



Automation with BTXML Script

Using BarTender XML to Automate BarTender and Integrate
with Other Applications

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Overview

BarTender XML Script (BTXML Script) provides the ability to easily automate BarTender while allowing 3rd party programmers a simple way to integrate BarTender into their applications.

Extensible Markup Language (XML) is a markup language that defines a set of rules for encoding documents in a format that is both human-readable and machine-readable. BTXML differs from regular XML only in that it was created specifically to work with BarTender.

In some cases, an XML response is created after running a BTXML script. For example, an XML response is returned when you pass BTXML Script to BarTender using ActiveX Automation. An XML response provides you with valuable information about the print job, the printer used to complete the job, BarTender's settings during the print job, and complete details about the printed items. This response can be integrated with a custom application.

Most ERP software packages already have standard functions built into them for generating XML. This is one reason why XML is such a convenient way for controlling applications to send commands to BarTender. One potential challenge, however, is that the default XML generated by your software may not be compatible with the BTXML format understood by BarTender. As an alternative to generating custom XML from your ERP application, you can generate your XML in its default format and convert it to BTXML using Integration Builder.

BarTender XML Script is available with the Automation and Enterprise Automation editions of BarTender. For more information, refer to the [Automation with BarTender XML Script](#) topic in the BarTender help system.

BarTender XML Script Message Format

BarTender XML script uses an XML style format to communicate with BarTender to process print jobs. BarTender processes the code and completes the task that the code defines.

All BTXML commands sent to BarTender must have the following format:

```
<?xml version="1.0" encoding="utf-8"?>
<XMLScript version="2.0">
  <Command>
    ...
  </Command>
</XMLScript>
```

For more detailed information, refer to the [BarTender XML Script Message Format](#) topic in the BarTender help system.

Command Tag

The command tag defines the command request. The syntax is as follows:

```
<Command [Name=Command Name] [RepeatCount=Number]>...</Command>
```

Where ... is replaced with the tags contained within the command.

For more detailed information about the command tag and supported BTXML commands, refer to the **Reference** section in the [Automation with BarTender XML Script](#) book in the BarTender help system.

Methods of Executing BTXML Script

You can create BTXML Script as a script or as a file and send it to BarTender using any of the following methods:

- BarTender **File** menu
- Integration Builder integration files
- BarTender SDK
- ActiveX Automation
- Command line interface

BarTender File Menu

You can execute BTXML Script files within BarTender by selecting **Run BTXML Script** from the **File** menu and navigating to the saved BTXML Script file.



BTXML Scripts executed through the **File** menu do not return or save an XML response.

Integration Builder

BarTender Integration Builder is an application that allows you to integrate BarTender with other software or other sources of data, and automate processes in BarTender. Using Integration Builder, you can create an integration containing a Print BTXML Script action that you can configure to pass your BTXML Script to BarTender to print one or more documents.

For more information about creating integration files, refer to the Integration Builder help system.



BTXML Scripts executed using a Print BTXML Script action return an XML response.

For more information, refer to the [Integration Builder](#) topic in the BarTender help system.

BarTender SDK

The BarTender .NET SDK interfaces with any .NET language and supports task-based concurrent label printing for high-demand environments such as web servers. It includes the following two APIs that support using BTXML Script:

- **Print Engine API:** You can execute BTXML within the Print Engine API using the Engine class `XMLScript` method. This method passes either a BTXML Script string or the path and name of a file containing BTXML Script.
- **Print Server API:** Using the Print Server API, you can use instances of the `XMLScriptTask` class to execute BTXML Script. The `XMLScriptTask` task is then submitted to the `TaskQueue` by either the `QueueTaskAndWait` method or the `QueueTask` method. The BTXML Script can

be used in either file or string mode. In file mode, the path to a BTXML Script file is given and the file is read at print time to automate BarTender. In string mode, the BTXML Script itself is placed in the task and used to perform automation.



BTXML Scripts executed using the Print Engine API and the Print Server API return an XML response.

If you have installed the BarTender SDK, you can learn more about the Print Engine API and the Printer Server API by accessing the BarTender SDK help system.

ActiveX Automation

BarTender supports ActiveX Automation, exposing its functionality as a set of software objects. Using a programming or scripting language, such as Visual Basic or C#, you can use ActiveX Automation to pass BTXML Scripts to BarTender using the Application object's XMLScript method.

For more information about automating BarTender with ActiveX Automation and using the Application object, refer to the following topics in the BarTender help system:

- [Automation with ActiveX](#)
- [Using the Application Object](#)



BTXML Scripts executed using ActiveX Automation return an XML response.

Command Line Interface

BarTender's functions can be performed automatically, when BarTender starts, by passing BTXML Script via the command line. The BTXML Script must be passed as a string or a file, and the /XMLScript parameter must be the last argument on the command line.

The following example defines the correct structure for passing a BTXML Script string to BarTender for processing (where `btxml_script` is the BarTender XML code to execute):

```
/XMLScript="btxml_script"
```

The following example defines the correct structure for passing a BTXML Script file to BarTender for processing (where `btxml_file` is the path and file name of the file containing the BarTender XML code to execute):

```
/XMLScript="btxml_file"
```

For more information on passing BTXML Script to BarTender using the command line, refer to the [Command Line Parameter Reference](#) topic in the BarTender help system.



BTXML Scripts executed through the command line do not return or save an XML response.

Printing Documents Using BXML Script

BXML Script provides a simple way for users to pass instructions to BarTender that define how to print a document. Using BXML Script tags, you can create scripts that allow you to print a single simple item or hundreds of complex designs.

Basic Printing

The following example demonstrates a simple BXML Script that opens and prints the BarTender document Document1.btw.

```
<?xml version="1.0" encoding="utf-8"?>
<XMLScript Version="2.0">
  <Command Name="Job1">
    <Print>
      <Format>c:\BarTender\Document1.btw</Format>
    </Print>
  </Command>
</XMLScript>
```

Customizing Printing

In addition to opening and printing a BarTender document, you can set various document settings before printing.

The following example opens the document Document1.btw, and sends a print job containing 100 serialized items to Tray 1 of the HP LaserJet printer.

```
<?xml version="1.0" encoding="utf-8"?>
<XMLScript Version="2.0">
  <Command>
    <Print JobName="Job1">
      <Format>c:\BarTender\Document1.btw</Format>
      <PrintSetup>
        <NumberSerializedLabels>100</NumberSerializedLabels>
        <Printer>HP LaserJet</Printer>
        <PaperTray>Tray 1</PaperTray>
      </PrintSetup>
    </Print>
  </Command>
</XMLScript>
```

Executing Multiple Print Jobs

BarTender also supports sending more than one print job within a single BXML file or string. To do this, include a <Command> tag for each print job you want to send.

The following example sends 3 print jobs (3 different <Command> tags) to the printer. Each job opens a different document, prints 5 copies and closes the document without saving it.

```
<?xml version="1.0" encoding="utf-8"?>
<XMLScript Version="2.0">
  <Command Name="Job1">
    <Print>
      <Format CloseAtEndOfJob="true">Document1.btw</Format>
      <PrintSetup>
```



```
        <IdenticalCopiesOfLabel>5</IdenticalCopiesOfLabel>
    </PrintSetup>
</Print>
</Command>
<Command Name="Job2">
    <Print>
        <Format CloseAtEndOfJob="true">Document2.btw</Format>
        <PrintSetup>
            <IdenticalCopiesOfLabel>5</IdenticalCopiesOfLabel>
        </PrintSetup>
    </Print>
</Command>
<Command Name="Job3">
    <Print>
        <Format CloseAtEndOfJob="true">Document3.btw</Format>
        <PrintSetup>
            <IdenticalCopiesOfLabel>5</IdenticalCopiesOfLabel>
        </PrintSetup>
    </Print>
</Command>
</XMLScript>
```

Automating Database Printing

Using BTXML Script you can automate a document to read data from several sources including text files, a wide variety of databases, and user prompts

Using a Text File

The following example prints the document Document1.btw, using the text data file: Data1.csv.

```
<?xml version="1.0" encoding="utf-8"?>
<XMLScript version="2.0">
  <Command Name="Job1">
    <Print>
      <Format>c:\BarTender\Document1.btw</Format>
      <RecordSet Name="Text File 1" Type="btTextFile">
        <FileName>Data1.csv</FileName>
      </RecordSet>
    </Print>
  </Command>
</XMLScript>
```

Using Embedded Delimited Text

The following example prints Document1.btw, using embedded comma delimited text. You can pass CSV data (Comma Separated Values) or you can delimit the text using quotes, tabs, or a custom delimiter. Line breaks are used to separate each individual record.

```
<?xml version="1.0" encoding="utf-8"?>
<XMLScript version="2.0">
  <Command Name="Job1">
    <Print>
      <Format>c:\BarTender\Document1.btw</Format>
      <RecordSet Name="Text File 1" Type="btTextFile">
        <Delimitation>btDelimQuoteAndComma</Delimitation>
        <UseFieldNamesFromFirstRecord>true</UseFieldNamesFromFirstRecord>
        <TextData>
          <![CDATA["FirstName","LastName","City","Zip Code"
            "Adam","Jones","Bellevue","98008"
            "John","Smith","Kirkland","98293"]]>
        </TextData>
      </RecordSet>
    </Print>
  </Command>
</XMLScript>
```

Using SQL Statements

BTXML Script supports printing BarTender documents connected to a wide variety of databases. The example below demonstrates how to print database records using a SQL statement, user ID, and password.

```
<?xml version="1.0" encoding="utf-8"?>
<XMLScript version="2.0">
  <Command Name="Job1">
    <Print>
      <Format>c:\BarTender\Document1.btw</Format>
      <RecordSet Name="employees" Type="btOLEDB">
        <UserID>Admin</UserID>
```

```

    <Password>seagull</Password>
    <SQLStatement>SELECT [last name] FROM [employees] WHERE [last name]
      = 'Swan'</SQLStatement>
  </RecordSet>
</Print>
</Command>
</XMLScript>

```

Using Query Prompts

At print time, BarTender can prompt the user for data.

The following example fills the user prompt with default data using the default reply tag. When the query prompt appears at print time, the user can choose to accept the default reply data or delete the default reply and enter new data.

```

<?xml version="1.0" encoding="utf-8"?>
<XMLScript Version="2.0" Name="09232006_103601_Job1" ID="123">
  <Command Name="Job1">
    <Print>
      <Format>c:\BarTender\Document1.btw</Format>
      <QueryPrompt Name="Product">
        <UserPrompt>Enter Product Name:</UserPrompt>
        <DefaultReply>Exotic Liquids</DefaultReply>
      </QueryPrompt>
    </Print>
  </Command>
</XMLScript>

```

Setting Template Object Data

BTXML Script allows you to directly set values of named data sources defined in a BarTender document.

The example below opens the document Document1.btw, sets values for the data sources named Product and Price, and prints the document.

```
<?xml version="1.0" encoding="utf-8"?>
<XMLScript Version="2.0">
  <Command Name="Job1">
    <Print>
      <Format>c:\BarTender\Document1.btw</Format>
      <NamedSubString Name="Product">
        <Value>Chai Tea</Value>
      </NamedSubString>
      <NamedSubString Name="Price">
        <Value>$18.00</Value>
      </NamedSubString>
    </Print>
  </Command>
</XMLScript>
```

Exporting a Template to an Image File

You can export a label to an image file using the `<ExportPrintPreviewToImage>` tag and use the image files to:

- Create an image that can be stored, transported and reprinted as desired.
- Create a record that you can use to visually validate the quality of the label.
- Create a file that can be called in a custom application to preview labels before printing them.

The following example shows the `<ExportPrintPreviewToImage>` tag. This example creates a 24 bit color *.jpg image file with 300 DPI resolution. Each image will include a border and display the correct page margins. Because the `ReturnImageInResponse` attribute is set to true, the response that will be returned when this command completes will include a copy of the exported image(s) in Base64 format.

If the print job consisted of multiple pages, each page would be saved as a unique image file with a file name that includes the words "Preview Label" and the page number.

```
<?xml version="1.0" encoding="utf-8"?>
<XMLScript Version="2.0" Name="09232006_103601_Job1" ID="123">
  <Command Name="Job1">
    <ExportPrintPreviewToImage ReturnImageInResponse="true">
      <Format>c:\format1.btw</Format>
      <Folder>c:\Images</Folder>
      <FileNameTemplate>Preview_Label%PageNumber%.jpg</FileNameTemplate>
      <ImageFormatType>JPG</ImageFormatType>
      <Colors>btColors24Bit</Colors>
      <DPI>300</DPI>
      <Overwrite>true</Overwrite>
      <IncludeMargins>true</IncludeMargins>
      <IncludeBorder>true</IncludeBorder>
      <BackgroundColor>16777215</BackgroundColor>
    </ExportPrintPreviewToImage>
  </Command>
</XMLScript>
```

Each time an `<ExportPrintPreviewToImage>` command is passed to BarTender, one or more image files are created in the target folder, and an XML response is generated. If the `ReturnImageInResponse` attribute is set to false, the command will export a copy of the image that can be viewed in BarTender History Explorer. If the `ReturnImageInResponse` attribute is set to true, the XML response will contain a copy of the image in Base64 format that can be saved and viewed in BarTender History Explorer.

Both the exported image files and the Base64 format response may be very large and care should be taken to reserve storage space.

Using the XML Response

In some cases, an XML response is created after running the script. An example of this is when you pass BTXML Script to BarTender using ActiveX Automation. An XML response provides you with valuable information about the print job, the printer, BarTender's settings during the print job, and details about the printed items. This response can be integrated with a custom application. An XML response is returned when BTXML script is run using the following methods:

- ActiveX Automation
- BarTender SDK
- Integration Builder Integration Files

You can use the information contained in the response to:

- Troubleshoot problems encountered while processing print jobs.
- Record the status of print jobs.
- Create a record that you can use to validate the content of documents and individual printed items.
- Create a summary of the entire print job.

The default response that is returned contains information about the user who sent the BTXML request, the printer used to process the request, the status of the print job and any messages that were created. The following example displays the response returned when no attributes are used or when the ReturnPrintData attribute is set to true and the ReturnSummary and ReturnLabelData attributes are set to false:

```
<?xml version="1.0" encoding="utf-16"?>
<Response Version="2.0" Name="09232006_103601_Job1" ID="123" AppName="BarTender"
AppVersion="9.00" AppVersionId="900" AppVersionMajor="9" AppVersionMinor="00"
AppVersionBuild="2345" AppInstancePid="12345" AppInstanceGUID="(5EFC7975-14BC-11CF-
9B2B-00AA00573819)">
  <User>Administrator</User>
  <Server>MyServer</Server>
  <Command Name="Job1">
    <Print GUID="{C87068F8-4972-41F1-A6E8-724381703764}"
JobName="MCIJob" ID="1234" JobLastStatus="Sent"
JobCompleted="true">
      <JobStatus Completed="true">
        <TimeJobStart>02:24:34</TimeJobStart>
        <TimeJobQueued>02:24:34</TimeJobQueued>
        <TimeJobSent>02:24:34</TimeJobSent>
        <LastStatus>Sent</LastStatus>
        <Description>Finished sending print job to printer.</Description>
      </JobStatus>
      <Message ID="1606" GUID="{8A8E8550-C822-4e84-8713-
212793DFD6E1}" Severity="Information" Category=
"Miscellaneous" Response="OK">
        <Text>BarTender successfully sent the print job to the spooler.
          Job Name: MyJobName
          BarTender Document: Document1.btw
          Printer: Datamax H-4212 7.1.4 </Text>
      </Message>
    </Print>
  </Command>
</Response>
```

You can set the response to include additional information by setting the attributes associated with the following commands:

- `<Print>` Command attributes: `ReturnPrintData`, `ReturnSummary`, `ReturnLabelData`, and `ReturnChecksum`.
- `<ExportPrintPreviewToImage>` Command attribute: `ReturnImageInReponse`.

The following sections introduce these attributes, and how they affect the response.

Returning Print Data in the Response

The `ReturnPrintData` attribute displays the summary data and the template information depending upon how the `ReturnSummaryData` and `ReturnLabelData` attributes are set. When you set the `Print` Command's `ReturnPrintData` attribute to true and do not include any other attribute, the response includes the print job details, a summary of the print job and the individual item information. Setting either the `ReturnSummaryData` or `ReturnLabelData` attributes to false will remove their information from the response.

Click [Response](#) to view an example of the response returned when the `ReturnPrintData` attribute is set to true and no other attributes are set or when the `ReturnSummary`, `ReturnLabelData` and `ReturnChecksum` attributes are included and also set to true.

Returning Summary Data in the Response

Setting the `ReturnSummary` attribute of the `<Print>` Command to true, or not including the attribute at all, returns a response that includes the `ReturnPrintData` attribute information and a summary of the entire print job. The summary information includes document and printer information, general page and layout information, and how BarTender was configured when it processed the print job. Refer to the `<Summary>` tag for a detailed description of the various tags. Setting the `ReturnSummary` attribute of the `<Print>` Command to false returns a response that does not include a detailed summary of the print job.

Click [ReturnSummary](#) to view an example that displays the response returned when the `ReturnSummary` attribute is set to true and the `ReturnLabelData` attribute is set to false.

Returning Template Data in the Response

Setting the `ReturnLabelData` attribute to true or not including the attribute at all, returns a response that includes the print job information described in the `ReturnPrintData` attribute and a detailed definition that includes page, template, object and data source information, and can be used to validate and reprint the print job. Setting the `ReturnLabelData` attribute of the `<Print>` Command to false returns a response that does not include any template data.

Click [ReturnLabelData](#) to view an example that displays the response returned when the `ReturnLabelData` attribute is set to true, but the `ReturnSummary` attribute is set to false.

Returning Checksum Data in the Response

To return checksum data in the response you must set the `ReturnChecksum` attribute to true. When set, the checksum attribute returns checksums that represent various parts of the print job and objects included on the document being printed.

History Explorer and Reprint Console will use these checksum values to verify the content of the documents being reprinted by comparing the checksums of the new document with the old one. If the checksum values match, you can be sure that the document you will print exactly matches the old one. If the checksum values do not match, you will know that the new document has changed in some way. With that knowledge you may choose to print the document with the difference, or you may choose to correct the difference so that the items match again before printing. Refer to the <FormatChecksum> tag for a detailed description of the returned checksum values.

Click ReturnChecksum to view an example that displays the response returned when the ReturnChecksum attribute is set to true.

Returning an Exported Template in a Response

The ReturnImageInReponse attribute of the <ExportPrintPreviewToImage> Command returns a response that contains an image of the exported template as a string in Base 64 format.



A response containing template data in Base 64 format will consume a lot of space.

Related Documentation

White Papers and Manuals

- Getting Started with BarTender
- BarTender Integration Methods

For downloadable versions, visit:

<https://www.seagullscientific.com/support/white-papers>

BarTender Help System

- [Automation with BarTender XML Script](#)
- [BarTender XML Script Message Format](#)

