# Fiery® Print Server

# Variable Data Printing

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# INTRODUCTION

This document provides information about variable data printing (VDP) and describes the variable data printing features that may be supported by the Print Server, including:

- Compatible variable data printing languages such as FreeForm and FreeForm 2

- Imposing variable data jobs with Impose

**NOTE:** For information about supported variable data languages and features, see *Printing*.

## Terminology and conventions

This document uses the following terminology and conventions.

| Term or convention | Refers to |
|---|---|
| Copier | The copier or printer |
| Titles in *italics* | Other documents in this set |
|  | Topics for which additional information is available by starting Help in the software |
|  | Tips and information |
|  | Important information |
|  | Important information about issues that can result in physical harm to you or others |

## About this document

The document covers the following topics:

- Basic concepts of variable data printing

- Supported Print Server features and compatible variable data printing languages

- Instructions for printing variable documents with FreeForm and FreeForm 2

- Instructions for printing and submitting other variable data job formats, such as PPML, VIPP, and Creo VPS

**NOTE:** For detailed information about printing variable data jobs using third-party variable data printing applications, see the documentation that accompanies the application.

For example scenarios of popular variable data printing workflows, see *Workflow Examples*.

# OVERVIEW

This chapter describes variable printing technology and discusses the components that may be supported with your Print Server that allow you to create variable data print jobs.

**NOTE:** For information about supported variable data languages and features, see *Printing*.

For specific variable data printing scenarios and workflows, see *Workflow Examples*.

## Overview of variable data printing

Variable data printing is typically used for personalized mailings, such as direct-mail advertising. It involves combining a set of master elements that are common across copies of a document (reusable data) with a set of variable elements that change from copy to copy. When you use variable data printing, you create personalized communications with elements that have special appeal to your targeted audience.

An example of variable data printing is a brochure that greets customers by name and may include other personal information about the customer obtained from a marketing database. Background elements, illustrations, and text blocks that do not change across copies of the brochure are master elements. The customer's name and other customer-specific information are variable elements.

In its simplest form, you can use variable data printing as a basic mail merge. However, you can also dynamically assemble images, charts, text, and other objects to create attractive, highly customized documents.

Variable data printing uses digital printing technology that customizes communication by linking databases that contain the content for printed documents to a print device, such as the copier. The customized communication includes rules that specify the selection of content from the database and the placement of that content in the document.

The following two variable data printing technologies describe how reusable data is specified within a variable data printing language.

**Page-based technology** describes static, reusable data (the master element) in terms of entire pages. Each page element is called a master page. Page-based languages are more suitable for simple, predictable layouts. FreeForm is a page-based language. For more information about FreeForm, see "Printing variable data documents" on page 12.

**Element-based technology** describes static, reusable data in terms of elements or objects. Element-based technology allows you to use many separate objects within a page as static elements or variable elements individually.

Element-based variable data jobs use reusable objects for the variable elements in the job, such as images. Because these elements are frequently accessed, they are stored on the Print Server and cached as a group.

## Variable data job components

A typical variable data print job includes the following major components:

- Content

  Content includes the text, images, or photographs placed in different areas of your document. You can create static or variable content using a variety of applications, such as Adobe Photoshop or Microsoft Word.

- Database

  A database is a table containing all the changeable or variable elements in a printed document, such as text, graphics, and photographs. You can use a database created in popular desktop programs, such as Microsoft Excel or FileMaker Pro.

  The data must be organized into records and fields (categories) for each record. For example, in a database about people, a person is a record and the information about that person, such as name, address, and phone number, is a field.

- Business rules

  Business rules, created in a variable data printing application, specify what variable content to use and where to place it within your document. According to these predefined rules, which are described by "if" and "then" statements, the variable data application uses particular elements from databases to create personalized pages and documents that contain different text and images for a specific audience. For example, you can set up a rule to print specific content for a specific age range.

- Layout

  Layout encompasses the design or page layout of your document in any desktop publishing or word processing application. The layout must accommodate space for variable text and images.

- Variable data print applications
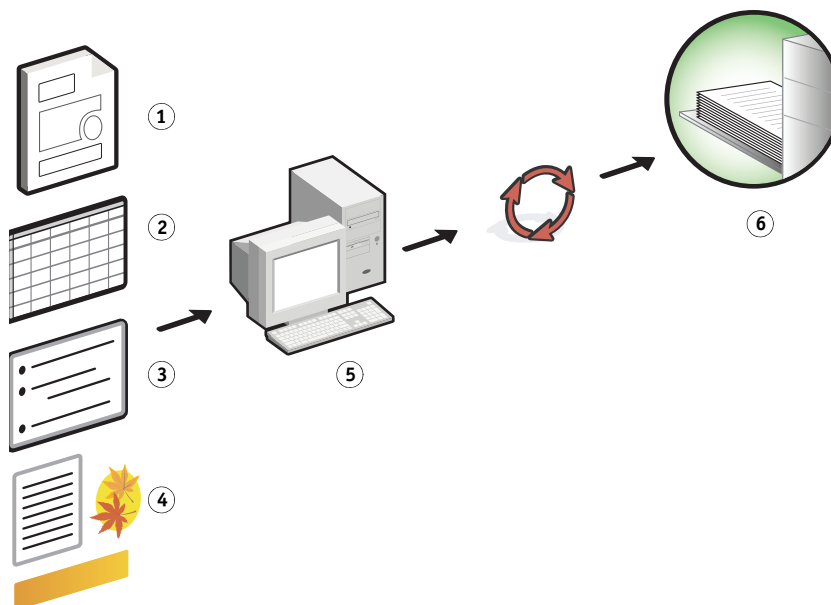
  Variable data print applications combine master elements and variable information and prepare the document for printing. For FreeForm, you do not need a dedicated variable data print application.

- Print device

  The print device is the output device that turns digital files into hardcopy documents. This can be any printer, copier, or digital press that supports variable data printing.

The following diagram shows the variable data printing components.

# Print Server variable data printing

The Print Server combines variable data printing languages, third-party variable data printing applications, and Print Server core features to integrate into many existing workflows. For more information about variable data printing workflows, see *Workflow Examples*.

## Compatible variable data printing languages

The Print Server is compatible with the following variable data printing languages:

• FreeForm and FreeForm 2

FreeForm and FreeForm 2 are used with variable data solutions. FreeForm technology reusable data is RIPped only once, enabling the copier to run faster.

FreeForm supports the creation of master elements and variable data from any desktop application or computer platform. Within the application, the master page is assigned a number from 1 to 100. FreeForm options are found in the driver and job management tools. For more information about FreeForm, see "Printing variable data documents" on page 12.

FreeForm 2 expands FreeForm technology by allowing you to determine page conditions and rules for printing a job containing multiple master pages. It also allows you to define the boundaries of each record in the data stream. This means defining a start and end for each record. Unlike FreeForm, FreeForm 2 requires a variable data printing application (for example, PrintShop Mail) that specifically supports FreeForm 2. For more information about FreeForm 2, see "Printing variable data documents" on page 12.

- Personalized Print Markup Language (PPML) version 2.2

  PPML, an XML- based language developed by PODi, is considered an industry standard. PPML allows the copier to store text elements and graphic elements and reuse them as needed, making variable data jobs print faster.

  The Print Server accepts zipped and non-zipped PPML jobs. To print documents in PPML format, use a third-party software application that is compatible with PPML format, such as Pageflex Persona. Send the PPML job to the Print Server or download the PPML file using Command WorkStation or Hot Folders.

**NOTE:** PPML version 2.2 files were created using either the IMPOSITION or PRINT_LAYOUT commands specified from the PPML application are not supported on the Print Server. Instead, specify these options from Command WorkStation using Impose.

- Creo Variable Print Specification (VPS)

  Creo VPS is an extension of the PostScript language developed by Creo. A Creo VPS file consists of a Header section and a Booklet section. The Header section contains the global objects for the entire job. The Booklet section contains one copy of a personalized document. Page elements are reusable objects as defined in the Creo VPS format. All of the page elements must be packaged inside of the Creo VPS file.

  To print, you must have an application that emits the Creo VPS data stream, such as Atlas PrintShop Mail or Creo Darwin Desktop. You can download a Creo VPS file using Command WorkStation or Hot Folders.

- Xerox Variable Data Intelligent PostScript Printware (VIPP)

  VIPP is a proprietary page description language developed by Xerox.

  To print documents in Xerox VIPP format, use a third-party software application that is compatible with Xerox VIPP format. Send the Xerox VIPP job or download the Xerox VIPP file using Command WorkStation or Hot Folders.

## Print Server core features for variable data printing

By integrating variable data support into the Print Server's core features, such as Impose and Mixed Media, you can create custom layouts and apply different media and finishing options to your variable data jobs. You can also manage reusable objects for a variable data job using the Resource Manager.

### Impose with variable data printing imposition

The Print Server is compatible with variable data printing imposition with Impose for the following variable data printing languages:

- FreeForm and FreeForm 2 variable data jobs
- PPML

- Creo VPS

- Xerox VIPP

For information about imposing a variable data job, see "Imposing FreeForm jobs with Impose" on page 23.

For more information about imposition layouts, see Command WorkStation Help.

**Hot Folders with variable data printing imposition**

You can impose a variable data job using Hot Folders when you submit it to the Print Server. You must set up a proper variable data printing imposition template for the specific Hot Folder in the Hot Folders application.

For information about imposing a variable data job with Hot Folders, see Hot Folders Help. For information about variable data imposition options, see Command WorkStation Help.

**Mixed media with variable data printing**

You can apply Mixed Media settings to all variable data printing jobs, including imposed variable data jobs. When using Mixed Media settings, the Print Server recognizes each variable data record as a separate job. For a variable data job that is not imposed, the Mixed Media settings are applied to all records of the variable data job. For an imposed variable data job, the Mixed Media settings are applied to the output sets of the variable data job.

For more information about setting Mixed Media for a job, see *Utilities*.

**Resource Manager**

Reusable objects are required images that you must download to the Print Server for variable data jobs that contain variable elements. These reusable objects are stored on the Print Server and cached as a group.

The Resource Manager allows you to manage disk space on the Print Server by viewing the list of the reusable objects and deleting them, or allowing them to reside for future variable data jobs. The Resource Manager is compatible with the following variable data printing language:

- FreeForm

- PPML

- Creo VPS

- Xerox VIPP

For more information about using the Resource Manager, see Resource Manager Help.

# PRINTING VARIABLE DATA DOCUMENTS

With FreeForm technology, you can use print options to define master documents and assign them to variable data jobs sent to the Print Server.

This chapter explains how to do the following:

- Print documents with FreeForm

- Create a master and variable document

- Print documents with FreeForm 2 using a third-party variable data application

- Print other variable data formats

- Impose a variable data job

**NOTE:** For information about supported variable data languages and features, see *Printing*.

## Printing variable data documents using FreeForm

You can use FreeForm to print variable data documents. This section provides an overview of FreeForm and describes how to create and combine master and variable elements. Guidelines and tips are discussed at the end of the section.

### How FreeForm works

FreeForm variable data printing sends the master-element data for the job to the Print Server and rasterizes it separately from the variable-element data. The master-element data is stored on the Print Server in rasterized form as a FreeForm master, and can be used as often as required with multiple sets of variable-element data. Because the FreeForm master job is preRIPped and stored on the Print Server, the only RIP time required for variable data print jobs is the time necessary to RIP the variable-element data.

You can use FreeForm masters for any fixed-element data you might combine with different data from day to day. For example, you can store a letterhead template as a FreeForm master and use it repeatedly as the background for different letter content (the variable-element data).

FreeForm allows you to create the master and variable documents using any application. You can create the two documents using different applications or computer platforms. To create the master document, use a page layout or graphics application. To create the variable document, use a word processing application that has a mail merge feature, a page layout application that supports scripting, or a database application.

You control FreeForm functions with the Create Master and Use Master print options. Set these options in the printer driver when you send a job, or instruct the operator to set them with job overrides from Command WorkStation. After the master document is RIPped, it appears on the Command WorkStation FreeForm tab. You can also use Command WorkStation to monitor and manage all the FreeForm masters stored on the Print Server.

For more information, see Command WorkStation Help.

## Creating the master document

Before you can use FreeForm, you must create a master document and a variable document. This includes creating the layout for the combined document, as well as individual elements. In a page layout or graphics application, arrange the master elements (text and graphics that do not change) on one or more pages, leaving space for the variable elements.

**Master document**

**1  Space for variable elements**

**2  Unchanging master elements**



After you finalize the design of the master document, print it to the Print Server and specify that a FreeForm master be created from the job (see ).
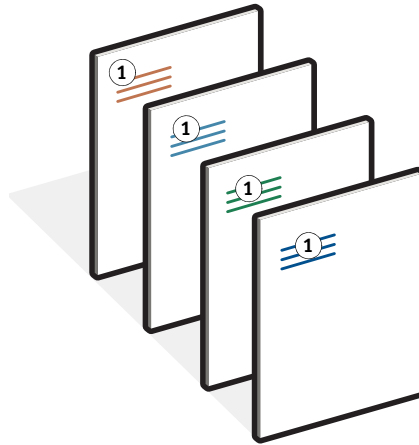
## Creating the variable document

You can create the variable document with a word processing application that provides a mail merge function, a database application, or a page layout application that supports scripting. In all cases, information is taken from a list or database and merged into an existing document that is designed to accept the information. Each application has different controls for this function. For detailed instructions, see the documentation that accompanies the application. Before you add variable elements to the master document, format them to conform to the layout of the master document. To do this, create a document with the correct formatting, and then add the variable information in the appropriate places.

**NOTE:** You must create a variable document with the same page count as the master page document. For example, if a master document has a record length of four pages, all the variable documents must have a record length of four pages. Add empty pages to the last record of the variable document, if necessary.

**Variable document**

**1   Variable element**



After you create a variable document, print it to the Print Server and specify that it be combined with the corresponding FreeForm master (see page 18).

## Combining the FreeForm master with the variable document

When you print a variable document to the Print Server, specify the FreeForm master created from your master document with the Use Master print option. The Print Server combines the raster data of the variable document with the previously RIPped FreeForm master, creating a new raster data file.
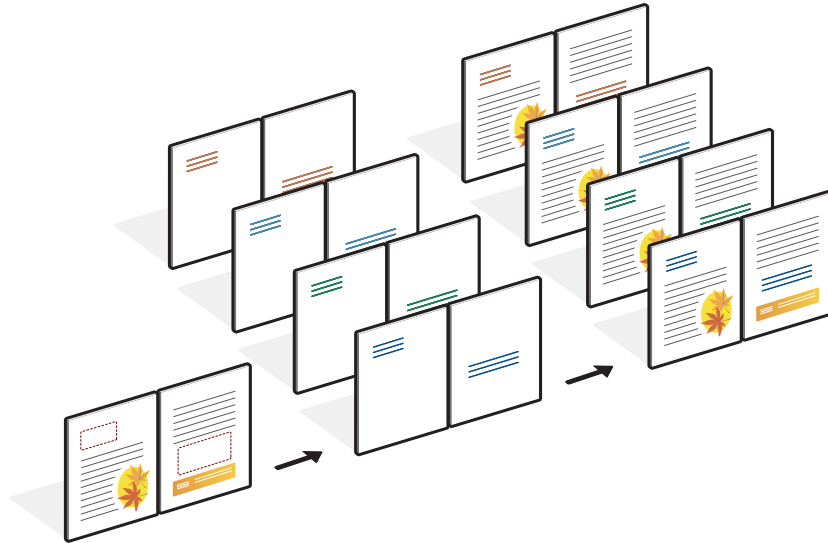
**Combined document**



A master document can include more than one page. When you print a variable document and specify a FreeForm master that contains multiple pages, the variable pages are combined with the master pages in a cyclical fashion. The following example illustrates how a variable document combines with a two-page master document.

Pages 1 and 2 of the variable document are combined with Pages 1 and 2, respectively, of the master document. The cycle of master pages then starts over, and Pages 3 and 4 of the variable document are combined, respectively, with Pages 1 and 2, again, of the master document. This pattern continues for each subsequent set of pages in the variable document.

**Combined document**



## Guidelines

This section provides some suggestions to help you print variable data jobs correctly.

- Ask your administrator or operator about how FreeForm master numbers are assigned at your site.

- You cannot specify the Use Master option and Create Master option in the same job.

- Single page FreeForm Masters are limited to single-sided output. You cannot duplex a singe page FreeForm Master.

- Do not send your variable printing jobs to the Direct connection.

   If you send a variable data job to the Direct connection, the job does not process.

- Use the Notes and Instructions fields to communicate instructions about your job to the operator.

- Give your jobs unique and descriptive names.

  You and the operator must be able to easily identify your jobs if there are many jobs in the queues, the FreeForm master numbers are reassigned, or you must refer to another job in the Notes or Instructions fields.

  The Create Master and Use Master options do not allow the use of the following special characters when you specify a name:

  |, /, \, *,?, ", ', `,:, <, >, or special control characters

  FreeForm 2 master names cannot begin with "form" or "formU".

  Character length for FreeForm 2 master names is limited to 64 characters.

- Consider the restrictions on Print Options when using FreeForm.

  The master file and the variable file must use identical paper size and orientation settings. Each job is limited to a single paper size, even when mixed media is applied.

  Finishing options and paper tray selection, as specified in the variable data file take precedence over master job settings, if these settings are different.

  Only FreeForm supports the Create Master and Use Master settings in the Command WorkStation and printer driver Job Property window.

- Consider the restrictions on Print Options when using FreeForm.

  For more information about these restrictions, see *Printing*.

- You cannot designate an imposed job (.dbp) to be a Master for any type of FreeForm job.

- Only the variable data file needs to be imposed for FreeForm and FreeForm 2.

- FreeForm 2 jobs require record boundary settings, as produced by the application, for use with VDP imposition and record-based finishing.

**TO PRINT VARIABLE DATA DOCUMENTS USING FREEFORM**

**1 Create a master document.**

The following example illustrates one page of a master document for a tri-fold brochure created with a page layout application.



**2 Print the master document to the Print Server with the Create Master print option set to one of the FreeForm Master numbers.**

You can also set the Create Master option to None and instruct the operator to use overrides from Command WorkStation to create a FreeForm master from this job.

For more information, see Command WorkStation Help.

To print your FreeForm master to ensure that it is correct before you merge it with variable data, enable the Print Master feature after the file is sent to the Print Server (see *Printing*).

**3 Create the variable document.**

You can create the variable document using a different file, a different application, or a different computer platform than you used to create the master document, but some print options must be the same (for details, see page 17).

The following example illustrates one page of the variable document for the tri-fold brochure. The data in this document can be as simple as a name and address, or as complex as multiple, graphics and photographic elements.



**NOTE:** To impose the job, see "Imposing FreeForm jobs with Impose" on page 23.

**4 Print the variable document to the Print Server with the Use Master print option set to the appropriate FreeForm master number.**

The FreeForm master number can be one you set when you send the master document or one assigned by the operator.

To preview the master page, click Preview Master from the printer driver to generate a low-resolution image of the master page.

FreeForm master numbers can be overridden from Command WorkStation. Consult the operator to make sure that the FreeForm master number you specify is the correct one for the FreeForm master you want to use.

To check the job before it prints, instruct the operator to Process and Hold the job so you can preview it from Command WorkStation.

The following example illustrates the FreeForm master and variable document combined. The variable data is overlaid on the master document.

### Previewing master documents in the Windows printer driver

After a master document is created, you can preview it from the Windows printer driver. This feature allows you to conveniently select your master document when you print using FreeForm.

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**TO PREVIEW MASTER DOCUMENTS IN THE WINDOWS PRINTER DRIVER**

**1  Choose Print in your application.**

**2  Select the Print Server as your printer and click Properties.**

**3  Click the Fiery Printing tab.**

**4  Click the VDP icon.**

**5  Click Update to retrieve the list of FreeForm master names from the Print Server.**

The FreeForm master numbers and names appear in the Create Master and Use Master options.

**NOTE:** You must enable Two-Way Communication to retrieve the list of FreeForm master names. To enable this feature, see the printer driver Help.

**6  Select the master document that you want to preview from the Use Master option, and then click Preview Master.**

The FreeForm Master Preview window appears.

**7  Click Close.**

## Printing variable data documents with FreeForm 2

FreeForm 2 extends the functionality of FreeForm. FreeForm 2 requires a third-party variable data printing application that supports FreeForm 2, such as PrintShop Mail. Using the third-party printing application and FreeForm, you can create multiple page masters, allowing more personalization and customization to your documents. You can still use another master created in any application, and then use a third-party application that supports FreeForm 2, such as PrintShop Mail, to combine the design and database information.

FreeForm 2 and the third-party variable data printing application allow you to specify page conditions that determine rules for individual master pages. These rules, described by "if" and "then" statements in each master page, allow you to skip or print pages within a master file. For more information about creating page conditions, see the documentation that accompanies your third-party variable data printing application.

FreeForm 2 also provides the option to delete a specified FreeForm master from the Print Server hard disk after its corresponding variable data job has been successfully RIPped and printed. You can set this feature in a third-party application that supports the clearing of FreeForm masters. For more information about deleting FreeForm masters, see the documentation that accompanies the third-party printing application.

**TO PRINT A VARIABLE DATA JOB USING FREEFORM 2**

**1**  **Open the variable document in the third-party variable data printing application that supports FreeForm 2, such as PrintShop Mail.**

**NOTE:** To impose the job, see "Imposing FreeForm 2 jobs with Impose" on page 24.

**2**  **Select FreeForm 2 when you send the variable document.**

For more information about creating a variable data job or printing variable data jobs, see the documentation that accompanies your third-party application.

**3**  **Print the document.**

When you send a PPML or Creo VPS job to the Print Server and you must reference external resources, the Print Server automatically searches for the global images using File Search Paths created in Setup. For more information, see *Configuration and Setup*.

If you know the path location, you can also search for external resources on a job by job basis. Before you print the job, indicate the File Search Path.

**TO SEARCH FOR EXTERNAL RESOURCES FOR CREO VPS OR PPML JOBS USING THE FILE SEARCH PATH**

**1**  **Download the Creo VPS or PPML job to the Print Server using a third -party variable data application that supports the variable data printing language.**

**2**  **In Command WorkStation, select the Creo VPS or PPML job and right-click to choose Job Properties.**

**3**  **Click the VDP print option bar and enter the File Search Path location.**

**NOTE:** The File Search Path server must be set up by the administrator. For more information, see *Configuration and Setup*.

**4**  **Process the Creo VPS or PPML job.**

**NOTE:** If the Print Server cannot find the reusable objects for the job, the job does not process. Make sure you enter the correct File Search Path location.

# Imposing variable data jobs

If variable data Imposition is enabled on the Print Server, you can impose FreeForm and FreeForm 2 jobs, as well as jobs using other supported variable data languages.

You can impose a variable data job using Hot Folders. For more information, see Hot Folders Help.

When you submit a variable data job to Command Workstation, open Impose to impose the job. The printed job merges and imposes the variable and master file.

When you impose a variable data job, you can choose a single record imposition scheme or a multiple records imposition scheme. For more information, see Command WorkStation Help.

## Imposing FreeForm jobs with Impose

You can select Imposition settings for a FreeForm variable data job. Imposition must be enabled on the Print Server.

**TO IMPOSE A FREEFORM JOB**

1 **Download any PS or PDF file as a master job to the Print Server.**

2 **Open Command WorkStation, select the master job, and then click Properties.**

3 **Select the Create Master print option, and assign the master job a number.**

4 **Send the master job to Print or to Process and Hold.**

5 **Download the variable data file to the Print Server.**

6 **In Command WorkStation, select the variable data file, and then click Properties.**

7 **Select the Use Master print option and select the master job number.**

8 **Select the variable data file and click Impose.**

Select Imposition settings for the variable data job.

For more information about Imposition settings, see Command WorkStation Help.

9 **Process the variable job.**

## Imposing FreeForm 2 jobs with Impose

You can select Imposition settings for a FreeForm 2 variable data job. Imposition must be enabled on the Print Server.

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### TO IMPOSE A FREEFORM 2 JOB

1 **Download the master job using a third-party variable data application that supports FreeForm 2.**

2 **Open Command WorkStation, and process the master job.**

3 **Download the variable job to the Hold queue using a third-party variable data application that supports FreeForm 2.**

4 **Select the variable job and click Impose.**

   Select Imposition settings for the variable data job.

   For more information about Imposition settings, see Command WorkStation Help.

5 **Process the variable job.**


## Imposing other variable data jobs with Impose

You can select Imposition settings for other variable data jobs. Imposition must be enabled on the Print Server.

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### TO IMPOSE OTHER VARIABLE DATA PRINTING JOBS

1 **Download the Creo VPS , VIPP, or PPML job to the Print Server using a third-party variable data application that supports the variable data printing language.**

2 **Select the job and click Impose.**

   Select Imposition settings for the variable data job.

   For more information about Imposition settings, see the Command WorkStation Help.

3 **Process the variable data printing job.**

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