

# Using ColorFlow software

ColorFlow software is integrated with Prinergy .

ColorFlow software provides tonal calibration curves to Prinergy for screened output. It also provides ICC device and DeviceLink profiles for color matching during Refine and Output processes. When ColorFlow provides generates profiles, it maintains the relationship among curves, profiles, and the devices whose color they affect, a capability called ColorFlow Color Relationship Management. ColorFlow can be used simply for tonal calibration but is also powerful software that simplifies the process of setting up color and ensuring that Prinergy jobs are processed using the correct color settings.

## Getting started with ColorFlow

| Complete these steps, in this order             | Notes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
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| Install ColorFlow software on client computers. | <p>As part of Prinergy, ColorFlow server software and a sample colorstore database are automatically installed on the Prinergy server. The ColorFlow server runs as a process on the Prinergy primary server.</p> <p>You must install the ColorFlow software on one or more client computers that connect to a Prinergy server.</p> <p><b>Note:</b> Only one user can modify the colorstore database at one time. Therefore, only one ColorFlow client computer can be running at a time.</p> <p>For instructions on installing the ColorFlow software on client computers, see the <i>ColorFlow User Guide</i>.</p> |

If previously using Harmony and using ColorFlow for the first time to manage tonal calibration, you can optionally decide to import specific (or all) Harmony curves from the current Harmony database file. To do this, start ColorFlow, and under the **Harmony Curves** section of the **Plate Curves** or **Print Curves** tab, click **Import...**, and open the Calcurve.hmy found at \Prinergy\AdobeExtreme\Bin \Harmony\. You can then select specific Harmony curves or use Ctrl \Cmd+A to select all curves and import. You are under no obligation to import legacy Harmony curves, as Harmony curves will continue to work in existing process templates. So you could decide to start using ColorFlow for creation of new Plate or Print curves and keep existing Harmony curves as is.

Decide whether you'll use the ColorFlow software to create and manage all color control elements, or will only use ColorFlow to manage tonal calibration. If you are only using the tonal calibration capabilities of Colorflow, you can delay using other capabilities of ColorFlow until you have time to print and measure charts to characterize the full color response of your device conditions.

**Note:** When migrating tonal calibration from Harmony to ColorFlow, you can continue to use and edit legacy imported Harmony curves, but you get increased functionality, such as grey-balance curves, from measuring tonal characterization charts and creating new curves in ColorFlow.

For more information about working with imported Harmony curves, see the *ColorFlow User Guide*.

Configure ColorFlow.

1. Create ColorFlow Plate or Print Calibration curves. To do this, you will need to print a target and measure the results. If you want to simply create a curve using a spreadsheet of values ("node-based curve creation"), it is currently recommended to continue to use Harmony for the creation of these curves. If you want to create a Print Transfer curve based on a single control point at the 50% (Midtone) value, it is recommended that you use ColorFlow.

**Note:** A future version of ColorFlow is planned to simplify the process of manual creation of curves using node values.

2. Create a color setup. A color setup is the virtual structure that you build to define the color relationships among the devices in your printing task. It includes devices, device conditions, a simulation target, and color control elements, such as DeviceLink profiles and curves. A color setup manages how its device conditions simulate the primary color output (PCO). If you edit the color response of a device condition, ColorFlow ensures that related color control elements in the color setup are updated to reflect the edit.

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|                                                             | <p>3. Add device conditions. A device condition is the combination of a device and the operating conditions in which the device captures or produces an image. It has a measurable color response. A device condition can include more than one device. If it does, all devices must have the same device type and must use the same consumables and operational settings. The devices must be able to be calibrated to yield a similar color response. Note that this applies to curve-controlled devices only.</p> <p>For more information about configuring ColorFlow, see the <i>ColorFlow User Guide</i>.</p> |
| <p>Measure or import the color response of your device.</p> | <p>Perform either of the following actions:</p> <ul style="list-style-type: none"> <li>• Create and measure a ColorFlow characterization chart.</li> <li>• Import an existing measurement set.</li> </ul> <p>The attributes of the chart must be suited to the inks you are using on the output device, your measuring device, and the size of your press.</p> <p>For more information about measuring color response, see the <i>ColorFlow User Guide</i>.</p>                                                                                                                                                    |

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| <p>Define simulation and conversion settings.</p> | <p>Use the Simulation Definition dialog box in ColorFlow to control how a primary color output (PCO) simulates the color target. ColorFlow can perform the simulation using tonal curves or DeviceLinks or a combination.</p> <ol style="list-style-type: none"> <li>1. In the <b>Target</b> list, select the color response whose colors the PCO will attempt to simulate. Often this will be an industry reference.</li> <li>2. Using the <b>Curves</b> slider (for offset presses and halftone proofers only), select how you want to use tonal curves. For an explanation of each option, see the <i>ColorFlow User Guide</i>.</li> <li>3. Using the <b>DeviceLink Method</b> selector, select how you want to use DeviceLinks. For some types of devices, not all values are available. Because the DeviceLink is used in the context of a simulation, the DeviceLink source is the color space selected in the <b>Target</b> list; the destination is the device condition inside the PCO. For an explanation of each option, see the <i>ColorFlow User Guide</i>.</li> </ol> <p>For more information about simulation and conversion, and the options in the Simulation Definition dialog box, see the <i>ColorFlow User Guide</i>.</p> |
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## Using ColorFlow in Prinergy

In the refine process template, you select a color setup. The available color setups are in the ColorFlow colorstore database on the primary server. When a page or artwork file is refined using the refine process template, the color setup specified in the process template is assigned to the page or file.

In each output process template, you select the **Snapshot**, **Color Setup**, **Device**, **Device Condition**, **Output Version**, **Plate Setup**, and **Plate Line** color control elements. During output processing, the color setup assigned to each page or artwork file (during refining) defines the specific color control elements that are applied on output, unless you choose to override the color setup tagged to the file during refining.

When a job's pages or artwork are refined using a refine process template in which you have enabled ColorFlow, the color setup that is assigned depends on the ColorFlow settings in the refine process template:

- If the refine process template indicates to use the default color setup selected for the job, the job's color setup is assigned during refining.
- If a color setup is specified in the refine process template, the settings in the template override the default color setup selected for the job, and the color setup specified in the refine process template is assigned.

In Job Manager, the **Color Setup** column in the **Pages** and **1-Up Artwork** pane indicate the color setup assigned to each page.

**Note:** If the refine process template is not ColorFlow-enabled, but the job has a default color setup selected, what happens during refining depends on whether the **Match Colors** option is selected in the process template. If **Match Colors** is *not* selected, the job's default color setup is registered with the refined files, but no color conversion is applied. If **Match Colors** *is* selected, refining will fail.

It is also possible to change a refine process template's ColorFlow settings when you refine specific pages, to change the selected color setup. This is useful when you plan to print parts of a job differently, such as on different presses or with different ink sets. For example, for a book that consists of a cover and body pages, you might want to print the cover CMYK but print the body pages in black only.

## Setting the halftone output modes

You can select one of four modes for output to halftone devices or files, in the output process template. These modes control the curves that are applied upon output, corresponding to your output goals.

### Print Production

Reflects the standard operation of Prinergy and ColorFlow for production. When this option is selected, a *print calibration curve* and a *plate calibration curve* are applied to each output separation.

### Print Characterization

Is used to print and measure the response of a print device. When this option is selected, a *device curve* and *plate calibration curve* are applied to each output separation.

### Plate Verification

Is used to verify the linear response of plates produced by a particular plate line (consisting of the computer-to-plate device, plate processor setup, and chemistry), with a selected screening system. When this option is selected, only the *plate calibration curve* is applied to input tints of all separations.

### **Plate Characterization**

Supports imaging and measuring the uncalibrated (or intrinsic) response of a plating line, such that a plate linearization curve can be computed. When this option is selected, no calibration curves are applied to input tints of any separations.

### **Applying ColorFlow curves and making curve adjustments**

If a printing plate has imaged and run on press, but the press is not printing with the desired response, you may need to recreate the plate using a different ColorFlow curve channel for one or more separations. You can also make curve adjustments to the assigned ColorFlow curve channel. These adjustments, made on-the-fly from the Start Process dialog box, are appended to the ColorFlow calibration curves and have no effect on ColorFlow colorstores.

### **ColorFlow and archiving**

If you retrieve an archived job for which a Job Color Setup is selected, the ColorFlow server will request the name of the color setup and the number of the **Snapshot** that was used to initially process files within that job. If you have modified any of the elements within the color setup from the initial time of output, these modified elements will be used to output the archived job.

In addition, if the initial color setup was deleted or renamed, the job will fail processing. If you want to change a color setup, duplicate the original one and make changes to the duplicated and newly-named color setup. You can use the **Allow unassigned color setup or color setup mismatch** check box to output the archived job when the selected color setup differs from the color setup assigned by the refine process.

### **ColorStore database and backups**

If you are running the Windows 2003 Server operating system on your Prinergy primary server, the Windows NT Backup utility automatically backs up your colorstore database. If you are running the Windows 2008 Server operating system on your Prinergy primary server, the System Configuration Backup Utility performs the backup process of the colorstore database. If you are using Prinergy with Hot Standby (Hot Standby combines the basic functionality of failover, allowing a Prinergy secondary server or render station to take over primary server functions if the primary server fails), the colorstore database is also automatically backed up.

### **Issues to consider when using ColorFlow**

- Sharing ColorFlow-enabled work between plants or servers is not possible unless you change the **Prinergy Job Color Setup** defaults to an available color setup, and you select the **Allow unassigned color setup or color setup mismatch** check box in the output process template. Note that your output could be significantly different.
- If you refine a file with ColorFlow selected, ensure that you select **ColorConvert** and **Enable ColorFlow** if you refine the file again. Otherwise, an error message appears.
- If you want to change the tagged color setup of a PDF file that has been refined, you must refine the PDF file again with a new color setup specified in the process template.
- You may encounter a situation in which you have two objects with the same CMYK input in a single PDF file. One object is *tagged* with an ICC-based CMYK profile; the other object is *untagged* using Device CMYK. Conversion of the ICC-based CMYK content will happen via embedded profiles for one object. In contrast, the untagged content will be converted via a DeviceLink from ColorFlow, if a DeviceLink is present in the selected color setup. To avoid complication, override the embedded profile in the refine process template, which will ensure that all content is managed via DeviceLink.
- If you refine a file with the Prinergy Bypass Refine feature, ensure you refine the file again to tag a color setup in the PDF file.
- When using ColorFlow, you can assign one color setup per page in the refine process template. When using the imposition output process template with ColorFlow, you can output an imposition file that has different color setups for each page. When outputting in this situation, ensure that you select a device condition that is contained in all of the color setups assigned to all pages.