# Bluebeam File Exchange Reference Version 1.1

Bluebeam Software, Inc.
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Applies to Bluebeam PDF Revu®

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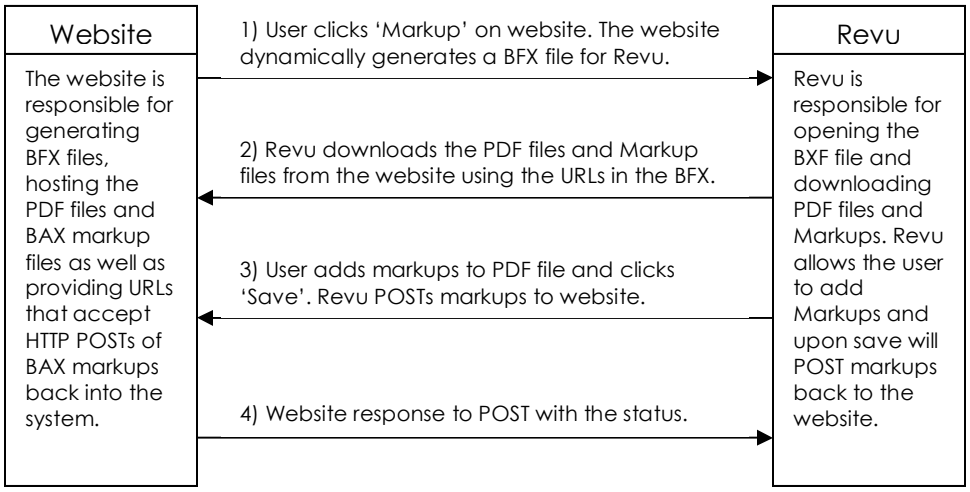
# Introduction

Bluebeam File Exchange is a feature of Bluebeam PDF Revu whereby PDF files can be opened from remote locations and any markups made to the PDF can be posted back into the remote system. The exchange format is an XML file with the .BFX file extension. The system relies on HTTP GET and POST protocols in order to interface with the remote system. The markups are stored in an XML file with the .BAX extension.

The typical usage of BFX technology is that a third party entity creates a website that will dynamically construct BFX files based on user input. This dynamic website could be implemented using a server side scripting technology such as ASP or PHP. The BFX file contains URLs to PDF files to download as well as separate URLs to BAX markup files for interfacing with the remote system using HTTP GETs and POSTs. The user would then open the .BFX file in Bluebeam PDF Revu which would trigger Revu to download the appropriate PDF files and BAX markups. After the user adds markups to the PDF files, the user presses the 'Save' button within Revu and Bluebeam will then attempt to POST a BAX file back into the remote system based on the POST URL specified in the originating BFX file. In response to the POST the website would then dynamically send back a POST Response XML file. The following diagram illustrates how such a system would work.




The BFX file may contain URLs to more than one BAX file, so that a user may see the markups of other users. The BFX file contains information about the current user so that the markups of any other users would be read-only. The BFX file may also specify security settings to restrict the user from being able to perform certain functions such as printing.

A BFX file must also specify a valid provider identifier that is registered with Bluebeam Software, Inc. When a BFX file is downloaded and when markups are posted back into the system, Revu performs a validation check on the provider. An internet connection is therefore required for Bluebeam File Exchange to function.

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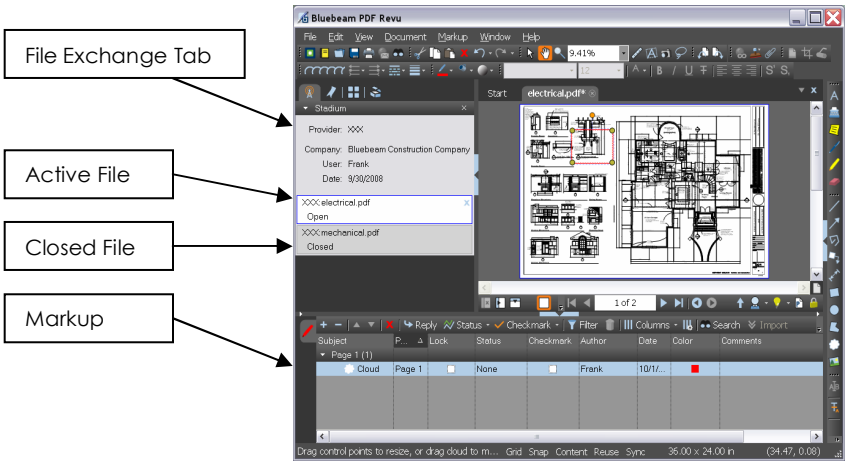
# Revu User Interface




Within Revu there is a File Exchange Tab which provides the user with a list of files associated with a BFX file. Users can click a file in order to activate it, or if the file is not currently open to download that file and then activate it. The File Exchange Tab also provides information about the Project, Date, User Name and more. To post the markups back into the system the user simply has to click 'Save'.

# BFX Format

## *Overview*

BFX files are XML files with the .BFX extension. Bluebeam PDF Revu is registered with the operating system to open .BFX files. A BFX must specify a version. The current version is 1.1 and requires Bluebeam PDF Revu 6.5.1 or later. Typically a BFX file would be dynamically generated for a particular user.

## *Sample BFX File*

```
<?xml version="1.0" encoding="utf-8"?>
<BluebeamRemotePackage Version="1.1" ID="pk123">
    <Provider>XXX</Provider>
    <LogoURL>www.bluebeam.com/logo.png</LogoURL>
    <ProviderURL>www.bluebeam.com</ProviderURL>
    <UserID>u123</UserID>
    <UserName>Frank</UserName>
    <CompanyName>Bluebeam Construction Company</CompanyName>
    <UserType>Subcontractor</UserType>
    <Date>DATEFORMAT</Date>
    <Project Name="Stadium" ID="p123">
        <Company>The Isotopes</Company>
        <ProjectURL>www.bluebeam.com/isotopes.html</ProjectURL>
        <File Name="electrical.pdf" ID="f123">
            <FileURL>www.bluebeam.com/isotopes/files/electrical.pdf</FileURL>
            <Size>23452</Size>
            <Date>DATEFORMAT</Date>
            <Load>True</Load>
            <Security>
                …
            </Security>
            <Comment UserID="u123" ID="c123">
```

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```
                <FileURL>www.bluebeam.com/isotopes/files/markups/u123.bax</FileURL>
                <ResponseURL>www.bluebeam.com/MarkupPost.asp?ID=u123</ResponseURL>
            </Comment>
            <Comment UserID="u456" ID="c456">
                <FileURL>www.bluebeam.com/files/markups/u456.bax</FileURL>
            </Comment>
        </File>
        <File>
            …
        </File>
    </Project>
</BluebeamRemotePackage>
```

## *Fundamentals*

### Date Format

The date format follows the XML standard of "yyyy-MM-ddTHH:mm:ss.fffffffZ" which includes year, month, date, hour, minutes, seconds, and time zone offset.

### Markups

Any number of different BAX markup files can be referenced for a particular PDF file. If a user has not made any comments yet the best practice would be to specify a ResponseURL only, this way a new BAX file would be introduced into the system the first time the user clicks 'Save'. Also, if a markup file is referenced for a different user, the best practice would be to omit the ResponseURL, this way the comments would be treated as read-only. Only markups with a ResonpseURL are editable by the user.

Note that the terms markups and comments are interchangeable. In the Revu user interface and for the majority of this document the term markup is used, however the actual tags within the BFX XML use the term comment.

### Posting

Notice in the sample BFX file that the ResponseURL takes a parameter. This illustrates a typical implementation for handling the posting of markups. The BAX markup file would be posted to the URL using the HTTP POST protocol and the ID parameter would instruct the system of which user the POST corresponds to. This implementation style allows the system to place the markups in a database with the correct association to the user, or alternatively in a file system based approach to the particular user's folder. The FileURL could also be implemented using similar techniques where an ID parameter would be passed as a parameter. Note that these techniques are all implementation specific to the third party entity interfacing with Bluebeam File Exchange.

## *Detailed XML Element Descriptions*

### BluebeamRemotePackage

The BluebeamRemotePackage element is the base element within a BFX file. There may only be one entry and it is required.

Attributes:

Version
Required. Current version is 1.1.

ID

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Required. Must be unique to each individual BFX file.

Tags:

Provider
Required. Must be issued from Bluebeam Software, Inc.

ProviderURL
Optional. A URL to the provider's website.

UserID
Required. Must be unique from all other users in system. This ID represents the ID of the current user for whom the BFX file was generated for.

UserName
Required. The name of the user that will be shown in the user interface of Revu.

CompanyName
Required. The name of the provider that will be shown in the user interface of Revu.

LogoURL
Optional. A URL to a graphic image that will be shown in the user interface of Revu.

UserType
Required. These are implementation specific identifiers that are tracked by Bluebeam. For example the types could be "GC", "Subcontractor", "Owner", etc…

Date
Required. Date value specifying the date/time that the BFX file was constructed.

Project
At least one required. See Below.

**Project**

The Project element is meant to group PDFs in a BRX file by Project. Revu will show the PDF files in the 'File Exchange' tab grouped by the Projects. Projects are found either in the Package element, or they can be nested within other Project elements.

Attributes:

Name
Required. The name of the project that will be shown in the user interface of Revu.

ID
Required. Must be unique to each project specified in the BFX file.

Tags:

ProjectURL
Optional. A URL to the project's website.

File

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At least one required. See  below.

Project
Optional. Projects may be nested.

**File**

The file element wraps a PDF file that is accessible via a URL. At least one file element is required. It is supported under the Project Element.

Attributes:

Name
Required. The actual file name that will show in the user interface of Revu.

ID
Required. Must be unique to each PDF file in the BFX file.

Tags:

FileURL
Required. URL to download the PDF file. File system based URLs are permissible using the file:// syntax.

Size
Optional. Number value specifying the size of the file in bytes, highly recommended because it allows Revu to show accurate progress when downloading the file.

Date
Optional. Date value specifying the date stamp of the file.

Load
Optional. Boolean value specifying whether or not to immediately download the file. For instance if a BFX file references 200 PDF files it might not make sense to have all of them automatically download. The default value is True.

Security
Optional. Supports only one. See Below.

Comment
Optional. Supports more than one. See Below.

**Security**

The Security element is supported under the File element and is optional. A PDF file may already have security restrictions embedded within the file. The BFX security is a secondary layer of security; the PDF security will take precedence.

Tags:

PrintDoc
Optional. Boolean value specifying whether or not printing the PDF should be allowed.

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CopyFrom
Optional. Boolean value specifying whether or not copying text from the PDF should be allowed.

Commenting
Optional. Boolean value specifying whether or not commenting from the PDF should be allowed. *

FillFormFields
Optional. Boolean value specifying whether or not form filling in the PDF should be allowed.*

CopyFromWAccess
Optional. Boolean value specifying whether or not copying text for accessibility reasons should be allowed.

PrintDocHigh
Optional. Boolean value specifying whether or not printing using high quality resolution is allowed. This value is ignored if PrintDoc is set to False.

SaveAs
Optional. Boolean value specifying whether or not the user may save the PDF file locally.

*These fields are reserved for future use and are not recommended to be used with version 1.1 of the BFX format.

**Comment**

The Comment element wraps a BAX markup file that is accessible via a URL. It optionally includes a response URL so that the user can post markups back into a remote system. Comment elements exist under the file element. Multiple Comment elements are allowed so long none of the comments share a common UserID.

Attributes:

UserID
Required. Specifies the UserID associated with the markups. If the markups belong to the user for whom the BFX file was created for, then it is imperative that this value matches the UserID at the Package level, otherwise the comments would be read-only.

ID
Required. Must be unique to each Comment specified in the BFX file.

Tags:

FileURL
Optional. URL to download the BAX markups from. If this entry is omitted it is assumed that the user has not yet created any markups for the PDF file.

ResponseURL

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Optional. URL instructing Revu where to HTTP POST the BAX markups to when the user hits save. The remote website is expected to respond with a 'POST Response File' as specified below. If this entry is omitted then the markups will be treated as read-only.

# POST Response Format

The POST Response file is another XML file that should be dynamically generated on the third party website in response to an HTTP POST of BAX markups. One of two different flavors of the Response XML should be generated based on either success or failure. Note that in both cases a Version is required and is currently 1.0.

## *Success*

In the success case the Result Code should always be "0". A file URL is also required in the success case. This is meant for the scenario where a FileURL wasn't specified in the BFX file because the user had not yet made any comments for the file because it is likely that the ReponseURL would be different from the FileURL. Even if the BFX file contained the FileURL it is still mandatory to be in the POST Response.

```
<?xml version="1.0" encoding="utf-8"?>
<BluebeamPostResponse Version="1.0">
    <Result Code="0">
        <FileURL>url to comments</FileURL>
    </Result>
</BluebeamPostResponse>
```

## *Failure*

In the failure case the Code would be non-zero. The error codes are implementation specific and are meant to be used for business logic errors emitted from the remote system. An example might be the post failed because the users account had been cancelled. The HelpURL is optional and would be shown to the user in an error dialog so that the user may click to learn more about why the error happened.

```
<?xml version="1.0" encoding="utf-8"?>
<BluebeamPostResponse Version="1.0">
    <Result Code="1">
        <Message>User does not have persmission to post.</Message>
        <HelpURL>http://www.bluebeam.com/ErrorCode1.html</HelpURL>
    </Result>
</BluebeamPostResponse>
```

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