, you can create a table that contains dynamic data, such as database records or data that is returned from Visual Basic Script. The table object supports this dynamic data by increasing the number of rows or columns automatically at print time to accommodate the data that is merged with the document when it is printed.

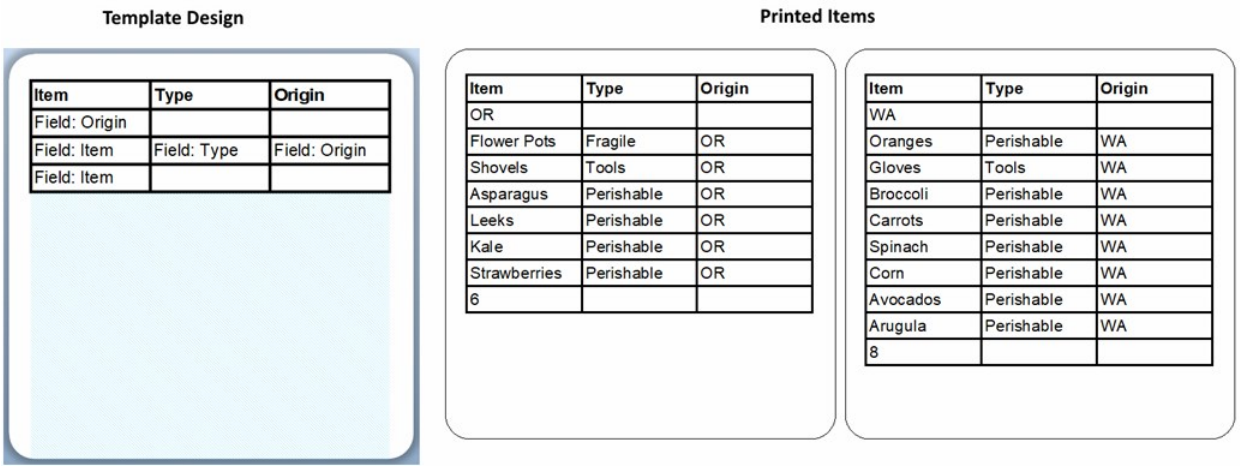
You can also add rows and columns to the table that can include table and page headers and footers and that can group the dynamic data based on an included field and summarize information about the data by using Sum and other aggregate functions.

The following graphics illustrate this feature. The first set of graphics shows the template design and the resulting printed items for a table that is configured to display three fields from a database; it includes a table header row with a single data row for records.



The second graphic shows the same table with the following modifications:

- The table data template for the first row was changed from Table Header to Page Header, so it now appears at the top of each printed item.
- A new row was inserted after the Page Header row, and the Group Header table data template was applied and configured to group the products by the Origin field with a page break between groups.
- A new row was inserted after the Data row, and the Group Footer table data template was applied; the "Field: Origin" data source was added to the first column in this row and configured to count the products in the preceding group.



Supported Table Data Templates

As shown in the preceding graphics, the table object supports table data templates that can help you organize and summarize the data that is contained in the table. By using these templates, you can add headers and footers to the table, to pages, and to groups of data, and you can add other template objects to the table, such as text, barcodes, and pictures. You can also display calculated values, such as the sum, average, maximum, or minimum for data fields in the table.

Supported Field Functions

The following field functions are supported for table data fields:

- Sum: Calculates the total of all the values in the specified range for the Table Data Field data source. Supported for numeric values.
- Average: Calculates the average of all the values in the specified range for the Table Data Field data source. Supported for numeric values.
- Minimum: Determines the minimum value in the specified range for the Table Data Field data source. Supported for numeric values and date values. Also supported for text values, where it can determine the first string, as sorted by a case-sensitive, neutral language comparison.
- Maximum: Determines the maximum value in the specified range for the Table Data Field data source. Supported for numeric values and date values. Also supported for text values, where it can determine the last string, as sorted by a case-sensitive, neutral language comparison.
- Count: Calculates the number of records in the specified range.
- List (Comma-Separated Value): Concatenates all record values in the specified range into one long string, separated by commas.
- List (Tab-Separated Value): Concatenates all record values in the specified range into one long string, separated by tabs.
- List (Single Value Per Line): Concatenates all record values in the specified range into one long string, separated by line breaks.

Barcodes

Improvements to barcode support include the following:

- Removed restrictions on how barcodes can be rotated on the template.
- Added an option to disable the ECI header (prefix) for binary data.
- Added the Data Matrix standard for retail Pharmacy Product Number (PPN) packs.
- Updated GS1 Application Identifiers (AI) to the GS1 version 19 specification.
- Improved support for the following symbologies:
    - Data Matrix: Added manual encoding support for the following escape sequences:
        - **^a**: Latch to ASCII
        - **^b**: Latch to Binary (base 256)
        - **^c**: Latch to C40
        - **^e**: Latch to EDIFACT
        - **^t**: Latch to Text
        - **^u**: Unlatch (return to Auto)
        - **^x**: Latch to X12
    - GS1 Data Matrix: Added "split" AI placement option that extracts all key AIs and places them below the barcode, with the remaining human readable text placed above the barcode.
    - QR Code: Added ECI support.
    - Royal Mail 4-State Customer Code: Added support for Type C, Type L, and CMDM.
    - Singapore 4-State Postal Code: Added support.

Other

Expanded Object Error Handling

You can now configure error handling for all template objects by using the object's **Error Handling** property page. On this property page, you can specify the actions that you want to take if a certain error condition occurs. This feature previously existed for picture objects, but it is now available for all template objects.

Improved Printer-Switching Behavior

BarTender now automatically retains within each document a history of printer settings by printer model rather than name. These settings are added to the printer setting history when you switch to a new printer. By saving these settings, BarTender can switch between different printers for a document and have fewer settings that require user adjustments.

Added Description Field for Data Sources

A new **Description** field on the **Data Sources** property page makes it easy for users to select standard terms (such as the terms that are used in the GS1 AI wizard or the MaxiCode wizard) that describe what the data source represents.

Terminology Changes

Single Line and Multi-Line Text Objects are Renamed

The Single Line and Multi-Line text objects have been renamed to Normal and Normal Wrapped.

Auto Size is Renamed

The Auto Size feature is renamed to Auto Fit. Improvements to this feature are described in the New Text Wrapping and Autofit Features section of this document.

Data Entry Forms

Support for data entry forms is expanded with the following additions in BarTender 2019.

Actions

You can now configure actions that you want to run at print time in response to events that are related to the data entry form and the new data entry button control and hyperlink text object. The actions that you configure can be as simple as printing another BarTender document or sending an email message or as complex as writing data to a database or performing a looping set of actions.

The supported actions that you can run from the data entry form include not only most of the same actions that are available in Integration Builder but also form-specific actions, such as Reset Form Data, Clear Form Data, Cancel Print Job, and more.

Form Events

You can configure actions that you want to run when the following form events occur:

- Form Opened
- Validate Data
- Form Closed
- Form Cancelled

Button Control

The button control creates a button on the data entry form that you can configure to run any number of actions when it is clicked by the print operator. It includes the following single event on which the actions are run:

- Control Clicked

Hyperlink Text Object

The hyperlink text object creates a text object on the data entry form that supports a hyperlink that you can configure to run any number of actions when it is clicked by the print operator. You specify the content of the text and then configure the actions that you want. The hyperlink text object includes the following single event on which the actions are run:

- Control Clicked

List Improvements

Multiple Columns

The following data entry controls now support a multiple-column view that you can enable by selecting **Multiple Columns** for the control's **Type** property:

- List box
- Dropdown list

After you enable multiple columns for these controls, the **Columns** property page is added to the control's **Properties** dialog so that you can configure the number of columns that you want and the format of the columns. At print time, the data entry form displays the control with the columns that you configure.

Card Views

The following data entry controls now support card views that you can enable by selecting **Simple Cards** or **Custom Cards** for the control's **Type** property:

- List box
- Record picker

After you enable cards, you can use the **Columns** property page to specify and configure the data fields that appear on the cards.

Bind to Multiple Data Sources

For list control types that support multiple columns and simple and custom cards, you can use the **Linked Data Source** property page to bind each column in the control to a separate data source.

Databases

BarTender 2019 introduces new database tools and providers and improved database connections for text files and Microsoft Excel and Microsoft Access files.

Data Builder

Data Builder is a new companion application in the BarTender Suite that you can use to create and manage databases that include one or more tables. You can connect to these databases in BarTender Designer when you want to import the data into a BarTender document. You can also connect to these databases from other applications in the BarTender Suite, including Integration Builder and Process Builder. By using Data Builder to create your database tables, you can replace external applications such as a text editor, Access, Excel, and so on.

When you use Data Builder to create your database, you can specify data types for the fields in your tables, including auto-incrementing ID, text, number, date, time, check box, picture, and multiple choice, and then select from various formats for each data type. You can specify that fields are required or unique within the table, and you can specify the fields that you want to be indexed within the database. You can also create validation rules for each field in a table and create the error message that you want to be shown if validation fails.

The Data Builder import functionality uses the Import Table wizard to make it easy for you to select the database tables that you want from one of the supported database types when you create your database.

Embedded Database Tables

You can now embed a database in a BarTender document by using the new **Embedded Data Table Editor**. This editor is similar in appearance and function to the Data Builder companion application, including the same range of data types and field validation options. By using this editor, you can build embedded data tables for use in your BarTender documents.

New Connectors

BarTender 2019 adds support for additional database providers.

XML

When you connect to an XML file by using the Database Setup wizard, you are prompted to select the master element. You can also select the child elements and any parent elements that you want to include. The Database Setup wizard scans for an XML schema, which can be referenced in the XML file itself or in an XSD or DTD file. If the XML schema cannot be found, you are prompted to provide the schema file.

After you have successfully connected to an XML file, the data is converted into a table that uses a consistent field name syntax.

Microsoft Azure SQL Database

Microsoft Azure SQL Database is a cloud database service that is based on Microsoft SQL Server database technology and built on the Microsoft Azure cloud computing platform. It is used to store relational data in the cloud, and it uses dynamic scalability and integrated optimization features to minimize database administration.

MariaDB

MariaDB is an open-source relational database management system that provides a Structured Query Language (SQL) interface for accessing data. Its primary function is to store and retrieve data as requested by other software applications. MariaDB is a branch of MySQL, and it remains highly compatible with MySQL, with the main differences being the advanced back-end features of MariaDB. BarTender supports MariaDB 5.5 and later versions.

Improved Connectors

BarTender 2019 improves existing database connectors for text, Excel, and Access database files.

Text

Connections to a text file database include the following improvements:

- New filter conditions, including the following SQL syntax:
  - IN
  - NOT IN
  - BETWEEN
  - NOT BETWEEN
  - IS NULL
  - IS NOT NULL
- New filtering options, including the following:
  - **Discard lines at beginning of file**: Specifies the number of lines that are skipped at the start of the file.
  - **Discard lines at end of file**: Specifies the number of lines that are skipped at the end of the file.
  - **Stop reading when line matches expression**: Specifies that a line that contains the specified expression is ignored, and no further lines are read.
  - **Discard blank lines**: Specifies that blank lines are skipped.
  - **Discard lines that start with**: Specifies that lines that start with the specified character are skipped.
  - **Discard lines that match expression**: Specifies that a line is skipped if it matches the regular expression that you create. This operation determines whether the line starts with, ends with, or contains a sequence of characters.
  - **Discard X characters on left (or right)**: Specifies that each line has the specified number of characters removed from the left (or right) side of the string.

- **Keep only X characters per line**: Specifies that after discarding any characters from the left and/or right side of the line, each line is truncated to the specified number of characters.

- Added support for files that express data by using name/value pairs (such as an INI file)
- Added support for additional delimited file options, including a custom delimiter and a custom regular expression delimiter
- Fixed-width improvements

Excel

BarTender Designer now supports Excel by integrating the CData Excel ADO.NET provider, which offers the following advantages:

- Works in 32-bit and 64-bit environments regardless of what version of Office you have installed
- Improves performance based on direct file access
- Supports “transposed” tables (where fields are rows instead of columns)
- Makes it possible to specify a range (such as C5:F17) as a source for a table without the need to create a “named range” in Excel

Access

BarTender Designer now supports Access by integrating the CData Access ADO.NET provider, which offers the following advantage:

- Works in 32-bit and 64-bit environments regardless of what version of Office you have installed

Database Actions for Integration Builder, Process Builder, and BarTender

Additional database actions are now supported by Integration Builder, Process Builder, and document, form, and control events in BarTender. These new actions include the following:

- Insert Record
- Update Record
- Delete Record
- Execute SQL

Multiple Records Per Item Printing

Support is added for printing multiple database records on a single printed item by using a new **Records Per Item** property page on the **Database Setup** dialog. By using the settings on the **Records Per Item** property page, you can configure how you want the records to be grouped on the printed items.

For example, you can configure a database that has the following data to group all products of a specific region on a single printed item.

Product	Region
Knife	Western Region
Dish Towel	Eastern Region
Coffee Mug	Southern Region
Fork	Western Region
Spoon	Western Region
Tongs	Western Region
Hot Pad	Eastern Region
Dinner Glass	Southern Region
Wine Glass	Southern Region
Spatula	Eastern Region
Tea Cup	Southern Region
Juice Glass	Southern Region
Tumbler	Southern Region

The following graphic shows an example of how you might configure your printed items to appear.

Other

Administer Named Database Connections

You can now manage named database connections in Administration Console, on the new **Database Connections** page. By using the **Database Connections** page, you can add, modify, delete, rename, or clone a named database connection.

Data Updates

Support is added for writing data back to the database when a database field data source is updated. *Not supported for text databases, SAP IDoc databases, and Excel databases.*

Join Improvements

New supported join types include the following:

- LEFT OUTER
- RIGHT OUTER
- FULL

Printing

BarTender 2019 brings new features to the printing process and improvements to many existing features.

Data-Sourced Printer

Printers can now be data-sourced, either from a control on a data entry form or from a database or other data source. This makes it possible to specify the printer at print time, from a data entry control, from a database record, or even from a VBScript data source.

Document Actions

In previous versions of BarTender, you could run Visual Basic Script (VBScript) in response to document events such as the start or end of a print job or the printing of each item. With BarTender 2019, as an alternative to writing VBScript, you can configure actions that run in response to document events.

In addition to having a user-friendly interface to create these automated actions with, you have access to a wider range of actions, such as sending an email message, writing data to a database, or managing files and folders in a file system. The supported actions include most of the same actions that are available in Integration Builder and also a collection of form-specific actions, such as Clear Form Data, Continue Print Job, and Show Form.

You can configure actions that you want to run when the following document events occur:

- Print Job Started
- Data Entry Completed
- For Each Record
- For Each Identical Copy
- Print Job Sent
- Print Job Cancelled

Print Order and Start Position Improvements

BarTender 2019 adds support for new print order options and print-time starting position options.

Print Order

New print order options have been added to the **Page Setup** dialog's **Print Order** tab: **Horizontal (Alternating)** and **Vertical (Alternating)**. These options enable a serpentine print order, where printing begins on the same edge of the stock where it completed on the previous row or column (depending on whether horizontal or vertical is selected).

Print-Time Starting Position

You can now configure the print-time **Starting Position** dialog to request the row and column combination for the specific item (or label) on the page of stock where you want the printer to

begin printing the items in the print job. You can configure this option the **Page Setup** dialog's **Print Order** tab.

Native PDF Support

BarTender now supports native PDF printing. With this support, PDFs are optimized and you should experience faster PDF generation than by using third-party PDF drivers. You can also specify the export options for the PDF, including security and default view options.

Wasatch SoftRIP Integration

Wasatch is a well-known vendor of raster image processor (RIP) software, which is commonly used to output to digital press, large-format, and textile printers. BarTender 2019 supports printing to any print unit that is configured in Wasatch SoftRIP.

Printer Management in Administration Console

In BarTender 2019, a new **Printer Setup** page has been added to Administration Console, which replaces the **Advanced Printer and Driver Setup** dialog in BarTender Designer. This page provides the following new features:

Default Printer

You can now specify a default printer for BarTender that is different than a user's default printer that is used by other Windows applications.

Remove Printer from List

When you have a printer on your network that you do not want print operators to be able to select from any BarTender applications, you can remove the printer with a single check box selection.

Printer Redirection and Failover Settings

You can now specify that BarTender redirect its printing operations to an alternate printer when the original printer is offline, in an error state, or otherwise unavailable. This feature includes a option to specify the conditions under which you want a print job to be redirected to another printer, such as when the print queue is paused. You can also simply remove a printer from the list of available printers in BarTender.

Logging Improvements

When you are setting up print job logging to the BarTender System Database and when you choose to include an image of the printed items in the log, the following new features are available:

- **Log PDF to System Database**: In addition to the standard image formats, you can now also choose to save the image as a PDF.
- **Log first and last page only**: You can now specify which images of the printed items in the print job you want to save to the log: All, First Only, First and Last Only, or Last Only. By selecting an option other than "All," you can reduce the space that the print job requires in the system database.

License Management

In BarTender 2019, the BarTender Licensing Service replaces the Seagull License Server; the only mode of operation is now as a service. Running as an application is no longer supported.

Administration for this new licensing model has been moved to a new **Licensing** module in Administration Console. By using the pages in the **Licensing** module, you can now do the following:

- Monitor printer usage information, which includes details about when printers are approved or denied and which users were using the printer.
- Control which users, groups, or locations can connect.
- Create printer groups and specify which users can print to which printers.
- Block printers from use.
- Split licenses into partitions.
- Host multiple licenses on a single server by associating a product key code (PKC) with a user name, a computer name, or an IP address. When you do this, separate instances of the BarTender Licensing Service can be hosted on a single computer.
- Keep the same PKC after you make an edition upgrade or a printer count change.
- Use your existing PKC to activate newer versions of the product as long as it is still under maintenance. (For example, you can activate BarTender 2019 by using a BarTender 2016 PKC that is under maintenance.)

Integration Builder

In BarTender 2019, improvements have been made to Integration Builder to update the user interface, provide better support for variable use, improve testing and deployment, and provide additional actions that you can run from your integrations.

User Interface

The Integration Builder user interface has been updated with new and redesigned tabs and ribbons to help you perform the tasks that are associated with creating, testing, and deploying your integrations.

- **Create Tab and Ribbon**: The **Home** tab is renamed to the **Create** tab. The **Create** tab ribbon includes new controls for copying, cutting, and pasting content and new find and replace functions. Additionally, the Insert Variable and Insert Symbol functionality has been removed from most property pages and is now available on the **Create** tab ribbon when you select a property that supports these options.
- **Test Tab and Ribbon**: You can now test actions and integrations by using the new **Test** tab. The **Test** tab ribbon provides quick access to controls for existing start and stop functionality, but it also includes controls for new functionality, such as running your test as a print simulation and capturing and using sample data for your tests.
- **Deploy Tab and Ribbon**: A new **Deploy** tab helps you deploy your integrations and manage deployment configurations (which replace deployment plans).
- **Action Property Tabs**: Action properties are now easier to navigate by using the provided property tabs, which are specific to each action.

Variable Expressions

The syntax for variable evaluation has been extended to support properties and methods that are being called on a variable. The general syntax is based on the JavaScript language.

Testing

Improvements in testing include the addition of sample testing data and a simulated print option.

Sample Data

Each integration in an integration file can now have its own set of samples. These samples are snapshots of integration inputs and events that you can use to test and troubleshoot integrations and actions. By using samples, you can verify that the actions and variables that you have configured will produce the results that you want.

Simulated Print

You can now select a simulated print mode when testing your actions and integrations. Simulated print mode specifies that during the test, the print-type actions run without printing any physical items. A simulated print result is generated and saved to a temporary folder where you can view it.

Deployment

In BarTender 2019, deployment plans are replaced by deployment configurations, the **Deployment** page is redesigned, and a new **Servers** page is added to the **Integrations** module in Administration Console.

Deployment Configurations

A deployment configuration defines the settings that are required to deploy a single integration file to one or more servers, and it is saved as a component of the integration file. An integration file can have any number of deployment configurations; default test and production configurations are provided.

Deployment Page

On the **Deployments** page, pending deployments and deployment history have been merged into a single view of recent deployments. There is no longer a deployment plan view.

Servers Page

The servers that are listed on the **Servers** page are stored in the BarTender System Database so that they are shared between all servers that use the same system database. By default, the current server is always added to the list. Any time a server is used for deployment, it is added to this list automatically.

By using the options that are available on the **Servers** page, you can:

- Define new servers, which are then added to the servers list.
- Specify a description for each server. This description then appears in the user interface when you are selecting servers to use, such as when you add a server to a server group.
- Designate a server as a production server.
- Add one or more maintenance windows, which is a scheduled time during which server maintenance can safely be run. Typically, maintenance windows are scheduled when the server is not in production.
- Define a list of server groups, which you can use to more easily view, or deploy to, multiple servers at the same time.

> A new security permission has been added for Integration Builder. In order to deploy an integration to a production server, a user must now have permissions enabled for **Deploy to Production Servers** and either **Deploy Published Integration Files** or **Deploy Unpublished Integration Files**.

New Actions

New actions that are introduced with BarTender 2019 include the following:

- **Copy Folder**: Copies a folder from one location to another.
- **Move Folder**: Moves a folder from one location to another.
- **Rename Folder**: Renames a folder.
- **Delete Folder**: Deletes a folder.
- **Add Files to Archive**: Adds one or more files from a folder to an archive.
- **For Each File in Folder**: Runs one or more actions on all the files in a folder that match the specified filter.
- **For Each File in Archive**: Runs one or more actions on all the files in an existing archive folder that match the specified filter.
- **Extract Files from Archive**: Extracts one or more files from an archive to a folder.
- **Execute SQL**: Runs any kind of custom Structured Query Language (SQL) script.
- **Delete Database Record**: Deletes records from a connected database.
- **Insert Database Record**: Inserts a new record into a connected database.
- **Update Database Records**: Updates one or more records in a connected database.
- **Show Message**: Displays a message box to the user.
- **Show Web Page**: Opens a web page in the default browser.

Updated Action

The Print Batch action can print both legacy Batch Maker files (*.btbat) and the new Process Builder files (*.btproc).

Process Builder

Process Builder is a new companion application in the BarTender Suite that is introduced with BarTender 2019.

By using Process Builder, you can create customizable process files that run one or more actions in sequence. These process files can automate repetitive operations, and you can use the Process Builder interface as an alternative to programming interfaces such as ActiveX, the Microsoft .NET Framework SDK, the command line interface, or BarTender XML (BTXML) script. The supported actions for Process Builder include the same actions that are available in Integration Builder.

You can run your process file from Print Station or from Windows Explorer.

> Batch Maker is removed from the BarTender Suite with the addition of Process Builder. You can use Process Builder to convert an existing batch file to a process file so that you can continue to print your batch print jobs without interruption.

BarTender Edition Changes

BarTender editions have been redesigned to make the editions easier to understand and to provide customers with a better method for experiencing the features that are not included in their licensed edition.

For a list of all edition-specific features for the BarTender Suite, visit the BarTender Software edition comparison page:

https://www.bartendersoftware.com/software/compare/

BarTender is now available in the following editions:

- Free
- Professional
- Automation
- Enterprise

The edition redesign includes the following changes that are related to these new editions:

- You can test or preview features and applications that are not included in your licensed edition of BarTender. When you do this, the application displays a message that you are using a feature that is not included in your licensed edition and lists the edition that is required; items that are printed by using the unlicensed features include a watermark to identify that the item is printed in demonstration mode.
- The Trial edition is discontinued and is replaced by the new Free edition. The Free edition has a feature set that you can use indefinitely; it does not expire after 30 days.
- The Basic edition is discontinued. Many of the features that were previously included in the Basic edition are now available in the Free edition.
- The Professional edition is now licensed by number of printers.
- Intelligent Template features such as layers and conditional printing are now included in every edition.

Improved Installation Experience

The BarTender Setup wizard has been simplified and streamlined, including the following changes:

- You no longer need to specify the BarTender edition that you are installing.
- All companion applications are installed by default.
- All translations are installed by default.
- The .NET SDK is installed by default.
- The BarTender System Database is installed by default, because it is now used by all BarTender editions. If you want to centralize the system database, you can run the System Database wizard from the Administration Console **System Database** page after the BarTender installation is complete.

Additional Resources

- BarTender Software Website
  https://www.bartendersoftware.com
- BarTender Support Center
  https://support.seagullscientific.com
- BarTender Online Help System
  http://help.seagullscientific.com
- BarTender White Papers
  https://www.bartendersoftware.com/resources/white-papers/
- BarTender Getting Started Manual
  https://support.seagullscientific.com/hc/categories/200267887

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