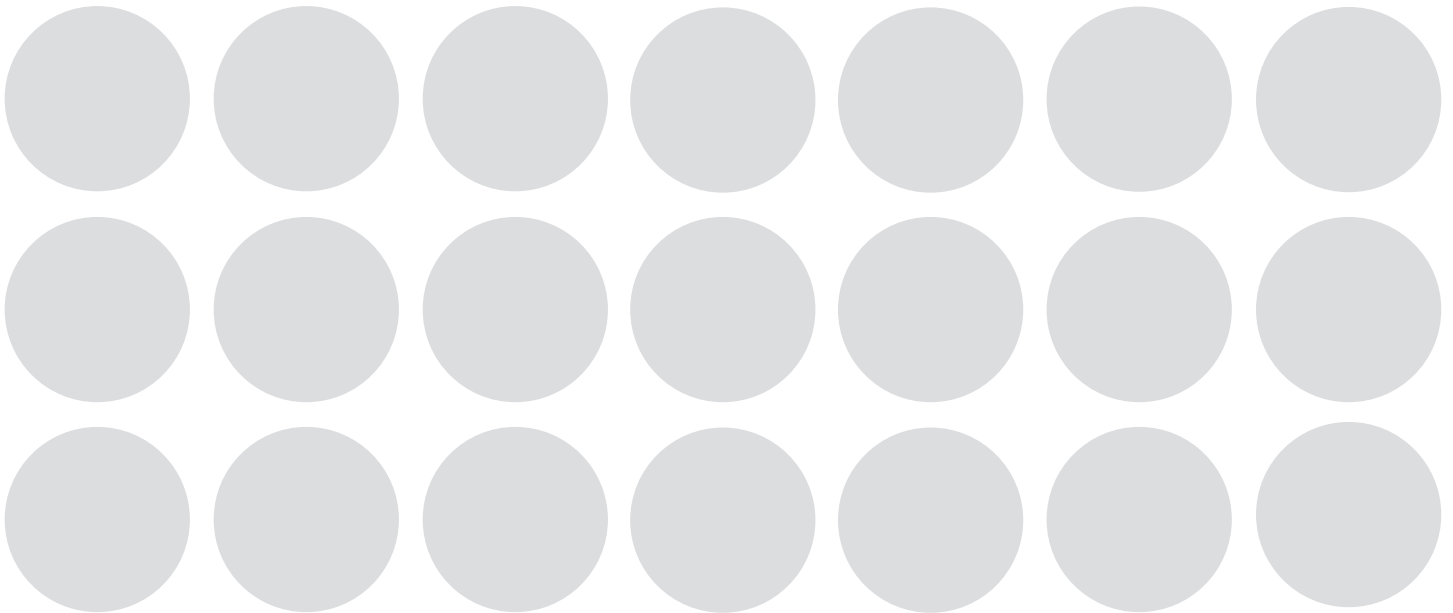




Innovative People *Redefining Print*SM



Submitting Digital Files
to Quad/Graphics



Submitting Digital Files to Quad/Graphics

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1. Introduction to Imaging Workflows

ALL-DIGITAL WORKFLOWS

Welcome to Quad/Graphics, the industry leader in the development of all-digital workflows. In 1998 Quad/Graphics was the first web offset printer to embrace a 100-percent digital computer-to-plate workflow for imaging plates.

This manual provides the information necessary to submit digital files for our prepress workflows. We offer three basic categories of digital workflows based on file type.

1. Plateready file workflow

All plateready files undergo a standard preparation process we refer to as "Handle & Prepare." See chapter 2, "Quad's Handle & Prepare and Optimization Processes," for more information.

2. Postscript and normalized PDF workflows

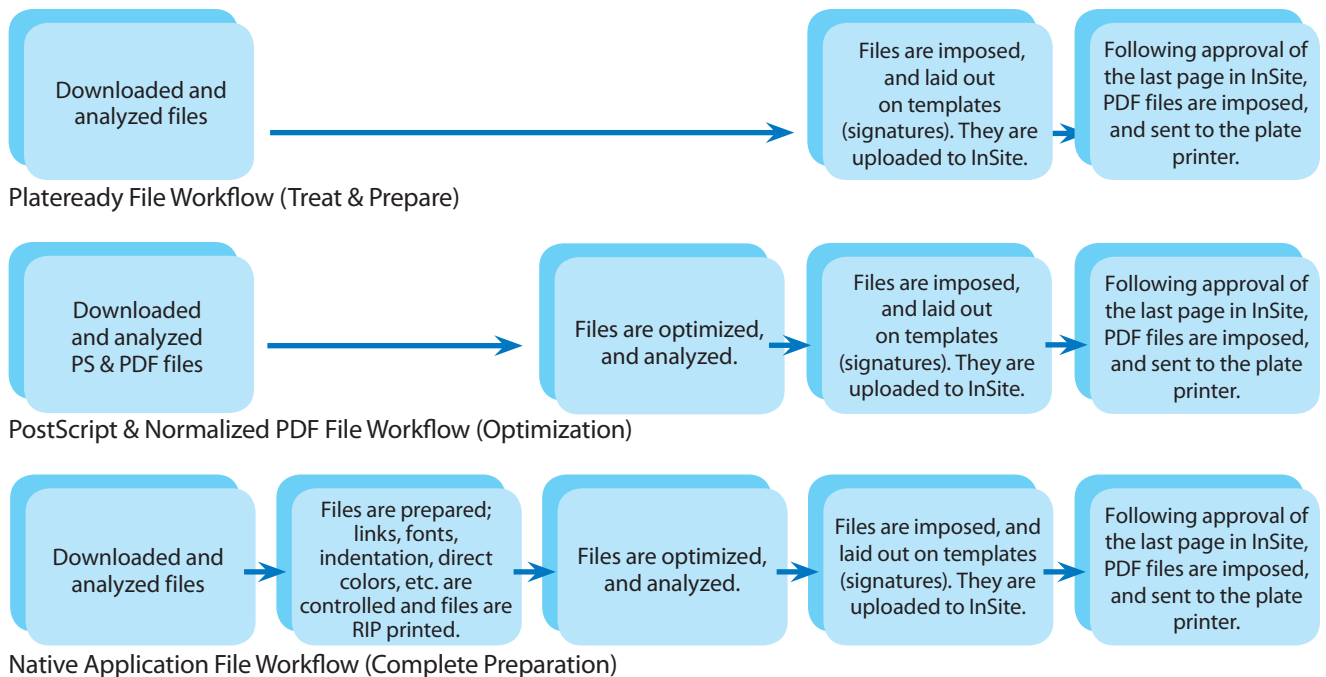
All submitted PostScript and normalized PDF files undergo our optimization process to create streamlined PDF files compatible with any prepress workflow and output device.

These files also undergo our standard "Handle & Prepare" process. See chapters 2, 3 and 4, "Quad's Handle & Prepare and Optimization Processes" and "Quad's Optimization Process," for more information.

3. Workflows for native application files

Imaging provides full prep prepress services for clients submitting QuarkXPress and Adobe InDesign files, including conversions, digital page assembly, retouching, color manipulation, silhouetting and special effects, and proofing. These files undergo our "Handle & Prepare" process and our optimization process. For more information, please see chapters 2 and 3, "Quad's Handle & Prepare and Optimization Processes," "Quad's Optimization Process," and "Guidelines for Preparing Digital Files for Quad/Graphics."

The diagram below shows the basic differences in digital workflows based on supplied file types.





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2. Quad's Handle & Prepare Process for All Jobs

PREPARING PAGE FILES FOR PRINTING

All incoming page files, including plateready files, undergo prepress production steps that we call "Handle & Prepare."

Quad's Handle & Prepare is a standardized process with a standard fee that is applied to EVERY print job. The Handle & Prepare process is documented in our standard operating procedures, called Quality Systems Management (QSM), and is managed in exactly the same way at all of our Regional Imaging Centers. The imaging QSM system is our guide for continuous improvement in our performance, allowing us to provide the highest attainable quality in prepress technology and service.

HANDLE & PREPARE STEPS

1. Receive the page files digitally via FTP or by disk.
2. Download the files onto a network server.
3. Optimize, refine, and rename files.
4. Load files in a template according to the required compagination. This creates a digital PDF reader for InSite, and separate preview files.
5. Inspect the preview files.
6. Files are sent to plate manufacturing after the final page has been approved in InSite.

3. Quad's Optimization Process

Our all-digital workflows are based on optimized PDF files. All non-plateready files from clients, including "normalized" PDF files often considered as plateready, undergo an "optimization" conversion to create streamlined PDF files that are compatible with any prepress workflow and output device. In addition to normalized PDF files, imaging will optimize PostScript files and current versions of QuarkXPress and Adobe InDesign.

The Quad optimization process converts incoming files into industry-standard PDF/X1-a files, which will process efficiently through any workflow system with maximum security and reliability. Optimization allows our prepress specialists to adjust the PDF file for any output requirement.

Our optimization process is a critical step to ensure the files move efficiently through our workflows and print correctly

on press. **Quad/Graphics cannot guarantee the accuracy, integrity and stability of page files unless they undergo our optimization process.**

OPTIMIZATION VS. NORMALIZATION

Most digital prepress vendors use a traditional digital workflow in which incoming data files, including PDF files, are normalized, which means they are converted into standard PDF files for further processing in a dedicated RIP or workflow. Many normalized PDF files are NOT plateready and cannot be printed without problems. Unflattened transparency layers, for example, could erroneously conceal (knock out) text, and images may not be the proper resolution. The bottom line is that an incorrect page reproduced during a press run could result in a great financial burden.

QUAD OPTIMIZATION

During optimization, incoming data files are first pre-flighted to check for common errors. Our verification software confirms that the file is error-free and includes all necessary elements and instructions. After pre-flighting, OPI images are updated to the high-res. The file is exported, then "optimized," removing layers, flattening transparencies, down-sampling images, setting overprints and creating traps (trap is a Quad requirement).

The instructions contained in each Quad-optimized PDF file support consistent and reliable file output with any workflow. The Quad-optimized PDF is ripped at each output device, providing extensive workflow flexibility since any RIP device can be used with any proofer, printer or platesetter.

The ONLY exceptions to our optimization process are what we consider plateready files, including PDF/X1-a files created with one of these Quad-certified RIPs: DALiM TWiST, Kodak PRiNERGY Evo and EskoArtwork Nexus. ALL other PDF files are required to undergo our optimization process. All incoming files, including plateready files, also go through our standard "Handle & Prepare" process before platemaking.



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4. Guidelines for Preparing Digital Files for Quad/Graphics

Quad/Graphics is one of the leading prepress providers in North America, and is capable of processing many different digital file types.

SUBMITTING PDF/X1-A FILES

A PDF/X1-a file optimized or created using the DALiM TWiST, Kodak PRiNERGY Evo and EskoArtwork Nexus RIPs is the preferred file format for both web offset and gravure printing. The printing industry standard PDF/X1-a is based on the PDF 1.3 specification.

PDF/X1-a files created with a RIP other than DALiM TWiST, Kodak PRiNERGY Evo and EskoArtwork Nexus must undergo our Optimization process. (See chapter 3).

Normalized PDF files and PostScript files are accepted, but also must undergo our optimization and Handle & Prepare processes to create plateready files (See chapters 2 & 3).

All files should be built with a consistent page size and origin—this includes the various box sizes. All Trim boxes, Media boxes, etc., should be sized consistently from page to page.

Quad/Graphics and other printers have encountered production challenges related to the widespread use of Adobe PDF in prepress workflows. With each release of Acrobat, Adobe Systems has added features, such as improved compression techniques, to the PDF file format.

Acrobat 4.0 is equal to PDF 1.3, Acrobat 5.0 to PDF 1.4, Acrobat 6.0 to PDF 1.5, Acrobat 7.0 uses PDF version 1.6, and Acrobat 8.0 uses PDF 1.7. The technology built into PDF versions after 1.3 is not conducive to accurate, consistent RIP output due to transparency flattening issues. PDF 1.3, upon which the printing industry's spec PDF/X1-a is based, is printer friendly. The PDF/X1-a specification does not "understand" transparencies, so all transparency layers in these files are flattened.

ACROBAT, QUARK, AND INDESIGN

Newer versions of Adobe Acrobat need to be set up carefully to ensure PDF 1.3 or PDF/X1-a files are produced. Using QuarkXPress to export (i.e. "print to") a file to PDF produces a flattened PDF 1.3 file.

Adobe InDesign CS, CS2 and CS3, however, allow users to choose PDF versions. If a PDF 1.4 and above is created, InDesign will "turn off" the flattener, so the PDF must be flattened by the RIP or proofer during prepress. This is

problematic for printers because every RIP device and proofer handles transparency flattening differently. Flatteners in RIP software vary, so different RIPs and proofers will deliver different results (some RIP devices do not support any transparency flattening).

If you supply a flattened proof but an unflattened PDF file of the page or ad, then the flattener that created the proof must perfectly match our flattener or there will be different output results. Complicating the issue is the fact that the different Acrobat versions have slightly different flatteners. Different flattener settings can also be used within the same Acrobat version.

NATIVE PAGE FILE APPLICATIONS

Quad/Graphics accepts native Macintosh page files created using the most current released versions of QuarkXPress and Adobe InDesign. Native QuarkXPress and InDesign pages are processed in a traditional prepress workflow. Proofs are then forwarded to the client for approval.

Page Construction Guidelines

- We prefer to have pages created as single pages built to trim size.
- Reader spreads should be set up as facing single pages.
- Elements that bleed off the page must be extended 1/8" over the edge of the page on all three outer edges.
- All live matter of importance, including all type, must be a minimum of 1/4" inside the final trim in order to guarantee that no essential information is trimmed off.
- If you are creating versioned pages, contact your CSR (Customer Service Representative), who will refer you to a technical consultant that will provide you with specs regarding the best way to create and submit these files.
- Use QuarkXPress's "Collect for Output" and InDesign's "Package" features when preparing files for output. These assist in gathering corresponding art, image files and fonts needed for processing.
- QuarkXPress and InDesign offer built-in options for clipping paths. Special care should be taken to assure that the desired embedded path (from Photoshop) is selected and active.
- OPI workflows used with InDesign's and Quark's transparency functions may require special consideration. Contact your Quad ISR for testing prior to submitting final files.



Submitting Digital Files to Quad/Graphics

- All Photoshop images should be 300 dpi (or double the line screen) and either CMYK or grayscale. Black and white line art should be in bitmap TIFF format.
- Trapping and overprinting may require special consideration. Except for special cases, Quad uses process settings which automatically overprint only occurrences of 100% K. If you want a black object to knockout, create a color that includes at least 1% CM & Y along with 100% K.
- Maintain a consistent naming convention for your files that includes the folio(s). Avoid using the following special characters: (, . ? / * \ ({ } > = # : ")
- If using a spot color (PMS), it should be named exactly the same in all page files and linked image files.
- Thin lines, fine serifs and lightweight or very small type should be restricted to one color. Reproduce all colored type with a minimum of colors.
- Reverse type and line art should not be less than 12 points for typography, and 4 points for plates at the thinnest part of a character or rule. Reverse type should use dominant color (usually 70 percent or more) for the shape of letters. Where practical, and not detrimental to the appearance of the job, make the type in subordinate colors slightly larger to minimize register problems on the production press. Small type and fine serifs should not be used for reverse type. The surrounding tone must be dark enough to ensure legibility.
- Overprinted (surprinted) type should not be less than 8 points for typography, and 25 points for plates at the thinnest part of a character or rule. When type is to be overprinted, the background should be no heavier than 30 percent in any one color and no more than 90 percent total in all four colors for legibility.

LAYER ORDERING

- Depending on the design complexity of your pages and whether you work in a high-res or low-res workflow, a layering strategy can help you and Quad/Imaging work more efficiently and yield the most consistent results.
- In general, all body text should be placed on the topmost layer of the page's stacking order or on its own layer using the Layer Palette.
- Using the Layers Palette, a specific solution for a more complex page may be similar to this example:
 - 1st Layer: Folio versions (topmost)
 - 2nd Layer: Tag info such as directions
 - 3rd Layer: Body text
 - 4th Layer: Images and Art
 - 5th Layer: Rules and Lines
 - 6th Layer: Tints, Backgrounds and Shadows (bottom)

GUIDELINES SPECIFIC TO QUARKXPRESS FILES

- Quark 7 and 8 templates/documents should be recreated from scratch. Do not open older version Quark documents (6, 5 or 4) in Quark 7 and 8.
- If utilizing the Blend feature within QuarkXPress, realize that these have been inconsistent in nature, and at times "banding" has occurred. If this occurs, your Quad ISR can offer alternatives.
- Colorizing grayscale TIFF within QuarkXPress can impact certain production workflows. If you plan to colorize TIFFs in QuarkXPress, notify your Quad ISR. Testing may be required.
- To learn more about the best practices for using transparency in QuarkXPress, go to www.quark.com.

GUIDELINES SPECIFIC TO INDESIGN FILES

- To learn more about transparency for print output from InDesign, go to www.adobe.com.

GUIDELINES FOR VECTOR ART PROGRAMS

- Do not supply final page files as Adobe Illustrator. Instead, place the CMYK .ai or .eps file into InDesign or Quark. If necessary to construct pages in an art program, clearly note this to your Quad ISR. Additional charges may apply.

GUIDELINES SPECIFIC TO GRAVURE PRINTING

- A dot smaller than five percent cannot be reproduced on press consistently and will result in a salt-and-pepper pattern.
- Please contact your Quad ISR for specifications on how to build and supply pages or covers for gravure jobs that will be perfect-bound.



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5. Everything Else You Need to Know About Submitting Files

PAGE FILE PRINTOUTS

Supply final color or black and white laser printouts at actual size (100%) with no corrections noted. If the image area in the page file exceeds the size of a laser or thermal print, print the laser at a reduced percentage, but clearly note the reduction.

If possible, output final printouts with registration marks. This places crop marks on the edges of the file and also prints the name of the file at the top of the page.

What should be marked on each of the printouts?

- Note any special instructions directly on your laser proofs before submitting them to Quad.
- If you are submitting files that will be sent as 3, 2 or one color files, a conversation with your Quad's CSR will help determine the workflow specific requirements.
-
- If fifth or spot colors (actual PMS color) are to be used, they should be clearly indicated.
- Clearly indicate on your proofs any areas in which you have trapping, overprint or knockout concerns.

FONTS

According to CREF standards, "fonts used by both customers and vendor must be the same version, name and manufacturer."

To accommodate any inconsistencies between customer fonts and our current font library, please supply all screen and printer fonts used in your page files. You may furnish your font library by family, in a subfolder. We recommend maintaining the screen and printer font organization as originally provided by the font manufacturer.

There are two options for supplying fonts to Quad:

- 1) Supply a copy of your entire in-house font library. Imaging will keep this collection on file and use it whenever your files are supplied. Only new additions to your typeface library will need to be submitted when you supply your page files for production.
- 2) Supply the fonts used for your job each time page files are submitted. If we do not receive the necessary fonts to process your job, or are supplied a listing of the fonts, the customer will be responsible for any type reflows or

substitutions.

In addition, please adhere to the following font guidelines:

- Do not use TrueType fonts or Helvetica PS Type 1 fonts.
- Fonts that have been created or customized by a font editing software such as FontLab must be tested prior to production.
- "City" fonts (New York, Geneva, Chicago, Monaco) cannot be used in production. There are no matching printer fonts.

PANTONE COLORS

The Pantone® Process Guide Coated SWOP tint book should not be used for accurate representation of web offset printing when using anything less than a #3 sheet. The Pantone Process Guide book itself is printed on a #1 sheet @ 175 linescreen. Physical and optical gains and trap values are visibly different on proof and press, especially in deeper tones.

TOTAL AREA COVERAGE BASED ON PAPER STOCK

The basis weight and type of paper stock to be used in the final printed piece will directly affect the amount of UCR at the separation stage.

UCR is expressed and checked in the final file as total area coverage, which is the sum of the four dot percentages measured in the same spot of the densest part of the separation and larger than the size of a quarter.

- **Uncoated and newsprint stocks:** 240 percent total area coverage maximum.
- **Supercalendered stock:** 260 percent maximum.
- **Lightweight coated stock:** 280-300 percent maximum.
- **Heavier coated stock (50 lb. and above):** SWOP requires a maximum of 300 percent and 325 percent for small image areas carrying no significant detail.

NOTE: If images will be reproduced by both Offset and Gravure, then they should adhere to SWOP, which is 300 percent.

SUBMITTING TRANSPARENCIES, ARTWORK, DIGITAL IMAGES

If you are submitting digital images or artwork/transparencies for scanning, please provide the following information on each image.



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- The scan name should be no more than 10 characters. If you plan to archive images, it may be helpful to use a unique naming convention. Your Quad ISR can provide more information about naming conventions.
- If an image needs to be silhouetted, indicate so in the laser proof.
- If an image or artwork requires special effects, such as drop shadows, please indicate it on the laser proof and/or transparency.

Please supply a black and white laser proof of the image at 100 percent. Imaging will use these proofs to calculate percent of enlargement/reduction/rotation for each image.

PREPARING DIGITAL PHOTOGRAPHY IMAGES

Please see "How to Create and Supply Digital Images" at http://www.qg.com/imaging_specifications.asp.

IMPORTANT NOTE: Digital photographers who have not yet worked with Quad should submit test files at least 30 days before production begins. We will use the test files to:

- Check color and sharpness
- Ensure that we receive workable files
- Verify the RGB to CMYK conversion.

NETWORK OPTIONS AND FILE TRANSFERS

Quad/Graphics gives each client access to an FTP and InSite account. The submission of digital pagination files to Quad/Graphics over Internet saves time and allows for subsequent content changes.

NAMING CONVENTIONS

Please name Offset and Gravure files using a maximum of 14 characters, excluding the file extension. Name your files to clearly identify client name and folio number. Please name files with these points in mind:

- Uppercase characters are preferred
- Use only alpha numeric characters within file names
- No "special characters" (i.e. -, ., /, *, \, {, |, >, =, #, ") should be used.

CONTACT US

If you have concerns about any of these guidelines, please contact your Imaging Service Representative. This will prevent delays and additional costs.

These guidelines do not take into account the many special situations that can occur with today's high-tech prepress production processes. We pride ourselves on our flexibility and customer responsiveness, so if you require special arrangements or procedures in order to submit your files, please contact your Imaging Service Representative or your Imaging Sales Representative.