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Xerox® FreeFlow® Core
Help

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Overview

Introducing Xerox® FreeFlow® Core, the next generation in PDF workflow solutions from Xerox. 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. The modularity and scalability of FreeFlow® Core affords even small to mid-size businesses the opportunity to take advantage of the tremendous value proposition prepress automation delivers.

This browser-based solution intelligently automates 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 consistent results.

Note

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 FreeFlow Core Software

The FreeFlow Core user interface includes the following tabs:

Job Management and Status

Allows Operators and Administrators to submit and manage jobs in FreeFlow Core.

Printer Management and Status Tab

Allows Operators and Administrators to manage and monitor printing from FreeFlow Core.

Workflow Setup

Allows Administrators to manage workflows.

Administration

Allows Administrators to manage hot folders, notifications and FreeFlow Core users.

Language and Units

FreeFlow Core is a web-based Silverlight application. The web browser locale settings determine the language and units used in the 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 FreeFlow Core UI defaults to US English.

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 FreeFlow Core server.

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User Roles and Passwords

By default, 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

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

The user has the option to override the Quantity as well as the Main Stock name. Submission of multiple files results in the creation of a Job Group with a job for each document.

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. During print submission, job ticket selections are merged with the Printer Destination Job Ticket defaults.

- **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.

- **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 FreeFlow Core.
- **Preflight Report**: The report, in PDF format, from the Preflight task.

Note

The Preflight report is a text file for jobs with more than 1,000 warnings or errors.

Job Resubmission

The Resubmit dialog allows the user to resubmit a job 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. The user has the option to override the Quantity as well as the Main Stock.

During resubmission, the user may elect to resubmit the job 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.
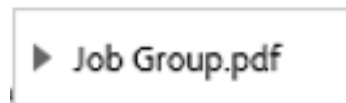
Job Retention

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 Group.pdf

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 Job Documents 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 Job Documents option is enabled in Imposition, job group jobs 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 display 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.

- **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.

Job Submission Regulation

When Job Submission Regulation is enabled, FreeFlow® Core automatically suspends and resumes job submission to a printer's Printer Destinations. See: Printer Destination

Job Submission Regulation requires DFE support for querying available spool disk space over SNMP.

To enable Job Submission Regulation, Edit a Printer and select **Enable** under Job Submission Regulation.

Note

Job Submission Regulation requires the output management license. See: Workflow Component Configurations.

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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

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 FreeFlow Core. Select the Info button [i] next to the preset name to see a list of workflows that use the selected preset.

Creating Workflows

Workflows in 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.
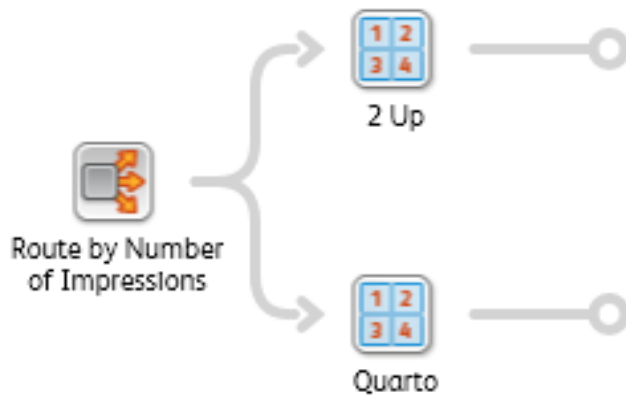
  ⚠ **Caution**

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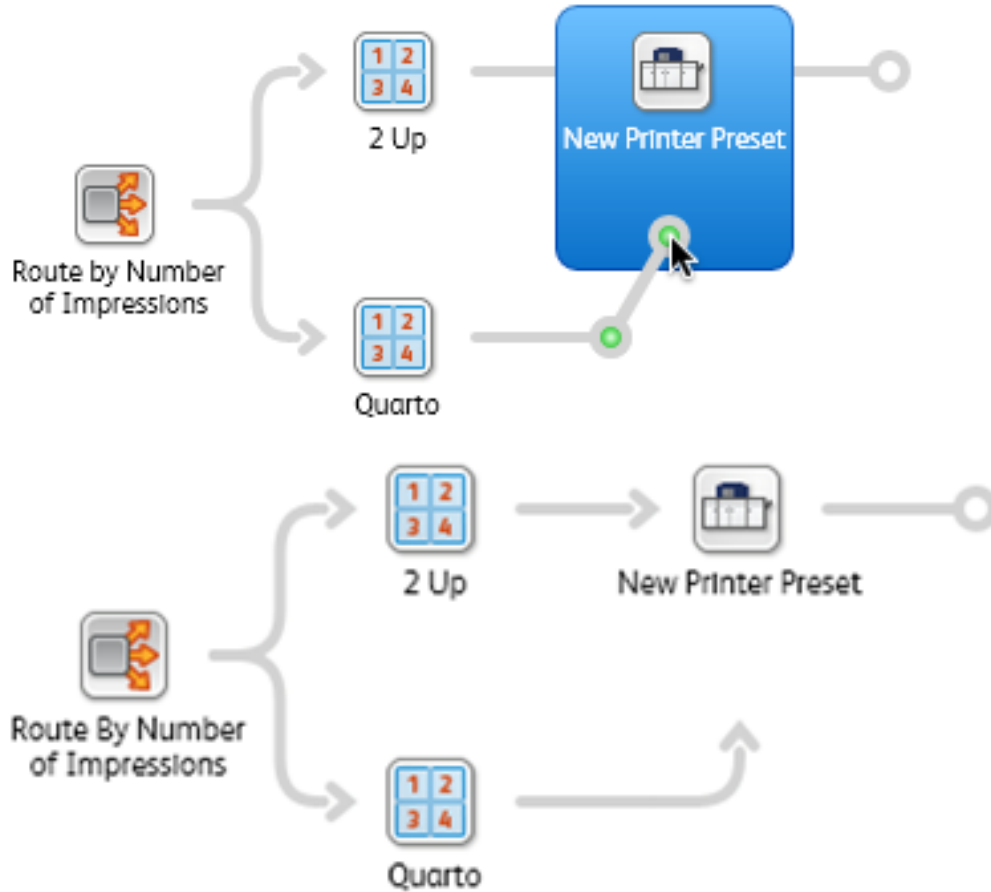
  in FreeFlow Core. Select **Info** ℹ️ next to the preset name to see a list of workflows that use the selected preset.

Execution Paths

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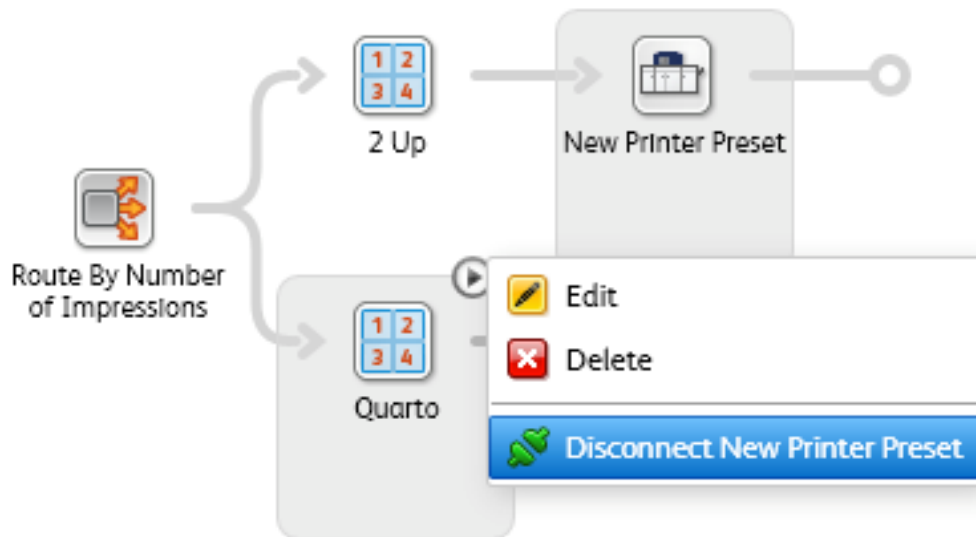
Execution paths in a workflow may be merged into any existing workflow component. To merge an execution path into a component, drag and drop the end of the execution path into the component icon.
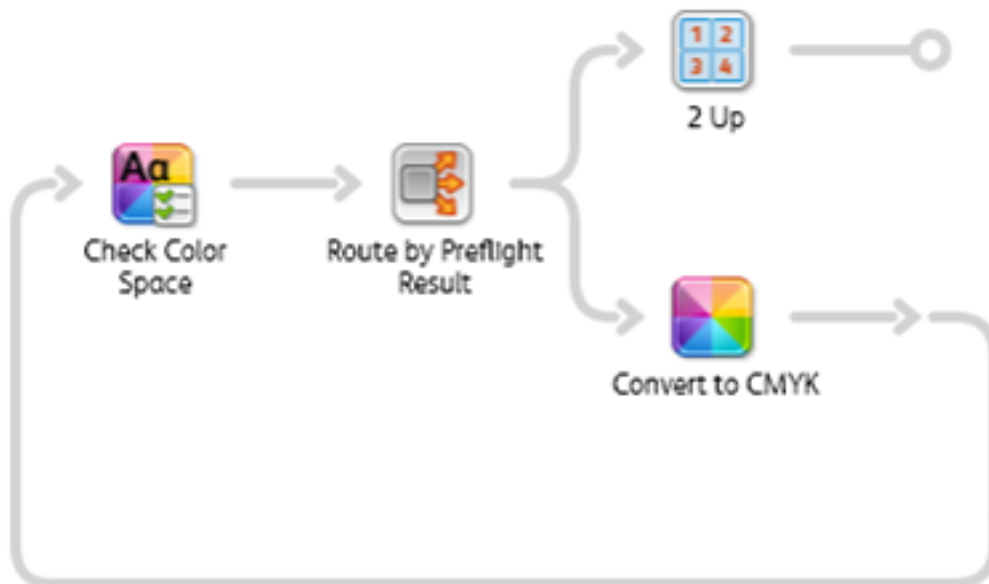
To disconnect an execution path from a component, select Disconnect <preset name> from the component icon menu.

Execution paths may also be connected to upstream component icons.

Workflow Components

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

Workflow Component Configurations

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 FreeFlow Core Base module is always required. Optional modules provide additional capabilities.

Component	FreeFlow Core Base	Advanced Prepress	Advanced Automation	Output Management	Variable Data
Convert	✔				
Convert - VIPP VPCs					✔
Preflight	✔				
Imposition	✔				
Enhance Images	✔				
Job Group Imposition				✔	
Save	✔				
Print	✔				
Optimize		✔			
Manage Color		✔			
Barcode		✔			
Watermarks		✔			
Pressmarks		✔			
Page Numbers		✔			
Resize Pages		✔			
Rotate Pages		✔			
Insert Pages		✔			
Delete Pages		✔			

Component	FreeFlow Core Base	Advanced Prepress	Advanced Automation	Output Management	Variable Data
Join		✔			
Finish		✔			
Route			✔		
Collect				✔	
Split			✔		
Printer Routing			✔		
Printer Job Submission Regulation				✔	
Printer Job Distribution				✔	
Finisher Routing			✔		
External Process			✔		

Convert

The Convert component allows you to convert files to PDF.

When Convert is enabled, FreeFlow Core will accept 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) and VIPP Project Containers (.vpc) files.

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

Font Handling

If needed, fonts are embedded during conversion as long as the fonts are installed in the FreeFlow Core server and do not have a flag indicating embedding is not allowed.

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.
- **Microsoft Office**: Missing fonts are substituted. Substitute fonts are embedded in the PDF. Conversion status is set to Success.
- **VIPP Project Container**: Font handling based on settings from 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: Multi-page, JPEG compression, row boundaries that are not divisible by 16, YCbCr color space, header rotations. In addition, TIFF transparencies are flattened during conversion.

VIPP Conversion Settings

Workflow settings for VIPP Project Container 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 Distiller joboptions file using the Document Selection Common Controls.

- **PDF Generation**: Determines whether the conversion will generate a single PDF with all records in the VPC or a PDF for each record in the VPC.

  Note

  The following VIPP functions are unsupported: Legacy VIPP jobs (.vpc files must contain all resources required to print the job), Specialty Imaging, Feeding and Finishing options.

Preflight

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

To use the preflight component, you must upload a preflight profile created in Adobe Acrobat. This profile may include both preflight checks and fixups.

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

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.

  ### 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.

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

- **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.
- **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.

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 & 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.

- **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.
    - **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.

- **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.

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 Rows, Fixed Columns**: A fixed number of columns with an automatic number of rows.
- **Auto Columns, Fixed Rows**: A fixed number of rows with an automatic number of columns.

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.

  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.

  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 MarksTab

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.
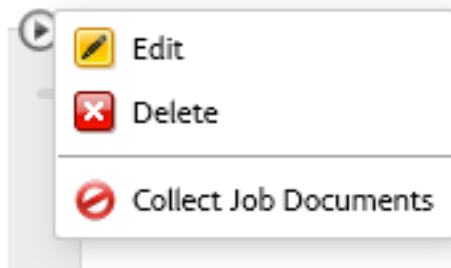
- **Row Transform Mode**: Allows the user to specify180 degree rotation for layout rows. Layout row rotation is specified by clicking on the rotation icon that is displayed when hovering over a layout row in this override mode.

- **Column Transform Mode**: Allows the user to specify180 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 specify180 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.

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, 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 & Stack 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 & 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.

  - 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 at least one imposed job has been created and the remaining jobs are not enough to fill a layout then those jobs are not imposed. Instead those jobs are added to the output Job Group.

    - If no imposed jobs have been created, the jobs are imposed. The layout that will contain blank page cells.

  Note

  The number of sheets per stack is not used when performing Job Group imposition.

- **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.

Manage Color

The Manage Color component converts document colors to the defined Destination Profile color space.

- **Source RGB, CMYK and Gray Profiles**: Define default ICC profiles used for 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 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.

- **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 1D or 2D barcodes to the document.

Barcode Contents Tab

- **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.

- **Size (pixels per cell) for 2D symbologies**: The Font Size is the width of the cell size in pixels.
- **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

- **Text Field**: Adds text to the barcode content.
- **Data Field**: Adds a barcode variable to the barcode content. The following barcode variables are supported:
  - **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.
  - **Sheets per 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.
  - **Job Id**: The FreeFlow Core Jobs ID.

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.

Barcode Placement Tab

- Content Placement Common Controls
- Page Selection Common Controls

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 or image 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 Watermarks

- **Image File**: Defines the location of the selected image using the Document Selection Common Controls.

  Note

  The watermarks component supports JPEG (.jpeg, .jpg, Portable Network Graphics (.png), TIFF (.tif, .tiff) and PDF documents. Images are in the Images folder and PDFs are in the PDF Documents folder.

- 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

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: Black rectangles most often used for finishing device control.
    - Registration Marks
    - Sequence Marks: Marks used in book printing to ensure folded signatures are in the expected sequence.
    - Lay Marks
    - Color Swatches
    - Color Bars

- **Name**: Defines a descriptive name for the pressmark.
- **Swatch Width, Height**: Define the width and height of each swatch in a color bar or the overall dimensions of individual color swatches, registration marks or the lay mark.
- **Line thickness**: Defines the thickness of the lines in the registration and lay marks.
- **Horizontal, Vertical Offset**: Incremental adjustment to the placement of each sequence mark

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.

- **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

Resize Pages

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

- **Resize Pages**

  - **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.

  - **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.

- **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, the PDF Box Selection Behavior is used.

  - 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.

- Content Scaling Common Controls

- 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.

  - **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.

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**: When inserting Blank Pages, defines the number of blank pages to insert at each insertion point in the PDF.

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 or PDF document 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.

When inserting blank pages or PDF document pages:

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

- **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 Single Job** 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.

Use the Page Selection Common Controls to define the subset of pages that are submitted to one or more workflow execution paths. Each row in the Rules table creates a unique execution path in the workflow. The pages submitted to each execution path, if any, appear as a separate job in a job group. Jobs are named by concatenating the original job name with the name of the rule in the Split Rules table.

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.

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.

External

The external component allows you to integrate third party software products into 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**.

Note

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

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, 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 XPIF ticket for the job to the external process.

Note

If the 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.

Print

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

The Print components may:
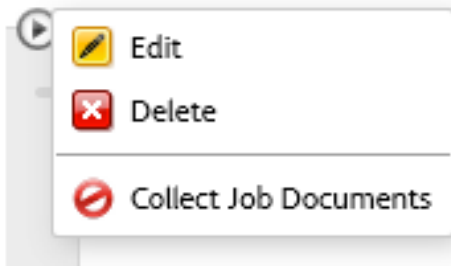
- **Send All Jobs to a Single Printer**

- **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 using round robin scheduling. If Job Submission Regulation is enabled, jobs are not distributed to Printer Destinations for which job submission has been suspended.

Pause Job Before Sending to Printer pauses jobs in 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 Printer component includes an option to **Collect Job Documents**. This option is enabled from the popup menu that appears when hovering over the Printer component in the Workflow Canvas area.

When this option is enabled, the Print component submits jobs to the DFE based on the order defined in the Job Group Sequence Behavior.

Note

Submitting jobs to a FIFO queue ensures that the job group sequence is retained during printing.

Printer Destination

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

- **Printer DNS Name or IP Address**

- **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.

To add a printer destination, enter the P**rinter DNS Name or IP Address** and select **Get Printer Info**. Printer information is retrieved 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

Printer Job Ticketing

Printer job ticketing defaults are defined in the 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 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. 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
  - Multiple Finishing

  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**: Quantity and Main Stock.
- **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 job ticketing attributes available in the Printer Destination. Other job ticketing attributes are not supported.

Finish

Finisher Destinations saves a JDF layout description of the FreeFlow Core job.
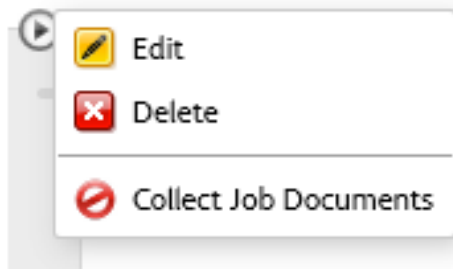
The Finish component may **Send All Jobs to a Single Finisher** or use the Routing Common Controls to **Select the Finisher Based on Job Characteristics**.

Pause Job Before Sending to Finisher will pause jobs in 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 FreeFlow Print Server job ID required for Ultimate Bindery to release the held FreeFlow Print Server job after the finisher is properly configured.

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

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 jobs based on the order defined in the Job Group Sequence Behavior.

Note

Ultimate Bindery processes jobs using a FIFO queue. This ensures that the job group order defined during job submission to 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.

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.

  The job may be saved using the FreeFlow Core Job Name or a new name may be assigned to the job.
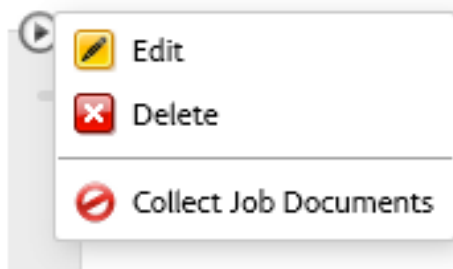
- **Job Ticket to Save**:

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

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

    ### Note

    This is not the job as it was submitted to FreeFlow Core.

  - **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.

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.

Routing rules are composed of:

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

- **Job Destination**: If the job characteristics are true, then the job is routed 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 5 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

  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

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 with a given Orientation (Landscape vs. Portrait), Parity (Odd vs. Even) and Size.

Content Placement Common Controls

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

- **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 (rightward/downward offset) and negative (leftward/upward offset) values.

- **Rotation**: Defines clockwise rotation of content to be placed on the page.

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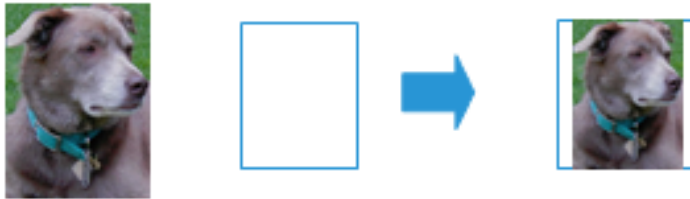
  Text is not compressed to less than 10 % of the original width.

- **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.
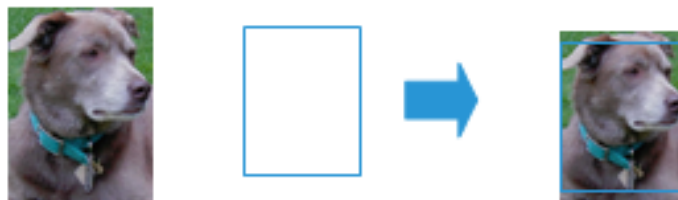
Content Scaling Common Controls

These controls allow the user to specify how content is scaled to fit into a target area of the document.
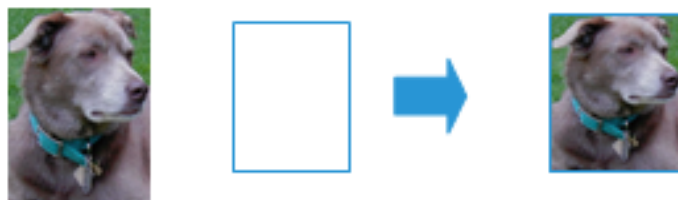
- **None**: Content is placed without scaling.

- **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:

- **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 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 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 RunList 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 FreeFlow Core Job Id.

Note

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

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

5

Administration

Hot Folder Setup

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

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\

Job Submission Configurations

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 FreeFlow Core Base module is always required. Optional modules provide additional capabilities.

Component	FreeFlow Core Base	Advanced Prepress	Advanced Automation
Hot Folder	✔		
JMF / JDF	✔		

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

Hot Folders

Hot Folders are used to process both supported job files (.pdf, .ps, .eps, .jpeg, .jpg, .png, .tif, .tiff, .doc, .docx, .ppt, .pptx, .xls, .xlsx,.pub, .vpc and .zip) and manifests (.csv, .txt). Job files submitted to a hot folder may be associated with an XPIF job ticket via the following naming conventions:

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

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, 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 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 <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 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.

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, 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.

- **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

- **Order ID**: Defines the order associated with a manifest row.

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

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.

JMF Submission

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

To enable XSLT processing, open the JdfToolkitLogging.properties file in the <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 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.

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 FreeFlow Core to connect to SMPT 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.

8

FreeFlow Core Exchange

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

Import to FreeFlow Core Tab

When the user opens a FreeFlow Core Exchange file (.ffc) the contents of the file display on the **Importable Items** area within FreeFlow Core Exchange. The user selects items 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. Imported items are available the next time the user logs into FreeFlow Core.

During the import process, Core Exchange compares items on the import list with existing items in 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.

Export from 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 user selects **Export**, items in the **Items to Export** area are exported. Exported items are saved into a FreeFlow Core Exchange file (.ffc).

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

Required Items and Import/Export

When an item is imported into or exported from 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

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.

9

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
Job ID	Number	$FFwfJob.Id$	FFC Job
Name	String	$FFwfJob.jobName$	FFC Job
Job Group Name	String	$FFwfJob.groupName$	Job Group
Document Group ID	String	$FFwfJob.documentGroupId$	Job in Job Group

Job File

Job Property	Type	Variable	Source
Stock Size	Dimension	$FFwfDoc.documentWidth$ $FFwfDoc.documentHeight$	Set to 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.
Original Document Size	Dimension	$FFwfDoc.pdfPageWidth$ $FFwfDoc.pdfPageHeight$	Set to the dimensions of the Crop box of the first page in the PDF.

Job Property	Type	Variable	Source
Trim Size	Dimension	$FFwfDoc.trimWidth$ $FFwfDoc.trimHeight$	Set to the 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	$FFwfDoc.minimumBleedDistance$	Set to 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.
PDF Media Box	Dimension	$FFwfDoc.pdfMediaWidth$ $FFwfDoc.pdfMediaHeight$	Set to the dimensions of the Media 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 Crop Box	Dimension	$FFwfDoc.pdfCropWidth$ $FFwfDoc.pdfCropHeight$	Set to 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	$FFwfDoc.pdfBleedWidth$ $FFwfDoc.pdfBleedHeight$	Set to 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	$FFwfDoc.pdfTrimWidth$ $FFwfDoc.pdfTrimHeight$	Set to the dimensions of the Trim box of the first page in the PDF. Updated by Insert Pages, Delete Pages, Resize Pages, Split, and Join.
PDF Art Box	Dimension	$FFwfDoc.pdfArtWidth$ $FFwfDoc.pdfArtHeight$	Set to the dimensions of the Art box of the first page in the PDF. Updated by Insert Pages, Delete Pages, Resize Pages, Split, and Join.
Pages	Number	$FFwfDoc.pages$	Set to the Number of Pages in the PDF. Updated by Imposition, Delete Pages, Insert Pages, Split, and Join.
Orientation	Enum	$FFwfDoc.documentOrientation$	Set to 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.

Job Property	Type	Variable	Source
Plex	Enum	$FFwfDoc.documentPlex$	Set by imposition based on the Sides Imaged used in imposition.
Face Trim (Left)	Number	$FFwfDoc.trimOffsetLeft$	Set and 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	$FFwfDoc.trimOffsetRight$	Set and 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.
Head Trim	Number	$FFwfDoc.trimOffsetTop$	Set and 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	$FFwfDoc.trimOffsetBottom$	Set and 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
Main Stock	String	$FFwfJob.mainStock$	Set to the stock name on the incoming job ticket (Submit Job…, XPIF, JDF, MAX). If no inbound stock is defined, set and updated by print.
Print Quantity	Number	$FFwfJob.printQuantity$	Set to the quantity on the incoming job ticket (Submit Job…, XPIF, JDF, MAX).
Finished Quantity	Number	$FFwfJob.finishedQuantity$	Set to the quantity on the incoming job ticket (XPIF, JDF, MAX). Updated by imposition when imposing using the Repeated Page Order.
Total Impressions	Number	$FFwfJob.totalImpressions$	Set by imposition to the product of the number of pages on the imposed document and the print quantity. Updated by insert and delete.
Total Finished Impressions	Number	$FFwfJob.totalFinishedImpressions$	Set by imposition to the product of the number of pages on the imposed document and the finished quantity. Updated by insert and delete.
Sides Imaged	Enum	$FFwfDoc.sidesImaged$	Set by incoming job ticket (Submit Job…, XPIF, JDF)
Collation	Enum	$FFwfDoc.collation$	Set by incoming job ticket (Submit Job…, XPIF, JDF)
Color	Enum	$FFwfDoc.color$	Set by incoming job ticket (Submit Job…, XPIF, JDF)
Output Order	Enum	$FFwfDoc.outputOrder$	Set by incoming job ticket (Submit Job…, XPIF, JDF)

Job Property	Type	Variable	Source
Output Location	String	$FFwfDoc.outputLocation$	Set by incoming job ticket (Submit Job…, XPIF, JDF)

Job Metadata

Job Property	Type	Variable	Source
Author	String	$FFwfdoc.Author$	Set to the Author property of the PDF. Updated by Optimize if over-riding PDF Document proper-ties is enabled.
Creator	String	$FFwfdoc.Creator$	Set to the Creator property of the PDF.
Producer	String	$FFwfdoc.Producer$	Set to the Producer property of the PDF.
Title	String	$FFwfdoc.Title$	Set to the Title property of the PDF. Updated by Optimize if over-riding PDF Document proper-ties is enabled.
Subject	String	$FFwfdoc.Subject$	Set to the Subject property of the PDF. Updated by Optimize if over-riding PDF Document proper-ties is enabled.
Keywords	String	$FFwfdoc.Keywords$	Set to the Keywords property of the PDF. Updated by Optimize if over-riding PDF Document proper-ties is enabled.
Billing Code	String	$FFwfjob.jmfBillingCode$	Set to the BillingCode of the incoming JDF.
Customer ID	String	$FFwfjob.jmfCustomerID$	Set to the CustomerID of the incoming JDF.

MAX

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

Workflow

Job Property	Type	Variable	Source
Convert Result	Enum	$FFwfDoc.convertResult$	Set by convert based on the conversion results
Preflight Result	Enum	$FFwfDoc.preflightResult$	Set by Preflight based on the results of the preflight checks defined in the pre-flight profile.Set to the most severe result if pre-flight returns multiple preflight results.
Preflight Fixup Result	Enum	$FFwfDoc.preflightFixupResult$	Set by Preflight based on the results of the preflight fixups defined in the pre-flight profile. Set to the most severe result if pre-flight returns multiple fixup results.

Job Property	Type	Variable	Source
Imposition	String	$FFwfJob.imposition$	Set to the name of the most recently used imposition preset.
Job Sheets Inserted	Number	$FFwfDoc.jobSheetsInserted$	Set and incremented by Insert Pages based on the number of pages inserted into the PDF.
Job Release	Enum	$FFwfJob.jobRelease$	Set by Collect based on the release conditions used to release a job.
Requested Finisher Hint	String	$FFwfJob.requestedFinisherHint$	Set to the DeviceID in ResumeQueueEntry JMF signals.
Printer Name	String	$FFwfJob.printerName$	Set to the name of the most recently used printer destination.
Finisher Name	String	$FFwfJob.finisherName$	Set to the name of the most recently used finisher destination.

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	$FFwfdoc.preflightReport$	URI of the preflight report.

Additional Variables

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