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Technical bulletin

Synapse EyeMedia Image Proxy Workflow

This document describes the image proxy workflow provided by Synapse® EyeMedia and Prinergy® software, focusing especially on potential problems and areas of possible confusion. Although a brief explanation of image proxy workflows is provided, this document assumes that you have prior knowledge.

Synapse EyeMedia uses the term “image proxy workflow” rather than “OPI workflow” because the Synapse EyeMedia workflow provides significant advantages compared with classic OPI and has a different usage. However, the image proxy workflow is based on OPI, so we must begin our discussion with OPI. If you are already familiar with classic OPI, you can skip this background section.

OPI Background

OPI (Open Prepress Interface) is an extension to PostScript® that allows for automatic replacement of low-resolution placeholder (or proxy) images with their high-resolution originals before printing. OPI was created to allow page files to be easier to handle and transmit between parties. The printer would generate small, down-sampled proxy images (called FPOs, which means For Placement Only) from large scanned images and then send these FPOs to the designer to place into the layout instead of the large images. This meant files were smaller and easier to manipulate. When printing to a high-resolution device, the printer’s software would recognize the FPOs in the page layout and automatically swap them for the high-resolution images.

In a classic OPI workflow, the designer places the FPO in the layout and then, when printing as PostScript (or PDF), selects the option **Omit Images**. The layout software then places OPI comments into the PostScript file but does not place the FPO itself into the PostScript. The resulting file is called thin PostScript. At the printer, OPI merging software scans the PostScript for the OPI comments and then searches the relevant folders to find the high-resolution image that matches the FPO file name. The high-resolution image is then merged into the PostScript file (or “swapped” for the comment), creating fat PostScript.

One problem with thin PostScript files is that the placed FPOs cannot be viewed prior to the prepress OPI merge, since the images are not in the file. To get around this, the designer may choose to print PostScript from the layout software but with the **Omit Images** option off, so that the FPO image is actually visible. This is called chunky PostScript because it is the low-resolution (FPO) version of the image that is included rather than the high-resolution version. The layout software still places OPI comments into the generated PostScript, so the OPI merge engine is able to find the high-resolution image and swap out the FPO.

The FPO is usually an EPS file but can be a TIFF file. The FPO file consists of up to three parts—the OPI comments, a screen preview image, and a print preview image—depending on the FPO generating software (also called a Sampler) that is used to create the FPO. Generally, the Sampler creates the FPO image at 72 dpi and places it into the screen preview portion of the file. If the Sampler also provides an option to include a print preview image in the file, the print preview image is usually created at a high resolution. So it is possible for the size of the FPO file to be larger than the file size of the original image, although this is unusual for images generally used in professional quality publications.

Classic OPI has a number of advantages:

- Generation of PostScript from the layout software is much faster (since large images are not included).
- The page files transmitted to the printer are smaller, so sending them electronically is more viable.
- High-resolution images can be edited separately from the page layouts and brought together only in prepress.

However, it also has a number of disadvantages:

- The merge operation depends on file names to find the high-resolution image. This means that the image may not be found or, even worse, that the wrong image may be substituted.
- Image effects cannot be applied in the layout software, since they would be applied to the FPO and lost when the high-resolution image is swapped in.
- Many applications remove OPI comments (for example, Acrobat® Distiller® software has an option to do so); therefore, you must take care when processing page layout files prior to the OPI merge.
- If chunky PostScript is generated, it is possible that the FPOs can mistakenly make it on to plate and even possibly on to the press.
- It is problematic to mix placed FPOs and placed high-resolution images. (Further explanation of this problem is provided next.)

Synapse EyeMedia Image Proxy Workflow

The Synapse EyeMedia image proxy workflow is similar to a classic OPI workflow, but differs in a number of key ways. FPOs are generated in Synapse EyeMedia by selecting an image in a supported format (EPS, DCS, TIFF, JPEG, PDF) and selecting the command **Download FPO**. In Synapse EyeMedia 1.0, the screen preview portion of the FPO is always EPS format, 72 dpi, and the print preview portion is always included and is also at 72 dpi. (Synapse EyeMedia 2.0 will enable the site administrator to control these parameters.)

The OPI comments included in Synapse EyeMedia FPOs contain both the name of the image and a unique database ID. This ID is “globally unique”, meaning that it can be used to identify the image uniquely amongst all other available images. When printing PostScript from the layout software, it is critical that you do *not* select **Omit Images**. Some layout software also includes an option to “do OPI”, meaning that the software will attempt to look up high-resolution images from the OPI comments in the FPO. You must disable this option.

Since the **Omit Images** option was off, the resulting PostScript file contains the FPO image, including its embedded OPI comments. When the Prinergy normalize function processes the chunky PostScript, it detects the embedded Synapse EyeMedia OPI comments and uses the unique database ID to get the path to the high-resolution image from Synapse EyeMedia. The high-resolution is then swapped for the FPO as in classic OPI.

The settings to control the Synapse EyeMedia FPO swap are found in the **Normalizer** section of the Prinergy Process Template Editor. Normal OPI must be enabled before the Synapse EyeMedia (referred to as **AssetManager** in current version of the Process Template Editor) parameters are enabled. The template has a check box to specify whether Synapse EyeMedia processing should be done. If this is selected, there are also settings to specify whether failure to find an image in Synapse EyeMedia should prevent normal OPI folder searching. In addition, there is a verbosity setting that controls how much information is logged to the Prinergy history. **Verbose** logs a history message for each image, **normal** logs a message for each page, **terse** logs a message for each input file, and **off** disables all logging related to Synapse EyeMedia FPO swaps.

Compared to classic OPI, the Synapse EyeMedia image proxy workflow has the advantage of not being dependent on folder searching and linking the name of the FPO with the high-resolution image; there is no chance that the wrong high-resolution image will be swapped in, and there is a much lower chance that an image won't be found. In fact, after an FPO has been generated from Synapse EyeMedia, it is possible to rename it or change its location to another folder or even another library, and the high-resolution image will still be found. Note, however, that the image cannot be copied and then deleted from its original location, since the new copy has its own unique database ID. Also, of course, if the image is deleted from Synapse EyeMedia, the high-resolution will not be found.

Common Problems

This section provides descriptions of some common problems that occur with the Synapse EyeMedia image proxy workflow. Note that a later section is devoted specifically to the problems and issues relating to transparency.

Print Settings

As described earlier, it is critical that you do *not* select **Omit Images** when generating PostScript or PDF files. In addition, the option to "do OPI" should be off (except when exporting PDF directly from QuarkXPress®, as discussed in the next section).

If these settings are wrong, the PostScript file will not contain the Synapse EyeMedia database ID, and an error will occur during the Prinergy refine process because the image cannot be found.

Distiller (or PDF Generation) Settings

If the generated PostScript is converted to a PDF file, or if a PDF file is sent directly from the layout software, care must be taken with these settings.

In Distiller, you must ensure that the **Remove OPI Comments** option is *not* selected. In Adobe InDesign® software, the similar setting for PDF export must also be cleared.

When exporting PDF directly out of QuarkXPress, select **File > Export Layout as PDF > Options > Output** tab, select the **Use OPI** option, and set the **Images** box to **Include Images**.

In all cases, if the appropriate settings are not selected, the Synapse EyeMedia FPO OPI comments will not be retained and the FPOs will not be swapped during the refine process.

Image Edits

The Synapse EyeMedia image proxy workflow has the same advantage as classic OPI in that the image can be edited while the FPO is used in the page layout. But this also means that it is possible to get the wrong version of the image. You should exercise caution during upload into a library that overwriting of an image will not cause already generated FPOs to result in the wrong image on a page. In general, you should only overwrite when the new file is an improvement to the image that will be desired in all usages. If the changes alter the fundamental nature of the image, you should rename the file so that the overwrite will not occur (for example, rename **logo.tif** to **logoV2.tif**).

Image Effects

A feature of the newer versions of InDesign and QuarkXPress is image editing options (for example, feathering the edge of an image). Often these image effects result in the removal of all OPI comments—including the database ID—when PostScript is generated. Not all image effects will cause this. For example, drop shadows are okay when processed using the CS2 version of InDesign (although not in the CS1 version). You will need to experiment with the various effects to see if they can be used safely with Synapse EyeMedia FPOs, but anything that alters the image itself will not work properly with an OPI or image proxy workflow. The safest approach is to not use FPOs if image effects will be used.

Mixing Classic OPI, FPOs, and High-Resolution Images

It is not generally possible to generate PostScript with a combination of thin and chunky behavior; you must either **Omit Images** or not. The best workaround is to print thin and chunky pages into separate files. However, this doesn't allow for a single page that contains an FPO and an omitted image.

QuarkXPress 5.0 and beyond does include an OPI XTension that allows individual images to either have or not have OPI comments. This is found under **Utilities > Usage > OPI**. Normally, QuarkXPress automatically sends OPI comments with placed TIFF files, but with this tool, it is possible to select which

individual FPOs will have OPI comments attached. However, the use of this tool either erases or rewrites embedded OPI comments in Synapse EyeMedia FPOs, and when rewritten, the new OPI comments do not contain the unique database ID—meaning that the swap of the FPO will not be done by Prinergy. When using QuarkXPress with Synapse EyeMedia FPOs, the OPI.xnt must be disabled.

It is possible to place a mixture of high-resolution and FPO images and then print with **Omit Images** off. However, this will cause problems when the PostScript is refined by Prinergy, since the layout software inserts OPI comments even when **Omit Images** is off. This means that Prinergy will attempt to swap both the FPOs and the high-resolution images, resulting in error or warning messages from the refine process. The simplest way around this is to print pages with FPOs separately from those with high-resolution images and then to process each with different process plans in Prinergy. However, this may not always be possible. In this case, the best that you can achieve is to set the Synapse EyeMedia FPO processing to fail if the images are not found and to set classic OPI processing to only warn.

PDF OPI and Prinergy

At the time of writing, Prinergy has some significant issues related to both OPI swap of FPOs in PDF input files and OPI swapping of FPOs whose high-resolution format is PDF. The problem is that Prinergy converts the PDF page or FPO to PostScript *before* doing the swap. Specifically this means that:

- Transparency effects are flattened (see the *Transparency* section).
- Performance is slower (compared with PostScript OPI) because of the time to convert.
- The conversion to PostScript is not perfect and can introduce problems in the generated PostScript (which is then turned back to PDF by the normalize function).

The simplest workaround is to not send PDF files to Prinergy when using FPOs, but this is not generally acceptable because of the advantages of the PDF workflow (for example, the use of Synapse Prepare). The performance problem must simply be lived with while the errors are infrequent; vigilant checking of generated PDF pages in Prinergy will suffice.

A future enhancement to Prinergy is planned to do PDF OPI directly without conversion to PostScript.

Transparency

With the CS1 version of its software applications, Adobe introduced “live” transparency to graphic arts. While this provided powerful new options to designers, it introduced significant complexity to prepress, and in particular, in an image proxy workflow. This section provides some background about transparency and discusses the problems and possible workarounds when using a Synapse EyeMedia image proxy workflow with transparency.

Transparency Background

Transparency has been around for a while. It has been available inside Adobe Photoshop® software as an option when layering objects on top of one another, but when exporting to a non native format like EPS or TIFF, Photoshop layers and transparency had to be rasterized, or flattened. Today, some software supports, as well as exports, file formats that maintain transparency.

Transparency is an effect where an overlaying object allows objects stacked directly underneath to be visible. Flattening transparency, or flattening, is defined as the process where the visual effect of transparency is replicated by using a flat layer of opaque objects, often achieved by rasterizing layers of vector objects, portions of vector objects, and images. Sometimes it is easy to overlook that a transparent effect has been used on a page because transparency can occur when an object or image that was already transparent is imported into a layout, or when an object uses a pattern or brush that itself uses transparency.

Currently, no versions of QuarkXPress support transparency, either natively or via an imported, placed file that contains transparency. There is no workflow through QuarkXPress that can contain transparency.

Transparency and Synapse EyeMedia Image Proxy Workflow

InDesign and Illustrator (CS1 and CS2 versions) do support transparency in many modes and forms, so consideration must be given to Synapse EyeMedia FPOs and transparency interactions.

Images With Transparency

The only image format that Synapse EyeMedia supports for FPO generation that can contain transparency is PDF. As described above, the PDF image is flattened *before* it is swapped for the FPO during the Prinergy refine process. Generally, this will result in correct behavior as long as it is okay that this image flattening occurs only for the image and not with any other overlapping objects on the page, as discussed further in the next section.

Pages With Transparency

The simplest option is to *not* mix transparency and Synapse EyeMedia FPOs (or any OPIed image). Although we describe one option that does allow for pages with transparency and FPOs, the workflow is still complex and problematic. If designers will be using transparency, they should simply place high-resolution images.

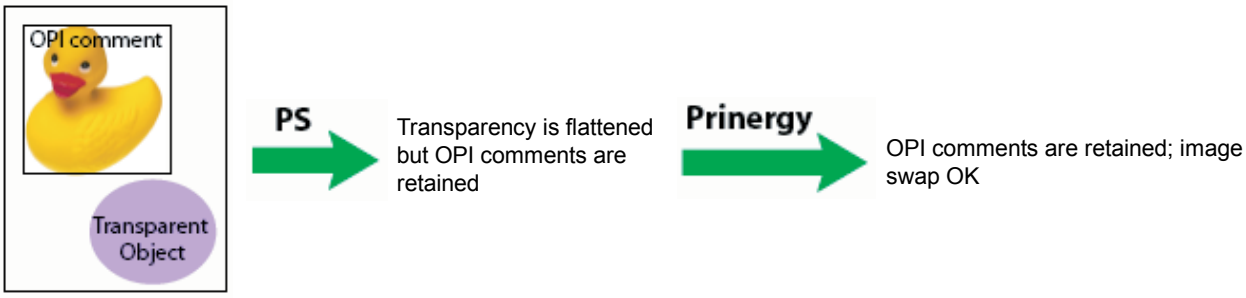
Tip: It can be easy to miss a transparency effect on a page. InDesign has two ways of detecting transparency effects. First, on the **Pages** palette, pages with transparency appear with a checkered pattern, while pages with no transparency appear as solid white. Second, you can select **Window > Output > Flattener Preview** to highlight transparency at the object level using several selectable modes. Illustrator CS and CS2 also have a transparency flattener tool.

PDF from Distiller

If PostScript is generated from InDesign or Illustrator and then distilled, it is possible to mix transparency and placed FPOs, but great care must be taken that these FPOs and transparent objects do not overlap. It is not possible to place a transparent object over or under an FPO. The problem is that when the PostScript is generated, the transparency will be flattened. If the transparency overlaps an FPO, it is the FPO that is altered, removing the OPI comments.

The following diagram illustrates this workflow. The duck element in the layout is the FPO.

If the transparency and the FPO do not overlap, or the transparency is clipped so that visually the transparency and the FPO do not touch, and the layout is exported as a *PostScript or EPS* file, the transparency is flattened but the FPO's embedded OPI comments are retained.



FPO and transparency do not touch



Transparency is clipped; visually, FPO and transparency do not touch

However, if the transparency visually overlaps the FPO, and the layout is exported as a PostScript or EPS file, the transparency will be flattened into the FPO and the FPO's embedded OPI comments will be lost.

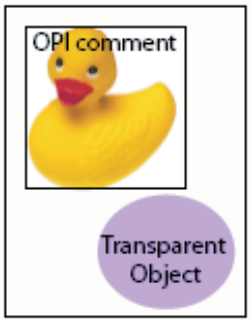


FPO and transparency are touching

PDF Export

If transparent effects are used, PDF export out of InDesign will *not* allow for the use of placed Synapse EyeMedia FPOs. The generation of PostScript during refine in Prinergy removes all OPI comments if *any* transparency is used anywhere in the refined document. The planned enhancement to Prinergy will remove this limitation. In addition, InDesign and Illustrator CS1 remove all OPI comments when doing PDF export. So even when the Prinergy problem is resolved, only InDesign and Illustrator CS2 will support the desired workflow.

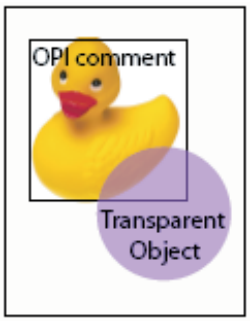
Just for informational purposes, we include the following diagram, which illustrates how a page in InDesign or Illustrator CS2 is flattened when it is exported as a PDF file.



FPO and transparency do not touch

PDF → No flattening; OPI comments retained

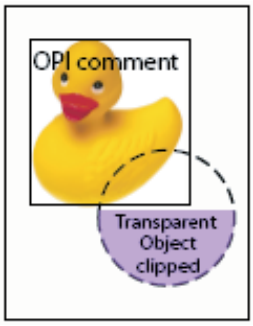
Prinergy → Transparency is flattened into FPO; OPI comments lost; no image swap



FPO and transparency are touching

PDF → No flattening; OPI comments retained

Prinergy → Transparency is flattened into FPO; OPI comments lost; no image swap



Transparency is clipped; visually, FPO and transparency do not touch

PDF → No flattening; OPI comments retained

Prinergy → Transparency is flattened into FPO; OPI comments lost; no image swap

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