



Variable Data Printing (FS400 and later)

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Overview of Variable Data Printing (FS400 and later)

Variable data printing (VDP) combines a set of static elements that are common across copies of a document with a set of variable elements that change from copy to copy.

VDP uses digital printing technology that links databases containing the content for printed documents to a digital printer. Variable data files include rules that allow you to specify and select content from the database, and design the placement of that content in the document.

You can create personalized communications, such as a brochure that greets customers by name and includes other personal information obtained from a database. Background elements, illustrations, and text blocks that do not change across copies of the brochure are static elements. The customer's name, address, barcodes, and other customer-specific images and text are variable elements.

A mail merge with a personalized address block is a simple form of VDP. However, you can also dynamically assemble images, charts, text, and other objects to create highly customized documents.

Typical VDP job components

A typical VDP job uses content, a database, business rules, layout, VDP application, and a printer.

These major components involve the following:

Variable data component	Description
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 InDesign or Microsoft Word.
Database	Contains both static and variable content elements for use in variable data document records.
Business rules	Specify which variable content to use and where to place it within your document.
Layout	Includes the arrangement of both static and variable design elements such as text, images, and other objects on a page.
VDP applications	Combine static elements and variable information and prepare the document for printing.
Printer	Turns digital files into printed documents. This can be any digital printer that supports VDP.

VDP on the Fiery server

The Fiery server supports variable data workflows using built-in features that support many VDP languages and third-party features.

Compatible VDP languages for Fiery server

Variable data printing on a Fiery server requires a compatible VDP language.

The following VDP languages are compatible with the Fiery server:

- **Fiery FreeForm Plus** - Is the file format produced using Fiery FreeForm Create. Fiery FreeForm Create combines all of the resources needed for a job (both master and variable content) into a single FreeForm Plus (FFP) file package, which can be sent to the Fiery server.

You can use either the variable data workflow or the file merge workflow in FreeForm Create to combine variable text, images, or barcodes with master content. You can print FFP jobs directly to the Fiery server from FreeForm Create, or submit FFP jobs to the Fiery server using Fiery Hot Folders or Command WorkStation.

- **Traditional Fiery FreeForm** - Processes static reusable content only once, which can result in faster and more efficient printing.

You can use the printer driver to create FreeForm master and variable files. You can also assign PDF and PostScript files as FreeForm master and variable data files from Command WorkStation.

- **Personalized Print Markup Language (PPML)** - Is an industry standard that allows the printer to store text elements and graphic elements and reuse them as needed, making variable data jobs print faster.

The Fiery 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. You can send the PPML job to the Fiery server or download the PPML file using Command WorkStation or Fiery Hot Folders.

The Fiery server does not support PPML files created using the IMPOSITION or PRINT_LAYOUT commands specified from the PPML application. You must specify these options from Command WorkStation, using Fiery Impose.

- **Creo Variable Print Specification (VPS)** - Is Creo's extension of the PostScript language. 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. You must package all the page elements inside the Creo VPS file.

You can import a VPS file to the Fiery server using Command WorkStation or Fiery Hot Folders.

- **Xerox Variable Data Intelligent PostScript Printware (VIPP)** is a proprietary page description language developed by Xerox. To print documents in Xerox VIPP format on the Fiery server, you must first install a third-party interpreter application that is compatible with Xerox VIPP format. Import the Xerox VIPP file to the Fiery server using Command WorkStation or Fiery Hot Folders.

- **Portable Document Format/Variable Transitional (PDF/VT)** - Is an Adobe format based on PDF technology. PDF/VT enables reliable document exchange for variable data and transactional printing. Transactional documents include invoices, statements, and documents that integrate billing information with marketing information. PDF/VT uses object-based technology.

A VDP application generates the PDF/VT files. You can import these PDF/VT files to the Fiery server using Command WorkStation or Fiery Hot Folders. The PDF/VT files can be processed through PostScript or Adobe PDF Print Engine.

- **PS, PDF, and Quick Doc Merge files when Define Record Length is set to On in Job Properties** - Lets you process a PS, PDF, or Quick Doc Merge file like a variable data job. With this option selected, you can define a fixed subset record length for variable data processing.

Define Record Length is available for non-VDP PostScript, PDF, and Quick Doc Merge jobs.

Note: Not all Fiery servers support all VDP languages. Please refer to your Fiery server support documentation.

Fiery server features for VDP

Features of the Fiery server, such as Fiery Impose and Mixed media, allow you to create custom layouts and apply different media and finishing options to your variable data jobs.

Using VDP resources, you can also manage reusable objects for some variable data jobs.

Fiery Impose with VDP imposition

The Fiery server is compatible with VDP imposition with Fiery Impose for a variety of VDP languages.

- FreeForm Plus
- Traditional FreeForm
- PPML
- Creo VPS
- Xerox VIPP
- PDF/VT
- PS, PDF, and Quick Doc Merge files when Define Record Length is selected

When you impose a variable data job, you can choose a single record imposition scheme or a multiple record imposition scheme.

Hot Folders with VDP imposition

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

Mixed media with VDP

You can apply Mixed media settings to all VDP jobs. When using Mixed media settings, the Fiery server recognizes each variable data record as a separate job. For a VDP job that is not imposed, the Fiery server applies the Mixed media settings to all the records of the VDP job.

VDP Resources

Reusable objects such as images used in some variable data jobs may be stored on the Fiery server and cached as a group.

The VDP Resources feature available from Command WorkStation lists the reusable objects, letting you delete them or leave them for future variable data jobs. VDP Resources is compatible with the following VDP languages:

- FreeForm Plus
- Traditional FreeForm
- PPML
- Creo VPS
- Xerox VIPP
- PDF/VT

Printing variable data documents using FreeForm Plus

You can design the static and variable elements of your job using the Fiery FreeForm Create application, and then print the FreeForm Plus (FFP) job directly to the Fiery server from FreeForm Create. You can also import FFP files to the Fiery server using Fiery Hot Folders or Command WorkStation.

For more information about Fiery FreeForm Create, see [Fiery FreeForm Create Help](#).

Print a FreeForm Plus job using Fiery FreeForm Create

You can send your design to a Fiery server to print.

Keep in mind the following:

- You will need the server address, the username, and the password of the Fiery server the first time you send a design to the Fiery server. The administrator user name for the Fiery server is Admin. You are also required to provide the administrator password.
 - The design edits should be complete.
- 1** In Fiery FreeForm Create, click Send to Fiery Server.
 - 2** Select an existing Fiery server or click New to add a Fiery server.
 - 3** Type the server IP address, username, and password in the respective fields for the Fiery server.
 - 4** Click Login.
 - 5** Optional: Select an appropriate setting from the Settings list.
 - 6** Click Process and Hold, or use the list to select a different job action for the Fiery server.
Choose from the following job actions.
 - Process and Hold processes the file and places it in the Held list.
 - Hold places the file in the Held list.
 - Print prints the file.
 - Print and Hold prints the file and places it in the Held list.

Print Fiery FreeForm Plus files using Command WorkStation

You can use Command WorkStation to print FreeForm Plus (FFP) files to the Fiery server.

1 To import FFP files directly from your computer, do one of the following:

- Click File > Import Job.
- Click the Import toolbar icon in Job Center.

The Import Files dialog box is opened.

2 Select the FFP files you want to upload.

3 Apply settings to print the FFP files:

- Select Apply default settings to import files with attributes defined in the files. If a setting is not defined, the default setting on the Fiery server is used.
- Select Use Server Preset and then choose from a list of factory default presets or server presets that are currently published on the Fiery server.
- Select Use Virtual Printer and then choose from a list of virtual printers that are currently published on the Fiery server.

The Use Server Preset and Use Virtual Printer options only appear if server presets or virtual printers have been set up on the Fiery server.

4 Select a job action from one of the following:

- Process and Hold (default) processes the file and places it in the Held list.
- Print prints the file.
- Print and Hold prints the file and places it in the Held list.

Other job actions may be shown depending on the capabilities of the connected Fiery server.

The FFP files print using the selected job action.

Print Fiery FreeForm Plus files using Command WorkStation with drag and drop functionality

You can use Command WorkStation to print FreeForm Plus (FFP) files to the Fiery server with drag and drop.

1 To print with a specific job action on the Fiery server, drag and drop FFP files from the computer to the Printing or Processing queue, or the Held list.

The FFP files print with the job action that corresponds to where you dropped them on the Fiery server.

Note: The Import Files dialog box does not display when you drag and drop variable data files to these locations.

- 2 To print to a Fiery server without selecting a job action, drag and drop FFP files to a connected Fiery server in the Servers list.

The Import Files dialog box opens.

- 3 Apply settings to print the variable data files:

- Select Apply default settings to import files with attributes defined in the files. If a setting is not defined, the default setting on the Fiery server is used.
- Select Use Server Preset and then choose from a list of factory default presets or server presets that are currently published on the Fiery server.
- Select Use Virtual Printer and then choose from a list of virtual printers that are currently published on the Fiery server.

The Use Server Preset and Use Virtual Printer options only appear if server presets or virtual printers have been set up on the Fiery server.

- 4 Select a job action from one of the following:

- Process and Hold (default) processes the file and places it in the Held list.
- Print prints the file.
- Print and Hold prints the file and places it in the Held list.

Other job action may be shown depending on the capabilities of the connected Fiery server.

The FFP files print using the selected job action.

Printing variable data documents using traditional FreeForm

Traditional FreeForm technology lets you use print options to define master documents and assign them to variable data jobs sent to the Fiery server.

When you print a variable data job with traditional FreeForm, you create a master document, then create a variable document, and finally use traditional FreeForm to combine the master and variable files.

Traditional FreeForm VDP sends the master element data for the job to the Fiery server and rasterizes it separately from the variable-element data. The master-element data resides on the Fiery server in rasterized form as a FreeForm master, and you can use the data as required, with multiple sets of variable-element data. Because the FreeForm master job is preprocessed and stored on the Fiery server, only the variable-element data requires processing thus reducing the total processing time for the job.

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

Traditional FreeForm lets you create the master and variable documents using many applications, such as Adobe InDesign or Microsoft Word. The master document should contain the reusable content that remains static among records. The variable document should contain all of the unique content for each record, such as names and addresses. You can use a word processing application with a mail merge feature, a page layout application that supports scripting, or a database application to create the variable document pages.

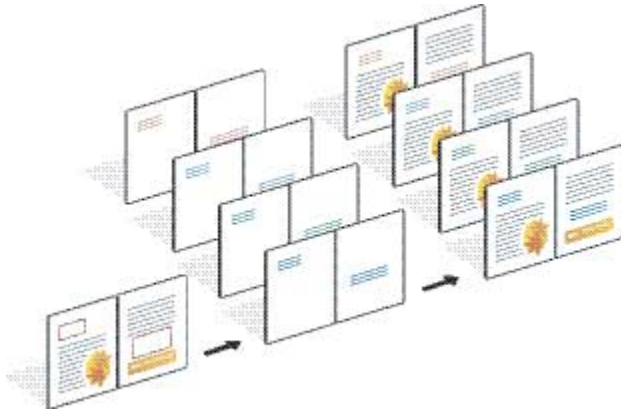
The Create Master and Use Master print options let you control traditional FreeForm functions. You set these options in the printer driver when you send a job, or instruct the operator to set them with job overrides from Command WorkStation. The processed master document appears in VDP Resources in the Device Center of Command WorkStation. Command WorkStation also lets you monitor and manage all the FreeForm masters stored on the Fiery server.

Possible master document structures

A master document can include more than one page. When you print a variable document and specify a FreeForm master that has multiple pages, the master pages combine with the variable pages in a cycle.

For example, with a two-page master, pages 1 and 2 of the variable document combine with pages 1 and 2 of the master document. Then pages 3 and 4 of the variable document combine with pages 1 and 2 of the master document. This pattern continues for each subsequent set of pages in the variable document.

Figure 1: Combined document using 2-page master



Guidelines for printing traditional FreeForm jobs

This section provides some guidelines to help you print traditional FreeForm jobs correctly.

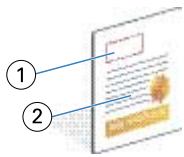
- Ask your administrator or operator how your site assigns FreeForm master numbers.
- You cannot specify the Use Master option and Create Master option in the same file.
- Limit single page FreeForm masters to single-sided output. You cannot duplex a single page FreeForm master.
- Do not send your variable 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.
- Assign your jobs unique and descriptive names. However, the following restrictions apply:
 - The Create Master and Use Master options do not allow the characters |, /, \, *, ?, “, ’, ` , ; , < , > , or special control characters.
- Consider these restrictions when using traditional FreeForm:
 - The master file and variable file must use identical paper size and orientation settings. You must limit each job to a single paper size, even when you apply mixed media.
 - Finishing options and paper tray selection settings in the variable data file take precedence over master job settings, if these settings are different.
 - Only traditional FreeForm supports the Create Master and Use Master settings.
- You cannot designate an imposed job (.dbp) as a master for any type of FreeForm job.
- You need to impose only the variable data file for traditional FreeForm.

Create a master document for use with traditional FreeForm

Before you use traditional FreeForm, you must create a master document and a variable document, which will be the layout for the combined document, with space for individual elements.

- 1 From an application of your choice, layout the master document.
- 2 Arrange the master elements (text and graphics that do not change) on one or more pages, leaving space for the variable elements.

Figure 2: Master document



- 1 *Space for variable elements*
- 2 *Unchanging master elements*

- 3 Save the file.

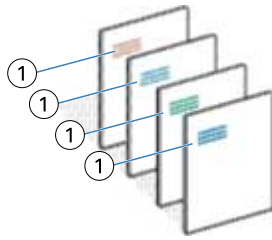
Create a variable document for use with traditional FreeForm

Creating the variable document requires a desktop publishing application that provides a mail merge function, a database application, or a page layout application that supports scripting.

Your application takes information from a list or database and merges it into an existing document that accepts the master information. Each application has different controls for this function.

- 1 From your supported application, create the variable document to conform to the layout of the master document.
- 2 Add the variable information in the appropriate places in your document.

Note: The variable document must have 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. You can use Enhanced FreeForm to add empty pages to the last record of the variable document, if necessary.

Figure 3: Variable document

1 Variable element

3 Save the file.

Combine the FreeForm master with the variable document

The Fiery server combines the raster data of the variable document with the FreeForm master processed earlier, creating a new raster data file.

When you print a variable document to the Fiery server, you specify the FreeForm master created from your master document with the Use Master print option. You can set the FreeForm master number when you send the master document, or use one assigned by the operator.

1 Print the master document that you created to the Fiery server. (Set the Create Master print option to one of the FreeForm Master numbers.)

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

2 To print your FreeForm master to check it before you merge it with variable data, enable the Print Master feature after the file is sent to the Fiery server.

3 Print the variable document that you created to the Fiery server, with the Use Master print option set to the appropriate FreeForm master number.

4 If desired, do one of the following to preview the job:

- To preview the master page, click Preview Master from the Fiery Driver to generate a low-resolution image of the master page.
- To check the job from Preview before it prints, process and hold the job.

Figure 4: Combined document

Preview master documents in the Fiery Driver

After you create a master document, you can preview it from the Fiery Driver, which lets you conveniently select your master document when you print using Traditional FreeForm.

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

- 1 Choose Print in your application.
- 2 Select the Fiery 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 Fiery server.

Note: You must enable Two-Way Communication to retrieve the list of FreeForm master names.

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

Map master and variable files using Enhanced FreeForm

Enhanced FreeForm lets you map the master and variable file in a fixed user-defined order, eliminating the need to add blank pages to get the desired merged output. (Traditional FreeForm always has a fixed page order.)

You can map any page in the master to any page of the variable document. The master may contain more pages than the final document. Additionally, the variable document record length does not have to match the total number of master pages.

- 1 Select a Traditional FreeForm job and select Actions > Properties.
- 2 Click the VDP tab in Job Properties.
- 3 From Use Master, select a FreeForm master.

Note: Make sure that you know the number of master pages used for your job when you select the FreeForm master.

- 4 Select Enable Enhanced FreeForm and click Define Mapping.
- 5 In Variable Pages per record, type the number of pages in the variable file that will be used per record.
- 6 To preview your master page, click Preview Master.
- 7 In Total pages per record to be finished, type the number of pages in the master file for the record length, and then click Continue.
- 8 Map each page from the Variable Pages column to a master page from the Master Pages column.
- 9 For master pages that are not assigned to a variable page, click the up and down arrows to associate the variable page with the required master page.

Printing other variable data files

You can design the static and variable elements of your job using a third-party VDP application, and then print the job to the Fiery server from the application using a compatible file format.

The Fiery server is compatible with a number of VDP languages. See [Compatible VDP languages for Fiery server](#) on page 6.

Print variable data files using Command WorkStation

You can use Command WorkStation to print variable data files to the Fiery server.

Not all Fiery servers can use all VDP languages. Please refer to your Fiery server support documentation.

1 To import files directly from your computer, do one of the following:

- Click File > Import Job.
- Click the Import toolbar icon in Job Center.

The Import Files dialog box is opened.

2 Select the variable data files you want to upload.

3 Apply settings to print the variable data files:

- Select Apply default settings to import files with attributes defined in the files. If a setting is not defined, the default setting on the Fiery server is used.
- Select Use Server Preset and then choose from a list of factory default presets or server presets that are currently published on the Fiery server.
- Select Use Virtual Printer and then choose from a list of virtual printers that are currently published on the Fiery server.

The Use Server Preset and Use Virtual Printer options only appear if server presets or virtual printers have been set up on the Fiery server.

4 Select a job action from one of the following:

- Process and Hold (default) processes the file and places it in the Held list.
- Print prints the file.
- Print and Hold prints the file and places it in the Held list.

Other job actions may be shown depending on the capabilities of the connected Fiery server.

The variable data files print using the selected job action.

Print variable data files using Command WorkStation with drag and drop

You can use Command WorkStation to print variable data files to the Fiery server with drag and drop.

- 1 To print with a specific job action on the Fiery server, drag and drop variable data files from the computer to the Printing or Processing queue, or the Held list.

The variable data files print with the job action that corresponds to where you dropped them on the Fiery server.

Note: The Import Files dialog box does not display when you drag and drop variable data files to these locations.

- 2 To print to a Fiery server without selecting a job action, drag and drop variable data files to a connected Fiery server in the Servers list.

The Import Files dialog box opens.

- 3 Apply settings to print the variable data files:

- Select Apply default settings to import files with attributes defined in the files. If a setting is not defined, the default setting on the Fiery server is used.
- Select Use Server Preset and then choose from a list of factory default presets or server presets that are currently published on the Fiery server.
- Select Use Virtual Printer and then choose from a list of virtual printers that are currently published on the Fiery server.

The Use Server Preset and Use Virtual Printer options only appear if server presets or virtual printers have been set up on the Fiery server.

- 4 Select a job action from one of the following:

- Process and Hold (default) processes the file and places it in the Held list.
- Print prints the file.
- Print and Hold prints the file and places it in the Held list.

Other job actions may be shown depending on the capabilities of the connected Fiery server.

The variable data files print using the selected job action.

Print PS, PDF, or Quick Doc Merge files as VDP files using Define Record Length

When Define Record Length is selected, you can define a subset length and enable the file for record-based finishing. Command WorkStation displays the numbers of records and pages per record in Job Center.

Note: Define Record Length is available for PS, PDF, and Quick Doc Merge jobs.

- 1 Import any PS, PDF, or Quick Doc Merge file to Command WorkStation, select the job, and then click Actions > Properties.
- 2 Click the VDP tab and select Define Record Length.

- 3** From Pages Per Record, specify the fixed record length (in pages) to apply all finishing to records, rather than to the whole job.

Print variable data jobs with remote resources

You can specify a shared location to store remote variable data resources, such as images and fonts. The Fiery server accesses all required resources at the location specified and retrieves them automatically.

If you know the path location, you can also search for external resources on a job-by-job basis. Before you print the job, set the File Search Path. File Search Path accepts the following VDP languages:

- Creo VPS
- VIPP
- PPML
- PDF/VT

To search for resources remote to the Fiery server, you must type the File Search Path to the remote network computer in *Configure*. See *Configure Help*.

Note: If the Fiery server cannot find the remote objects for the job, the job does not process. Make sure that you type the correct File Search Path location.

- 1** Submit the Creo VPS, VIPP, PPML, or PDF/VT job to the Fiery server using a third-party application that supports the VDP language.
- 2** In *Command WorkStation*, select the Creo VPS, VIPP, PPML, or PDF/VT job and select *Actions > Job Properties*.
- 3** Click the VDP tab and type the File Search Path location.
- 4** Process the Creo VPS, VIPP, PPML, or PDF/VT job.