

Adobe®

JDF Solutions



Reliable JDF Job Ticketing with Adobe® Creative Suite® using Acrobat® 8 Professional

JDF – Job Definition Format – is well-known in the print production community, but virtually unknown within the graphic design community. That is changing. JDF technology was first integrated into Adobe Creative Suite software with the introduction of Acrobat 7 Professional, and for the first time content originators had the ability to use this industry standard job ticketing format to describe their jobs electronically, right on the desktop.

What is JDF?

JDF is an XML-based file format standard for information exchange in the graphic arts environment. In the context of Adobe Creative Suite, JDF is a job ticketing, or job intent, file format designed to bridge the communication gap and automate processes between creative professionals and print providers.

It's difficult to overstate the importance of standards. In 1985, Adobe PostScript® technology ushered in the era of desktop publishing. Before then, every system was completely and totally proprietary. Operators were burdened with steep learning curves, and the expertise gained on one piece of equipment could not be applied to another. PostScript, the device-independent page description standard changed all that, and giant strides were made.

The development of PDF marked another milestone. Documents created in any application, on any computer platform, suddenly became accessible to all – making the format a de facto standard. Today, PDF files are ubiquitous in the graphic arts environment because they are viewable, small, and most importantly, portable from one computer to the next and one stage of production to the next. The PDF/X standard, now adopted by printing concerns across the globe, ensures that the PDF is suitable for print production.

In the same way, JDF is a device-independent, vendor-neutral format. It is an international standard, developed by a consortium of graphic arts vendors too numerous to list, but initiated and led by Adobe, Agfa, Heidelberg, and MAN Roland. Whereas PostScript describes *pages* and PDF describes *documents*, JDF describes *jobs*.

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GLOSSARY

CIP3/CIP4

CIP4 is the International Cooperation for the Integration of Processes in Prepress, Press and Postpress (CIP4). CIP4 today is an international, worldwide operating standards body located in Switzerland. The purpose of the association is to encourage computer based integration of all processes that have to be considered in the graphic arts industry, in particular the specification of standards, such as the Job Definition Format.

Computer Integrated Manufacturing (CIM)

Computer integrated manufacturing is a vast concept for digitizing, automating and integrating print production processes. Advances in technology have led to workflow being widely viewed as a digital continuum, from file creation to final output. This shared vision meets with the industry's move toward CIM and implementation of the JDF (Job Definition Format) specification.

Extensible Markup Language (XML)

XML stands for EXtensible Markup Language, a markup language much like HTML that was designed to describe data. XML tags are not predefined. XML uses a Document Type Definition (DTD) or an XML Schema to describe the data.

JDF Files Are Extensible

While there are similarities between PostScript and PDF, on the one hand, and JDF, on the other, there are also significant differences. One of the most important differences is the fact that a JDF file is *extensible*, whereas PostScript and PDF files are not. PostScript and PDF files are either complete and correct, in which case they can be processed, or they are incomplete and incorrect, in which case they cannot be used. Conversely, because JDF is based on the Extensible Markup Language (XML), JDF files can be added to as job information is gathered throughout the premedia and printing processes by people with different job functions. A JDF file can start its life as a high-level job definition describing only a rough outline and evolve into a detailed product description complete with all the necessary manufacturing details.

Where is the JDF File Initiated?

Before Adobe Creative Suite, JDF job tickets were predominantly initiated at the print production site, usually by a Customer Service Representative, who had to manually transcribe the information gleaned from discussions with the graphic designer/customer. The job information was typically hand written or typed into a job ticket. As most of us know from practical experience, this process lends itself to misunderstanding and error. Often three parties are involved: the customer, the graphic designer, and the CSR at the printing plant; the children's game of "Telephone" all too often describes the unfortunate results. Furthermore, even when communication is perfect, inadvertent typos can cause disaster.

Adobe Creative Suite: The Missing Link in the JDF Workflow

Communication problems and unnecessary rework and delay can be ameliorated by digitally capturing job information upstream, in a standard job description file. With this goal in mind, Adobe has provided content originators with the ability to create JDF files on the desktop, directly within Adobe Creative Suite software.

A basic job description might include:

- number of pages
- trim page size
- print quantity
- type of binding
- inks (colors)
- desired stock
- cover type (separate cover or self-cover)
- contact information

JDF Job Tickets, Verified Content, and Print-Ready PDF

Content originators can generate JDF job tickets from Adobe Creative Suite by using the JDF dialog within Acrobat 8 Professional. Using a JDF "template" supplied by the print provider, the creative professional is assured that production-specific settings are appropriate and adequately describe the job. These templates typically include PDF conversion settings, preflight profiles, and may also include other commonly-used job specifications.

PDF Conversion, Preflight and Verification

The ability to embed PDF conversion and preflight settings in a JDF template ensures the integrity of the files before the job enters print production.

Most importantly, Acrobat performs a *comparison* between the job definition in the job ticket and the properties of the assigned files. Any inconsistencies or discrepancies in page sizes, inks, and/or the number of pages available in the associated documents result in an error. In other words, files are not only preflighted, they are *verified*.

Verification is a qualitative leap above preflight, and is of course impossible without a job description. Standalone preflighting cannot detect extra pages or missing pages, for example, nor can it detect page size discrepancies. This important feature will surely prevent many of the errors that cause frustration, delay production, and hurt the bottom line.

Submission Options

Once the JDF and associated content files have been converted to PDF, preflighted, corrected/converted and verified, they can be packaged into a single MIME (Multipurpose Internet Mail Extensions) file. MIME is a specification for formatting non-ASCII messages so they can be sent over the Internet, ensuring they do not get separated from each other.

The JDF package is then submitted to the print production site, either manually (attached to email) or automatically (for example, sent to the URL of a JDF/JMF-enabled MIS system).

GLOSSARY

JDF (Job Definition Format)

The Job Definition Format is a comprehensive XML-based file format/industry standard for end-to-end job ticket specifications combined with a message description standard and message interchange protocol. JDF is used to store and access job information and to automate workflow processes.

JMF (Job Messaging Format)

A communication format with multi-level capabilities – the command and control language that is an integral part of JDF. JMF is specified within the JDF Specification – it is not a separate CIP4 standard. JMF is used to deliver a JDF and communicate JDF information across devices. Devices are JMF aware – meaning they can consume the JDF and use the information within it for file processing and routing.

Production Automation

Use of a centralized computer to monitor costing, workflow, job status, pressroom efficiency, billing and other administrative and production processes critical to the concept to fulfillment process of print production.

Adobe Creative Suite 3 Recommended JDF Workflow – Acrobat 8 Professional

THE MOST PROMINENT FEATURES OF JDF ARE

1. Ability to carry a print job from genesis through completion. This includes a detailed description of the creative, prepress, press, postpress and delivery processes.
2. Ability to bridge the communication gap between production and Management Information Services. This ability enables instantaneous job and device tracking as well as detailed pre- and post-calculation of jobs in the graphic arts.
3. Ability to bridge the gap between the customer's view of product and the manufacturing process by defining a process independent product view as well as a process dependent production view of a print job.
4. Ability to define and track any user defined workflow without constraints on the supported workflow models. This includes serial, parallel, overlapping and iterative processing in arbitrary combinations and over distributed locations.
5. Ability to do so (1, 2, 3&4) under nearly any precondition.

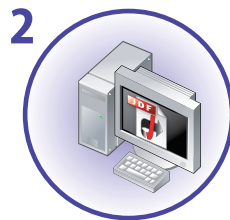
Excerpted from
www.cip4.org:
"CIP4 and JDF FAQ"



Create
Submission
Setup

Print Provider

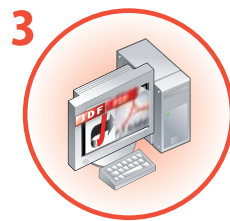
Create a Submission Setup, which includes the PDF Conversion and Preflight settings your customer will use to create PDF files.



Create JDF
Template

Print Provider

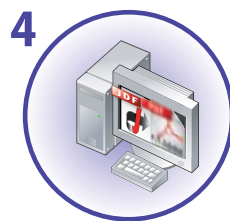
Create a JDF Template, which includes the Submission Setup and possibly other plant-specific settings. Send the JDF Template to the creative professional.



Create a new
JDF based on
the Template
and Submit

Creative

Use the Template to create a new JDF. Fill out the job ticket and add the content file(s). Submit the JDF using the embedded Submission settings.



Open the JDF
to extract job
info and PDF
file(s)

Print Provider

Open the JDF package in Acrobat 8 Professional, which unpacks the job ticket and the PDF file(s). Enter the job into production.



STEP ONE

Create Submission Setup

PRINT PROVIDER

Create Submission Setup

The first step required to create a JDF Template is to create a Submission Setup. This allows you to pre-determine the PDF Conversion and Preflight settings that your customer will use to create print-ready PDF files. Follow these instructions to create and save a JDF Template.

- 1 From Acrobat 8 Professional, display the JDF dialog by selecting JDF Job Definitions from the **Advanced > Print Production** menu or by selecting JDF  from the Print Production Toolbar.
- 2 To display the existing Submission setups, click  .
- 3 To create a new Submission setup, click  .
- 4 Name the setup and select your **Pre-Submission** and **Submission** options.



- Use standard or customized PDF Conversion Settings. The setting you choose is embedded in the submission setup. This means that you don't have to deliver your setting files separately.
- Enable this option to verify that the content (PDF) matches the job definition (JDF), e.g., number of pages, inks, etc.
- Not recommended for PDF/X workflows, but may be appropriate for other workflows.
- Use a standard or customized Preflight Profile. The setting you choose is embedded in the submission site.
- Use this option when your customer will submit the JDF to a JMF device at your location, such as an MIS system.
- Use this option when your customer will submit the JDF to a local, predefined hot-folder on their network.
- Use this option to allow your customer to select a local folder to store the JDF before attaching it to email or sending it via FTP.

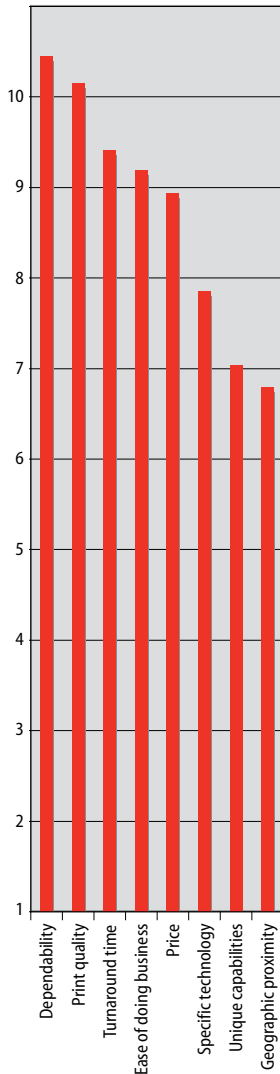
- 5 Click the OK button to save the Setup. Now you are ready to create a JDF Template using this Submission Setup.

“A JDF file can be created at many different stages in the workflow – and the further upstream it can be implemented, advantages become more apparent. The process starts with a system or software solution that captures basic job elements or writes them into a digital job ticket.”

**JDF Guide for Managers,
BRIDG’S Committee
October, 2006**

WHITE PAPER

TOP EIGHT CRITERIA USED TO SELECT A PRINT SERVICES PROVIDER



Scale: 1–10; 10=very important

Source: "The Advertising Agency's Role in Marketing Communications Demand Creation," Barbara A. Pellow, Patricia Sorce, Franziska Frey, et. al., R.I.T. Printing Industry Center, October 2003.

2





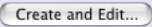
STEP TWO

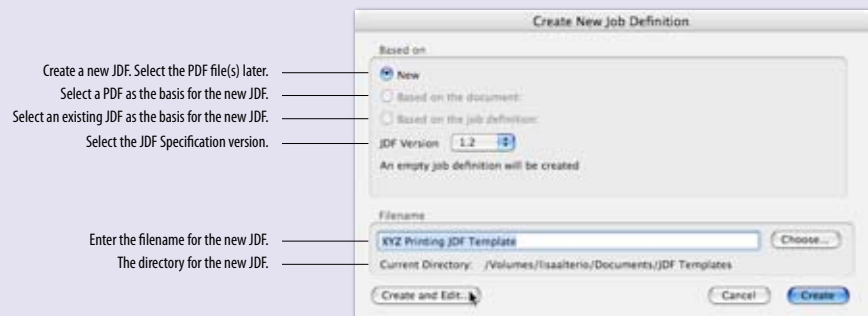
Create JDF Template

PRINT PROVIDER

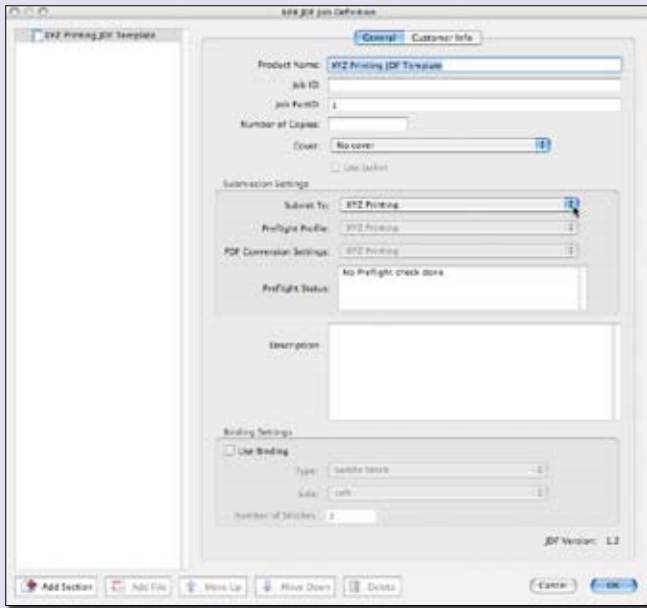
Create JDF Template

Supplying your customers with a JDF Template is a quick and easy way to ensure that you receive verified, print-ready PDF files, along with adequate job specifications. Follow these instructions to create and save a JDF Template.

- 1 Display the JDF dialog by selecting JDF Job Definitions from the **Advanced > Print Production** menu or by selecting JDF  from the Print Production Toolbar.
- 2 Click  to create a new JDF file:
- 3 Enter a filename (for example, your company name), select a location to store the template, then click 



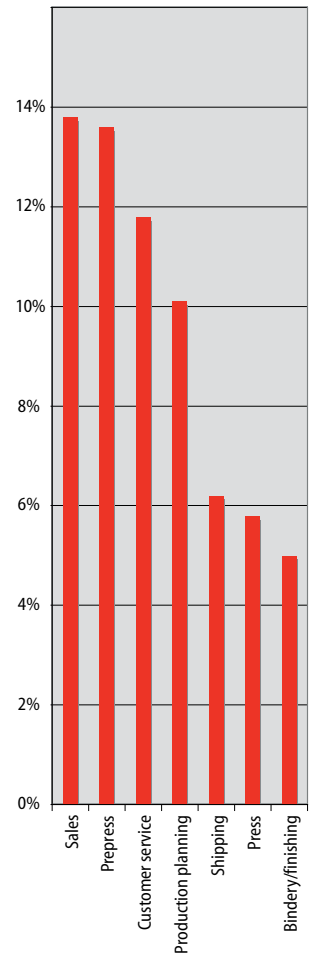
- 4 Select the **Submission Setup** you created in Step One. The **PDF Conversion** settings and **Preflight Profile** selected for the Submission Setup are automatically embedded in the JDF.



- 5 Click **OK** to save the JDF. You will find it in the location specified when you created it.

Send the JDF Template to your customer. It can be attached to an email or posted on your website for download.

PERCENTAGE OF JOBS DELAYED IN THE FOLLOWING DEPARTMENTS DUE TO MISSING OR WRONG INFORMATION



Source: "Digital Integration and the Lean Manufacturing Practices of U.S. Printing Firms," Frank J. Cost and Brett J. Daly, R.I.T. Printing Industry Center, October 2003.

"Clients can easily make JDF files using Adobe Acrobat... and from InDesign using the Adobe Creative Suite... This is significant; it not only automates the process from the customer's desktop, but leads to solution selling where the printer becomes a partner with their customer instead of just a vendor."

"A JDF Success Story," by Harry Waldman, *Printing Impressions*, May, 2006

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STEP THREE

Create a new JDF based on the Template and Submit




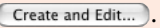
CREATIVE

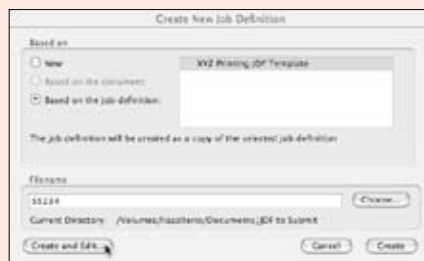
Create a New JDF Based on the Template and Submit


Follow these instructions to create a new JDF based on the Template supplied by your Print Provider and submit your job.

Adding the JDF Template

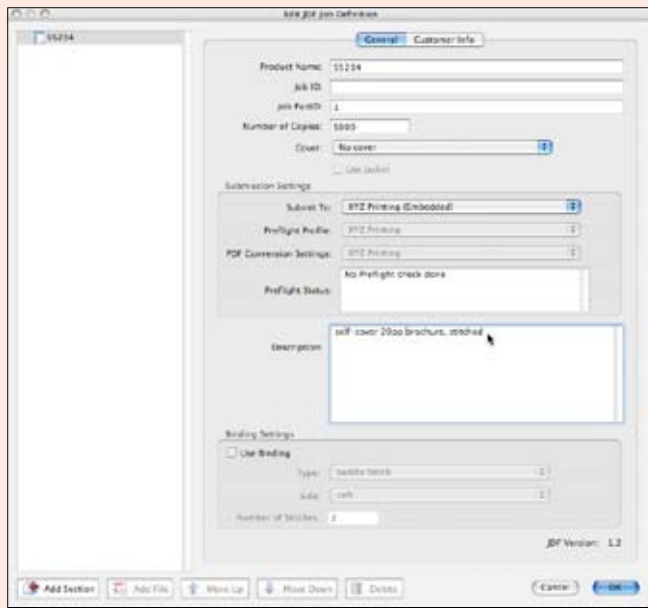
The JDF Template can be stored in any location on your network. To make the Template accessible, it must be added using the JDF dialog of Acrobat. Follow these steps to add the Template.

- 1 Display the JDF dialog by selecting JDF  from the Print Production Toolbar.
- 2 Click  to load the JDF Template.
- 3 Click  to create a new JDF. Choose **Based on the job definition**, select the Template, enter a filename and click .



NOTE: Rather than using the JDF as a template, you may simply add and then click  to modify the supplied JDF before submitting it. Using templates is a good idea if several jobs are to be sent over a period of time.

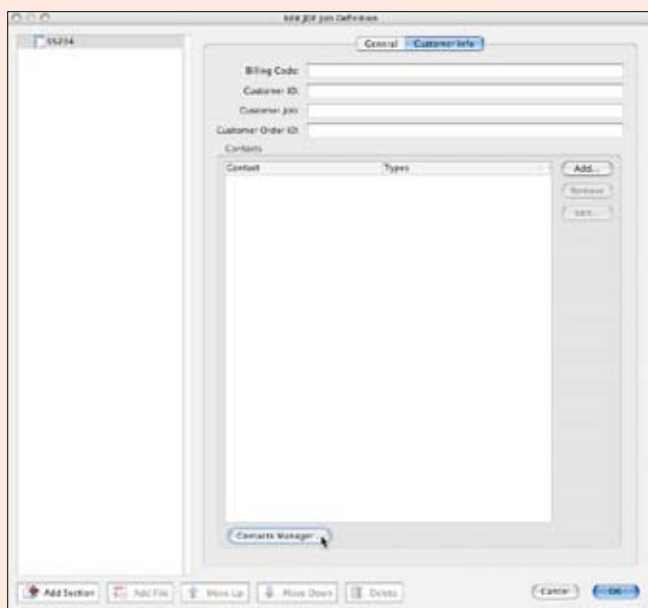
- 4 Enter the job name or number, along with the general job specifications on the **General** tab. Enter only the information you are sure of. Binding specifics, for example, can be added later in the production cycle.



You can use the **Submit To** field to determine the submission site for the job. Alternatively, leave the drop-down set to “Unspecified” to make a decision later at the time of Submission.

NOTE: If this JDF was supplied as (or is based on) a template, don’t change this setting as otherwise the settings provided by the printer will not be used.

- 5 Click the **Customer Info** tab to enter the contact(s) for this job.



If you haven’t already added contacts using the **Contacts Manager**, click

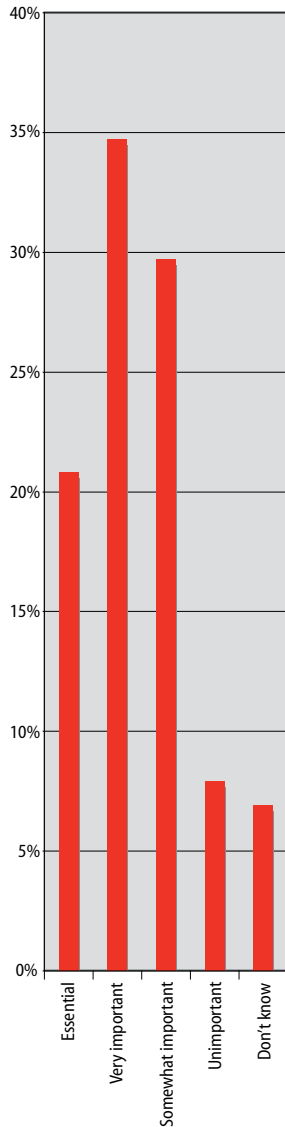
[Contacts Manager...](#)

“JDF was created to eliminate fragmentation. Every department in a production chain often re-enters the same job data, creating error opportunities and adding unnecessary time. With JDF, the process becomes more streamlined. It’s essentially a standard for any digital file describing every possible specification (number of pages, ink settings, binding type, deadline – everything) required to produce any print job. JDF also defines all processes and resources to get the job delivered.”

“JDF in the Graphic Arts,”
 by Gee Ranasinha,
 Director of Marketing,
 Dalim Software GmbH,
 Digital Output, June, 2005

WHITE PAPER

HOW IMPORTANT DO YOU BELIEVE CIM WILL BE TO THE FUTURE PROFITABILITY OF YOUR BUSINESS?



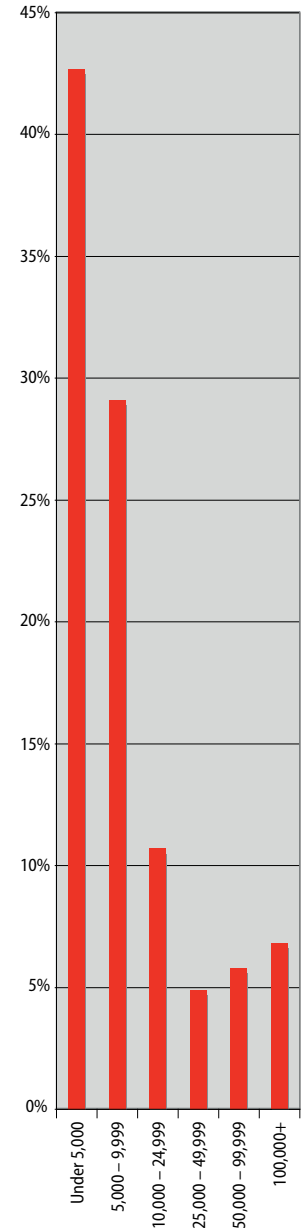
Source: "Digital Integration and the Lean Manufacturing Practices of U.S. Printing Firms," Frank J. Cost and Brett J. Daly, R.I.T. Printing Industry Center, October 2003.

- To create a new contact, click and enter all the information that is known, preferably including one or more "Communication Channels" (how to reach that person).


- Close the **Contacts Manager** when you have finished adding contacts.
- Click to add at least one contact. NOTE: You must designate at least one contact as the **Customer**.

When you have finished adding contacts, they will appear on the **Customer Info** tab.

AVERAGE RUN LENGTH

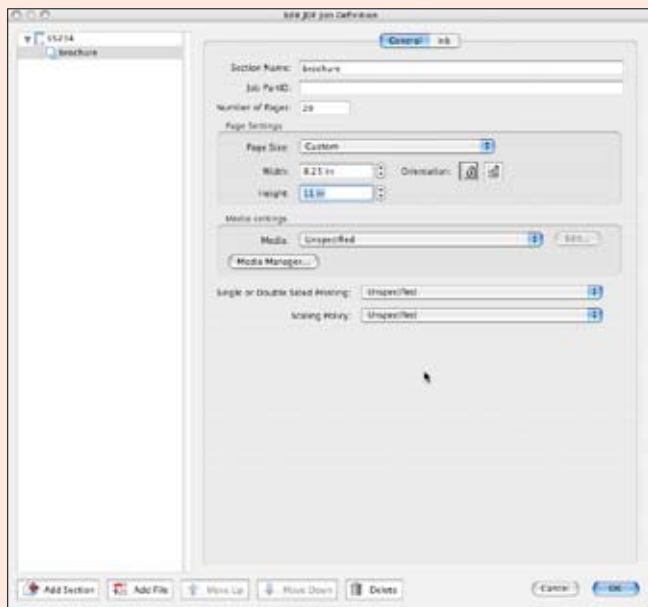



Source: "Digital Integration and the Lean Manufacturing Practices of U.S. Printing Firms," Frank J. Cost and Brett J. Daly, R.I.T. Printing Industry Center, October 2003.


9 Add a Section by clicking  **Add Section**. A Section must be created for each file or set of files that has unique:

- Page size and orientation, or
- Media (paper stock), or
- Simplex/duplex policy, or
- Scaling percentage, or
- Inks.

10 Enter the information you know on the **General** tab for the Section.



11 Paper stock can be specified using the **Media Manager**, if desired. To display the existing database of paper stocks, click  **Media Manager...**.

12 To create a new paper stock, click  **Add...**. Enter only the information that is known. For example, your paper stock description might only include a stock name and/or type, and weight.

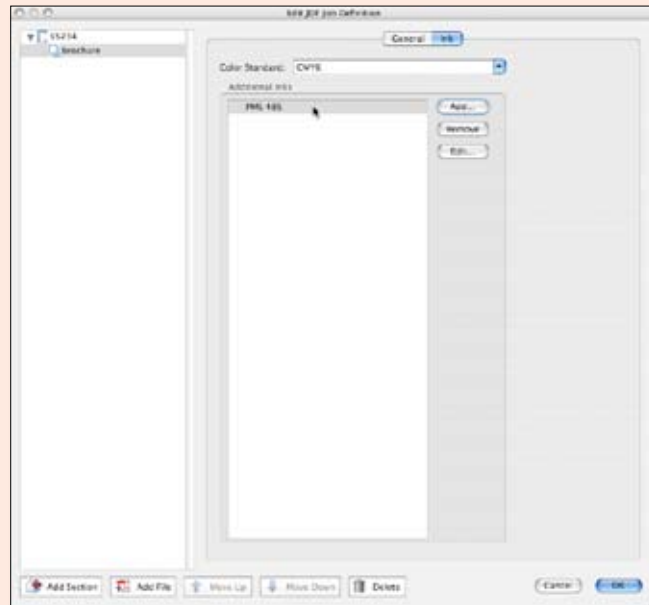



WHITE PAPER

"The printing industry is trying to decrease the throughput time by automating industry standard workflow instructions that will follow a job from creation to delivery. For the last few years JDF has been available in bits and pieces in a few systems. Now the major vendors are on board and have a solution from Adobe that will make implementation much easier and let everything 'talk' to everything else."

"Workflow Solutions Streamline the Path to Profitability," by John Giles, *QuickPrinting.com*, January, 2007

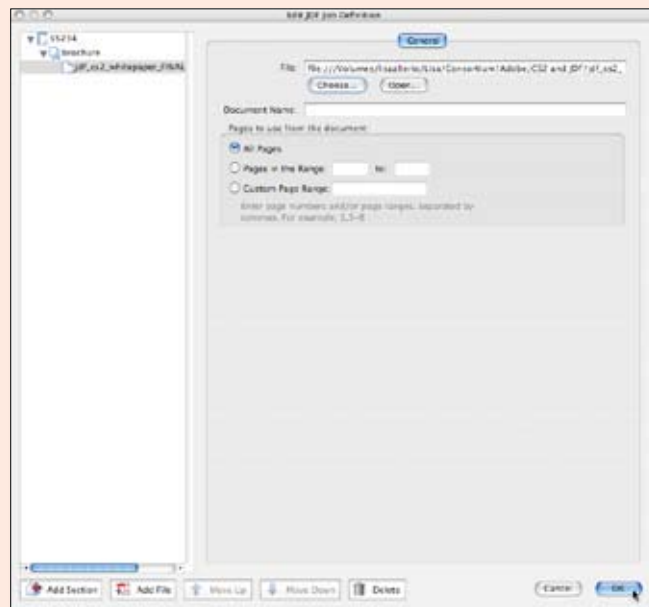
- 13** Click the **Ink** tab to select the color standard and the inks required for the job.



- 14** To add PDF files and/or compatible native files, click  **Add File**. Add the files in reader order. Use the dialog to select each file and page range in the Section.

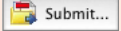
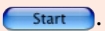
NOTE: Supported native file formats include InDesign and image files (JPG, EPS, etc.) on both platforms, and Microsoft Office, Outlook, Internet Explorer, Access, Publisher, AutoCAD, Microsoft Visio and Microsoft Project files on Windows only.

For the latest information on compatible native file formats, visit <http://www.adobe.com/products/acrobatpro/productinfo/features/>.



After all the files have been specified in reader order within one or more Sections, the JDF is complete.

Submitting the JDF

After the job ticket has been filled out you are ready to submit the job. To submit the job, click . Select the desired Submission Site, then click .

NOTE: If you have associated the JDF with a specific submission site in the JDF Editor, you won't be offered a choice of submission sites at this time, though the settings embedded in the JDF will be used.

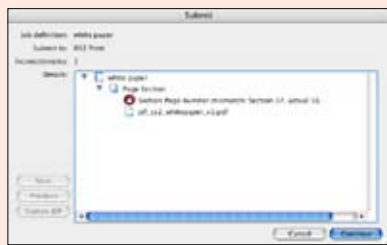


Acrobat performs the following tasks upon submission:

- **Conversion to PDF** (when necessary)
Native formats are converted to PDF using the PDF Conversion settings specified in the JDF or the defaults specified by the **Submission Manager**.
- **Verification**
The JDF is compared to the content of the files to check for any inconsistencies or discrepancies. Verification errors are displayed in the preflight report. You can either change the JDF to correspond to the assigned files, correct the files as necessary, or ignore the errors and allow your print provider to resolve the problems.
- **Preflight, Correct, and Convert**
The files are preflighted using the Preflight Profile specified in the JDF or as the default by the **Submission Manager**. The preflight report contains a detailed listing of any problems found as well as any corrections or conversions completed.
- **Packaging and delivering the updated JDF and final PDF**
When PDF conversion, preflighting, and verification are complete, the JDF/PDF package is submitted for production.

Verification Report

If Acrobat discovers any discrepancies between the JDF definition and the assigned files, a report is produced which describes the problem(s) found:



You can either update the JDF (if it is incorrect), or correct the file(s).

The Acrobat verification report also contains important information about the file(s), even if no errors were discovered.

“Design, prepress, and print professionals are looking to JDF as an enabling technology to speed production, increase reliability, and enhance the quality and flexibility of printed output. In an industry where cost and time efficiency are paramount, JDF promises to usher in a new era of workflow automation.”

“Automating Workflows from Desktop to Final Print Production,”
www.adobe.com/products/jdf/

WHITE PAPER

"In theory, publishers will never actually see the machinations of JDF but instead benefit from it by using electronic job tickets. Instead of e-mailing or writing down print job specifications in pen on an envelope or stapling a form to a folder, software that supports JDF allows publishers to enter (or receive) instructions about a print job such as page size and paper stock."

"With JDF, Print Jobs Come with Instructions,"
by Charles Pickett,
Publish, August 9, 2005

Preflight Report

Acrobat delivers a complete preflight report that includes errors found, problems fixed, and conversions made. You will receive a preflight report even if no errors were discovered.



After preflight, the JDF and PDF are processed according to the **Submission** options originally selected in the **Submission Manager** and embedded in the JDF when the Submission site was selected.

- **Submit to a folder (no MIME encoding)**
The JDF is placed in the target folder, with the PDFs in a subfolder.
- **Submit to a folder (MIME encoding)**
The JDF is combined with the PDF file(s) into a MIME package and placed into the target folder.
- **Convert to a MIME package and submit to a JMF device**
The JDF is combined with the PDF file(s) into a MIME package and sent directly to a JMF device. No files are created on your system.

4



STEP FOUR

Open the JDF to extract job info and PDF file(s)

PRINT PROVIDER

Receiving and Processing JDF

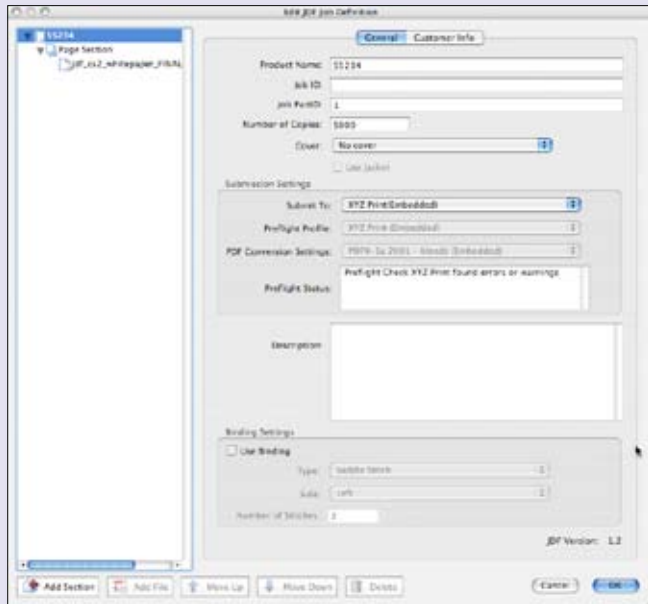
Unless you are equipped with a JMF device, you will be receiving the updated JDF and final PDF files and preflight report from your clients either as MIME-encoded email attachments, as uploads to your FTP site, or on supplied media.

MIME-encoded JDF files from Creative Suite have an “mjd” extension.



JDFProdDef.mjd

To unpack the file from your Acrobat 8 Professional workstation, double-click on the file. Acrobat will prompt you for a location in which to unpack the file. The JDF is separated from the content PDF file(s) and placed into the specified folder. Acrobat adds the JDF to the list, and from here you can review all the job specifications and contact information, and add information when necessary.



The PDF Conversion and Preflight settings specified in the **Submission Setup** of the JDF Template are displayed on the **General** tab.

NOTE: Pay special attention to the **Preflight Status** message, which displays the Preflight Profile used and lists any problems to address.

“JDF provides two significant advantages. First, it allows the description of more job definition elements than any other format. Second, it’s been adopted by a large, ever-growing number of vendors. Consequently, JDF will deliver automation within reach of small to midsized companies – while larger companies will be able to rely on standard solutions rather than building their own.”

Freddy Pieters,
Product Manager,
Commercial Printing,
Esco-Graphics



JDF Makes the Workflow Flow

With Adobe Creative Suite, JDF can be introduced into the production workflow at the onset of the creation process – literally on the desktop. Users can capture job-specific information early in the workflow and then manually append additional details later in the production process.

Job information captured on the desktop is carried through to the end of the prepress workflow by the Adobe® PDF Print Engine. By rendering PDF content natively and by relying on JDF to capture job ticket and process control information, the print workflows powered by the Adobe PDF Print Engine enable designers and print production professionals to keep PDF content device independent throughout the workflow. This allows designers and printers to more easily make late-stage edits in PDF files and to configure PDF jobs to print on different types of output devices and presses.

Eventually, JDF will supplant the myriad manual and error-prone processes now required to get a job from the desktop to the shipping dock. Backed by the commitment, experience, and standards-based development of companies like Adobe, JDF is poised to become as important to the industry as PostScript and Adobe PDF.



Resources

For more information on JDF, visit the following websites:

www.adobe.com/products/jdf

www.cip4.org

For more information on Acrobat, visit

www.adobe.com/products/acrobat

For more information on Adobe Creative Suite, visit

www.adobe.com/products/creativesuite

For more information on the Adobe PDF Print Engine, visit

www.adobe.com/products/pdfprintengine

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