Xerox® FreeFlow® Core
Help

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Overview

Xerox® FreeFlow® Core is the next generation in workflow solutions from Xerox. It is a browser-based solution that intelligently automates and integrates the processing of print jobs, from file preparation to final production for a hands-free workflow that operates easily, adapts effortlessly, scales quickly and delivers consistently. Xerox® FreeFlow® Core's modularity and scalability affords even small to mid-size businesses the opportunity to take advantage of the tremendous value proposition prepress automation delivers. Adding advanced capabilities is as simple as adding modules for increased automation and potential.

Xerox® FreeFlow® Core also serves as the backbone of all new Xerox production workflow solutions. This new platform is the core engine that enables automated and integrated solutions across market needs, including web-to-print, automated finishing, and even extending to digital publishing.

Note

Xerox® FreeFlow® Core is fully-configurable, with individual modules offering greater control over the workflow and the flexibility to add the components that are best suited to your needs. Certain features may not be available depending upon the product configuration purchased. Refer to Workflow Component Configurations and Job Submission Configurations for more information.

The Xerox® FreeFlow® Core Software

The Xerox® FreeFlow® Core user interface includes the following tabs:

- Job Management and Status: Allows Operators and Administrators to submit and manage jobs in Xerox® FreeFlow® Core.

- Printer Management and Status Tab: Allows Operators and Administrators to manage and monitor printing from Xerox® FreeFlow® Core.

- Workflow Setup: Allows Administrators to manage workflows.

- Administration: Allows Administrators to manage hot folders, notifications and Xerox® FreeFlow® Core users.

Language and Units

Xerox® FreeFlow® Core is a web-based Silverlight application. The web browser locale settings determine the language and units used in the Xerox® FreeFlow® Core UI.

The following languages are supported:

- English
- French
- Italian
- Russian
- Dutch
- German
- Portuguese
- Spanish

If there is no translation for the language defined in the browser locale, the Xerox® FreeFlow® Core UI defaults to US English.

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User Roles and Passwords

By default, Xerox® FreeFlow® Core opens to a login screen. The user must log on for access to the system. Logged on users are automatically logged off after 30 minutes of inactivity.

Administrator

The administrator has access to the entire system:

- Job Management and Status tab functions: Submit Job Dialog and Job Status Tab.
- Printer Management and Status Tab
- Workflow Setup
- Administration tab functions: Hot Folder Setup, Notifications Setup, User Access Setup

One Administrator may be logged on to Xerox® FreeFlow® Core at any given time.

Operator

The Operator has access to the following:

- Job Management and Status tab functions: Submit Job Dialog and Job Status Tab
- Printer Management and Status Tab

Multiple operators may be concurrently logged on to Xerox® FreeFlow® Core.

Job Status Monitor

The Job Status Monitor has read-only access to the Job Status Tab window.

Multiple job status monitors may be concurrently logged on to Xerox® FreeFlow® Core.

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Job Management and Status

The Job Management and Status tab allows Operators and Administrators to submit and manage jobs. The user can select Submit Job and Job Status via the tab menu.

▾

See also: Submit Job Dialog, Job Status Tab

Submit Job Dialog

The Submit Job dialog allows the user to upload one or more documents and associated Xerox® Programming Information Format (XPIF) print tickets for submission to the selected workflow. Documents are associated with print tickets if they are uploaded at the same time from the same location and if they use the following naming convention:

- filename.ext – document
- filename.ext.xpf – print ticket

Submit Job options include:

- **Submit All Documents as a Job Group**: Determines whether documents are submitted as a single Job Group or as separate jobs.
- **Use as Job Name**: Allows the user to define the job name for jobs are submitted.
- **Workflow Destination**: Allows the user to define the workflow to which jobs are submitted.
- **Job Priority**: Allows the user to define the priority of the job submission.
  - **Normal**: Jobs are queued for processing after any Pending jobs already in the system.

- **High**: Jobs are queued for processing before any Pending jobs already in the system.

    Note

    Jobs processing in the system have higher priority than submitted jobs.

- **Printer Destination**: Allows the user to define the Printer Destination that is used to print the selected job.

- **Override Job Ticket Settings**: Allows the user to define or override job ticket settings from uploaded job tickets.

    - If the user selects a Printer Destination, the available job ticket settings will display values for the selected Printer Destination. See Printer Job Ticketing.

    - If the user selects **In Workflow** for the Printer Destination, a subset of job ticket settings is enabled.

        During workflow submission, job ticket selections are merged with uploaded job tickets.

Job Status Tab

The Job Status tab allows the user to display Active Jobs, Completed Jobs, Failed Jobs, Cancelled Jobs or All Jobs.

Job Management functions in the Job Status tab include the following:

- **Printer Destination** : Allows the user to define the Printer Destination that is used to print the selected job.

- **Edit Job Ticket**: Allows the user to edit the job ticket. See: Printer Job Ticketing. During print submission, job ticket selections are merged with the Printer Destination Job Ticket defaults.

    Note

    The Edit Job Ticket interface does not support use of variables when invoked from the Job Status tab.

- **Finisher Destination** : Allows the user to define the Finisher Destination that is used to save a JDF description of the selected job.

- **Resume**: Allows the user to resume a paused job.

- **Job Management Controls**: Allow the user to **Resubmit**, **Delete**, and **Cancel** jobs. Jobs may be resubmitted to the same or to a different workflow. See also: Job Resubmission.

- **Printer Job Commands**: Allow the user to **Release**, **Hold**, and **Cancel** jobs at the Printer Destination. Printer Job Commands require DFE support for the relevant commands over IPP.

- **List Area**: Displays the jobs in the system, based on the selected status. Users may view **Job Properties** by clicking ⓘ to the left of the job in the Job Status list.

  Users may also filter the jobs by searching on either their Job Names or Workflow.

- **Navigation Area**: Enables navigation for the List Area. Users may use the navigation links and buttons to browse through the jobs in the system. Alternatively, users may search for a specific job by Job ID.

Job Files

The Job Properties contain links to the following job files:

- **Document**: The job file as it has been processed by the workflow.
- **Original Document**: The job file as it was submitted to Xerox® FreeFlow® Core.
- **Preflight Report**: The report, in PDF or XML format, from the Preflight task.

Job Resubmission

The Resubmit dialog allows the user to resubmit jobs in a terminal state. Completed, failed, canceled, or aborted jobs are considered to be in a terminal state.

Resubmission uses the original document and the original job ticket as defined after the initial job submission.

During resubmission, the user may elect to resubmit jobs to another workflow. Jobs resubmitted to a different workflow appear as new jobs in the List Area.

Note

Job Resubmission is not available for jobs submitted as a Job Group or for individual jobs in job groups.

Job Retention

Jobs that are completed, cancelled, or aborted are retained for at least 24 hours before they are automatically deleted from the system. Jobs are automatically deleted once an hour. Failed jobs are retained indefinitely.

Job Group

Depending on how they were submitted and depending on the components in the workflow, jobs are processed individually or as part of a job group. Job Groups appear in the List Area as jobs that contain other jobs.

Click the triangle next to the Job Group name to see jobs in a job group:

Job ID	Job Name
13	▶ 📒 Job Group

Jobs in a job group are processed through the workflow independently with the following exceptions:

- The **Join** component combines multiple job group jobs into a single job.

- Individual job group jobs cannot be deleted or resubmitted.

- If the **Collect All Members of Job Group** option is enabled in the workflow component, the Save, Print and Finish components submit jobs based on their sequence in the job group.

- If the **Collect All Members of Job Group** option is enabled in Imposition, jobs in a group job are combined during imposition.

  Note

  Job Group Imposition requires the output management license. See: Workflow Component Configurations.

Printer Management and Status Tab

The Printer Management and Status tab allows Operators and Administrators to manage Xerox® FreeFlow® Core Printer Destinations.

- **List area**: Displays configured Printer Destinations and their Printers. The list of Printers is automatically populated based on the configured Printer Destinations. See also: Understanding Printer Management.
- **Printer Destination controls**: Allow the user to Add, Copy, Edit, and Delete Printer Destinations.
- **Job Submission controls**: Allow the user to Suspend and Resume Job Submission to the selected Printer Destination.
- **Edit Printer**: Allows the user to edit the Printer properties including Job Submission Regulation settings.

Printer

To access the Printer settings, select **Edit** ✏️ from the Printers list.

- **Name**: defines a name for the printer. If a name is not defined, the Model information retrieved from the DFE is used as the name of the printer in the Printers list.

Job Submission Regulation

If Xerox® FreeFlow® Core loses connectivity with a printer, it automatically suspends job submission to that printer's Printer Destinations regardless of whether Job Submission Regulation has been enabled. Xerox® FreeFlow® Core will automatically resume job submission when the printer becomes available.

Similarly, if queues are missing or nor accepting jobs, job submission is paused. Job submission is resumed when the queues either reappear or resume accepting jobs.

When Job Submission Regulation is enabled, Xerox® FreeFlow® Core uses additional criteria to automatically suspend and resume job submission to a printer's Printer Destinations.

Job Submission Regulation is based on:

- **Print engine state**: If enabled, pauses job submission when it detects a stopped print engine state via SNMP. Job submission is resumed when the print engine state changes to Ready or Warning.

- **Available spool space**: If enabled, pauses job submission when the available spool space at the DFE falls beneath the defined threshold. Job submission is resumed when available spool space at the DFE is above the defined threshold. DFE spool space is monitored via SNMP.

- **Number of Uncompleted Jobs at the Printer**: If enabled, pauses job submission when the number of active jobs in the DFE is greater then the defined threshold. Job submission is resumed when the number of active jobs in the DFE falls below the defined threshold.

Note

Use of additional criteria for Job Submission Regulation requires the output management license. See: Workflow Component Configurations.

Job Ticket Verification

FreeFlow Core job ticketing always reflects the options reported by the DFE when queried for capabilities. As such, print ticketing defined in FreeFlow Core will not contain constructs that are not reported as supported by the DFE.

However, job tickets submitted to FreeFlow Core may not align with the capabilities of the target Printer. The Job Ticket Verification options allow the user to define policies for handling constructs that are not supported by a given Printer.

- **Fail Jobs Containing Stock Names not Defined at Printer**: Prevents submission of jobs to the printer if the specified stock name does not exist at the DFE.

- **Use simplified Stock Name Matching**: Modifies print tickets to use simpler media definition if it is supported by the DFE. If simpler media definition is not supported by the DFE, reverts to nominal behavior for defining media and media attributes.

- **Remove Unsupported Settings**: Removes job ticket settings FreeFlow Core supports from the job ticket if the settings are unsupported by the DFE.

  Note

  FreeFlow Core does not send job ticket settings it does not support to the DFE.

- **Remove Unsupported Stock Properties**: Removes stock attributes FreeFlow Core supports from the job ticket if the stock attributes are unsupported by the DFE.

Understanding Printer Management

Xerox® FreeFlow® Core printing is configured and managed via three interrelated objects:

- **Printers**: Printers represent a connection to a DFE and a print engine. Each Printer is associated with one or more Printer Destinations.

  Print Engine capabilities, state, and job submission regulation are managed at the printer level.

  Printers are automatically added or removed from FreeFlow Core as needed when Printer Destinations are added or removed.

  Cloud Printers are added or removed by the FreeFlow Core Cloud Print Configuration application.

- **Printer Destinations**: Printer Destinations represent a print submission configuration. Each Printer Destination represents a connection to a specific print queue as well as a set of job ticketing defaults. Each Printer Destination may be associated with one or more print presets.

- **Print Presets**: Print Presets represent an association between job processing configuration and one or more Printer Destinations.

  Print Presets define whether jobs are automatically submitted to Printer Destinations. They also define rules for the selection of Printer Destinations.

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Workflow Setup

The Workflow Setup Tab

The Workflow Setup tab allows an administrator to manage workflows as well as the processes and output destinations used to build workflows. The tab includes the following:

- **Components**: The area on the left of the screen that displays components available for building workflows. Components represent workflow operations such as imposition and printing.

- **Presets**: The area on the left of the screen that displays presets for the selected component. See also: About Presets.

- **Workflow Canvas**: Provides an area for creating or editing workflows. Also provides an area for defining document conversion options.

- **Workflow List**: Displays the workflows in the system.

About Presets

Xerox® FreeFlow® Core manages workflow configuration via presets. When a Component is configured, that configuration is stored as a preset that is available globally. See also: Workflow Components.

⚠ Caution

When the preset is updated, the updated preset is automatically used in all workflows in Xerox® FreeFlow® Core. Select the Info button 🛈 next to the preset name to see a list of workflows that use the selected preset.

Creating Workflows

Workflows in Xerox® FreeFlow® Core consist of a sequence of Component presets.

Create a workflow by dragging process presets from the Components and Presets panels to the Workflow canvas.

- **Component icon**: Drag a component icon to add a blank preset that must be configured and saved as a new preset.

- **Preset icon**: Drag a preset icon to add a saved configuration preset.

  ⚠ **Caution**

  When the preset is updated, the updated preset is automatically used in all workflows in Xerox® FreeFlow® Core. Select **Info** ℹ next to the preset name to see a list of workflows that use the selected preset.

Execution Paths

Workflows may include one or more execution paths.
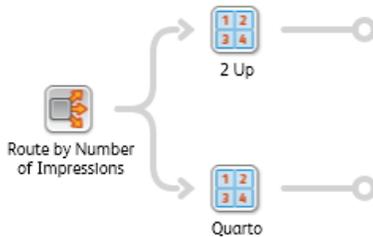
Execution paths in a workflow may be merged into any existing workflow component. To merge an execution path into a component, drag and drop the end of the execution path into the component icon.
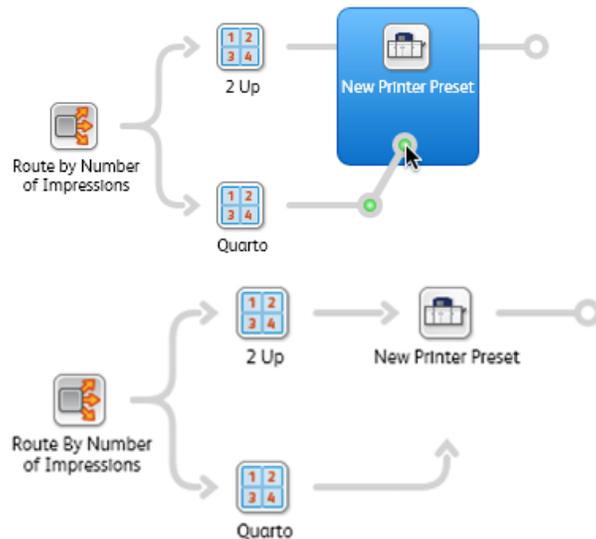
To disconnect an execution path from a component, select **Disconnect > <preset name>** from the component icon menu.
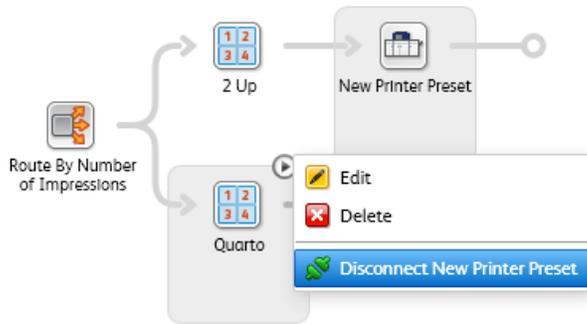
Execution paths may also be connected to upstream component icons.
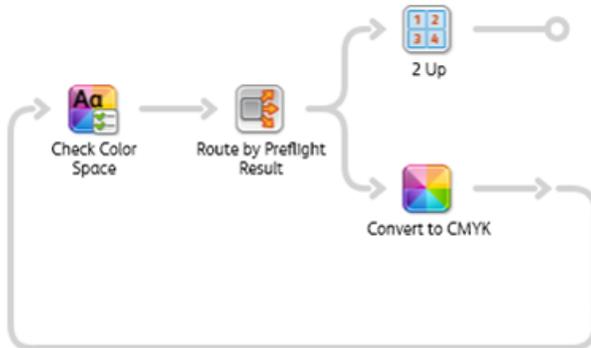
Collect Job Documents

Some workflow components support an option to **Collect Job Documents**.
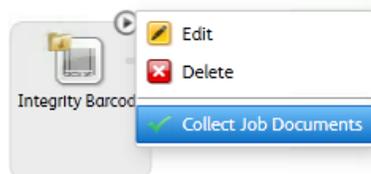
When this option is enabled, the workflow component will defer execution for jobs that are part of a job group until it has determined that the members of the job group have either reached the component or have processed through an execution path in the workflow that will prevent them from reaching the workflow component.

Workflow components may enable additional functionality when the Collect Job Documents option is enabled.

Workflow Components

Workflow components represent the types of operations that Xerox® FreeFlow® Core can include as part of a workflow.

Workflow Component Configurations

Xerox® FreeFlow® Core is fully-configurable, with individual modules offering greater control over the workflow and the flexibility to add the components that are best suited to your needs. Certain features may not be available depending upon the product configuration purchased.

Refer to the table below for the features that are available within each product configuration. The Xerox® FreeFlow® Core Base module is always required. Optional modules may be purchased separately and provide additional capabilities on top of the Base software.

Component	Xerox® FreeFlow® Core Base	Advanced Prepress	Advanced Automation	Output Management	Variable Data
Convert	✓				
Convert - Xerox VIPP VPCs					✓
Preflight	✓				
Imposition	✓				
Enhance Images	✓				
Job Group Imposition				✓	PDF/vt-1[1]
Save	✓				
Print	✓				
Optimize		✓			
Manage Color		✓			
Barcode		✓			PDF/vt-1[1]
Watermarks		✓			PDF/vt-1[1]
Pressmarks		✓			PDF/vt-1[1]
Page Numbers		✓			PDF/vt-1[1]
Resize Pages		✓			PDF/vt-1[1]
Rotate Pages		✓			PDF/vt-1[1]

Component	Xerox® FreeFlow® Core Base	Advanced Prepress	Advanced Automation	Output Management	Variable Data
Insert Pages		✓			PDF/vt-1[1]
Delete Pages		✓			PDF/vt-1[1]
Join		✓			PDF/vt-1[1]
Finish	✓				
Route			✓		
Collect				✓	
Split			✓		PDF/vt-1[1]
Printer Routing			✓		
Printer Job Submission Regulation				✓	
Printer Job Distribution				✓	
Finisher Routing			✓		
External Process			✓		

[1]The Variable Data optional module enables processing of individual PDF/vt records for those components noted in the table above if the corresponding optional module(s) is purchased and enabled as part of the Xerox® FreeFlow® Core product configuration. Specific enhancements for PDF/vt files are outlined, as applicable, in the component descriptions that appear later in this section.

Convert

The Convert component allows you to convert files to PDF.

Xerox® FreeFlow® Core accepts PostScript (.ps), Encapsulated PostScript (.eps), JPEG (.jpeg, .jpg), Portable Network Graphics (.png), TIFF (.tif, .tiff), Microsoft (MS) Word (.doc, .docx), MS PowerPoint (.ppt, .pptx), MS Excel (.xls, .xlsx), MS Publisher (.pub) files.

When the Variable Data license is enabled, FreeFlow Core will also accept and VIPP Project Containers (.vpc) and VIPP (.dbf, .vpn, .nm, .lm) files. Additionally, files without an extension or with an unknown extension are processed through VIPP conversion if they include VIPP commands.

Text files (.txt, .csv) are not parsed for VIPP commands as they are submitted to Manifest Automation from Xerox (MAX).

A Convert component is automatically and invisibly added to the beginning of all workflows.

Font Handling

If possible, fonts are embedded during conversion.

Handling of missing fonts or fonts that do not allow embedding depends on the format of the document being converted:

- **PostScript and Encapsulated PostScript**: Missing fonts are referenced in the PDF. Conversion status is set to Success. Preflight should be used to detect missing fonts.
- **Microsoft Office**: Missing fonts are substituted. Substitute fonts are embedded in the PDF. Conversion status is set to Warning for Microsoft Word and Success for all other Microsoft Office files.
- **VIPP Project Container**: Font handling based on settings from the selected joboptions file. Conversion status is set to Warning.

    Note

    MS Office conversion of documents with 3D formatting options, such as depth and color gradients for text and shape colors, may produce unexpected results.

    Note

    The following TIFF features are unsupported: JPEG compression and YCbCr color space. In addition, TIFF transparencies are flattened during conversion.

PS, VIPP, and PDF Generation Options

Workflow settings for PS, EPS, and VIPP conversion settings are available in the **Options** control at the top right corner of the workflow canvas.

- **Job Options file**: Defines the location of the selected Adobe® Acrobat® Distiller joboptions file using the Document Selection Common Controls.
- **VIPP Init File**: Defines the location of the VIPP initialization file using the Document Selection Common Controls (make link).

    The selected VIPP init file is prepended to:

    - VIPP (.dbf, .vpn, .nm, .lm) files
    - files without an extension
    - files with an unknown extension
    - text (.txt, .csv) files

Note

The VIPP init file is not prepended to VIPP Project Container (.vpc) files. Also, workflows that specify a VIPP Init file cannot be used with Manifest Automation from Xerox (MAX).

- **PDF Generation**: Determines whether the conversion will generate a single PDF file, a PDF/vt with metadata FreeFlow Core can use to ascertain record boundaries, or a PDF for each record in the VIPP file.

    Note

    VIPP Specialty Imaging functions are not supported.

Preflight

The Preflight component allows you to inspect and correct PDF files using Adobe® Acrobat® or Callas pdfToolbox preflight profiles.

Preflight Checks: Enables preflight checks without use of a preflight profile. Preflight checks that fail will result in a preflight error.

- **Fonts Not Embedded**: Checks to ensure all fonts are embedded.

- **Color / Grayscale Image Resolution**: Check to ensure color and grayscale image resolution is equal to or greater than the defined **Minimum Resolution** and equal to or less than the defined **Maximum Resolution**.

- **Bitmap Image Resolution**: Check to ensure 1-bit image resolution is equal to or greater than the defined **Minimum Resolution** and equal to or less than the defined **Maximum Resolution**.

- **Check Width and Height**: Checks the Width and Height of the selected PDF box using the Size checks from the Routing Common Controls. Supports use of Workflow Process Number Variables.

Preflight Using Profile: Enables preflight checks and fixups using a preflight profile created in Adobe® Acrobat® or Callas pdfToolbox.

Note

pdfToolbox Process Plans are not supported.

- **File**: Defines the location of the selected preflight profile using the Document Selection Common Controls.

Preflight Report Format: Defines the format for preflight reports.

Note

PDF Preflight reports are saved as text for jobs with more than 1,000 warnings or errors.

Preflight Report Language: Defines the language used for preflight reports.

Pause Jobs: Specifies when to pause jobs after preflight:

- **When Fixups are Applied**: Pauses jobs if preflight profile fixups are applied to the job.

- **When a Warning Occurs**: Pauses jobs if preflight profile checks result in a warning.

- **When an Error Occurs**: Pauses jobs if preflight profile checks or fixups result in an error.

Note

Jobs fail in the Preflight component only if the preflight profile cannot be executed.

Optimize

The Optimize process allows you to streamline documents to ensure more efficient and reliable processing downstream in the workflow.

Convert to PDF Standard: Enable conversion of the job to the selected PDF/X or PDF/A ISO standard.

- **Set Output Intent To**: Define the output intent ICC profile for the job. Output intents are required for PDF/X conversion.

   Note

   ICC profiles up to version 4 are supported. ICC profiles are retrieved from the operating system and are listed using the ICC profile name, which may differ from the filename. To add additional ICC profiles, install them in the operating system and restart the server.

- **Use Document Output Intent Profile If Present**: If enabled and if the document contains an output intent profile, the document output intent profile is retained during the PDF/X conversion. Otherwise, the output intent is set to the defined output intent profile.

   Note

   PDF/X-4p conversion does not support use of the document output intent profile.

Optimize PDF Tab

- **Embed Fonts If Needed**: Embeds fonts that are not already embedded in the PDF. To enable embedding, fonts must either be installed on the Xerox® FreeFlow® server or must be available in the location defined in **Fonts**.

   - **Fonts**: Defines the location of additional fonts that may be used for embedding missing fonts. Also, allows the user to manage fonts in the FreeFlow Core® sandbox.

   - **Font Substitution Configuration File:** Defines the pdfToolbox configuration file that will be used when embedding fonts. This configuration file controls font substitution behavior in Optimize.

Note

Fonts are embedded as subsets. Fonts are not embedded if they have a flag indicating that embedding is not allowed.

- **Flatten Transparent Objects**: Flattens transparent objects and objects whose appearance is affected by transparent objects.

   Note

   Xerox® FreeFlow® Core renders transparent objects as a mix of raster and vector content—some of which may use overprint. These documents may not appear as expected in Acobe® Acrobat®. To see an accurate representation of these documents in Adobe® Acrobat®, go to **Tools > Print Production > Output Simulation**.

- **Remove Unneeded Transparencies**: Removes transparency groups from pages that do not contain transparent objects.

- **Define Page Geometry Based on Cut Marks**: Searches for Registration color cut marks in the PDF. Adjusts the PDF trim and bleed boxes to match any cut marks that are found.

- **Add Bleed by Scaling Document**: Proportionally scales documents so that all edges have a bleed that's equal to or larger than the Bleed Distance.

- **Auto-Correct Page Geometry**: Adjusts PDF boxes to ensure proper nesting per PDF/X standard.

- **Optimize for Fast Web View**: Linearizes PDF to enable byte streaming over the web.

- **Flatten Form Fields**: Changes PDF form fields into non-interactive PDF content.

   Note

   Flattening some form field types, such as popup menus, renders only the selected values, if any. This may differ from the PDF appearance in a viewer.

- **Remove Printer's Marks**: Removes printer's marks outside of the document bleed or trim box.

- **Discard Hidden Layers**: Removes content in hidden layers and flattens remaining layers.

- **Remove Objects Completely Outside of**: Removes objects that are completely outside of the selected PDF box.

Optimize Images Tab

- **Downsample Color/Gray images**: Change the resolution of color and gray images whose resolution is higher than the defined threshold.

- **Downsample 1-Bit images**: Change the resolution of 1-Bit images whose resolution is higher than the defined threshold.

- **Reduce 16-Bit Images to 8-Bit**: Changes the bit depth of 16-bit images to 8 bits.

Optimize Metadata Tab

- **Override PDF Document Properties**: Override the contents of the standard PDF metadata fields.

- **Remove All Annotations**: Remove all PDF annotations from the job.

- **Discard Actions**: Remove all PDF actions from the job.

Impose

The Impose process allows you to define the placement of page elements to increase production press efficiency and to create specific applications, for example, booklets.

Imposition Press Sheet Tab

Press Sheet Size: Specifies the size of the imposed document:

- **A predefined size**: Imposes the document to the selected size. Press Sheet Sizes may have fixed dimensions or a fixed and an automatic dimension. Custom sizes may be added to the list of available paper sizes. Supports use of Workflow Process Number Variables for defining Press Sheet Sizes.

- **Automatic**: Imposes the document to a press sheet size that is based on the dimensions of the input document, the number of rows and columns, and the margin and gutter distances.

- **Automatic with Size Options enabled**: Selects the Press Sheet Size from the specified sizes to ensure the least amount of waste.

Orientation: Specifies the orientation as Portrait, Landscape, or Automatic. If Automatic is selected, the orientation is selected based on input document dimensions and the selected layout options.

Sides Imaged: Specifies plex for the imposed layout. Supports use of the Sides Imaged attribute from the submitted print ticket.

Note

The Sides Images selection will impact how the Cut Mark Press Sheet Sides selection is applied to the imposed PDF.

Imposition Layout Tab

Defines the arrangement and placement of document pages on the imposed layout.

Page Order: Specifies how input document pages are placed on the imposed layout. The following options are available:

- **Repeated**: Places the same document page multiple times on the layout. When doing Repeated imposition, the print quantity is adjusted to ensure the number of finished sets reflects the desired quantity.

- **Cut and Stack**: Places the document pages vertically through the stack in one layout position before putting pages in the next layout position.

- By default the stack height is based on the number of pages in the document. **Define number of sheets per stack** overrides this default.

   Pad with blank pages at end of stack: When setting the number of sheets per stack the last stack will, by default, have fewer pages than the other stacks. The pad with blank pages at end of stack option will add blank pages to ensure the number of sheets in the last stack matches the number of sheets per stack.

- **Cut and Split**: When imposing a single PDF, places the document pages vertically through the stack in one layout position. This option should only be used with Job Groups or with PDF/vt documents with the **Apply to Each Variable Data Record** option enabled. See Imposition and Job Groups and Imposition and PDF/vt Jobs.

- **Sequential**: Places document pages in all layout positions in one sheet side before placing document pages in the next sheet side.

- **Signature**: Defines either booklet or calendar imposition depending on the **Rows and Columns** selection.

   - **Define number of sheets per signature**: By default the number of pages in a signature is based on the number of pages in the document. The number of sheets per signature can override this default.

      Pad with blank pages at end of signature: When setting the number of sheets per signature the last signature will, by default, have fewer pages than the other signatures. The pad with blank pages at end of signature option will add blank pages to ensure the number of sheets in the last signature matches the number of sheets per signature.

   - **Signature shift**: Defines the distance by which pages in nested signatures are shifted to compensate for creep. Supports use of Workflow Process Number Variables for defining Signature Shift.

   - **Shift Direction**: Shifting pages **Towards Binding Edge** places pages in the outermost signature at their nominal position. Pages in other signatures are progressively shifted towards the signature's spine. Shifting pages **Away From Binding Edge** places pages in the innermost signature at their nominal position. Pages in other signatures are progressively shifted away from the signature's spine.

   - **Resize pages when shifting to preserve page content**: If shifting **Towards Binding Edge** prevents content from disappearing into the binding edge. If shifting **Away from Binding Edge** prevents content from disappearing into the non-binding edge.

- **Job Group**: Places jobs in a Job Group or records in a PDF/vt job in separate page cells in the layout. See: Imposition and Job Groups and Imposition and PDF/vt Jobs.

- **Manual**: Places document pages in layout based on order defined in the manual page order table. The following options are available:

   - **Page** entries in the table define the starting page from the input document that will be placed in the corresponding position in the layout.

- **Increment** entries define how many input document pages to skip when creating additional layout pages.
- **Auto Increment** defines Increment values automatically based on the number of entries in the manual page order table.

The list of pages and increments in the manual page order table represents a pattern that is used to map input document pages to a layout. This pattern is repeated until all input document pages are mapped to a layout page cell.

Page numbers used in Manual page order may be positive or negative. Negative numbers reference pages relative to the end of the document with page -1 being the last page of the document.

- **Apply to Each Variable Data Record**: Defines whether the Page Order applies to the entire PDF file or to each record within a PDF/vt file.

Rows and Columns: Specifies the number of Rows and Columns in a layout:

- **Fixed Rows and Columns**: A specific number of rows and columns.
- **Auto Rows and Columns**: The number of rows and columns is calculated to ensure the least amount of waste in the imposed layout.

  - When used with Automatic orientation, the orientation that results in the least amount of waste is automatically selected.
  - When used with Automatic sheet size with two or more Size options selected, the sheet size that results in the least amount of waste is selected.
  - When used with Automatic orientation and Automatic sheet size with two or more Size Options selected, the media size and orientation that result in the least amount of waste are selected.
  - **Add a 90˚ rotated row or column when possible**: Automatically determines whether a rotated row of pages will fit in the layout. If so, then this rotated row is added. The number of pages in this rotated row is calculated automatically.

    This option may also be combined with automatic press sheet size with size options enabled, automatic orientation or with both. The additional page cells are included in the calculations of waste that are used to select the number of rows and columns as well as the press sheet size and orientation.

- **Auto Columns, Fixed Rows**: A fixed number of rows with an automatic number of columns.
- **Auto Rows, Fixed Columns**: A fixed number of columns with an automatic number of rows.
- **Asymmetric Rows and Columns**: The number of rows and columns is calculated to ensure the least amount of waste in the imposed layout. Available when **Page Order** is set to Job Group. Jobs in the job group may be different sizes.

  - **Layout Style**: Determines how jobs in the job group are imposed together.

    Guillotine Cut recursively imposes documents in columns and rows that preserve the ability to separate jobs with a guillotine cutter.

Laser Cut imposes the documents by filling the sheet as much as possible.

- **Maximum Waste**: Defines the maximum percentage of the imposed layout that may be blank. If a given layout exceeds the defined **Maximum Waste**, the jobs in that layout and the rest of the jobs will not be imposed.

Note

When **Asymmetric Rows and Columns** is selected, Imposition Layout Modes, non-uniform Gutters, and Gutter Marks are unavailable. Asymmetric layouts are always clustered.

Impose Relative to: Defines the PDF box that is used for imposition, using the PDF Box Selection Behavior.

Note

The defined size is based on the size of the selected box in the first page of the document.

Cell Clustering: Clustering controls whether pages in the layout are abutted or whether they are spread out on the press sheet.

- **Scale Mode**: Defines a scaling mode that is applied to the layout. Scaling is performed per the Content Scaling Common Controls behavior.

Horizontal and Vertical Alignment: Alignment controls define either how a clustered layout is placed on the press sheet or how pages in a non-clustered layout are aligned in their cells within the layout. Placement is performed per the Content Placement Common Controls behavior.

Imposition Gutters Tab

- **Margins**: Defines a distance from the edge of the imposed layout that will be unavailable for placing input document pages.

  Uniform margins are applied to all edges of the press sheet. Non-uniform margins may be defined as either absolute or as **Edge Relative** margins.

  - **Edge Relative**: Margin distances are defined relative to the **Top Left Corner** and the **Bottom Right Corner**. For each corner, margin values are defined for the **Long Edge** and the **Short Edge**. The margins are applied to the top or left and to the bottom or right edges depending on the imposition press sheet size and orientation.

    For square press sheets, the **Long Edge** margin is applied to the top or bottom edge and the **Short Edge** margin is applied to the left or right edge.

  - **Absolute Gutters**: Margin distances are defined for the **Left**, **Top**, **Right** and **Bottom** edges.

  The margin distance increases the layout size used for press sheet size selection calculations. Similarly, the page cell size used in scaling calculations is reduced by the margin distance.

- **Row and Column Gutters:** Defines a distance between rows or columns in the layout that will be unavailable for placing input document pages. Support use of Workflow Process Number Variables for defining gutter distances.

  The aggregate row and column distances increase the layout size used for press sheet size selection calculations. Similarly, the page cell size used in scaling calculations is reduced by the aggregate distances of the gutters around the page cell.

  Non-uniform gutters are defined in a table starting from the topmost or leftmost gutter.

Imposition Cut Marks Tab

The Cut Marks tab provides the ability to add multiple cut marks to the imposed document.

Cut Marks Contents Tab

Placement Area: Defines the layout area that is used for placing cut marks.

- **Press Sheet**: Places cut marks relative to the press sheet. Press Sheet trims marks require an Inward Offset to appear within the imposed layout.

- **Page Cell**: Places cut marks relative the cells in the layout. Page Cell trims marks require and Inward Offset to appear within the imposed layout.

- **Cell Cluster**: Places cut marks relative to the perimeter of the placed document pages in the layout. The cell cluster perimeter is based on the PDF Box selected in the **Impose Relative To** selection in the Layout tab.

- **Gutters**: Places cut marks in the median of the selected gutters.

- **PDF Box**: Places cut marks relative to the selected PDF box using the PDF Box Selection Behavior.

Type: Defines Single Line, Double Line, or Cross Line cut marks.

Gray Value: Defines shade of gray for cut marks.

Cut Mark Dimensions: Specifies the cut mark Length, Bleed, and Line Thickness. The bleed distance for cut marks defines the distance between the edge of the reference box and the start of the cut mark.

Cut Marks Placement Tab

Page Selection Common Controls

Note

Apply Only to Pages selections are not applicable to imposition output.

Press Sheet Sides: Defines sides of sheet in which cut marks should be placed.

Note

When Sides Imaged is set to Simplex, all document pages are considered to be on the Front Side.

Offset Direction: Determines whether the specified offset is inward or outward from the nominal placement

Offset Values: Defines offset from nominal cut mark placement.

Imposition Layout Modes

Imposition includes controls for overriding the behavior of specific page cells in the layout. To use these controls, the user must enable the required override mode by clicking on the proper icon.

- **Horizontal Alignment Override Mode**: Allows the user to override the horizontal alignment mode for each cell in the layout. The horizontal alignment override is defined by clicking in the page cell in the layout. Alignment is performed per the Content Placement Common Controls behavior.

- **Vertical Alignment Override Mode**: Allows the user to override the vertical alignment mode for each cell in the layout. The vertical alignment override is defined by clicking in the page cell in the layout. Alignment is performed per the Content Placement Common Controls behavior.

- **Page Scale Mode**: Allows the user to override the scaling mode for each cell in the layout. The scaling override is defined by clicking in the page cell in the layout. Scaling is performed per the Content Scaling Common Controls behavior.

- **Row Transform Mode**: Allows the user to specify 180 degree rotation for layout rows. Layout row rotation is specified by clicking on the rotation icon that is displayed when hovering over a layout row in this override mode.

- **Column Transform Mode**: Allows the user to specify 180 degree rotation for layout columns. Layout column rotation is specified by clicking on the rotation icon that is displayed when hovering over a layout column in this override mode.

- **Cell Transform Modes**: Allows the user to specify 180 degree rotation, horizontal flip and vertical flip for layout cells. Layout cell rotation and flips are specified by clicking on the rotation , horizontal flip , and vertical flip icons that are displayed when hovering over a layout cell in this override mode.

Imposition Stages

Imposition Stage: Each imposition process may execute up to three imposition operations or stages as part of an imposition preset. The imposed layout from the Primary Stage is used as the input for the Secondary Stage and the imposed layout from the Secondary Stage is used as input for the Tertiary Stage.

Imposed Document PDF boxes

The imposed PDF's cropbox will be set to match the imposed press sheet size. PDF boxes inside of the cropbox will be set to match the perimeter of the matching boxes on the imposed layout. For example, the imposed PDF's trimbox will be set to the perimeter of the imposed document trimboxes on the imposed layout.

Imposition and Job Groups

The jobs in a Job Group are nominally imposed as if they were separate jobs. The jobs in a job group are imposed using job group imposition when the Collect Job Documents option is enabled for the imposition node.
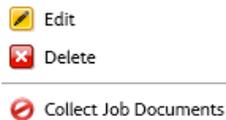
Job Group imposition differs from nominal imposition in the following ways:

- **Impose Relative to**: The PDF box size is based on the first page of the first job. This size is used for all documents in the multi-document job.

- **Repeated, Cut and Stack, Sequential, Signature, and Manual Page Order**: Jobs are imposed separately. Imposed jobs are padded to a multiple of 2 pages and are then joined into a single job.

- **Cut and Slit**: Jobs are imposed into a single PDF with jobs in the job group added to a column in the layout before they are added to the next column in the layout. Individual jobs in the job group are imposed so they remain within a single column of the imposed layout.

- **Job Group Page Order**:

  - Imposition determines the number of Rows and Columns required for the layout. This determines the number of jobs that will be imposed as a group.

  - Each job in this group is padded to match the number of pages in the longest job.

  - The jobs are then imposed using the Cut and Stack Page Order. Each job ends up in its own position in the imposed layout.

  - The imposed job is then added to the output Job Group.

  Imposition overflow for **Fixed Rows and Columns**; **Auto Rows and Columns**; **Auto Columns, Fixed Rows** and **Fixed Columns, Auto Rows**:

  - The job group imposition process is repeated until all jobs in the job group have been imposed or until the number of unimposed jobs is less than the number of Rows and Columns required for the imposed layout.

  - If the job group does not contain enough jobs to fill a layout then those jobs are not imposed. Instead those jobs are added unimposed to the output Job Group.

- Depending on the number of jobs in the Job Group, this may result in a Job Group that includes a mix of imposed and unimposed jobs.

Imposition for **Asymmetric Rows and Columns**:

- Asymmetric imposition always creates a document for each imposed layout - even when imposing PDF/vt documents.

- The job group imposition process is repeated until all jobs in the job group have been imposed or until the percentage of unused media in a layout exceeds the specified **Maximum Waste**.

  Jobs in a job group are added to layouts based on the Job Group Sequence Behavior. Once a layout exceeds the **Maximum Waste** threshold, all remaining jobs overflow unimposed.

  Depending on the number of jobs in the Job Group, this may result in a Job Group that includes a mix of imposed and unimposed jobs.

- **Multi-Stage Imposition**: The job group imposition behavior is only used in the last stage of a multi-stage imposition template. Other stages impose per nominal imposition behavior.

Imposition and PDF/vt Jobs

When the **Apply to Each Variable Record** imposition option is enabled, the records in a PDF/vt file are nominally imposed as if they were separate jobs.

PDF/vt imposition differs from nominal imposition in the following ways:

- **Impose Relative to**: The PDF box size is based on the first page of the first record. This size is used for all records in the PDF/vt file.

- **Repeated, Cut and Stack, Sequential, Signature, and Manual Page Order**: Records are imposed separately. Additionally, each record is padded to ensure records print in separate imposed sheets. The record boundaries on the imposed PDF are adjusted to match the pages in each imposed record.

- **Cut and Slit**: Records are added to a column in the layout before they are added to the next column in the layout. Individual records in the job group are imposed so they remain within a single column of the imposed layout.

- **Job Group Page Order**:

  - Imposition determines the number of Rows and Columns required for the layout. This determines the number of records that will be imposed as a group.

  - Each record in this group is padded to match the number of pages in the longest record.

  - The records are then imposed using the Cut and Stack Page Order. Each record ends up in its own position in the imposed layout.

- Finally, new record boundaries are defined to match the pages in the imposed records.

- The job group imposition process is repeated until all records in the PDF/vt have been imposed.

Manage Color

The Manage Color component converts document colors to the defined Destination Profile color space. It can also homogenize spot color names and appearances as well as set knockout and overprint for text and vector objects.

- **Convert Colors**: Specifies whether color is conversion enabled. It supports the following color conversion modes:

  - **Using ICC Profiles**: Converts to RGB, CMYK, or Gray color space.

  - **Using N-Channel ICC Profiles**: Converts to N-Channel color space.

  - **Using ICC DeviceLink Profile**: Converts from two pre-defined color spaces using an ICC DevlceLink profile.

    Note

    ICC Profile and N-Channel ICC Profile conversion may also be applied to **All** objects or to **RGB**, **CMYK**, or **Gray** objects.

  If **Convert Colors Using ICC Profiles** is enabled:

  - **Source RGB, CMYK, and Gray Profiles**: Define default ICC profiles used for ICC profile color space conversion. Default profiles are used if source profiles are not embedded in the job file.

  - **Destination Profile**: Define the destination color space for ICC profile color conversion.

    Note

    ICC profiles up to version 4 are supported. ICC profiles are retrieved from the operating system and are listed using the ICC profile name, which may differ from the filename. To add additional ICC profiles, install them in the operating system and restart the server.

  - **Use Document Output Intent Profile If Preset**: If enabled and if the document contains an output intent ICC profile, documents are converted to the output intent profile. Otherwise, documents are converted to the defined destination profile.

  - **Rendering Intent**: Defines the rendering intent used for color conversion.

    Note

    N-Channel ICC Profiles must use the **clrt** tag to specify the colorant names and the XYZ or Lab values used to define the appearance of these colorants. N-Channel conversion may produce unexpected output when used with transparency, overprint, and smooth shades.

If **Convert Colors Using ICC DeviceLink Profiles** is enabled:

- **Device Link Profile**: Defines the ICC Device Link profiles that should be used for color conversion.

- **Convert Spot Colors**: Defines whether spot colors are converted to the destination ICC profile.

- **Clean Up Spot Color Names**: Normalizes spot colors that use different names but have the same CMYK values to use the same name. The name of the first spot color in the group is used.

- **Clean Up Spot Color Appearances**: Normalizes spot colors that use different CMYK values but have the same name to use the same CMYK values. The CMYK values of the first spot color in the group is used.

- **Knock Out White Vector and Text Objects**: Sets white vector and text to knockout.

- **Overprint Black Vector and Text Objects**: Sets black vector and text to overprint.

Enhance Images

The Enhance Images component provides the ability to intelligently enhance document images. Selected image enhancements are applied if they improve the appearance of document images.

The following image enhancements are available:

- Contrast
- Saturation
- Balance Colors
- Reduce Red Eye

Note
Red eye reduction does not apply to pictures of animals.

- Exposure
- Increase Shadow Detail
- Sharpness
- Noise Reduction

Note
Enhance Images supports RGB and grayscale TIFF, JPEG and BMP images embedded in a PDF. Exif information is not retained on enhanced images.

Barcode

The Barcode component provides the ability to add multiple 1D or 2D barcodes to the document. Barcodes are added in the order in which they are placed on the barcodes table.

Barcode Contents Tab

- **Name**: Defines a descriptive name for the barcode.

- **Symbology**: Defines the barcode type. When a symbology is specified, symbology-specific options display.

- **Font Size for 1D symbologies**: Although the Barcode process does not require the use of barcode fonts, the barcode size is specified as a Font Size. The barcode font sizes map to minimum bar widths.

- **Cell Size (pixels per cell) for 2D symbologies**: The **Size** defines the width, in pixels, of the individual barcode cells. Barcodes are rendered at 600 dpi.

- **Fits Into for 2D symbologies**: The **Width** defines the maximum width of the overall barcode. The barcode is rendered to be as large as possible within the defined Width. The barcode dimensions are calculated to ensure cells are rendered using complete pixels at 600 dpi.

- **Barcode Height:** Specifies the bar height for 1D barcodes that support variable height.

  Note

  When **Enforce Minimum** is enabled, it overrides defined barcode height to ensure barcode meets minimum height requirements for the selected symbology.

- **Horizontal, Vertical Quiet Zones**: Specifies the distance from the edge of the barcode to mask with the background color.

- **Color, Background Color**: Defines the color of the barcode contents and background. Custom colors may be added to the list of available colors. Custom colors may be defined as CMYK, RGB, or Grayscale colors.

- **Background Opacity**: Defines the translucency of the background color.

- **Include Caption**: Adds a readable barcode caption to 1D barcodes that support captions. Symbology-specific caption options display under the caption font formatting parameters.

- Text and Paragraph Formatting Common Controls

  Note

  Barcode caption text alignment is based on the Content Placement Common Controls.

- **Scale Caption to Barcode**: Sets the font size for the barcode caption based on the barcode length.

- **Horizontal, Vertical Alignment and Offset**: This variant of the Content Placement Common Controls uses the perimeter of the barcode as the reference box for text alignment and placement of the barcode caption.

Barcode Data Tab

The content of a barcode is defined by adding text, including Workflow Process Variables and barcode variables to the **Barcode Data Value** field.

- **Select Values to Add**: Control used to add content to the Barcode Data Value. In addition to text, the following barcode variables are supported:

  - **Job ID**: The Xerox® FreeFlow® Core Job ID.

  - **Job ID in Group**: The Xerox® FreeFlow® Core Job ID within a job group.

  - **Job Number in Group**: A sequence number within a job group.

  - **Sheet Number**: Counter for the number of sheets in the job.

  - **Number of Sheets in Job**: Total number of sheets in the job.

  - **Sheet Number in Signature**: Counter for the number of sheets in a signature. This counter resets after it reaches the value defined in Sheets per Signature.

  - **Number of Sheets in Signature**: Total number of sheets per signature. This value matches the Sheets per Signature attribute.

  - **Signature Number**: Counter for the number of signatures in a job.

  - **Number of Signatures in Job**: Total number of signatures in a job. This value is calculated by dividing the Number of Sheets in Job by the Sheets per Signature value.

  - **Barcode Number**: Counter for the number of times a barcode is added to the document.

  - **Number of Documents in Job Group**: Total number of jobs in a job group.

  - **Record Number**: Counter for the number of records in a PDF/vt file.

  - **Pages in Record**: Total number of pages in a PDF/vt file.

  - **Number of Records**: Total number of records in a PDF/vt file.

Nominally, variables, such as counters and total number of sheets, map every page in the document to a sheet. However, variables increment for every two pages in the document when Odd or Even pages are selected in the Page Selection Common Controls or when a signature variable is added to the barcode.

- **Include Leading Zeros**: When enabled, adds leading zeroes to variables.

  - **Set Total Digits from Number of Pages**: Defines the number of digits in the barcode variable based on the number of pages in the document.

  - **Total Digits**: Defines the number of digits in the barcode variable.

- **Sheet Counting Order**: Defines whether counting variables increment or decrement.

- **Sheets per Signature**: Defines the assumed number of sheets per signature used by the variables in the barcode process.

- **Sheet Number Start Number**: The number from which to start adding sheet numbers to the document. Supports use of Workflow Process Number Variables.

Barcode Placement Tab

- Content Placement Common Controls
- Page Selection Common Controls

The Barcodes component includes an option to Collect Job Documents. This option is enabled from the popup menu that appears when hovering over the Barcodes component in the Workflow Canvas area.
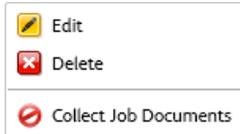
When this option is enabled, the Collect Job Documents behavior should ensure job group variables do not change while processing the jobs in the job group.

Watermarks

The Watermarks component provides the ability to add multiple text and image watermarks to the document. Watermarks are added in the order in which they are placed on the watermarks table.

Watermarks Contents Tab

- **Type**: Defines whether to insert a text, image, PDF, or Merge PDF pages watermark.
- **Name**: Defines a descriptive name for the text or image watermark.

Text Watermarks

- **Text**: Text to be added to the document.
- Text and Paragraph Formatting Common Controls
- **Opacity**: Defines translucency of placed text or image watermarks.

Image, PDF Watermarks

- **Image or PDF File**: Defines the location of the selected document using the Document Selection Common Controls.
- **Image**: Supports JPEG (.jpeg, .jpg), Portable Network Graphics (.png), and TIFF (.tif, .tiff) documents.
- **PDF**: When adding PDF image watermarks to PDF/vt jobs, the PDF must be PDF/x-4 compliant.

Merge PDF Pages

- **Merge PDF Pages**: When Merge PDF Pages is selected, each page of the selected PDF is merged into the matching page of the job.

- **PDF File**: Defines the location of the selected document using the Document Selection Common Controls.

  Note

  When merging PDF Pages to PDF/vt jobs, the PDF must be PDF/x-4 compliant.

- **Restart merge when all pages have been used**: Defines whether to continue merging PDF pages if the last page in the merged PDF is reached before the last page of the job is reached. If enabled, after the last page of the merged PDF is reached merging continues with the first page of the merged PDF and proceeds until a PDF page is merged into all job pages.

- Content Scaling Common Controls

- **Opacity**: Defines translucency of placed text or image watermarks.

Watermarks Placement Tab

- **Layer Order**: Defines whether the watermark should be placed above or below existing content in the document.

- Content Placement Common Controls

- Page Selection Common Controls

The Watermarks component includes an option to Collect Job Documents. This option is enabled from the popup menu that appears when hovering over the Watermarks component in the Workflow Canvas area.
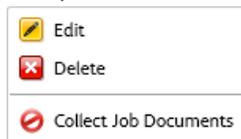
When this option is enabled, the Collect Job Documents behavior should ensure job group variables do not change while processing the jobs in the job group.

Pressmarks

The Pressmarks process provides the ability to add multiple pressmarks to the document. Pressmarks are added in the order in which they are placed on the pressmarks table.

Pressmarks Contents Tab

- **Type**: Defines the pressmark that should be added to the document. Supported pressmarks include: registration marks, lay marks, and color swatches or bars.

  - **Solid Marks**: Solid rectangles most often used for finishing device control.

- **Registration Marks**: Small targets printed outside the page area used to align different separations when printing color documents.

- **Sequence Marks**: Marks used in book printing to ensure folded signatures are in the expected sequence.

- **Lay Marks**: Marks used to register content to press sheets.

- **Line Marks**: Lines used to mark the location of operations such as cutting or perforating.

- **Color Swatches/Bars**: Small squares of color representing the RGB and CMYK solids and tints.

- **Name**: Defines a descriptive name for the pressmark.
- **Swatch Width, Height**: Define the width and height of each swatch in a pressmark. Also used to define the overall dimensions of registration marks or the lay marks.
- **Color**: Defines the color of Solid Marks, Sequence Marks, or Line Marks. Custom colors may be added to the list of available colors. Custom colors may be defined as CMYK, RGB, Grayscale, or Spot Colors.
- **Line Thickness**: Defines the thickness of the lines in the registration, Lay, and Line Marks.
- **Line Mark Options**:

    - **Line Start (horizontal, vertical)**: Location of the start of the Line Mark. Defined as a distance from the origin; defined in the Content Placement Common Controls.

    - **Line End (horizontal, vertical)**: Location of the end of the Line Mark. Defined as a distance from the origin; defined in the Content Placement Common Controls.

    Note

    Horizontal and Vertical Offset controls are not available when adding Line Marks.

    - **Dash**: Length of dashes on dashed Line Marks.

    - **Gap**: Length of gaps in dashed Line Marks.

- **Sequence Mark Options**:

    - **Horizontal, Vertical Offset**: Incremental adjustment to the placement of each sequence mark.
    - **Wrapping**: Defines how sequence marks are placed after they have been offset to the Wrap Width or Height.
    - **Wrap Width, Height**: Define the offset distance at which to wrap sequence marks.
    - **Sequence Mark Type**: Defines whether to place Plain or Numbered sequence marks. Numbered sequence marks have a number that increments with the placement of each sequence mark.
    - **Sequence Start Number**: The number from which to start adding Sequence Mark numbers. Supports use of Workflow Process Number Variables.

Pressmarks Placement Tab

- Content Placement Common Controls
- Page Selection Common Controls

Note

Unlike other content, registration marks are aligned to the center of the mark.

Page Numbers

The Page Numbers component provides the ability to add page numbers in a variety of formats to the document.

Page Numbers Contents Tab

- **Start Number**: The number from which to start adding page numbers to the document. Supports use of Workflow Process Number Variables.
- **Number Format**: Defines format used for the page numbers.

    Note

    The alphabetic page number formats use the English alphabet.

- **Include Leading Zeroes**: When enabled, adds leading zeroes to page numbers.

    - **Set Total Digits from Number of Pages**: Defines the number of digits in the page numbers based on the number of pages in the document.

    - **Total Digits**: Defines a fixed number of digits in the page numbers.

- **Prefix and Suffix**: Defines text that is concatenated with the page numbers.
- Text and Paragraph Formatting Common Controls
- **Increment Page Numbers Based On**: Defines whether page numbers are incremented based on the all pages in the document or based on the numbered pages.

Page Numbers Placement Tab

- Content Placement Common Controls
- Page Selection Common Controls

The Page Numbers component includes an option to Collect Job Documents. This option is enabled from the popup menu that appears when hovering over the Page Numbers component in the Workflow Canvas area.
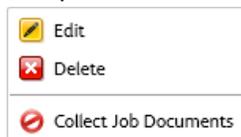
When this option is enabled, the Collect Job Documents behavior should ensure job group variables do not change while processing the jobs in the job group.

Resize Pages

The Resize Pages process defines how the selected PDF boxes or contents in the document pages are resized.

Resize Contents Tab

- **Resize**: Defines whether Resize will modify the PDF Contents or the PDF Boxes.

- **Resize Relative To**: Defines the PDF box or the PDF contents to be used as the source size for resizing.

  - If resizing a PDF box that is not defined in the job file, the PDF Box Selection Behavior is used to define the selected PDF box before resizing.

  - If Resizing the contents, the PDF boxes are not modified.

- **Proportionally Resize All PDF Boxes**: The selected PDF box is resized to the target dimensions. Other PDF boxes are scaled by the same amount as the selected PDF box to ensure the relationship between the PDF boxes is retained as the document is resized.

  ### Note

  When resizing only the selected PDF box, resize, if required, resizes other PDF boxes to ensure proper nesting of the Trim, Bleed, Crop, and Media PDF boxes.

- **Method**

  - **By Percent**: Resizes the selected PDF box or the contents by a defined percentage.

  - **To Size**: Resizes the selected PDF box or the contents to a defined size. Supports use of Workflow Process Number Variables for defining the Width and Height.

  - **To Size Offsets**: Resizes the selected PDF box or the contents by the defined distance.

  - **By Percent Offsets**: Resizes the selected PDF box or the contents by the defined percentage.

  - **Offset Direction**: When resizing by offsets, defines whether to offset inward or outward.

- Content Scaling Common Controls

Resize Placement Tab

- Content Placement Common Controls
- Page Selection Common Controls

Rotate Pages

The Rotate Pages process updates the PDF page rotation property by adjusting it in 90-degree increments.

- **Rotate Pages**: Defines the rotation that should be applied to the selected pages.

- Page Selection Common Controls

  Note

  Changing the PDF rotation property in a PDF does not actually rotate the PDF. As such, the PDF Job Properties remain unchanged. See: Appendix: Job Properties.

Insert Pages

The Insert Pages process inserts pages at defined locations in the document.

- **Type**: Defines the type of page insertion.

  - **Blank Pages**: Add blank pages to the document.

  - **Document**: Add the pages from a PDF to the document.

  - **Job Pages**: Add job pages to the document.

  - **Blank Pages Fill**: Add blank pages to the document until the Final Document Page Count is reached.

  - **Document Fill**: Add the pages from a PDF to the document until the Final Document Page Count is reached.

  - **Job Pages Fill**: Add job pages to the document until the Final Document Page Count is reached.

  When inserting Blank Pages:

  - **Insert Size, Orientation**: Defines the dimensions and orientation of inserted blank pages.
  - **Insert Size Same As**: Defines the PDF box that should be used to set the dimensions of inserted blank pages.
  - **Number of Inserts**: Defines the number of blank pages to insert at each insertion point in the PDF. Supports use of Workflow Process Number Variables.

    When a blank page is inserted, the Location attribute and the Page Selection Common Controls are used to define the insertion point in the PDF. The blank pages match the size of the selected PDF box of the page relative to which blank pages are inserted into the PDF.

  When inserting PDF document pages:

  - **File**: Document Selection Common Controls

When inserting Blank Pages, PDF document pages, or Job Pages to fill a document:

- **Final Document Page Count**: Defines the page count that must be reached before blank page fill or document fill stops. The page count may be an exact number or a multiple of the specified number. Supports use of Workflow Process Number Variables.

When inserting Job Pages:

- **Divide Print Quantity by Number of Inserts**: Divides the print quantity based on the number of times job pages are inserted into the document.

- **Set Automatically Based on the Print Quantity**: Defines the **Number of Inserts** so that the number of times each page is in the document matches the Print Quantity. After inserting Job Pages, quantity is set to 1.

When inserting Blank Pages or Job Pages:

- **Number of Inserts**: Defines the number of job pages to insert at each insertion point in the PDF. Supports use of Workflow Process Number Variables.

  The Number of Inserts may be defined as a fixed value or may be based on the value of the selected Manifest Job Property.

  Note

  Page Selection Common Controls are subset to a specific page number when inserting blank pages or PDF document pages to fill a document.

- **Location**: Defines whether the insertion should happen before or after the locations specified by the Page Selection Common Controls.

  - If inserting Job Pages, options to insert job pages **Before** or **After Each Set of Contiguous Pages** become available.

  - A PDF/vt is created when inserting PDF/x-4 job pages **Before** or **After Each Set of Contiguous Pages**.

- Page Selection Common Controls

  Note

  Page Selection Common Controls are subset to a specific page number when inserting blank pages or PDF document pages to fill a document.

Delete Pages

The Delete Pages component allows you to remove document pages.

Use the Page Selection Common Controls to specify deleted pages.

Route

The Route component allows you to automate decisions about the execution path that a job should take in the workflow.

Use the Routing Common Controls to define rules for routing jobs to one or more workflow execution paths. Each row in the Routing Rules table will create a unique execution path in the workflow.

Note

Routing is applied to individual jobs in a Job Group.

Collect

The Collect component allows you aggregate jobs. Collected jobs are held until one of the defined release conditions is met.

One of each of the following conditions may be added to the **Release Conditions**:

- **Time of Day**: Jobs are released at the specified time.

    - **Day of Week**: When releasing jobs at a specific Time of Day, defines the days of the week during which jobs should be released.

- **Collected Documents are Held for**: Jobs are released once the first job has been held for the defined number of minutes.

- **Number of Collected Documents**: Jobs are released once the number of held jobs reaches the defined number.

- **Number of Pages in Collected Documents**: Jobs are released once the number of pages in the held jobs reaches the defined number.

- **Number of Impressions in Collected Documents**: Jobs are released once the number of impressions in the held jobs reaches the defined number.

When **Release All Collected Jobs as a Job Group** is enabled, collected jobs are combined into a new Job Group. Jobs are sequenced based on the order in which they were collected.

Note

Jobs that are copied into the new Job Group are also new jobs.

Split

The Split component allows you to split jobs into multiple execution paths in the workflow.

- **Split By**: Defines whether jobs are split based on specified **Pages** or PDF/vt **Variable Data Records**.

- **Split Each Variable Data Record**: Defines whether the **Page Selections** defined in the Split Rules apply to PDF/vt files or to each record within PDF/vt files.

- **Split Rules** when splitting by **Pages**

    - Use the Page Selection Common Controls to define the subset of pages that are submitted to each workflow execution path. The pages submitted to each execution path, if any, appear as a separate job in a job group.

- **Split Rules** when splitting by **Variable Data Records**: A PDF/vt file with the records defined in **Record Selection** control for the split rule is sent to each workflow execution path.

    - **All Records**: Send all records in the document.

    - **Record Intervals**: Send every N records starting with the defined record number.

    - **Record Range**: Send specified records. Supports both positive and negative numbers. Negative numbers are relative to the last record in the PDF/vt with record -1 representing the last record.

- **Divide Print Quantity by the Number of Rules**: Adjusts the job print quantity based on the number of split rules.

    Note

    The aggregate quantity of the jobs in the Job Group created by Split equals the quantity of the job that was split. Additionally, jobs are not created if the quantity adjustment would result in said jobs having a quantity of zero.

- **Divide Pages by the Number of Rules**: Adjusts the number of pages sent to each execution path based on the number of split rules when selecting All Pages for all split rules.

- **Divide Records by the Number of Rules**: Adjusts the number of PDF/vt records sent to each execution path based on the number of split rules when selecting All Records for all split rules.

- **Append Rule Name to Job Name**: Defines whether the rule name is appended to the job name when a rule triggers a split operation.

Join

The Join component concatenates job in a Job Group into a single job. If jobs in a job group process through multiple execution paths, Join concatenates all jobs in the execution path that includes the Join component. Jobs are joined based on the order defined in the Job Group Sequence Behavior.

Join and PDF/vt jobs

When joining PDF/vt and PDF files, the PDF files are joined as a record within a PDF/vt file. Additionally, the PDF files must be PDF/x-4 compliant.

When joining PF/x-4 files the resultant PDF will be a PDF/vt with each PDF file defined as a record.

External

The external component allows you to integrate third party software products into Xerox® FreeFlow® Core workflows.

When **Type** is set to **Script**, the system performs a CLI call when executing the workflow component. The CLI call concatenates the following attributes:

- The URI defined in the **Script**. The following URI formats are supported:

    - script.xxx (Sandbox Location)

    - <drive letter>:\folder\script.xxx

- The text string defined in the **Parameters**.

    Carriage returns are automatically removed from this field.

Note

Variables unique to the external process component are listed in the External Process Node Variables section of Appendix: Job Properties.

Xerox® FreeFlow® Core determines the job status based on the script's exit code. If the exit code is anything other than 0, the job fails. If the exit code is 0, the job completes.

If the script does not explicitly return an exit code then the default value is returned. The default value is 0.

When a job completes, if there is a PDF with the name defined in $FFin$ in the location defined by $FFout$ that PDF is used as the job document. Otherwise the current document is used.

Each time a script executes, Xerox® FreeFlow® Connect archives the contents of stdout and stderr to XML files in the External Process Status subfolder in the Scripts folder in the sandbox. This folder is accessible via the server filesystem.

When **Type** is set to **Hot Folder**, the system saves the job to the **Input to External Process** folder. The job continues processing when the submitted file has been received in the **Output from External Process** folder.

Send the current ticket to the external process sends the current Xerox® Programming Information Format (XPIF) ticket for the job to the external process.

Note

If the Xerox® Programming Information Format (XPIF) ticket is sent to the Hot Folder external process then it must be returned along with the job file before the job continues processing.

Timeout: Defines the number of seconds to wait before it is assumed that there was a problem with the external process.

The External component includes an option to Collect Job Documents. This option is enabled from the popup menu that appears when hovering over the External component in the Workflow Canvas area.
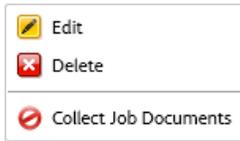
When this option is enabled, the Collect Job Documents behavior should ensure job group variables do not change while processing the jobs in the job group.

Print

The Print component allows you to submit jobs to IPP-based Printer Destinations.

The Print components may:

- **Send All Jobs to a Single Printer**

- **Select the Printer Based on Job Characteristics**: Jobs are sent to a Printer Destination using the Routing Common Controls.

- **Distribute Jobs Between Selected Printer Destinations**: Jobs are distributed between defined Printer Destinations. **Select Printer Distribution By**:

  - **Selecting The Next Available (Round Robin)** – Use round robin scheduling to select between the defined printer destinations using round robin scheduling. If Job Submission Regulation is enabled, jobs are not distributed to Printer Destinations for which job submission has been suspended.

  - **Selecting The First Available** – Send jobs to the first Printer Destination in the list for which job submission has not been suspended by Job Submission Regulation.

Pause Job Before Sending to Printer pauses jobs in Xerox® FreeFlow® Core when they reach the Printer component.

If this option is enabled, the job must be resumed via either the Job Status UI or via a JMF ResumeQueueEntry signal.

The Print component includes an option to Collect Job Documents. This option is enabled from the popup menu that appears when hovering over the Print component in the Workflow Canvas area.
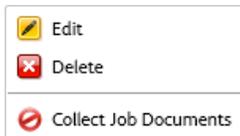
When this option is enabled, the Print component submits jobs to the DFE in the order defined in the Job Group Sequence Behavior.

Note

DFE queues used in a Printer Preset that have the Collect Job Documents option enabled must be used in a single Printer Destination.

Printer Destination

- **Name of Printer Destination**: Defines a descriptive name for the Printer Destination.

- **Printer**: Determine whether to create a new printer destination using an existing printer or a new printer.

- **Name**: Defines a name for the printer. If a name is not defined, the Model information retrieved from the DFE is used as the name of the printer in the Printers list.

- **DNS Name or IP Address**: The hostname or IP address for the DFE.

- **Get Printer Info**: Retrieves printer capabilities from the DFE. This information is used to populate the printer description, the list of queues, if any, and the job ticketing options.

    - Should available printer options change, for example, if the media library changes or if an additional output destination is added to the printer configuration, select **Refresh Printer Info** on an existing printer to retrieve updated capabilities from the DFE.

Note

DFE queues that are not accepting jobs do not display in the list of returned queues.

Note

When connecting to a Fiery DFE, one of the default queues (print, hold, direct) must be enabled.

The following protocols must be enabled in the DFE:

- **IPP Printing**: Enables retrieval of supported job ticketing and print submission.
- **SNMP**: Enables device type discovery via the Standard Device Description.

After Xerox® FreeFlow® Core retrieves Printer Info, the following options become available:

- **Printer Queue Name**: Name of the queue to use for job submission.

    Note

    This option is only available for DFEs that support multiple queues.

- **Define Job Ticket Defaults**: Enables the use of default job ticket settings for print submission.

- **Secure Printing**: Enables the use of Secure IPP for print submission.

Secure Printing requires a DFE with SSL/TSL enabled. Additionally, a certificate must be downloaded from the DFE using the Core Certificates utility.

Note

Secure Printing is supported on Xerox® FreeFlow® Print Servers and EFI Fiery® DFEs.

Printer Job Ticketing

Printer job ticketing defaults are defined in the Xerox® FreeFlow® Core Printer Destinations.

To access the job ticket settings, click **Apply Job Ticket Settings >** ✏ **Edit Job Ticket Settings**.

Setup Tab

- **Quantity**: Defines the number of copies for the job. The option to use printer default overrides the nominal precedence so that the Xerox® FreeFlow® Core default quantity and the quantity in incoming job tickets is ignored.
- **Main Stock**: List is based on the DFE's current stock library. When hovering over the stock name, a tooltip will display Stock properties retrieved from the DFE. Stocks loaded in the printer trays are marked with a ✔ icon.
- **Sides Imaged**: Defines plex used for printing.
- **Color**: Defines the color mode used for printing.
- **Collation**: Defines the page sequence used for printing.
- **Output Order**: Defines the print order and face orientation used for printing.
- **Output Location**: Defines the destination for printed sheets.
- **Slip Sheets**: Defines the insertion of blank sheets between sets when printing.
- **Offset**: Defines when to change the output position of the printed stack.
- **Number of Leading Banner Pages**: Defines the number of pages in the PDF, starting with the first page, which should be treated as banner pages by the DFE.

Special Pages Tab

The Special Pages tab enables you to manage exception pages and insert sheets.

- **Exception Pages**: Defines stock, plex and color mode for specific pages within a job.

  - Supports negative page numbers. If needed, negative numbers are converted to the appropriate positive numbers when sending the job to the DFE.

- **Sheet Inserts**: Defines printer sheet inserts, for example, a blank piece of paper or a pre-printed page, that are inserted between printed pages in a job.

  - Supports negative page numbers. If needed, negative numbers are converted to the appropriate positive numbers when sending the job to the DFE.

Note

Page ranges for Sheet Inserts and Exception Pages start with the first page in the PDF. This enables page exceptions and sheet inserts on Leading Banner Pages. However, this also means that page ranges must compensate for the number of Leading Banner Pages in the document.

Finishing Tab

- **Finishing Orientation**: Defines whether the finishing options apply to portrait or landscape pages.
- **Finishing**: Defines the available finishing on the DFE. The following integrated finishing operations are supported:
    - Stapling
    - Hole Punching
    - Folding
    - Booklet Making
    - Multiple Finishing
    - DFA Finishing Profiles
    - Custom DFA Finishing Profiles

    #### Note
    DFA finishing options are not supported.

Job Submission Methods and Job Ticketing

The default Printer Destination job ticketing values may be overridden during job submission. Different submission mechanisms support different levels of job ticketing:

- **Job Submission Client**: All Printer Destination job ticketing via Job file + XPIF upload. Quantity and Main Stock overrides.
- **JMF**: Printer Destination job ticketing, except slipsheets and leading banner pages, via JDF.
- **Hot Folder**: All Printer Destination job ticketing via XPIF.
- **MAX**: All available Printer Destination job ticketing options via manifest field referencing an XPIF file. Quantity and Main Stock via manifest columns.

    #### Note
    Finishing, Special Pages, or Sheet Inserts defined via XPIF or JDF replace all Finishing, Special Pages, or Sheet Inserts defined in the default job ticket.

    #### Note
    Job ticketing supports the print ticketing attributes available in the Printer Destination in addition to media attributes. Other job ticketing attributes are not supported.

Finish

Finisher Destinations saves a JDF layout description of the Xerox® FreeFlow® Core job.

The Finish component may **Send All Jobs to a Single Finisher** or use the Routing Common Controls to **Select the Finisher Based on Job Characteristics**.

Pause Job Before Sending to Finisher will pause jobs in Xerox® FreeFlow® Core when they reach the Finish component. If this option is enabled, the job must be resumed via either the Job Status UI or via a JMF ResumeQueueEntry signal.

Two types of finisher presets are available: Inline and Offline.

- **Inline finishers**: Generates a JDF that contains the Xerox® FreeFlow® Print Server job ID required for Ultimate Bindery to release the held Xerox® FreeFlow® Print Server job after the finisher is properly configured.

- **Offline finishers**: Generates a JDF without the Xerox® FreeFlow® Print Server job ID.

Note

Ultimate Bindery processes jobs using a FIFO queue. This ensures that the job group order defined during job submission to Xerox® FreeFlow® Core is retained when finishing jobs.

Finisher Destination

- **JDF Location**: Document Selection Common Controls
- **Media Weight**: Defines the media weight used by the finisher to fine tune paper handling.
- **Source Tray**: If using the Bourg Sheet Feeder, defines the tray that should be used for feeding the job.
- **Sheet Inserts**: Defines the trays that should be used for finisher sheet inserts when using the Bourg Sheet Feeder.

The Bourg Sheet Feeder supports the following Source Tray values:

- **Printer**: For sheets going through the Print Engine Bypass.
- **Tray-1**: For sheets fed out of the top Tray in the Bourg Sheet Feeder.
- **Tray-2**: For sheets fed out of the High Pile bottom tray in the Bourg Sheet Feeder.

The Finish component includes an option to Collect Job Documents. This option is enabled from the popup menu that appears when hovering over the Finish component in the Workflow Canvas area.
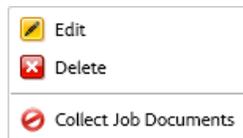
When this option is enabled, the Finish component saves JDF files based on the order defined in the Job Group Sequence Behavior.

Save

Save saves a copy of the job file to the defined File Location.

- **File Location**: Document Selection Common Controls.

Note

Requires a URI that supports write access.

- **File Name**: Filename to use when saving the job.

- **Job Ticket to Save**:

    - **Don't Save the Job Ticket**: Do not save a job ticket.

    - **Submitted Job Ticket**: Save the job ticket as it has been consumed during job submission but before it is modified by the workflow.

    - **Workflow Job Ticket**: Save the job ticket as it has been modified by the workflow.

- **Save Job Ticket As**: Determines whether to save an XPIF or JDF job ticket.

- **When Setting The PDF Location in the JDF**: Determines URI scheme to use for the reference to the PDF within the saved JDF.

The Save component includes an option to Collect Job Documents. This option is enabled from the popup menu that appears when hovering over the Save component in the Workflow Canvas area.
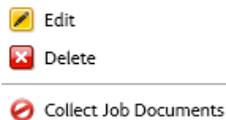
When this option is enabled, the Save component saves jobs based on the order defined in the Job Group Sequence Behavior.

Workflow Process Common Controls

Workflow processes include common controls whose behavior is defined globally. These controls, if used by the workflow process, will always have coherent behavior.

Routing Common Controls

Hot Folders have the ability to send jobs to a specific workflow based on job characteristics.

Similarly, the Route component has the ability to send jobs to a specific workflow execution path based on job characteristics.

Lastly, the Print and Finish components also have the ability to send jobs to a specific destination based on job characteristics.

The above is accomplished by defining routing rules composed of:

- **Job Characteristics**: Define checks of job properties that must be true for the routing rule to be considered true.

- **Job Destination**: If the job characteristics are true, then the job is sent to the associated destination. Job Destinations may be:
    - Workflows: Used with Hot Folder job routing.
    - Workflow execution paths: Used with the Route component.
    - Printer Destinations: Used with Print component job routing.
    - Finisher Destinations: Used with Finish component job routing.

Routing rules are evaluated in the order in which they are defined in the routing common control. The routing rules are evaluated until the Job matches the specified Job Characteristics.

Job Characteristic Presets

The job characteristic presets define the job conditions that must be true for a routing rule to be true.

An example of a condition: Quantity is less than 1000.

This condition will be true if the defined job property (Quantity) is less than 1000.

Within the job characteristic preset, conditions are grouped into sets. The user can define whether **All Conditions in the Set Must be Met** or **Any Condition in the Set May be Met** in order for the set to be considered true.

Similarly, the job characteristics preset may contain multiple sets of conditions. The user can define whether **All Sets Must be Met** or **Any Set May be Met** in order for the job characteristics preset to be considered true.

Each set may contain up to 25 conditions. Each job characteristics preset may contain up to 3 sets of conditions.

Job Properties

The job properties in job characteristic presets are evaluated differently depending on their types:

- Numbers are evaluated using:

    - is equal to
    - is greater than
    - is greater than or equal to
    - is less than
    - is less than or equal to
    - is not equal to
    - is a multiple of
    - is not a multiple of

- Text is evaluated using:

  - contains
  - does not contain
  - is equal to
  - starts with
  - ends with
  - is not equal to
  - is blank
  - is not blank

- Sizes are evaluated using:

  - is equal to
  - is not equal to
  - fits into
  - does not fit into
  - fits between
  - does not fit between

  Dimensions for **fits into / does not fit into** checks are orientation-agnostic. For example, Width: 11, Height: 17 with Units set to Inches fit into 11" x 17" and 17" x 11" documents.

- Enumerations are evaluated using:

  - is
  - is not

- Finishing enumeration is evaluated using:

  - Includes
  - Does not Include

- Boolean enumerations are evaluated using:

  - is equal to
  - is not equal to

  Note

  Boolean enumerations always have a value of True or False.

See: Appendix: Job Properties for a complete list of variables.

Page Selection Common Controls

These controls allow the user to define rules that are used to determine the document pages impacted by a workflow process. The pages affected by a workflow process must meet all the criteria in the **Page Selection** and **Apply Only to Pages** controls.

- **Page Selection**: Defines the pages that will be modified by the workflow process.

    - **All Pages**: Modify all pages in the document.
    - **Page Intervals**: Modify every N pages starting with the defined page number.
    - **Page Range**: Modify specified pages. Supports both positive and negative numbers. Negative numbers are relative to the last page of the document with page -1 representing the last page of the document.

- **Apply Only to Pages**: Subsets the defined Page Selection to pages that match the selected properties:

    - **Orientation**: Landscape vs. Portrait

    - **Parity**: Odd vs. Even

    - **Size**: Size comparisons from Routing Common Controls

    - **Bookmarks**: Text comparison from Routing Common Controls

- **Apply to Each Variable Data Record**: Defines whether the Page Selections defined in the common control apply to PDF/vt files or to each record within PDF/vt files.

Content Placement Common Controls

Allow the user to define rules that are used to determine the coordinates for placing content on the document.

- **Rotation**: Defines clockwise rotation of content to be placed on the page.
- **Position Relative To**: Defines the PDF box that is used as the basis for evaluating the alignment rules in other content placement common controls. The selection of the PDF box is based on the PDF Box Selection Behavior.

    Note

    The label for this common control is customized to the process. So, for example, the label is Resize Relative To in the Resize process.

- **Horizontal Alignment, Vertical Alignment**: Alignment controls define how content is placed on the target area of the document. Left and Right alignment aligns content based on the input document edges. Binding Edge and Non-Binding Edge aligns content based on the sheet edges.
- **Horizontal Offset, Vertical Offset**: Adjustment to the nominal content placement resulting from evaluation of other content placement common controls. Supports positive and negative values. Positive values offset content in the specified direction. Negative values offset content in the direction opposite of the specified direction. Support use of Workflow Process Number Variables.

- **Horizontal Direction, Vertical Direction**: Specifies whether content is aligned to the inside or the outside of the selected PDF box.

Text and Paragraph Formatting Common Controls

Allows the user to define text and paragraph formatting options.

- **Font**: Provides a list of fonts installed on the Xerox® FreeFlow® Core server.

  ### Note
  To add additional fonts, install them in the operating system and restart the server.

- **Size**: Defines the size of the font.

- **Color**: Defines the color of the font. Custom colors may be added to the list of available colors. Custom colors may be defined as CMYK, RGB, Grayscale, or Spot colors.

- **Text Alignment**: Defines the alignment for a block of text.

  - **None**: Aligns text based on the horizontal alignment defined in the Content Placement Common Controls.

  - **Left, Right, Center Align**: Overrides the text alignment that is implicitly defined in the Content Placement Common Controls.

  - **Justify**: When using a width other than Zero, wraps text at the defined width and spaces the text so it is aligned to both sides of the paragraph.

  - **Fit**: When using a width other than Zero, decreases the font size, if needed, to ensure all text fits within the specified width. Alignment of the block of text is based on the alignment in the Content Placement Common Controls.

  - **Compress**: When using a width other than Zero, scales text horizontally, if needed, to ensure all text fits within the specified width. Alignment of the block of text is based on the alignment in the Content Placement Common Controls.

    ### Note
    Text is not compressed to less than 10 % of the original width.

- **Width**: Defines a width for the text watermark. When the width is a value other than zero, the text wraps at the width distance.

- **Line Spacing**: Defines vertical space between lines in a paragraph.

Content Scaling Common Controls

These controls allow the user to specify how content is scaled to fit into a target area of the document.

- **None**: Content is placed without scaling.

- **Fit**: Scales content proportionally to fit the target area.
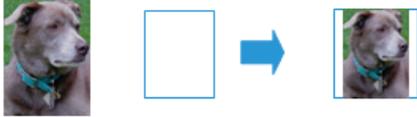
- **Uniform Fill**: Scales content proportionally to fill entire target area.
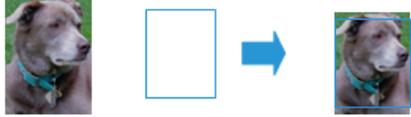
- **Stretch Fit**: Scales content anamorphically to fill entire target area.

- **Fit Width**: Scales content proportionally to fill width of target area.

- **Fit Height**: Scales content proportionally to fill height of target area.

- **Width, Height**: Defines the dimensions of the target area for scaling.

  #### Note

  For Imposition, the Press Sheet Size is used to define the target Width and Height.

  #### Note

  For Resize using Offsets, the Resize Relative To selection and the Offset values are used to define the target Width and Height.

Document Selection Common Controls

These controls allow the user to specify the location (URI) for file system operations. The following URI types are available:

- **Xerox® FreeFlow® Core Sandbox**: Available when selecting the sandbox 📁 in the Location dialog.

  - Example: My File.pdf

- **Local Path**: Available by typing the path in the location field. The path must be a valid URI pointing to a local drive in the Xerox® FreeFlow® Core server.

  - Example: C:\My File.pdf

- **UNC**: Available by typing the path in the location field. The path must be a valid URI pointing to a shared windows folder.

  - Example: \\Server\My File.pdf

Note

By default, the Xerox® FreeFlow® Core service runs as the Local System account. Access to network resources requires additional configuration. See the Xerox® FreeFlow® Core Installation Guide for additional information.

- **FTP**: Available by typing the path in the location field. The URI must be URL-encoded and the credentials must be in the URI. FTP access is read only.

  - Example: ftp://user:password@Server/My % 20File.pdf

- **HTTP**: Available by typing the path in the location field. The URI must be URL-encoded and the credentials must be in the URI. Only HTTP basic authentication is supported. HTTP access is read only.

  - Example: http://user:password@Server/My % 20File.pdf

PDF Box Selection Behavior

If the selected PDF box is not defined in the PDF, the component falls back to using another PDF box per the following:

- The Art Box falls back to the Trim Box.
- The Trim Box falls back to the Bleed Box.
- The Bleed Box falls back to the Crop Box.
- The Crop Box falls back to the Media Box.

Job Group Sequence Behavior

The sequence of jobs in a Job Group is based on the following:

- **Submit Job**: Jobs are sequenced in the order in which they appear in the Submit Job Dialog Document List.

- **Manifest Jobs**: Jobs are sequenced in the order in which they appear within the Manifest. See: Manifest Automation from Xerox Setup.

- **JMF Jobs**: Jobs are sequenced in the order in which they appear within the Run List in the JDF submitted during JMF Submission.

- **Zip files**: Jobs are sequenced alphabetically based on their filenames.

- **Split Jobs**: When splitting a job, the resultant jobs are sequenced based on the order of the Rules table in the Split component.

- **Split jobs in a job group**: When splitting a jobs in a job group, additional jobs are sequenced based on the order of the Rules table in the split component. In addition, these additional jobs are sequenced after the job from which the additional job was created.

Workflow Process Variables

All components support use of process variables as part of their configuration.

To use a process variable, type in the variable name as part of the content in a text field. Runtime variables are evaluated and replaced with their current value during execution.

For example, a barcode or watermark preset with the variable $FFwfjob.Id$ results in the addition of a barcode or watermark that contains the job's Xerox® FreeFlow® Core Job Id.

Note

Newline control characters (\n and \r\n) are replaced by carriage returns.

The units for localized variables such as $FFwfjob.documentWidth$ are defined during startup by reading the Measurement System configuration in the Region and Language control panel of the Xerox® FreeFlow® Core server.

See: Appendix: Job Properties for a complete list of variables.

Workflow Process Number Variables

Number settings may support use of process variables as part of their configuration. Number settings that support process variables include a menu that lists available variables.
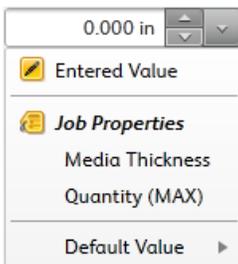
These variables include Number MAX variables and, in some cases, additional variables as applicable to the specific setting.

The **Default Value** setting defines a fixed value that will be used if the selected variable is undefined for a given job.

5

Administration

Job Submission Configurations

Xerox® FreeFlow® Core is fully-configurable, with individual modules offering greater control over the workflow and the flexibility to add the components that are best suited to your needs. Certain features may not be available depending upon the product configuration purchased.

Refer to the table below for the features that are available within each product configuration. The Xerox® FreeFlow® Core Base module is always required. Optional modules provide additional capabilities.

Component	Xerox® FreeFlow® Core Base	Advanced Prepress	Advanced Automation
Hot Folder	✓		
JMF / JDF	✓		
JMF Routing			✓
JMF plus JDF XSLT			✓
Hot Folder Scripting			✓
Hot Folder Routing			✓
Manifest Automation from Xerox (MAX)			✓

Hot Folder Setup

Hot Folder Setup allows Administrators to define hot folders and associate them with an existing Workflow.

Hot Folders are used to process both supported job files and manifests. Job files submitted to a hot folder may be associated with an Xerox® Programming Information Format job ticket via the following naming conventions:

- filename.ext. – document
- filename.ext.xpf – print ticket

Input Hot Folder Name defines the name for the hot folder configuration.

The **Hot Folder Location** is a location that will be monitored for job files. The following Universal Resource Identifier (URI) formats are supported:

- Folder (Sandbox Location)
- <drive letter>:\folder\
- \\server\share\folder\

Note

When defining Hot Folder Locations within Windows Shared Folders, the **Hot Folder Location** must use a folder within the shared directory.

Job Priority defines the priority for jobs submitted to the workflow. See Submit Job Dialog for more information about job priority.

Scripting

When the Hot Folder option to **Execute Script Prior to Workflow** is enabled the system will issue a CLI call in response to picking up a file in the Hot Folder. The CLI call will concatenate the following attributes:

- The URI defined in the **Script**. The following URI formats are supported:
  - script.xxx (Sandbox Location)
  - <drive letter>:\folder\script.xxx

- The text string defined in the **Parameters**. This field has two predefined variables:
  - $FFin$ the URI of the file that was put into the Hot Folder
  - $FFout$ the URI of the folder into which the script should output a valid job file

Note

Other variables are not supported in the Hot Folder Scripting tab.

Each time a script executes, Xerox® FreeFlow® Core archives the contents of stdout and stderr to XML files in the **Manifest Status** subfolder of the Hot Folder. This subfolder is accessible via the host's filesystem.

Note

When scripting is enabled the Hot Folder will accept files of any type. However, the output file from the script must be a file type supported by Xerox® FreeFlow® Core. The file must be placed in the location defined by the $FFout$ variable.

XSLT Processing of Hot Folder Jobs

The XSLT processor used for transforming JDF job tickets is also available via a command line application. This command line application can be used in conjunction with hot folder scripting to, for example, transform an XML file into a manifest.

To invoke the XSLT processor from a hot folder, enable Scripting in the hot folder and:

- Set <Xerox® FreeFlow® Core installation directory>\transformXML.bat as the value in the Script field.

- Append the location of an XML stylesheet to the default $FFin$ $FFout$ variables in the Parameters field.

  Note

  transformXML.bat does not function as expected if it is moved from the Xerox® FreeFlow® Core install directory.

Workflow Destinations

Hot Folders have the ability to send jobs to a specific workflow destination or to select a workflow destination based on job characteristics.

Selection of workflow destinations is performed using the Routing Common Controls.

When the option to **Select Workflow Based on Job Characteristics** is enabled, the Hot Folder **Options** selection allows the user to define PS, VIPP, and PDF Generation Options for jobs submitted to the workflow.

Manifest Automation from Xerox Setup

Manifest Automation from Xerox connects the print provider's order-management system, print MIS, or other Web to Print systems with automated print production. Manifest Automation from Xerox simplifies integration by enabling hot folder submission of order information via a delimited file, the manifest: .csv and .txt.

During manifest processing, Xerox® FreeFlow® Core retrieves a job file for each row in the manifest.

Note

Rows starting with a pound sign are not processed.

The manifest information in each row is mapped to job metadata based on the Manifest Automation from Xerox Setup configuration. The files listed in a manifest are submitted to a workflow based on the Hot Folder Workflow Destinations settings.

Manifest Automation from Xerox configurations are associated with individual hot folders. Multiple manifest configurations may be used with a single workflow by associating multiple hot folders, each with its own Manifest Automation from Xerox configuration, with the same workflow.

Build job name using data fields: By default, manifest jobs are named using the PDF's filename. Enabling this option allows the use of static text and manifest variables for job naming.

Standard Fields

- **File Name**: Specifies the location (URI) of the job file to be submitted for processing. The following URI formats are supported:

    - job.xxx
    - <drive letter>:\folder\job.xxx
    - \\server\share\folder\job.xxx
    - ftp://username:password@server/path/folder/job.xxx
    - http://username:password@server/path/job.xxx
    - file:///path/folder/job.xxx

    When using a Local Path or a UNC as the URI, the File Name field may contain the entire path to the file or it may contain only the filename. If the File Name field contains the filename, the rest of the URI must be defined via one of the following mechanisms:

    - **Folder Name**: Specifies the path to the job file.

    - **Default Source File Location**: Specifies a default path for all files in the manifest.

    ### Note
    When using HTTP or FTP URIs, files without an extension or with an unknown extension are assumed to be PDFs.

- **Quantity**: Specifies the desired print quantity. The value in the Quantity field will override the quantity in the XPIF.

- **Paper Stock Name**: Specifies the main stock for the job. The value in the Paper Stock Name field overrides the main stock in the XPIF.

- **XPIF File Name**: Specifies the location of the XPIF job ticket associated with the job. The following URI formats are supported:

    - <drive letter>:\folder\job.xxx
    - \\server\share\folder\job.xxx
    - ftp://username:password@server/path/folder/job.xxx
    - http://username:password@server/path/job.xxx

- file:///path/folder/job.xxx

- **Printer Destination**: Specifies the Printer Destination that should be used in the first Printer preset in the workflow.

- **Order ID**: Specifies that manifest rows with a given Order ID be submitted as jobs within a job group. This allows creation of multiple job groups from rows that share the same Group Key.

- **Group Key**: Defines manifest rows with a given Order ID value that should be submitted as jobs within a job group.

  All rows in a manifest that share the same value for the Order ID and Group Key columns are submitted as a single job group.

Custom Fields

Additional custom fields may be added to the Manifest Automation from Xerox configuration. Once configured, these fields behave in the same manner as the standard fields.

Note

Manifest Automation from Xerox supports up to 100 columns of data in a manifest.

Manifest Processing

The following options are available:

- **Column delimiter**: Defines the delimiter used in the manifest.
- **Text Qualifier**: Defines the character that may be used to surround values in a manifest. May be set to none, single or double quotes.
- **Process the first row as data**: Defines whether manifest processing should skip processing of the first row of data in the manifest.
- **Abort Manifest Processing If Errors Are Encountered**: Determines whether to continue processing a manifest if errors occur during processing of individual manifest rows.
- **Abort Order In Manifest If Errors Are Encountered**: Determines whether to continue processing an order in a manifest if errors occur during processing of individual manifest rows in an order.

Manifest Status

A status file is created after a manifest is processed and placed in the manifest status subdirectory in the hot folder. The status file contains the original manifest content and a status column with descriptive status messages.

The name of the status file is composed of:

- The original filename
- ".status" if there were no submission errors or ".error.status" if there were errors

- The original extension

A status file indicates the success or failure of the job submission. The status file does not indicate the status of the jobs in the workflow.

Unicode Manifests

Manifests that use Unicode characters must be encoded as utf-8 text. These manifests must also include a byte order mark (BOM).

JMF Submission

Xerox® FreeFlow® Core supports JMF submission. The JMF client should connect to http://hostname:7751/ and perform a KnownControllers query to retrieve a list of workflows. The client should then perform a SubmitQueueEntry to submit jobs to a workflow.

JMF Submission and Workflow Job Routing

When Hot Folder Workflow Destinations routing is enabled, Xerox® FreeFlow® Core advertises a routing workflow to JMF clients. This workflow name is HFRoutingWorkflow_<<Hot Folder Name>>. Jobs submitted to this workflow via JMF use the Hot Folder routing rules to select a workflow.

JMF Submission and JDF XSLT Processing

When JDF XSLT processing is enabled, Xerox® FreeFlow® Core transforms the JDF content of JMF submissions via a defined XSLT. The output of the XSLT is submitted to Xerox® FreeFlow® Core for processing.

To enable XSLT processing, open the JdfToolkitLogging.properties file in the <Xerox® FreeFlow® Core installation folder>/Platform/Config folder in a text editor. Add the URL to the global XSLT file to the following line:

TRANSFORM_FILE_URL =

Note

When XSLT processing is enabled, all JDF submissions are transformed via the defined stylesheet.

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Notifications Setup

The notification service monitors the system and sends out email notifications when relevant events occur.

Notification Recipients

Select the users that should receive system notifications. Notifications may be sent to users with Administrator privileges.

Enabling notifications requires at least one Xerox® FreeFlow® Core Administrator with a valid email address.

Job Notifications

Enable notifications when the following job events occur:

- A job fails.
- A Conversion Warning occurs.

Preflight Notifications

Enable notifications when the following preflight events occur:

- Fixups are applied to a job.
- Preflight checks return a warning.
- Preflight checks or fixups return an error.

Hot Folder Notifications

Enable notifications when the following events occur:

- An Unsupported File is Submitted.
- There is Not Enough Space to Process a File.
- An Error Occurs Processing the File.

System Notifications

Enable System Notifications when the following events occur:

- Server Resources are running out of space.
    - Notifications are sent when the system is low on memory or disk space.
    - Notifications are sent when the database is low on table space.

Email Notification Setup

E-mailed from: Defines the sender email address used for notification.

SMTP Settings

- **Server Address**: The hostname or IP address for the SMTP server.
- **Port**: Defines port used for communicating with the SMTP server.

    Note

    Common ports: 25, 2525, 465, 475, 587

- **SSL**: Enables encryption of communications between the notification service and the SMTP server.
- **Username and Password**: Credentials for authenticating with the SMTP server.

Note

Using a single space for both the username and password fields allows Xerox® FreeFlow® Core to connect to SMTP servers that do not require authentication.

The E-Mail Notification Setup includes a **Test** button that is used to validate connectivity. The **Test** button generates an email to the first enabled user in the Notification Recipients list.

Note

The notification service requires exceptions in the Windows firewall and in any installed antivirus software.

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User Access Setup

Adding or Editing Users

Users with Administrator privileges may define additional users or edit existing users.

- **User Name**: Allows you to enter a name.
- **Password**: Allows you to enter and confirm a password.
- **Access Level**:
  - Administrator
  - Operator
  - Job Status Monitor
- **E-mail address**: Allows you to enter an email address for Administrators.

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Xerox® FreeFlow® Core Exchange

Xerox® FreeFlow® Core Exchange is a desktop application that enables importing and exporting of Xerox® FreeFlow® Core configuration data. This application is installed in the Xerox® FreeFlow® Core server.

Import to Xerox® FreeFlow® Core Tab

When the user opens a Xerox® FreeFlow® Core Exchange file (.ffc), the contents of the file display on the **Importable Items** area within Xerox® FreeFlow® Core Exchange. The user selects items from this list to **Add** to the **Items to Import** area. When the user selects **Import**, items in the **Items to Import** area are imported.

When the user selects **Import as Clone…**, items, users, and notification configuration is discarded before importing. Imported items are available the next time the user logs into Xerox® FreeFlow® Core.

The user may optionally use a **Printer Destination Mapping** file during import. When a Printer Destination Mapping file is used, an additional item is added to the Items to Import area. When this item is imported, Xerox® FreeFlow® Core Exchange will redefine the IP addresses of Printer Destinations during import.

The user may create a new Printer Destination Mapping file or use an existing Printer Destination Mapping file during import. The user may also edit an existing Printer Destination Mapping file before importing.

Note
Existing Printer Destination Mapping files must only reference printer destinations that exist in the Xerox® FreeFlow® Core Exchange file.

If the **Overwrite Conflicting Items During Import** option is *not* enabled, Xerox®
FreeFlow® Core Exchange compares items on the import list with existing items in Xerox®
FreeFlow® Core. Items that are identical are not imported. Instead, imported items are
automatically linked to existing items. Items that are not identical but have conflicting
names are renamed on import. Other imported items are linked to the newly renamed
items.

If the **Overwrite Conflicting Items During Import** option *is* enabled, Xerox® FreeFlow®
Core Exchange overwrites any existing items that have the same name as imported
items.

Export from Xerox® FreeFlow® Core Tab

When the user selects the **Export from FreeFlow** Core tab, a list of all available exportable
items is displayed in the **Exportable Items** area. The user selects items from this list to
Add to the **Items to Export** area.

When the **Create FreeFlow Core Clone** option is selected, all Xerox® FreeFlow® Core
items, users, and notification configuration is added to the **Items to Export**.

Note

Options defined in the Xerox® FreeFlow® Core Configuration are not included in Xerox®
FreeFlow® Core Exchange clone files.

When the user selects **Export Items** or **Export Clone**, items in the **Items to Export** area
are exported.

Exported items are saved into a Xerox® FreeFlow® Core Exchange file (.ffc).

During the export process, Xerox® FreeFlow® Core Exchange exports files and folders
within the Xerox® FreeFlow® Core sandbox. These items are listed in the Files and
Directories Managed by the Xerox® FreeFlow® Core section of the Exportable Items
window.

The user may optionally choose the **Create Printer Destination Mapping** option during
export. After items are exported, Xerox® FreeFlow® Core Exchange will present a Printer
Destination Mapping dialog in which the user can redefine the IP addresses of all Printer
Destinations in the Xerox® FreeFlow® Core Exchange file. The printer destination mapping
information is saved in a separate Printer Destination Mapping file (.ffm).

Required Items and Import/Export

When an item is imported into or exported from Xerox® FreeFlow® Core, all linked items are also imported or exported. For example, if the user elects to import or export a Hot Folder, the workflow or workflows associated with that Hot Folder are also imported or exported. Similarly, the presets associated with the selected workflows are also imported or exported. To see the list of required items that will be imported or exported with an item, select the Info icon that appears when you hover over items in the Items to Import or Items to Export window.

To see the list of required items that are imported or exported with an item, select the Info icon that appears when you hover over items in the Items to Import or Items to Export window.

Note

Xerox® FreeFlow® Core Exchange does not import or export fonts and ICC profiles as those items are retrieved from the operating system and may have licensing restrictions.

Xerox® FreeFlow® Core Exchange CLI

The CoreExchange.exe application is a CLI application that can be used to import and export items from Xerox® FreeFlow® Core. This application should be invoked from its location in the Xerox® FreeFlow® installation directory.

The following arguments are supported:

- /lw - list Xerox® FreeFlow® Core workflows
- /lh - list Xerox® FreeFlow® Core hot folders
- /lc <file> - list contents of Xerox® FreeFlow® Core Exchange file
- /v <file> - list version of Xerox® FreeFlow® Core Exchange file
- /i <file> - import contents of Xerox® FreeFlow® Core Exchange file

    - /o - overwrite items that conflict with items in the Xerox® FreeFlow® Core Exchange file

    - /clone - remove all existing items, users, and configuration data and import all items, users, and configuration data

    - /r - display a report after import

- /i <file> <printerDestinationMappingFile> - import contents of Xerox® FreeFlow® Core Exchange file while remapping Printer Destination IP addresses
- /e <file> - export items to Xerox® FreeFlow® Core Exchange file

    - /w <workflow1 workflow2…> - export only named workflows

- /h <hotfolder1 hotfolder2…> - export only named hot folders
- /clone - export all items, users, and configuration data
- /r - display a report after export

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Xerox® FreeFlow® Core Reports

Xerox® FreeFlow® Core Reports is a desktop application that enables exporting of Xerox® FreeFlow® job data. This application is installed in the Xerox® FreeFlow® Core server.

Xerox® FreeFlow® Core Reports, by default, does not collect data for generation of reports. **Enable Data Collection** in Reports to start collection of data. Disabling Data Collection stops collection and jobs processed after data collection is disabled will not be available in the report.

By default Xerox® FreeFlow® Core Reports retrieves data from FreeFlow Core proper. To enable data retrieval from the DFE, open Core Configuration, go to **Settings** and select the option to **Retrieve Job Accounting from Printer**.

When the user selects the **FreeFlow Core Job Report** or the **FreeFlow Core Print Report** tab, a list of available fields is displayed. The user selects items from this list to **Add** to the **Selected Items** area. When the user selects **Create Report**, the **Selected Items** are exported as either a CSV or an XML file.

After a report is generated, collected data used in the report is removed.

Note

The FreeFlow Core Print Report will include information from the DFE if it is available. If print ticket information is not available from the DFE, the information will be based on the print ticket FreeFlow Core submitted to the DFE.

Xerox® FreeFlow® Core Reports CLI

The CoreReports.exe application is a CLI application that can be used to export the Job and Printer reports. This application should be invoked from its location in the Xerox® FreeFlow® Core installation directory.

The following arguments are supported:

- /runMode=silent – runs Core Reports in CLI mode

    - silent – launches Core Reports CLI application

    - gui – launches Core Reports application

- /reportType – specifies the report to export

    - export_job – export the Job Report

    - export_print – export the Print Report

- /fileType – specifies the report format

    - csv – exports the report in CSV format

    - xml – exports the report in XML format

- /pathName – defines the location for saving the report

Example:

```
<FFCore Install Directory>/CoreReports /runMode=silent
/reportType=<report Type> /fileType=<file type>/pathname=<drive
letter>:\folder\report.xxx
```

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Xerox® FreeFlow® Core Submit

Xerox® FreeFlow® Core Submit allows Job Submission to Xerox® FreeFlow® Core Cloud and Xerox® FreeFlow® Core instances running in cloud environments.

Connecting to Xerox® FreeFlow® Core

The Xerox® FreeFlow® Core Submit client includes both a stand-alone desktop application and Microsoft Office AddIns for Word, PowerPoint and Excel. Once the Xerox FreeFlow Core Submit client is installed, the Setup tab is used to establish a connection to Xerox® FreeFlow® Core. Once the connection has been established, it is shared by the application and the AddIns.

- **FreeFlow Core DNS Name**: The hostname for the Xerox® FreeFlow® Core server.

- **FreeFlow Core Username**: The username the Xerox® FreeFlow® Core Cloud Print client will use to establish a connection to the FreeFlow Core password.

  Note

  The selected user must have Operator or Administrator level access. Additionally, Xerox® FreeFlow® Core Cloud Print authentication does not support Active Directory.

- **FreeFlow Core Password**: The password for the specified username.

Submitting Jobs

The Xerox® FreeFlow® Core Submit application and the Office AddIns provide job submission in alignment with the Submit Job Dialog.

There are a number of job submission differences:

- MS Office files are converted to PDF locally before they are submitted to FreeFlow Core.

- The MS Office AddIns submits the currently active document. Submission of multiple documents is not supported.

- The Core Submit **PDF Conversion Options** are not available in the Submit Job Dialog.

- MS Office conversion options are not available in the FreeFlow Core Submit Job UI.

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Xerox® FreeFlow® Core Cloud Print

Xerox® FreeFlow® Core Cloud Print allows Xerox® FreeFlow® Core Cloud and Xerox® FreeFlow® Core instances running in cloud environments to seamlessly submit jobs to printers located in networks behind a firewall.

Xerox® FreeFlow® Core Cloud Print Server

Xerox® FreeFlow® Core Cloud Print uses a dedicated server running alongside Xerox® FreeFlow® Core. This server communicates with the Xerox® FreeFlow® Core Cloud Print client to facilitate communication with printers behind the firewall.

To enable the server, open the Core Configuration, go to **Settings** and select the option to **Enable the Core Cloud Print server**.

Communication between the Xerox® FreeFlow® Core Cloud Print server and client requires a secure connection. Additional configuration details are documented in the Xerox® FreeFlow® Core Security Guide.

Xerox® FreeFlow® Core Cloud Print Client

Xerox® FreeFlow® Core Cloud Print uses a client running behind the firewall inside the customer network. This client communicates with the Xerox® FreeFlow® Core Cloud Print server to facilitate communication with printers behind the firewall.

Connecting to a Xerox® FreeFlow® Core Cloud Print Server

Once the Xerox® FreeFlow® Core Cloud Print client is installed, the Core Cloud Print Configuration is used to establish a connection to the Xerox® FreeFlow® Core Cloud Print server. When the configuration tool is first launched, it will prompt for the following information:

- **FreeFlow Core DNS Name**: The hostname for the Xerox® FreeFlow® Core server.

- **Remote Client Name**: Defines a descriptive name for the Xerox® FreeFlow® Core Cloud Print client.

- **FreeFlow Core Username**: The username the Xerox® FreeFlow® Core Cloud Print client will use to establish a connection to the FreeFlow Core password.

  Note

  The selected user must have Operator or Administrator level access. Additionally, Xerox® FreeFlow® Core Cloud Print authentication does not support Active Directory.

- **FreeFlow Core Password**: The password for the specified username.

  Note

  The Xerox® FreeFlow® Core Cloud Print client communicates with a single Xerox® FreeFlow® Core server. However, the Xerox® FreeFlow® Core server may communicate with multiple Core Cloud Print clients.

Configuring Printers

Xerox® FreeFlow® Core Cloud Print Configuration is used to manage Xerox® FreeFlow® Core Cloud Print printers. The user can Add, Edit, and Delete printers.

- **Name of Printer**: Defines a name for the printer. If a name is not defined, the Model information retrieved from the DFE is used as the name of the printer.

- **DNS Name or IP Address**: The hostname or IP address for the DFE.

When a printer is saved, it is pushed to the Xerox® FreeFlow® Core server with which the Xerox® FreeFlow® Core Cloud Print client is registered. After this the printer can be used to create Printer Destinations.

Xerox® FreeFlow® Core Cloud Print printers have the following limitations:

- Secure Printing is not supported.

- Automating Pausing and Resuming of job submission is not enabled.

- The Printer Name cannot be changed within Xerox® FreeFlow® Core.

- Xerox® FreeFlow® Core Cloud Printers that do not have Printer Destinations will not appear in the Printer Status and Management tab.

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Appendix: Job Properties

Variables may be used in any parameter field that accepts text input. Some variables are not available in the Job Characteristics.

Job Information

Job Property	Type	Variable	Source
Name	String	$FFwfJob.jobName$	Xerox® FreeFlow® Core Job
Job Group Name	String	$FFwfJob.groupName$	Job Group

Job File

Job Property	Type	Variable	Source
Input File Name	String	$FFwfDoc.inputFileName$	Job file filename.
Input Document Format	Enum	$FFwfDoc.inputDocumentFormat$	Job file format.
Document Size	Dimension	$FFwfDoc.documentWidth$ $FFwfDoc.documentHeight$	Dimensions of the Crop box of the first page in the PDF. Updated by Impose, Insert Pages, Delete Pages, Resize Pages, Split, and Join.

Job Property	Type	Variable	Source
Original Document Size	Dimension	$FFwfDoc.pdfPageWidth$ $FFwfDoc.pdfPageHeight$	Dimensions of the Crop box of the first page in the PDF.
Trim Size	Dimension	$FFwfDoc.trimWidth$ $FFwfDoc.trimHeight$	Dimensions of the Trim box of the first page in the PDF. If the trim box is not defined, a PDF is selected per the PDF Box Selection Behavior. Updated by Impose, Insert Pages, Delete Pages, Resize Pages, Split and Join. If cut marks are enabled in Impose, then set to the dimensions of the perimeter defined by the placement of the outermost cut marks. If cut marks are not enabled, set to the dimensions of the perimeter of the PDF boxes used for imposition.
Minimum Bleed Distance	Number	$FFwfDoc.minimumBleedDistance$	The smallest distance between the trim and a bleed boxes in the PDF. Bleed distances are independently calculated for all PDF box sides. Updated by Insert Pages, Delete Pages, Resize Pages, Split, and Join.
Pages	Number	$FFwfDoc.pages$	The number of pages in the PDF. Updated by Imposition, Delete Pages, Insert Pages, Split, and Join.

Job Property	Type	Variable	Source
Orientation	Enum	$FFwfDoc.documentOrientation$	The orientation of the first page in the PDF. Updated by Insert Pages, Delete Pages, Resize Pages, Split, and Join. Portrait is defined as taller than wider. Landscape is defined as wider then taller. Square documents are portrait.
PDF Media Box	Dimension	$FFwfDoc.pdfMediaWidth$ $FFwfDoc.pdfMediaHeight$	The dimensions of the Media box of the first page in the PDF. Updated by Insert Pages, Delete Pages, Resize Pages, Split, and Join.
PDF Crop Box	Dimension	$FFwfDoc.pdfCropWidth$ $FFwfDoc.pdfCropHeight$	The dimensions of the Crop box of the first page in the PDF. Updated by Insert Pages, Delete Pages, Resize Pages, Split, and Join.
PDF Bleed Box	Dimension	$FFwfDoc.pdfBleedWidth$ $FFwfDoc.pdfBleedHeight$	The dimensions of the Bleed box of the first page in the PDF. Updated by Insert Pages, Delete Pages, Resize Pages, Split, and Join.
PDF Trim Box	Dimension	$FFwfDoc.pdfTrimWidth$ $FFwfDoc.pdfTrimHeight$	The dimensions of the Trim box of the first page in the PDF. Updated by Insert Pages, Delete Pages, Resize Pages, Split, and Join.

Job Property	Type	Variable	Source
PDF Art Box	Dimension	$FFwfDoc.pdfArtWidth$ $FFwfDoc.pdfArtHeight$	The dimensions of the Art box of the first page in the PDF. Updated by Insert Pages, Delete Pages, Resize Pages, Split, and Join.
Face Trim (Left)	Number	$FFwfDoc.trimOffsetLeft$	The distance between the left edge of the imposed document and the left edge of the imposed document's Trim box. Updated by Impose, Insert Pages, Delete Pages, Resize Pages, Split, and Join based on the distance between the left side of the Trim Size and the Stock Size.
Face Trim (Right)	Number	$FFwfDoc.trimOffsetRight$	The distance between the right edge of the imposed document and the right edge of the imposed document's Trim box. Updated by Impose, Insert Pages, Delete Pages, Resize Pages, Split, and Join based on the distance between the right side of the Trim Size and the Stock Size.

Job Property	Type	Variable	Source
Head Trim	Number	$FFwfDoc.trimOffsetTop$	The distance between the top edge of the imposed document and the top edge of the imposed document's Trim box. Updated by Impose, Insert Pages, Delete Pages, Resize Pages, Split and Join based on the distance between the top side of the Trim Size and the Stock Size.
Foot Trim	Number	$FFwfDoc.trimOffsetBottom$	The distance between the bottom edge of the imposed document and the bottom edge of the imposed document's Trim box. Updated by Impose, Insert Pages, Delete Pages, Resize Pages, Split and Join based on the distance between the bottom side of the Trim Size and the Stock Size.

Print Information

Job Property	Type	Variable	Source
Print Quantity	Number	$FFwfJob.printQuantity$	The quantity on the incoming job ticket (Submit Job…, XPIF, JDF, MAX).
Finished Quantity	Number	$FFwfJob.finishedQuantity$	The quantity on the incoming job ticket (XPIF, JDF, MAX). Updated by imposition when imposing using the Repeated Page Order.

Job Property	Type	Variable	Source
Total Impressions	Number	$FFwfJob.totalImpressions$	The product of the number of pages on the imposed document and the print quantity. Updated by insert and delete.
Total Finished Impressions	Number	$FFwfJob.totalFinishedImpressions$	The product of the number of pages on the imposed document and the finished quantity. Updated by insert and delete.
Main Stock	String	$FFwfJob.mainStockName$	The incoming job ticket. If undefined, the Printer Destination's Default Job Ticket.
Description	String	$FFwfJob.mediaDescription$	The incoming job ticket. If undefined, the Printer Destination's Default Job Ticket.
Stock Size	Dimension	$FFwfJob.mediaWidth$ $FFwfJob.mediaHeight$	The incoming job ticket. If undefined, the Printer Destination's Default Job Ticket. If not defined in the Printer Destination, the dimensions of the Crop box of the first page in the PDF. Updated by Impose, Insert Pages, Delete Pages, Resize Pages, Split, and Join.
Stock Size Name	String	$FFwfJob.mediaSizeName$	The incoming job ticket (XPIF).
Weight	Number	$FFwfJob.mediaWeightMetric$	The incoming job ticket. If undefined, the Printer Destination's Default Job Ticket.
Thickness	Number	$FFwfJob.mediaThickness$	The incoming job ticket. If undefined, the Printer Destination's Default Job Ticket.

Job Property	Type	Variable	Source
Color	String	$FFwfJob.mediaColor$	The incoming job ticket. If undefined, the Printer Destination's Default Job Ticket.
Type	String	$FFwfJob.mediaType$	The incoming job ticket. If undefined, the Printer Destination's Default Job Ticket.
Coating Type	Enum	$FFwfJob.mediaFrontCoating$	The incoming job ticket. If undefined, the Printer Destination's Default Job Ticket.
Drilled	Enum	$FFwfJob.mediaHoleCount$	The incoming job ticket. If undefined, the Printer Destination's Default Job Ticket.
Ordered	Enum	$FFwfJob.mediaOrderCount$	The incoming job ticket. If undefined, the Printer Destination's Default Job Ticket.
Preprinted	Enum	$FFwfJob.mediaPreprinted$	The incoming job ticket. If undefined, the Printer Destination's Default Job Ticket.
Recycled	Enum	$FFwfJob.mediaRecycled$	The incoming job ticket. If undefined, the Printer Destination's Default Job Ticket.
Grain	Enum	$FFwfJob.mediaGrain$	The incoming job ticket. If undefined, the Printer Destination's Default Job Ticket.
Sides Imaged	Enum	$FFwfDoc.sidesImaged$	The incoming job ticket. If undefined, the Printer Destination's Default Job Ticket. Updated by Imposition.
Collation	Enum	$FFwfDoc.collation$	The incoming job ticket. If undefined, the Printer Destination's Default Job Ticket.

Job Property	Type	Variable	Source
Color	Enum	$FFwfjob.color$	The incoming job ticket. If undefined, the Printer Destination's Default Job Ticket.
Output Order	Enum	$FFwfDoc.outputOrder$	The incoming job ticket. If undefined, the Printer Destination's Default Job Ticket.
Output Location	String	$FFwfDoc.outputLocation$	The incoming job ticket. If undefined, the Printer Destination's Default Job Ticket.
Job Sheets Inserted	Number	$FFwfDoc.jobSheetsInserted$	The incoming job ticket. If undefined, the Printer Destination's Default Job Ticket.
Finishing	Enum	$FFwfJob.finishing$	The incoming job ticket. If undefined, the Printer Destination's Default Job Ticket.
Multiple Finishing	Enum	$FFwfJob.hasMultipleFinishing$	The incoming job ticket. If undefined, the Printer Destination's Default Job Ticket.
Sender	String	$FFwfjob.sender$	The incoming job ticket. If undefined, the Printer Destination's Default Job Ticket.
Job Account ID	String	$FFwfjob.jobAccountId$	The incoming job ticket.

Note

Print Information string variables are evaluated using XPIF values.

Job Metadata

Job Property	Type	Variable	Source
Job ID	Number	$FFwfJob.Id$	Xerox® FreeFlow® Core Job

Job Property	Type	Variable	Source
Job in Group	String	$FFwfJob.documentGroupId$	Job in Job Group
Job Number in Job Group	Number	$FFwfDoc.documentSequenceNumber$	Job in Job Group
Number of Documents in Job Group	Number	$FFwfJob.documentGroupCount$	Job Group
Author	String	$FFwfdoc.Author$	The Author property of the PDF. Updated by Optimize if overriding PDF Document properties is enabled.
Creator	String	$FFwfdoc.Creator$	The Creator property of the PDF.
Producer	String	$FFwfdoc.Producer$	The Producer property of the PDF.
Title	String	$FFwfdoc.Title$	The Title property of the PDF. Updated by Optimize if overriding PDF Document properties is enabled.
Subject	String	$FFwfdoc.Subject$	The Subject property of the PDF. Updated by Optimize if overriding PDF Document properties is enabled.
Keywords	String	$FFwfdoc.Keywords$	The Keywords property of the PDF. Updated by Optimize if overriding PDF Document properties is enabled.

Manifest Automation from Xerox

Job Property	Type	Variable	Source
File Name	String	$FFFile Name$	The value of the defined manifest column.

Job Property	Type	Variable	Source
Folder Name	String	$FFFolder Name$	The value of the defined manifest column.
Paper Stock Name	String	$FFPaper Stock Name$	The value of the defined manifest column.
XPIF File Name	String	$FFXPIF File Name$	The value of the defined manifest column.
Printer Destination	String	$FFwfjob.printerName$	The value of the defined manifest column.
Order ID	String	$FFOrder ID$	The value of the defined manifest column.
Group Key	String	$FFGroup key$	The value of the defined manifest column.
Quantity	String	$FFQuantity$	The value of the defined manifest column.
Custom MAX Fields	String	$FF<custom name>$	The value of the defined manifest column.

JMF

Job Property	Type	Variable	Source
Job ID	String	$FFwfJob.jdfJobId$	The incoming JDF ticket.
Job Part ID	String	$FFwfJob.jdfJobPartId$	The incoming JDF ticket.
Sender ID	String	$FFwfJob.senderID$	The JMF signal.
Customer ID	String	$FFwfJob.CustomerID$	The incoming JDF ticket.
Customer Order ID	String	$FFwfJob.OrderID$	The incoming JDF ticket.
Customer Billing Code	String	$FFwfJob.BillingCode$	The incoming JDF ticket.
Customer Organization Name	String	$FFwfJob.CustomerCompany$	The incoming JDF ticket.
Customer Name	String	$FFwfJob.CustomerFullName$	The incoming JDF ticket.

Job Property	Type	Variable	Source
Customer First Name	String	$FFwfJob.CustomerFirstName$	The incoming JDF ticket.
Customer Family Name	String	$FFwfJob.CustomerLastName$	The incoming JDF ticket.
Customer Title	String	$FFwfJob.CustomerTitle$	The incoming JDF ticket.
Customer Phone	String	$FFwfJob.CustomerPhone$	The incoming JDF ticket.
Customer Email	String	$FFwfJob.CustomerEmail$	The incoming JDF ticket.
Customer Street	String	$FFwfJob.CustomerStreet$	The incoming JDF ticket.
Customer City	String	$FFwfJob.CustomerCity$	The incoming JDF ticket.
Customer Region	String	$FFwfJob.CustomerRegion$	The incoming JDF ticket.
Customer Country	String	$FFwfJob.CustomerCountry$	The incoming JDF ticket.
Customer Postal Code	String	$FFwfJob.Customer-PostalCode$	The incoming JDF ticket.
Delivery Organization Name	String	$FFwfJob.DeliveryCompany$	The incoming JDF ticket.
Delivery Name	String	$FFwfJob.DeliveryFullName$	The incoming JDF ticket.
Delivery First Name	String	$FFwfJob.DeliveryFirstName$	The incoming JDF ticket.
Delivery Family Name	String	$FFwfJob.DeliveryLastName$	The incoming JDF ticket.
Delivery Title	String	$FFwfJob.DeliveryTitle$	The incoming JDF ticket.
Delivery Phone	String	$FFwfJob.DeliveryPhone$	The incoming JDF ticket.
Delivery Email	String	$FFwfJob.DeliveryEmail$	The incoming JDF ticket.
Delivery Street	String	$FFwfJob.DeliveryStreet$	The incoming JDF ticket.
Delivery City	String	$FFwfJob.DeliveryCity$	The incoming JDF ticket.
Delivery Region	String	$FFwfJob.DeliveryRegion$	The incoming JDF ticket.
Delivery Country	String	$FFwfJob.DeliveryCountry$	The incoming JDF ticket.
Delivery Postal Code	String	$FFwfJob.DeliveryPostalCode$	The incoming JDF ticket.

Job Property	Type	Variable	Source
Requested Finisher Hint	String	$FFwfJob.requestedFinisher-Hint$	The DeviceID in ResumeQueueEntry JMF signals.

Workflow

Job Property	Type	Variable	Source
Time Since Submission	Number	n/a	Time since job was submitted.
Submission Method	Enum	$FFwfJob.submissionMethod$	The submission gateways.
Submitter Name	String	$FFwfJob.submitterName$	Submit Job UI - set to the logged in user's User Name. Hot Folder - set to the Hot Folder Name. JMF - set to the Agent-Name.
Job Priority	Enum	$FFwfJob.priority$	The submission gateways.
Convert Result	Enum	$FFwfDoc.convertResult$	The conversion results.
Preflight Result	Enum	$FFwfDoc.preflightResult$	The results of the preflight checks defined in the preflight profile. Set to the most severe result if preflight returns multiple preflight results.
Preflight Fixup Result	Enum	$FFwfDoc.preflightFixupResult$	The results of the preflight fixups defined in the preflight profile. Set to the most severe result if preflight returns multiple fixup results.
Imposition	String	$FFwfJob.imposition$	The name of the most recently used imposition preset.

Job Property	Type	Variable	Source
Imposition N-Up	Number	$FFwfJob.impositionNumberUp$	The total number of page cells on the imposed documents. Increments with every imposition operation in the workflow.
Total Pages Added	Number	$FFwfjob.totalPagesAdded$	Number of pages inserted in the PDF. Set and updated by Insert Pages.
Job Release	Enum	$FFwfJob.jobRelease$	The release conditions used to release a job in Collect.
Printer Name	String	$FFwfJob.printerName$	The name of the most recently used printer destination.
Finisher Name	String	$FFwfJob.finisherName$	The name of the most recently used finisher destination.

PDF/vt Variables

Job Property	Type	Variable	Source
Pages in Record	n/a	$FFwfJob.PDFVTPagesInRecord$	The Number of Pages in PDF/vt record. Updated by Imposition, Delete Pages, Insert Pages, Split, and Join.
Record Number	n/a	$FFwfJob.PDFVTRecordNumber$	The PDF/vt Record Number. Updated by Imposition, Delete Pages, Insert Pages, Split, and Join.
Number of Records	n/a	$FFwfJob.PDFVTNumberOfRecords	The Number of Records in PDF/vt.

External Process Node Variables

Job Property	Type	Variable	Source
Job File	n/a	$FFin$	URI of the job document.
Return Folder	n/a	$FFout$	URI of the folder the external process must use to return the job document ($FFin$).
Job Print Ticket	n/a	$FFxpf$	URI of the print ticket.
Job Preflight Report	n/a	$FFwfJob.preflightRepor-tUri$	URI of the preflight report.

Additional Variables

Job Property	Type	Variable	Source
Manifest File Name	n/a	$FFmanifestName$	Manifest filename.
Job ID on the Printer	n/a	$FFwfjob.jobIdOnPrinter$	Job ID returned by the DFE after print submission.
Time Stamp	n/a	$FFtimeStamp$	Current date and time.