

Using the

***KODAK PROFESSIONAL Image Print Server
with the
KODAK PROFESSIONAL Digital Multiprinter***

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Using the Image Print Server (IPS) Software with the KODAK PROFESSIONAL Digital Multiprinter

This document describes how to use the *Kodak Professional Image Print Server (IPS)* application for *Windows NT Workstation 4.0* Systems with the *Kodak Professional Digital Multiprinter* and the *Kodak Professional Digital Multiprinter II*.

The IPS application enables printing of TIFF images and provides easy, intuitive methods for performing simple print management operations that include:

- applying a tone scale correction to images
- inserting new images into the print queue
- stopping or suspending and resuming the processing
- deleting images from the queue

In addition, the IPS application allows you to monitor a specified folder for TIFF images to add to the print queue.

Communication Channels

Your computer can print to the Digital Multiprinter through a SCSI connection only.

Definitions of Terms

The following terms are used in this document and are defined here for your convenience.

Source Directory	Folder or directory that is designated for holding TIFF images to be printed.
Hot Folder	Another term for Source Directory.
Attended Mode	The mode in which all errors are displayed through a dialog box. When the application is in Attended Mode, it stops until you exit the dialog box.
Unattended Mode	The mode in which the only errors that are displayed in dialog boxes are the errors that require user intervention. Errors that do not require user intervention, such as invalid file format, are logged in the log file.
Enqueue	Insert a new image into the print queue.
Dequeue	Remove one image from the print queue. Only the top entry in the queue is removed.
Flush	Remove all images from the print queue.
Suspend	Prevent the application from sending another image to the printer until the application resumes. When you select Suspend, if an image is processing or going to the printer, this image will complete before the application suspends. When the application is suspended, it will not scan for images in the hot folder.
Resume	Return the application to normal operation.
Order Punch	An indicator on a print to specify that it is the end of an order.
Tiff Downloader	Another term for the Image Print Server (IPS) application.

Installing the IPS Application

Before you perform the installation, make certain you are familiar with the *Windows* NT operating system.

Hardware Requirements

The following is the minimum hardware required for the IPS application:

- 64 MB Main System Memory
- 100 MHz PENTIUM Processor
- VGA Monitor (640 x 480 spatial resolution)

Software Requirements

The following must be installed on your computer:

- *Windows* NT Workstation 4.0
- An ASPI-compliant SCSI interface driver (recommended: *Adaptec* 2940 SCSI card)

Installing the Software

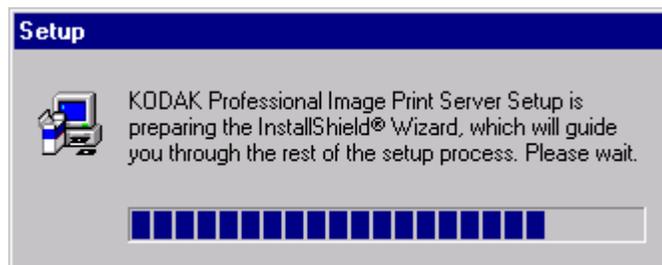
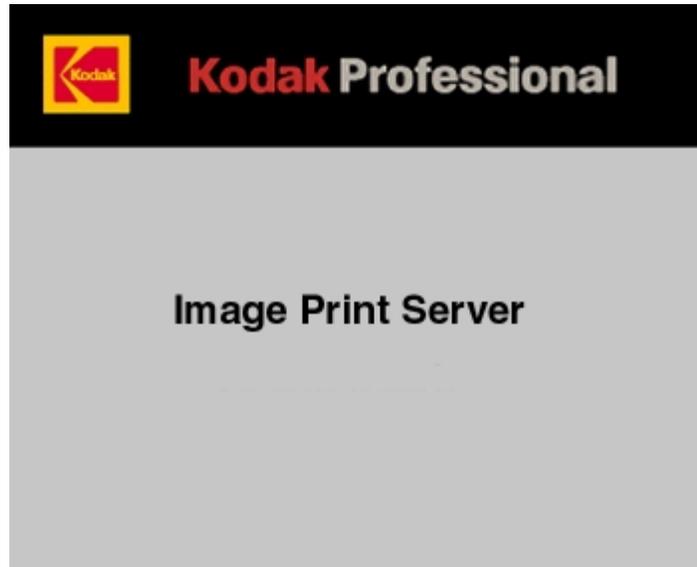
Downloading the Installation Application

1. Place the IPS application CD in your CD-ROM drive.
2. When the Internet Browser appears, select **Digital Multiprinter (KPDM)**.
3. Scroll to **Image Print Server** and click **KPROImagePrintServer**.
You may need to enter information such as your name and the serial number of your printer. If so,
 - a. Follow instructions on the screen and click **Download Software**.
 - b. Click in the appropriate location on the next screen to continue downloading.
4. If a dialog box appears asking if you want to "save this program to disk" accept the dialog box (do not launch the program from the browser).
The Save As... dialog box appears.
5. Either accept the path shown or click **Browse** to select another path for the KProImagePrintServer.exe file.
6. Click **Save**.

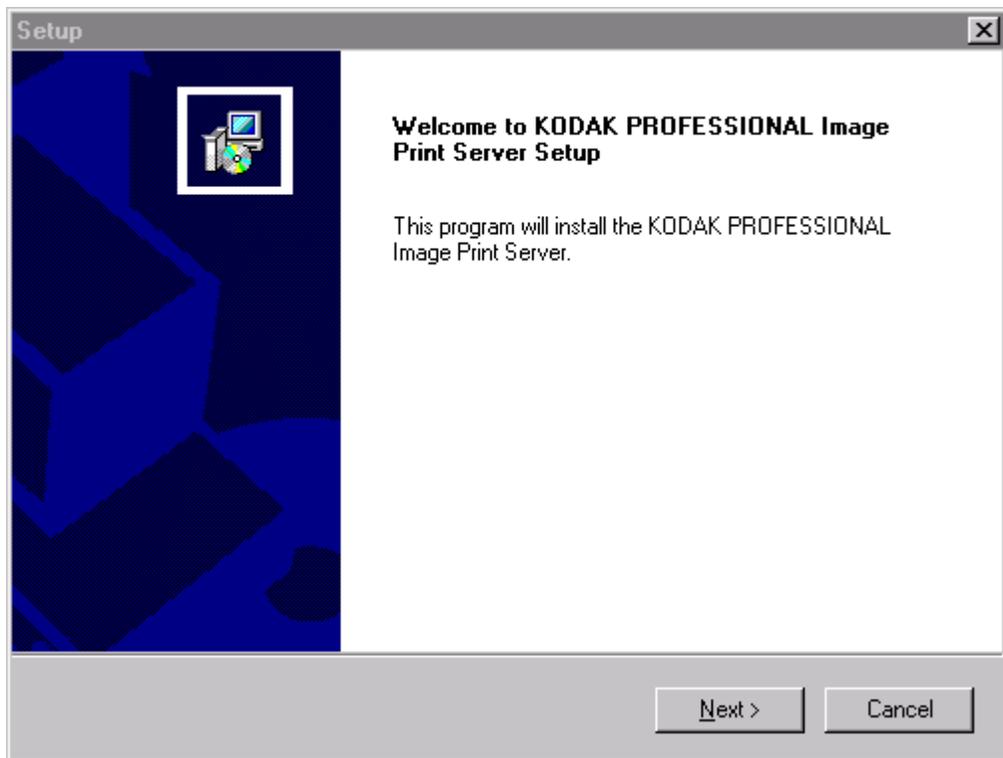
Installing the Application

1. From your *Windows Explorer* program, double-click the **Image Print Server** application (from the location designated in step 5 under “Downloading the Installation Application” on page 3).

The splash screen and setup messages appear.



The Welcome screen appears.



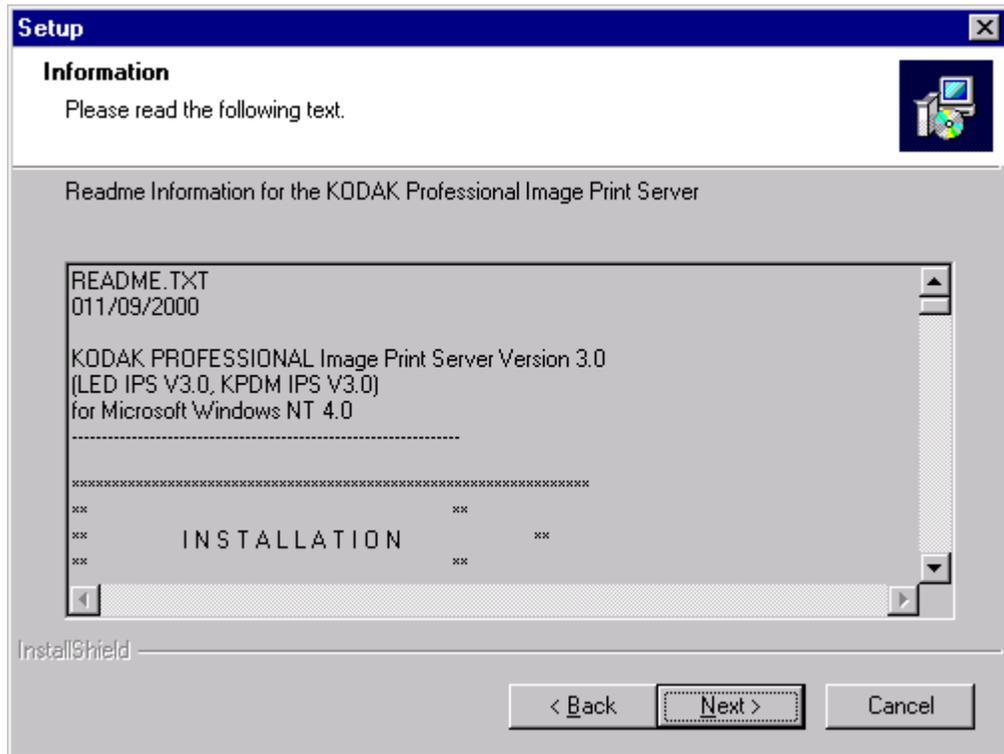
2. Click **Next>**.

The License Agreement screen appears.



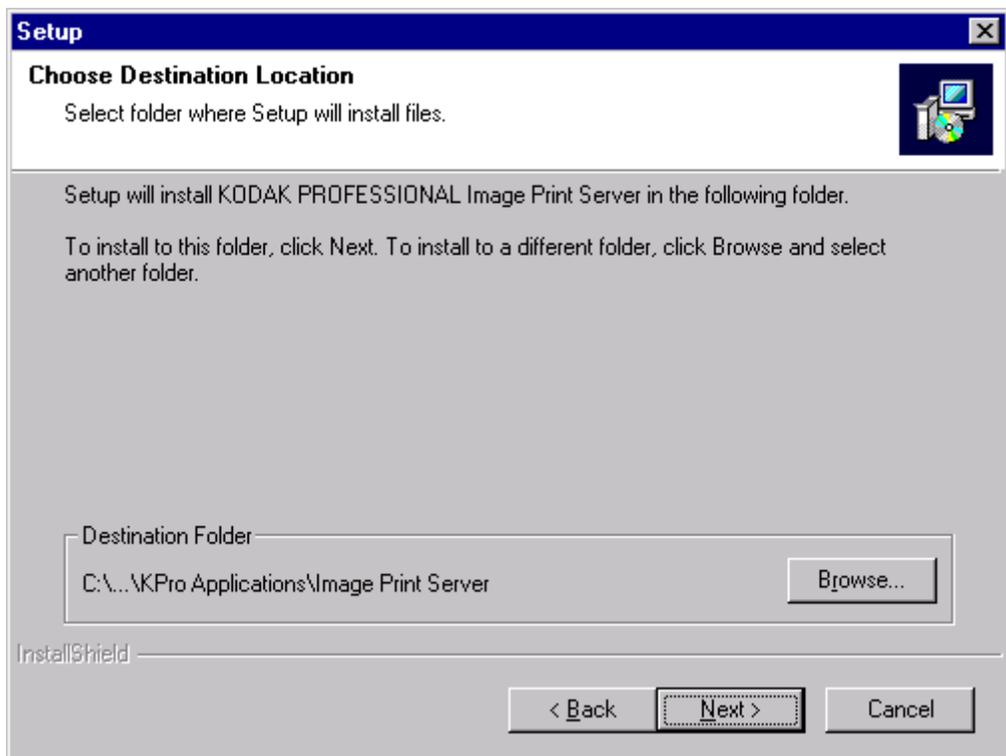
3. Read the License Agreement.
 - To accept the license agreement, click **Yes**.
 - Or, to cancel the installation, click **No**.

The Readme information appears.



4. Click **Next>**.

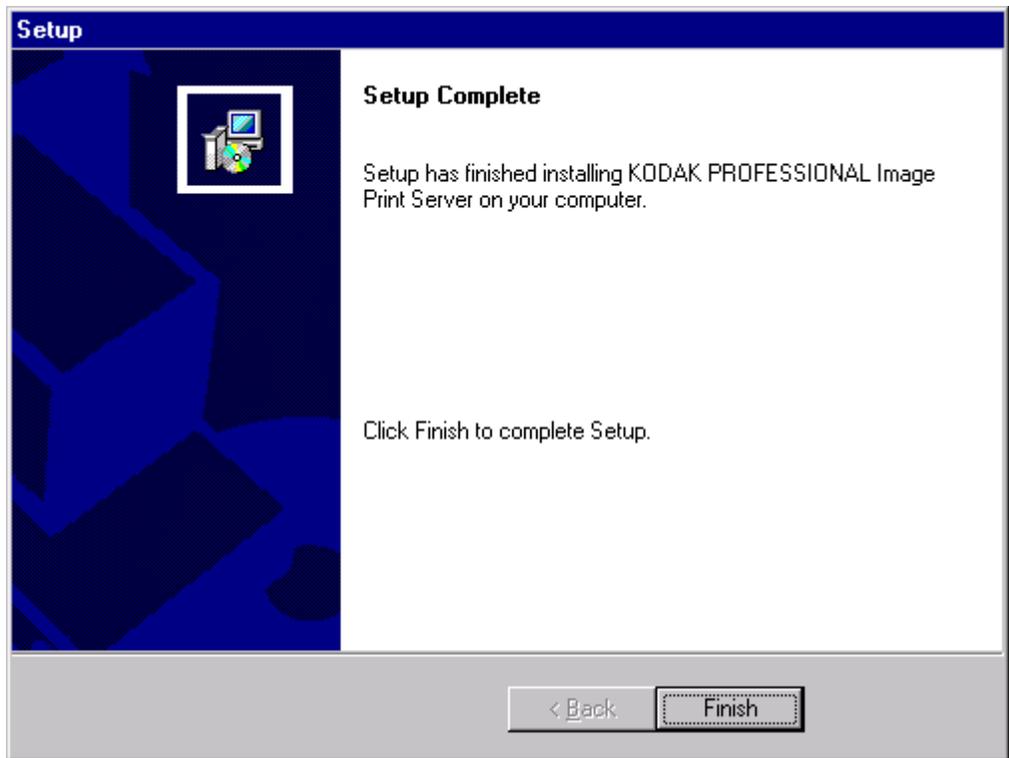
The Choose Destination Location dialog box appears, showing the destination folder and file name for the IPS application.



The default installation location for both the application and the tone scale correction Lookup Table (LUT) that can be used by the IPS application is "C:\Eastman Kodak\KPro Applications\Image Print Server."

5. Either:
 - a. Leave the destination as is and click **Next>** or
 - b. Click **Browse**, change the destination, and then click **Next>**.

The Setup Complete screen appears.



6. Click **Finish** to complete the installation.

Using the Image Print Server

Before You Begin

When you begin using this application, you need to set Source Directory Preferences (see page 15). To do this you need to:

- know whether printer calibration was performed using Density aims or Lightness aims; this will determine whether you apply tone scale correction
- know which printer LUT and Paper Pak files you want to use for each magnification you expect to print
- set up a log file on your host computer so the application can log errors
- designate a Source Directory (or hot folder) on your host computer, even if you do not send images from the Source Directory and you only enqueue (see “Definitions of Terms” on page 2) images one at a time

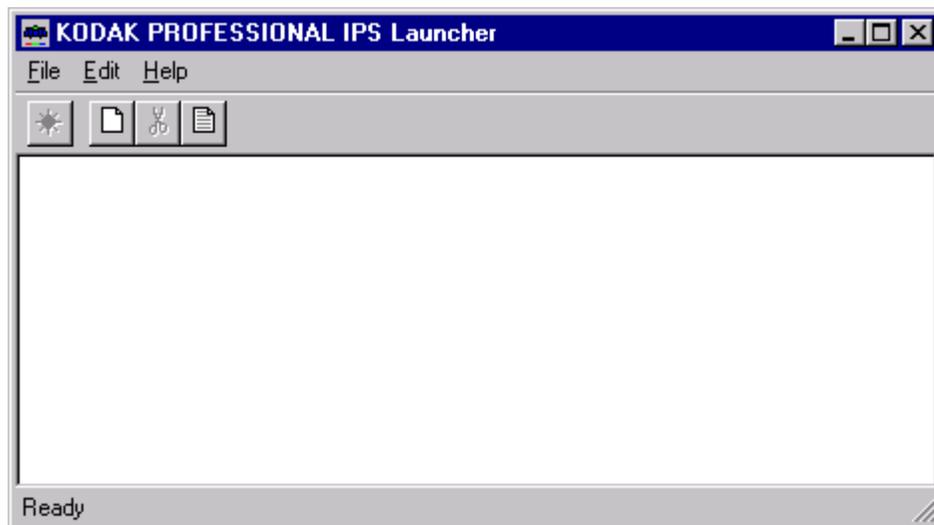
IMPORTANT: Set up the Source Directory for one use only—as a temporary source of images. Do not specify a directory that contains images that you want to keep. Once the images are processed from the Source Directory, they are deleted from that directory.

Do not specify as a Source Directory any directory that is on a read-only volume.

If you will be adding any print devices, you need to know the number of the SCSI Host Adapter and the SCSI ID for the devices.

Starting the IPS Application

- From the **Start** menu of the host computer, select *Programs>Eastman Kodak>KPro Applications>KODAK PROFESSIONAL Image Print Server*. The display shows the IPS Launcher window.



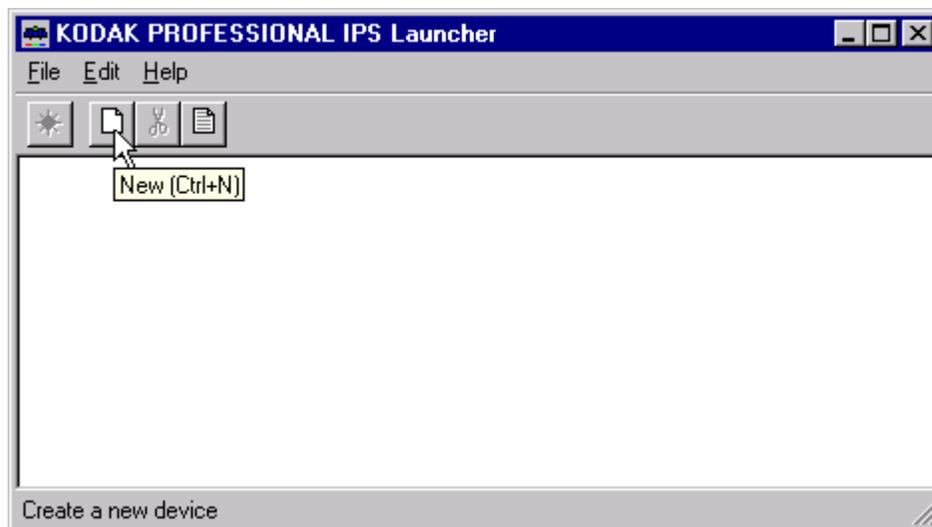
Add a device if no device icon is in the window or if there is no icon for the device from which you want to print. You can also update or delete the device information.

If you do not need to add, update, or delete a device, go to page 13.

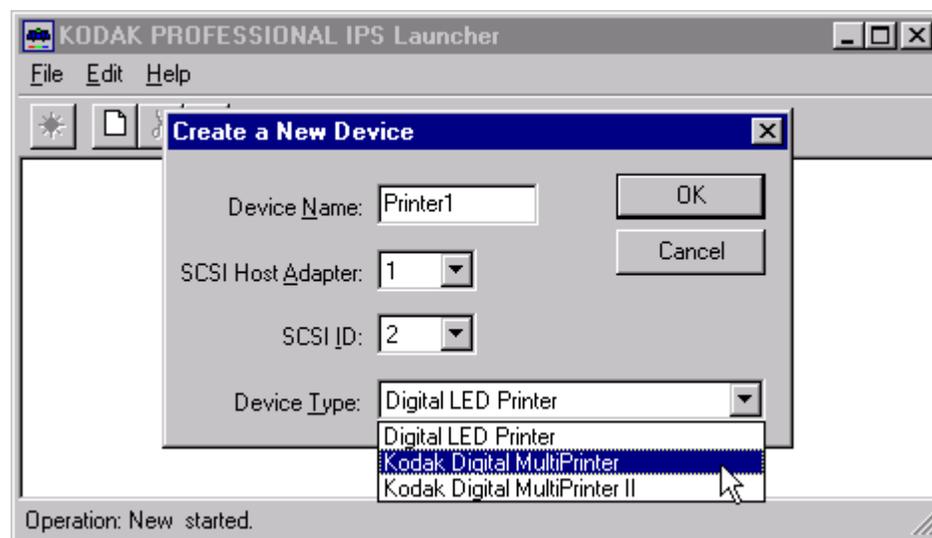
Adding, Updating, or Deleting a Printer Device

Adding a Device

1. Click the **New** icon on the IPS Launcher window or select *File>New*.



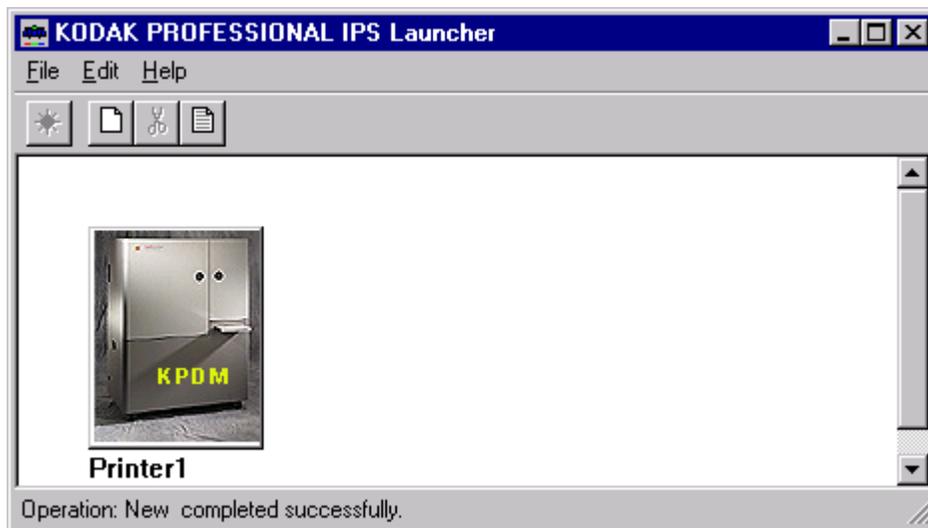
The display shows the Create a New Device screen.



2. Enter a unique identifier as the device name. The device name must be alphanumeric with no spaces or special characters. It can contain as many as 10 characters.
3. Enter the correct **SCSI ID** information.
The factory default is **2** for KPDM.

NOTE: The value for SCSI Host Adapter is typically 1. Select another value only if necessary.

4. Select the correct **Device Type** from the menu to correspond to either the Digital LED Printer, the *Kodak Professional Digital Multiprinter*, or the *Kodak Professional Digital Multiprinter II*.
5. Click **OK** to accept the information (or click **Cancel** to go to the IPS Launcher window without adding a device).
A new device icon appears on the IPS Launcher window.



Updating the Device Name, SCSI Host Adapter, or SCSI ID

1. On the IPS Launcher window, select the icon for the device to update and click the **Edit** icon or select *File>Edit*.



The display shows:

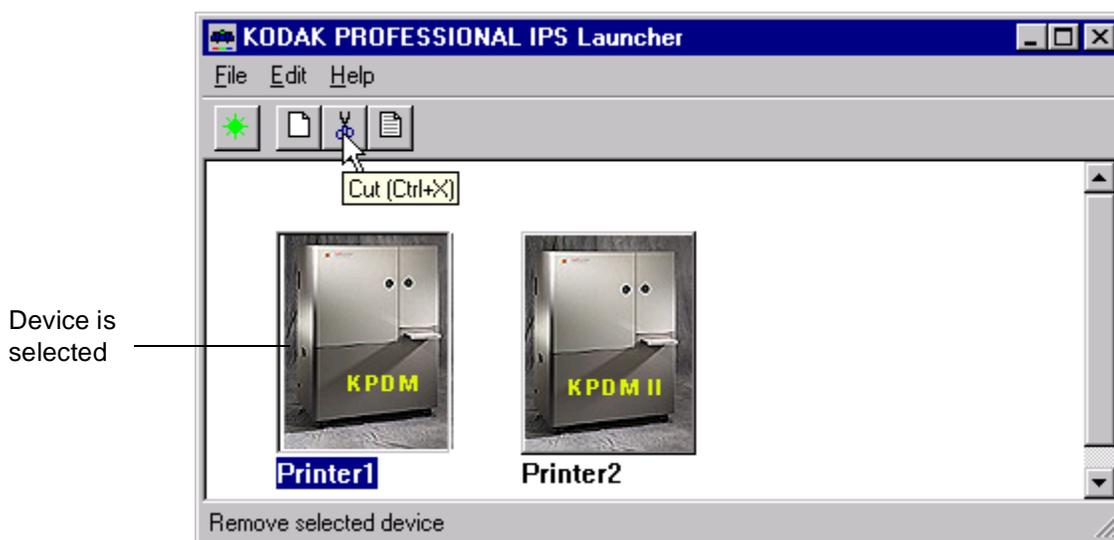


2. Edit the Device Name, SCSI Host Adapter, or SCSI ID.
3. Click **OK** to save the changes (or click **Cancel** to ignore the changes and go to the IPS Launcher window).

Deleting a Device

To delete a device and all files associated with the device:

1. On the IPS Launcher window, select the icon for the device you want to delete and click the **Cut** icon or select *Edit>Cut*.



The display shows:

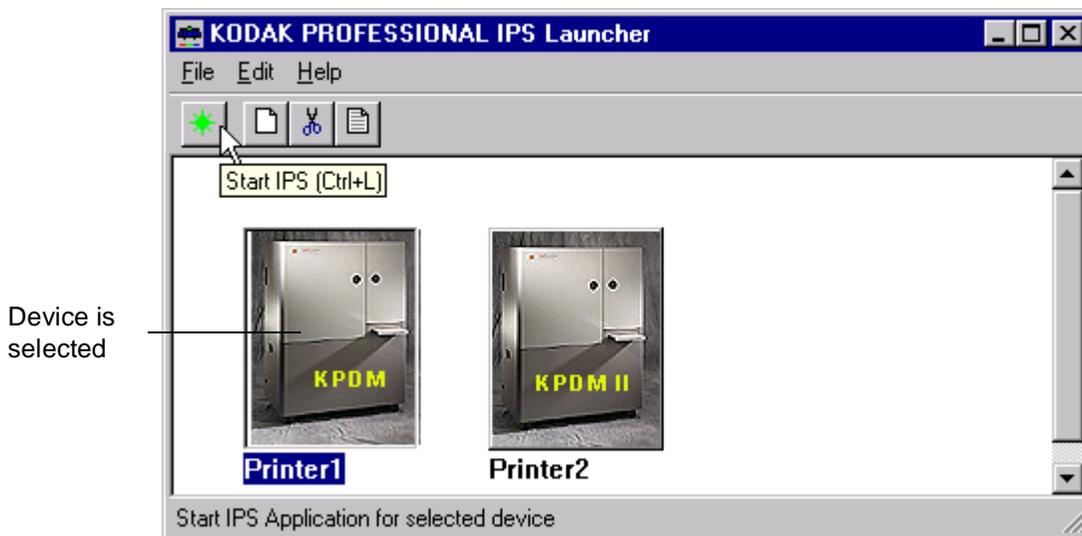


2. Select **Yes** to delete the device and associated files (select **No** to go to the IPS Launcher window).

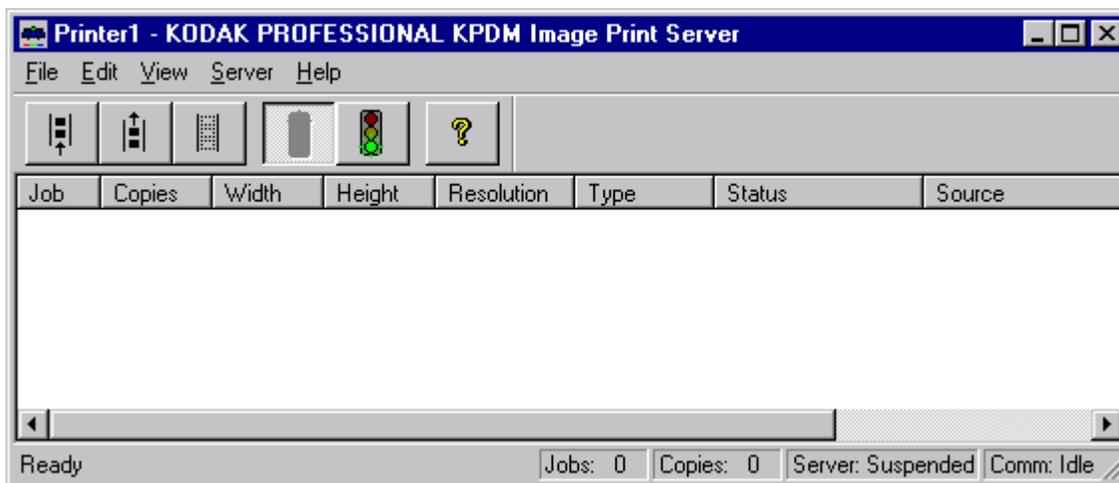
Printing Images

To print images, you:

- select the device from which to print
 - start the IPS application for the selected device
 - set the Source Directory preferences for the selected device, if not already done
 - place images in the print queue
 - wait for the images to print
1. Select the device from which to print.
 2. Click the **Start IPS** icon (or double-click the icon for the selected device).



The following main menu appears.



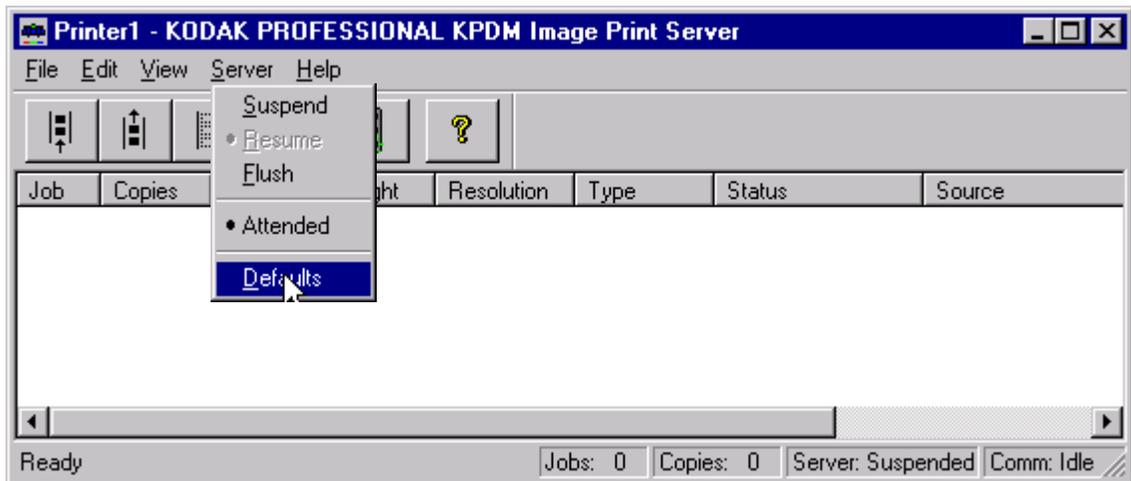
Description of Icons on the Main Menu

The icons and their associated menu items allow you to choose the following options:

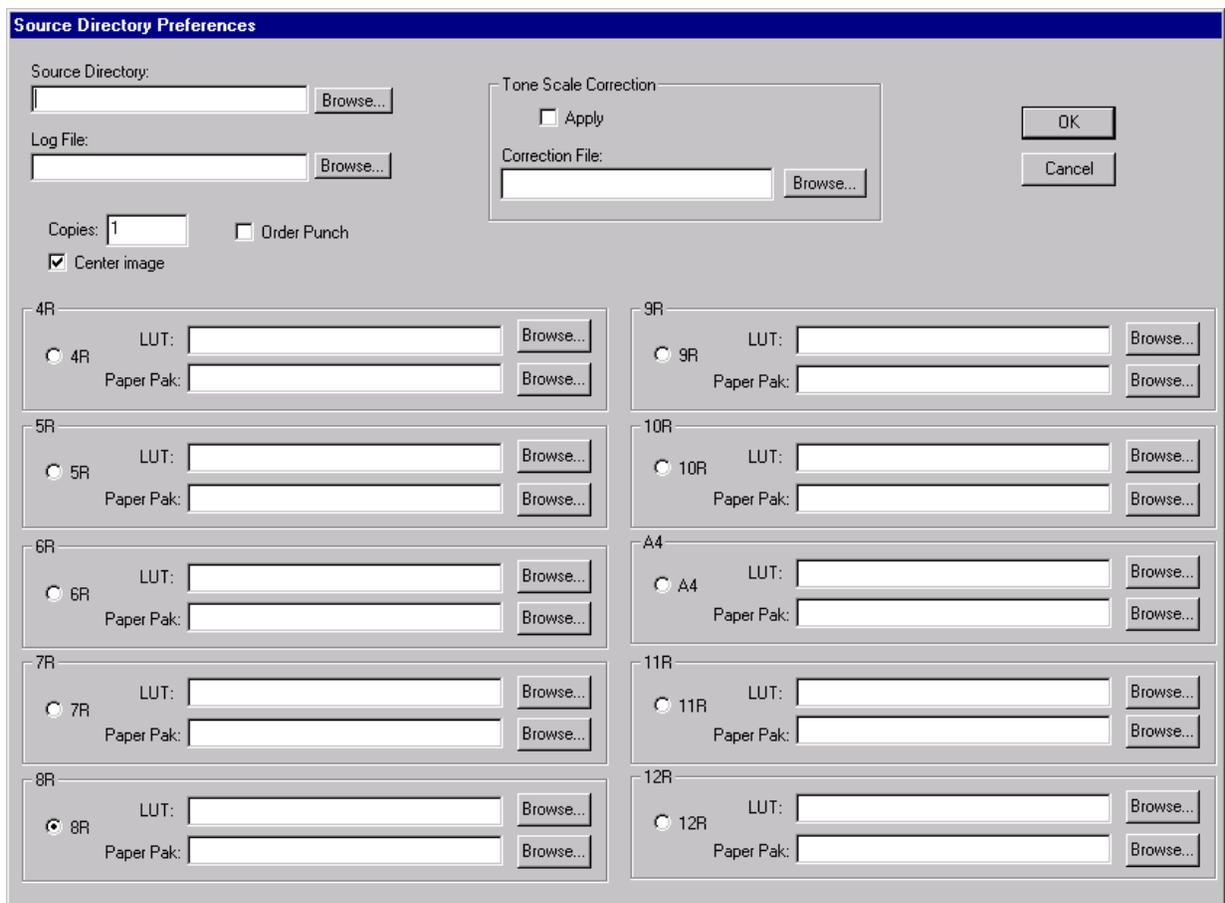
Menu Access	Menu Item	Icon	Description/Function
File	Enqueue		Displays the Enqueue dialog box and allows you to insert a new image into the print queue.
	Dequeue		Allows you to remove the top entry from the print queue.
Server	Suspend		Stops the operation of the application. If an image is processing or going to the printer, the operation on this image will complete before the application suspends.
	Resume		Resumes the operation of the application; Resume is active only when the system is suspended and can only be used if the server defaults were initialized (Source Directory preferences were set).
	Flush		Allows you to delete all entries from the print queue.
Help	About		Displays the About box that includes version information about the <i>Kodak Professional Image Print Server</i> .

Setting the Source Directory Preferences for a Device

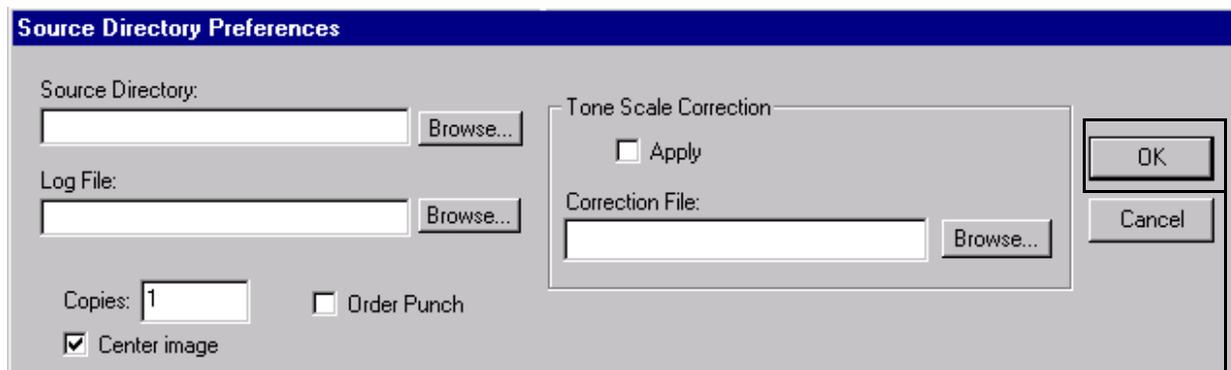
1. Select *Server>Defaults* from the IPS main menu.



The Source Directory Preferences dialog box appears.



Below is the top portion of the Source Directory Preferences dialog box.



Select OK only after both the top and bottom portions of this dialog box are complete.

2. Type the **Source Directory** name or click **Browse** to select the Source Directory where the TIFF images will be placed.
3. Type the **Log File** name or click **Browse** to select the Log File where printer error information is to be stored. The log file applies to all devices for the application. To edit the log file information, go to “Editing Log File Information” on page 18.
4. Enter the number of copies to print of each image in the Source Directory. Valid numbers are from 1 through 9999. The default value is 1.
5. If each image is the end of an order, click the box next to **Order Punch**.
6. To center each image on the paper, leave the **Center image** box checked. If you do not want to center images, click to “uncheck” the box.
To ensure that the complete image file is exposed on the paper, Kodak recommends that you always check “Center image.”
7. If the Digital Multiprinter was calibrated using *Density*, you may apply Tone Scale Correction with the **g22_fullrange.txt** file in the LUTs folder supplied with the IPS application.
To apply tone scale correction:
 - a. Type the path and name of the **Correction File** or click **Browse** to select the Correction File to be applied to each image.
 - b. Click the box next to **Apply** to apply the designated Correction File to each image.

Below is a representative area of the bottom of the Source Directory Preferences dialog box.

The screenshot shows a dialog box titled "Source Directory Preferences" with a blue header. It contains five vertically stacked sections, each for a magnification level: 4R, 5R, 6R, 7R, and 8R. Each section has a radio button next to the magnification label. The 8R radio button is selected. Each section also has two text input fields: "LUT:" and "Paper Pak:", each followed by a "Browse..." button.

8. For any one of the magnifications 4R, 5R, 6R, 7R, 8R, 9R, 10R, A4, 11R, or 12R:
 - a. Click in the circle next to the magnification at which you want the images to be printed (8R is the default).
 - b. Type the **LUT** path and file name or click **Browse** to select the LUT file associated with the selected magnification.
 - c. Type the **Paper Pak** path and file name or click **Browse** to select the Paper Pak file associated with the selected magnification.

NOTE: After you select the LUT and Paper Pak for a magnification, the IPS application saves that information.

The LUT and Paper Pak information must be entered for the *selected* magnification. However, before you start the IPS application, you may want to select all the LUTs and Paper Paks you will use. Then, if you change the magnification, you will not need to enter the LUT and Paper Pak information.

9. When the dialog box is complete, click **OK** to close the dialog box and save the specified values (or click **Cancel** to close the dialog box without saving the values).

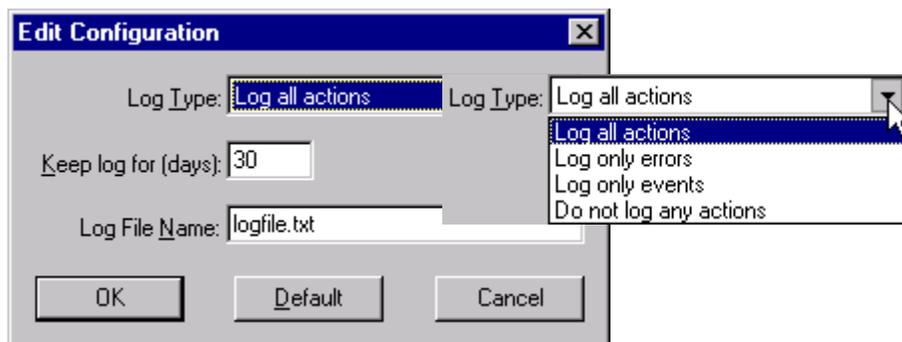
Editing Log File Information

Do this only when you need to edit information about the error log file.

1. With no device selected, select *File>Edit* from the IPS Launcher window.



The Edit Configuration dialog box appears.



2. Make changes as needed to either the Log Type, number of days to keep log, or the Log File Name.
3. Click **OK** to accept changes (or click **Cancel** to cancel changes).

Placing Images in the Print Queue

You can submit images by:

- placing images in the “hot folder” (the **Source Directory** in the Source Directory Preferences dialog box)
- using the enqueue function on the application menu bar

Using Source Directory Insertion

When you place images in the **Source Directory**, they are automatically placed in the print queue. The images are sorted by the date and time they were placed in the **Source Directory** and printed in that order.

IMPORTANT: After the image goes to the printer, the file is removed from the **Source Directory**.

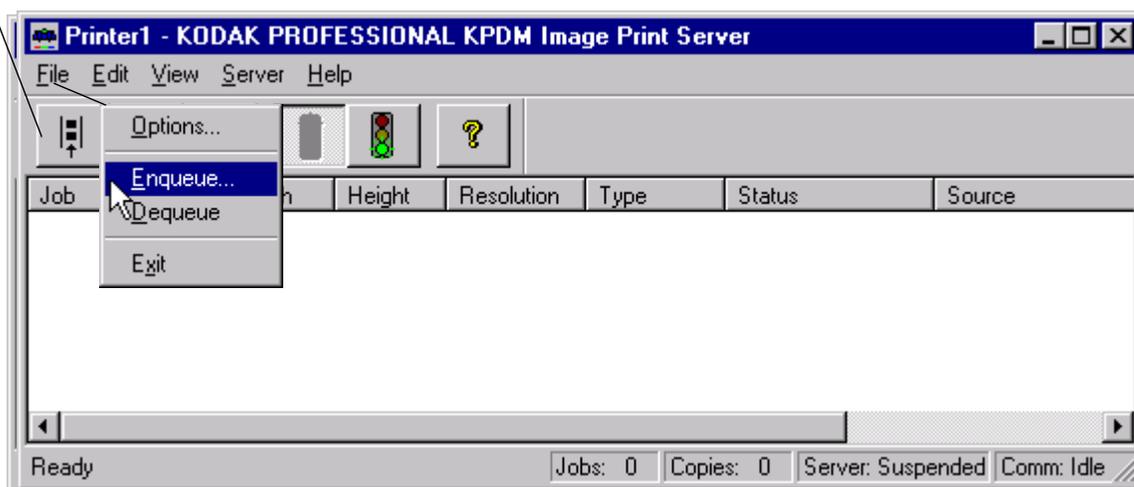
NOTE: The properties of the images placed in the **Source Directory** are taken from the Source Directory Preferences dialog box.

Using the Enqueue Function

To enqueue a single image from the menu bar:

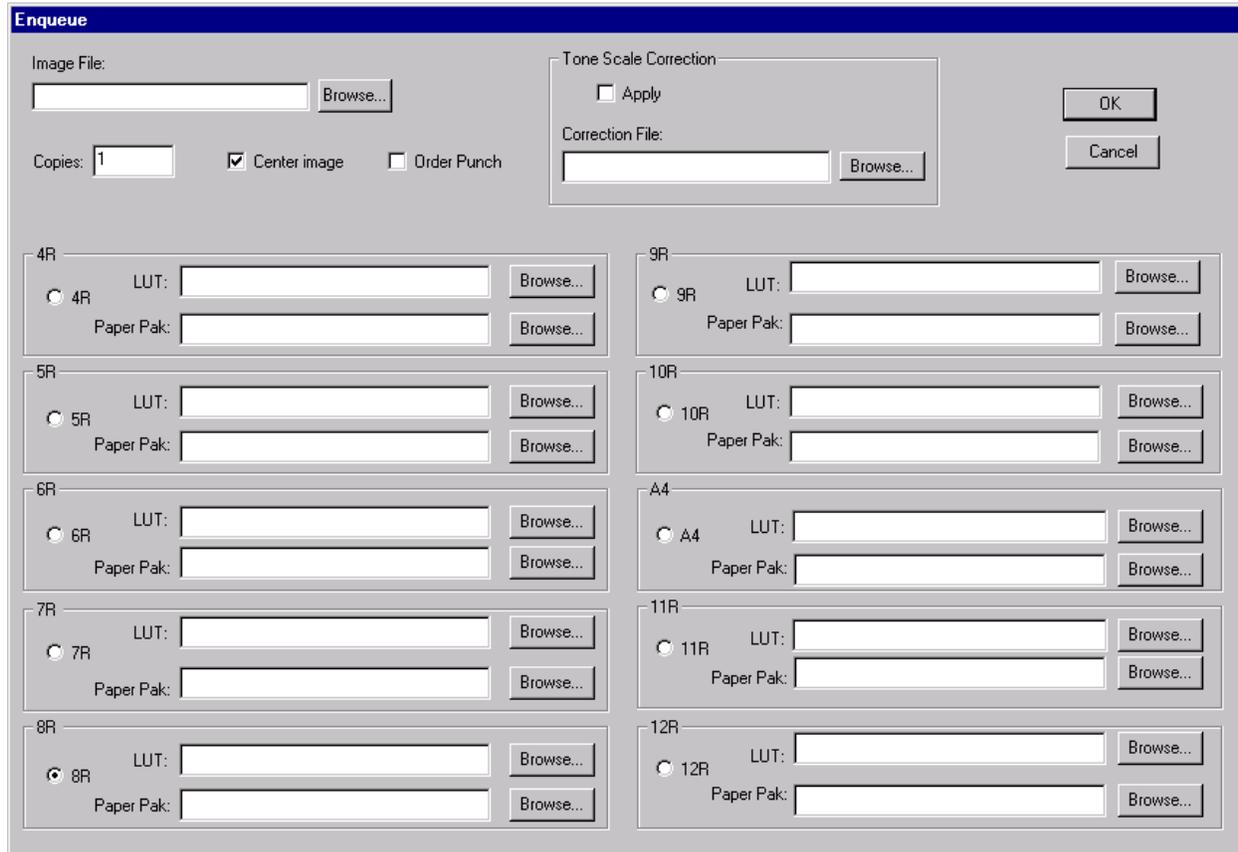
1. Click the **Enqueue** icon or select *File>Enqueue*.

Enqueue Icon

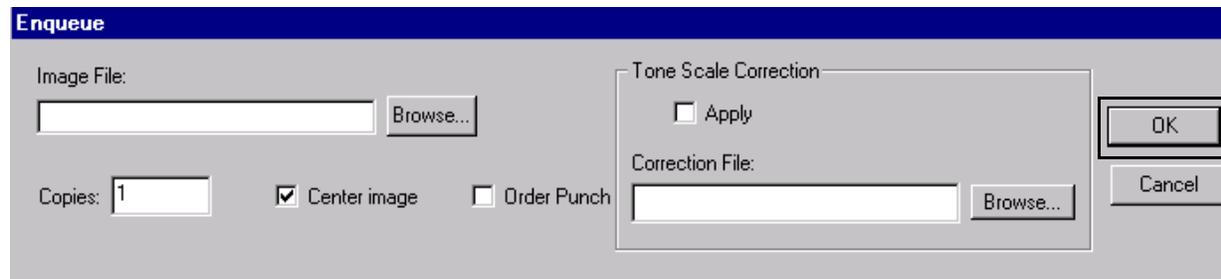


The Enqueue dialog box appears.

NOTE: The Enqueue and the Source Directory Preferences dialog boxes look almost identical, but they affect different image files. The information in each dialog is independent of the other.



Below is the top portion of the Enqueue dialog box.



Select OK only after both the top and bottom portions of this dialog box are complete.

2. Type the **Image File** path and name or click **Browse** to select the TIFF Image File to be printed.
3. Enter the number of copies of the image to print. Valid numbers are from 1 through 9999. The default value is 1.
4. If the image is the end of an order, click the box next to **Order Punch**.

5. To center the image on the paper, leave the **Center image** box checked. If you do not want to center the image, click to “uncheck” the box.

To ensure that the complete image file is exposed on the paper, Kodak recommends that you always check “Center image.”

6. If the Digital Multiprinter was calibrated using *Density*, you may apply Tone Scale Correction with the **g22_fullrange.txt** file in the LUTs folder supplied with the IPS application.

To apply tone scale correction:

- a. Type the path and file name of the **Correction File** or click **Browse** to select the Correction File to be applied to each image.
- b. Click the box next to **Apply** to apply the designated Correction File to each image.

Below is a representative area of the bottom of the Enqueue dialog box.

The screenshot shows a dialog box titled "Enqueue" with a blue header. It contains five vertically stacked sections, each for a different magnification: 4R, 5R, 6R, 7R, and 8R. Each section has a radio button to its left, with the 8R radio button being selected. To the right of the radio button is a "LUT:" label followed by a text input field and a "Browse..." button. Below that is a "Paper Pak:" label followed by another text input field and a "Browse..." button.

7. For any one of the magnifications 4R, 5R, 6R, 7R, 8R, 9R, 10R, A4, 11R, or 12R:
 - a. Click in the circle next to the magnification at which you want the image to be printed (8R is the default).
 - b. Type the **LUT** file name or click **Browse** to select the LUT file associated with the selected magnification.
 - c. Type the **Paper Pak** file name or click **Browse** to select the Paper Pak file associated with the selected magnification.

NOTE: After you select the LUT and Paper Pak for a magnification, the IPS application saves that information.

The LUT and Paper Pak information must be entered for the *selected* magnification. However, before you start the IPS application, you may want to select all the LUTs and Paper Paks you will use. Then, if you change the magnification, you will not need to enter the LUT and Paper Pak information.

8. When the dialog box is complete, click **OK** to close the dialog box and save the specified values (or click **Cancel** to close the dialog box without saving the values).

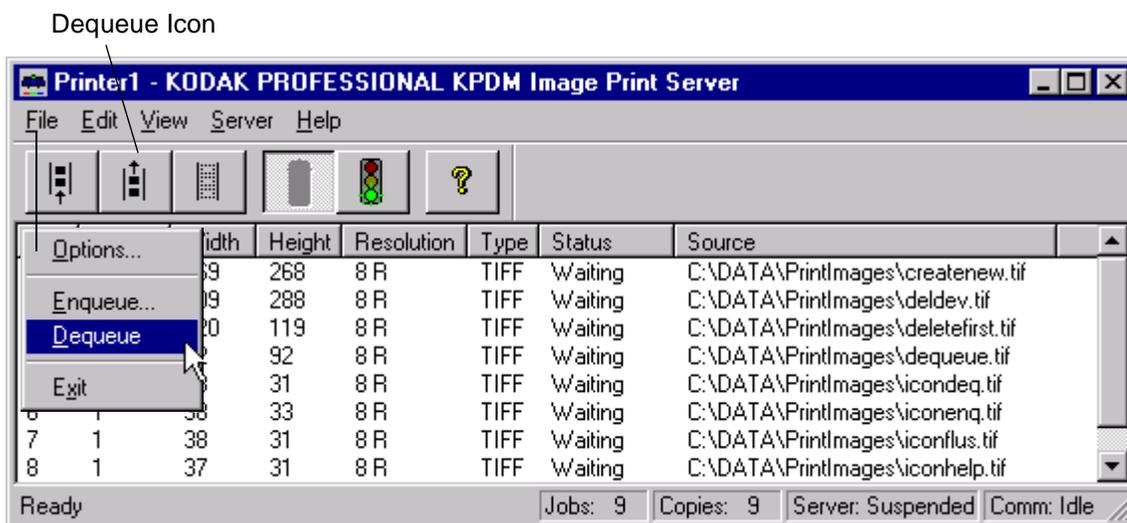
NOTES: You cannot enqueue a file that is in process. You must wait until the file is completely processed before you can access the file again.

Images placed in the queue by using the Enqueue function are not removed from their original directory after they are sent to the printer.

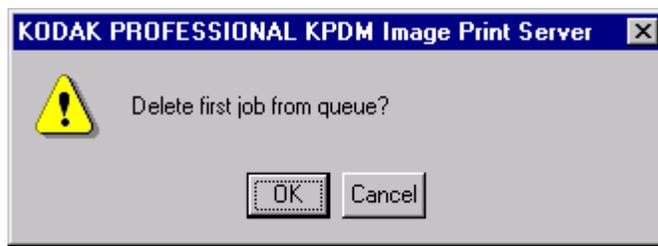
Removing Images from the Print Queue

Removing the Top Image from the Queue

1. Click the **Dequeue** icon or select *File>Dequeue*.



A dialog box appears.

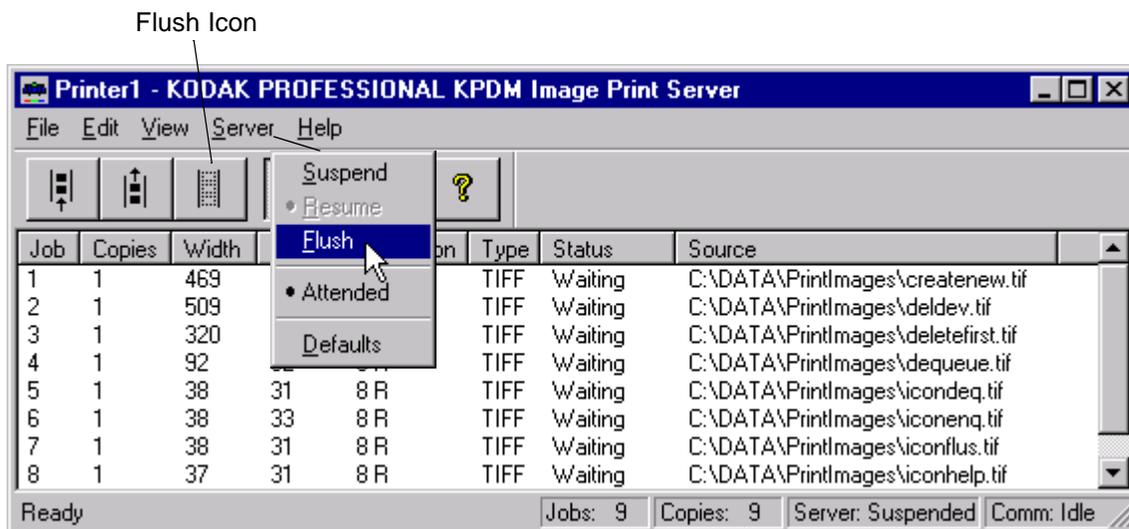


2. Click **OK** to delete the first job (or click **Cancel** to cancel the deletion).
The job at the top of the list is deleted from the print queue.

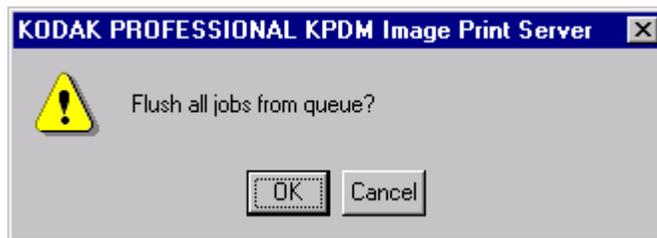
NOTE: Before you can delete an image from the print queue, the application must be suspended and all jobs in progress must be complete.

Removing All Images from the Print Queue

1. Click the Flush icon or select *Server>Flush*.



A dialog box appears.



2. Click **OK** to delete all jobs (or click **Cancel** to cancel the deletion).
All jobs are deleted from the print queue.

NOTE: Before you can delete an image from the print queue, the application must be suspended and all jobs in progress must be complete.

Suspending and Resuming the IPS Application

When the IPS application starts, it looks for Source Directory Preferences.

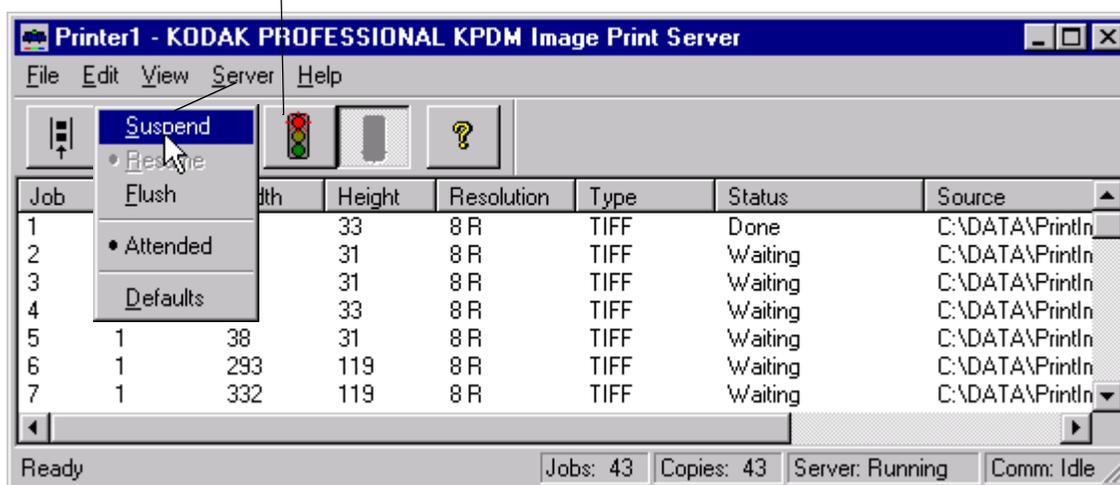
If these preferences are initialized, the application will start in the “running” state—as if the **Resume** icon was selected.

If the preferences are not initialized, the application is in the “suspended” state—as if the **Suspend** icon was selected.

Suspending the IPS Application

To suspend the IPS application, select the **Suspend** icon or select *Server>Suspend*.

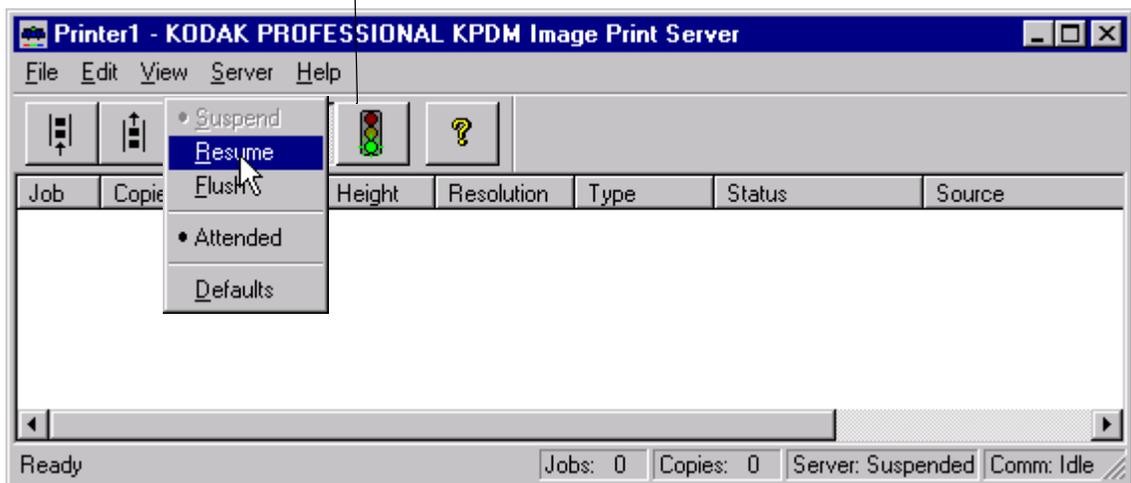
Suspend Icon



Resuming the IPS Application after a Suspension

To resume the IPS application, select the **Resume** icon or select *Server>Resume*.

Resume Icon



If the preferences were not initialized, the dialog box below appears.



After you select **OK**, the Source Directory Preferences dialog box appears and the application remains suspended until the preferences are initialized. See "Setting the Source Directory Preferences for a Device" on page 15.

Failed Jobs

When an image fails to go to the printer for any reason, an appropriate error message is appended to the log. The log file is specified in the Source Directory Preferences dialog box.

Images in the **Source Directory** (hot folder) are moved to the **FailedJobs Directory**. The **FailedJobs Directory** is created as a subdirectory within the **Source Directory** when the first failure occurs.

Images that fail and were not inserted through the **Source Directory** (that is, they were inserted with the **Enqueue** icon or menu item) are not moved to the **FailedJobs Directory**.

Attended and Unattended Modes

The IPS application allows you to operate in the Attended or Unattended mode.

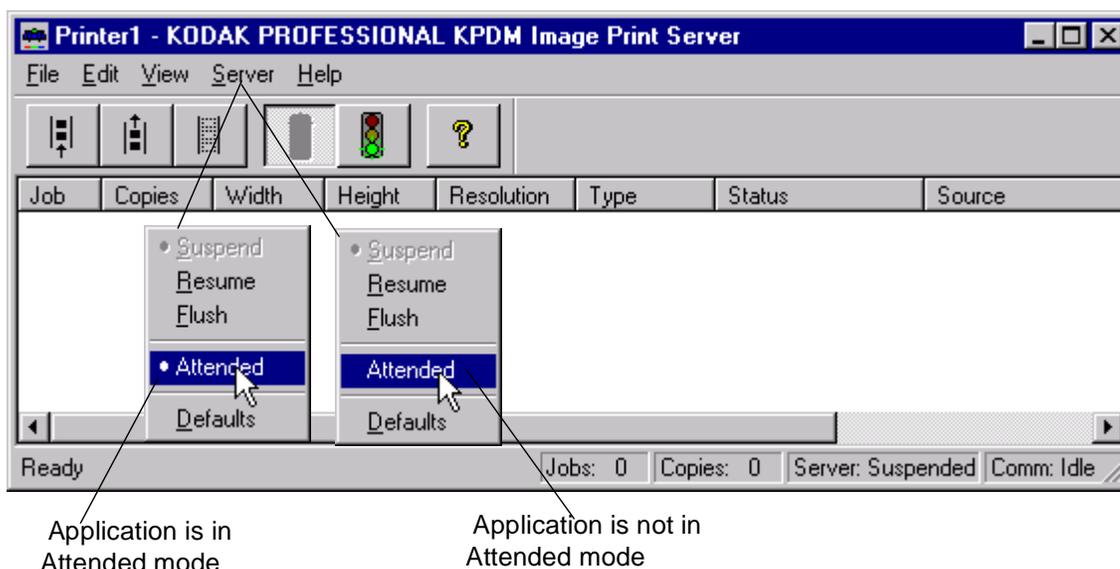
In Attended mode, all errors are displayed in dialog boxes. The IPS application is halted until you respond to the message.

In Unattended mode, only errors that require user intervention are displayed in dialog boxes. Errors that do not require user intervention, such as an invalid file format, are logged in the log file.

In both Attended and Unattended modes, all errors are written to the log file.

NOTE: If a communication error occurs while the file is going to the printer, the image may not be printed. In addition, jobs that fail to print from the Source Directory (hot folder) are copied to the failed jobs directory.

To determine if the IPS application is running in Attended mode, pull down the *Server* menu.



If the bullet appears next to Attended, the application is running in attended mode.

- To disable attended mode, select the *Server>Attended* menu item.

If no bullet appears next to Attended, the application is not running in attended mode.

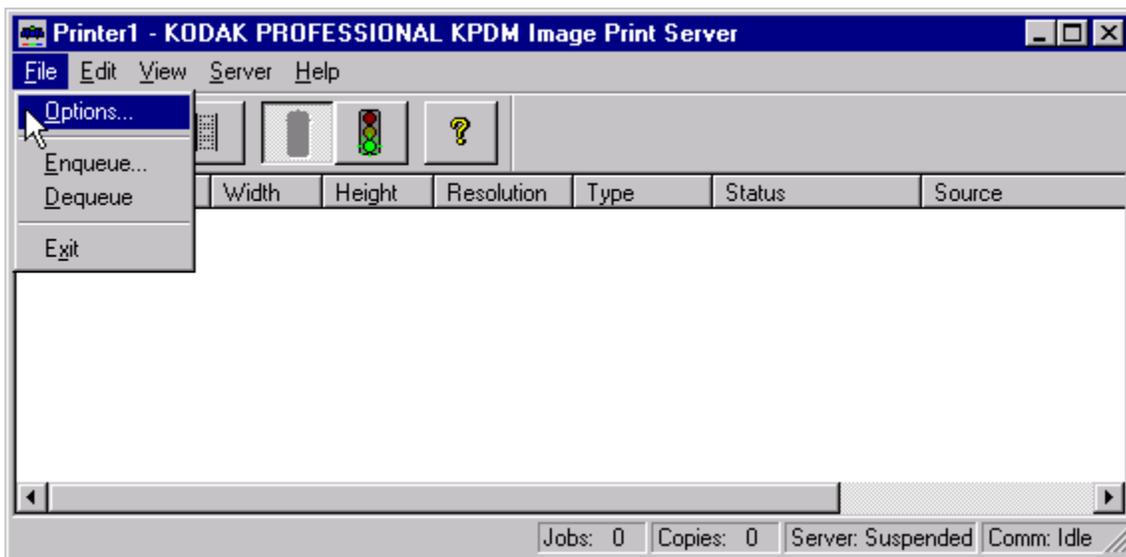
- To enable attended mode, select the *Server>Attended* menu item.

Changing the Number of Image Buffers

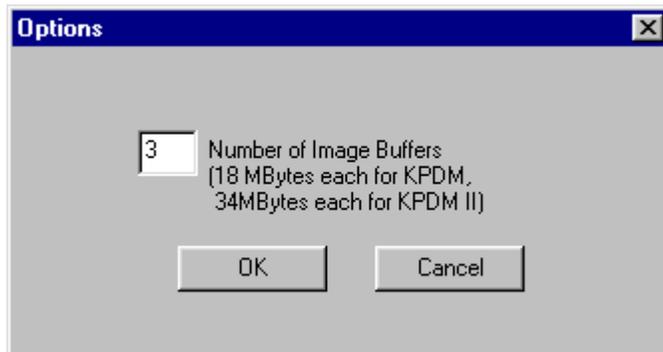
To improve throughput of the application, you may select the number of image buffers the application uses. To maximize, select the greatest number of buffers for which the computer has available RAM (each buffer requires 18 megabytes RAM for KPDM or 34 megabytes RAM for KPDM II).

To edit the number of buffers for holding images:

1. Select *File>Options* from the KPDM Image Print Server main menu.



2. The Options dialog box appears.



3. Change the value as needed (the value can be from 1 to 5).
4. Select **OK**.
A dialog appears stating that the application must be restarted if the number of image buffers is changed.
5. Exit and restart the application.

File Format Details

The data portion of the TIFF file must contain RGB byte interleaved data.

Supported Tags

The Image Print Server supports the TIFF tags listed below. The range of valid values for TIFF tags 256, 257, 258, 273, 278 and 279 are image dependent and are indicated by a "*" in the Valid Range column. If these values are incorrect, an error will occur when the application is reading the image data and an appropriate error message will be placed in the log file.

<i>TIFF Tag ID</i>	<i>Name</i>	<i>Valid Range</i>
256	Image Width	*
257	Image Length	*
258	Bits per Sample	*
259	Compression	1
262	Photometric Interpretation	2
273	Strip Offset	*
277	Samples per Pixel	3
278	Rows per Strip	*
279	Strip Byte Count	*
284	Planar Configuration	1

*indicates an image-dependent value

LZW Compression

The IPS application does not support LZW compression.

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