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## **Defaults Button**

Choose the Defaults button to return all selections in the Options dialog box to their default values.

# Density

**NOTE:** This option is available only with the HP LaserJet 4L/4ML printers.

Print density is a measure of the darkness of print on the page. Use the Density option to adjust the darkness of your printed images.

## Changing Density

To make your printed images darker, select a higher number. To make your printed images lighter, select a lower number.

**NOTE:** If you change your Density setting, you may want to adjust your RET setting. Adjusting print density will affect RET.

## Related Topic:

[RET](#)

## Duplex Printing

If you have an HP LaserJet 4Si/4Si MX printer with the duplex accessory installed you can use your printer to print on both sides of the paper. Double-sided printing is called duplex printing.

### Duplex Printing

If you would like to print on both sides of the paper, you can select either of two options:

#### Long Edge Binding:

Long edge binding in portrait orientation is used for conventional layouts in book binding. Long-edge binding in landscape orientation is often used in accounting and spreadsheet applications because pages can be flipped through, as on a clipboard.

#### Short Edge Binding:

Short edge binding in portrait orientation is used for calendar-like books. Short edge binding in landscape orientation is a variation of conventional book layouts.

### Single-sided Printing

If you would like your printer to print on only one side of the page, select None in the Duplex Printing box.

## EconoMode

**NOTE:** This option is available only with the HP LaserJet 4L/4ML printers.

Use the EconoMode option to reduce the amount of toner that your printer uses.

EconoMode causes the printer to use up to 60 percent less toner on each page. As a result, pages printed with EconoMode turned ON will be much lighter than pages printed with EconoMode turned OFF. This feature can be used as a draft mode to extend the life of your toner cartridge.

**NOTE:** The EconoMode option will not affect the speed of your printer. EconoMode will not result in performance gains or losses.

### To Use the EconoMode Option:

If the EconoMode selection is set at "Printer Default," whatever the printer was set at using the printer's front panel will be in effect.

Turn EconoMode ON by selecting the On radio button.

Turn EconoMode OFF by selecting the Off radio button.

## Graphics Mode

Use the Graphics Mode setting to tell Windows how to send graphic information to the printer. HP LaserJet printers will print graphics as either raster images or as HP-GL/2 graphic images. All graphics can be printed as raster images, however some geometric shapes or patterns print faster if they are printed as HP-GL/2 graphics.

**To Change your Graphics Mode, select one of the following options in the Graphics Mode box:**

### **Raster**

When you select the Raster setting, Windows will send all graphics to the printer as raster images.

### **HP-GL/2**

If you select the HP-GL/2 setting, Windows will send graphics to the printer as a mixture of HP-GL/2 and raster images.

**NOTE: Not all graphic images can print using the HP-GL/2 and Raster setting. If you are using the HP-GL/2 and Raster setting, and your graphic images do not print like they appear on your computer screen or if your printer displays a print overrun error (error 21), select the Raster setting and reprint your graphic.**

# Graphics Quality

Use the Graphics Quality box to change the resolution of graphic images.

**NOTE: The Graphics Quality setting affects the resolution of graphic images only, not text. To change the resolution of text as well as graphic images, use the Printer Resolution box in the Setup dialog box.**

You can select one of three Graphics quality options. High quality is equal to the highest resolution that your printer prints at the current Printer Resolution. Medium quality is half that resolution and Low quality is one fourth that resolution.

High resolution will produce finer, higher quality graphics. The graphics resolution decreases as the Graphics Quality setting decreases. For example, if you have set your Printer Resolution setting to 600 dpi for the HP LaserJet 4 printer, the High setting will print text and graphics at 600 dpi, Medium will print text and graphics at 300 dpi, and Low will print them at 150 dpi.

## Graphics Quality Problems

### Printed Graphic Looks Different than Computer Graphic

Not all graphic images can print using the HP-GL/2 setting in the Graphics Mode box. If your printed image looks different than the image on the computer screen, change your Graphics Mode setting from HP-GL/2 to Raster.

### Related Topic:

[Graphics Mode](#)

### Out of Memory printer error (Error 20)

Additional printer memory may be required to print full-page graphic images at higher Graphics Quality settings. If the printer does not print the entire graphic image on one page and the printer displays an out of memory error (Error 20) the printer has run out of memory.

### To avoid this error:

- \* choose a lower setting in the Graphics Quality box.
- \* try changing the setting in the Graphics Mode box (if HP-GL/2, change to Raster or if Raster, change to HP-GL/2).
- \* install more memory in your printer. (For more information about additional printer memory, contact your authorized Hewlett-Packard dealer).

### Print Overrun printer error (Error 21)

The Print Overrun message indicates that the data (rules, dense text, raster graphics, or vector graphics)

sent to your printer was too complex.

**To avoid this error:**

- \* make your page less complex by reducing the amount of dense text or the number of rules or graphic images.
- \* choose the Raster setting in the Graphics Mode box.



## Halftoning

Halftone refers to a type of pattern that is applied to printed images. By using combinations of black dots, these patterns produce a gray appearance on the printed page.

The best way to choose a Halftoning setting for your graphic image is to experiment. Print a graphic image at each setting and choose the one you like best.

**NOTE: In order to be able to use Halftoning options, you must select High in the Graphics Quality box.**

To help you decide which selection to choose, the three settings are described here:

### Photographic Images

Choose this setting for printed images that you want to have smooth, realistic and photographic appearance. The Photographic Images setting provides soft contrasts between various shades of gray. This setting also works well for images originally designed with color. At 300 dots per inch, the PCL 5 printer driver uses an 8 pixel-by-8 pixel "clustered dot" method to emulate 60 different levels of gray at this setting. At 600 dots per inch, 16 pixel-by-16 pixel give 120 levels of gray.

### Line Art Images

**NOTE: This option is not available if you have selected 600 dots per inch resolution in the Printer Resolution box in the Setup dialog box. If you have selected Line Art Images and you change your Printer Resolution to 300 dots per inch resolution, this options will automatically change to the Photographic Images setting.**

Choose this setting for graphic images with intricate lines and fine detail, like clip art graphics. The Line Art Images setting provides solid lines and sharp contrasts between shaded areas. The PCL 5 Printer Driver uses 32 different 8 pixel-by-8 pixel dispersed dot patterns to produce gray tones.

### HP ScanJet Images

Choose this setting if your graphic images were originally scanned in through an HP ScanJet. The HP ScanJet Images setting is specially tuned to provide exceptional quality and clarity to printed images originally scanned with an HP ScanJet. The PCL 5 Printer Driver uses a variation of the pixel-by-pixel clustered dot method used in the Photographic Images setting. This method also produces 60 different levels of gray at 300 dpi or 120 at 600 dpi.

## **Image Adapt**

Your printer uses Image Adapt to print complex graphic images with limited printer memory. If your graphic image requires more memory to print than you have available in your printer, the printer will use Image Adapt to make very small modifications to the image to allow it to fit into the available printer memory.

**To Change your Image Adapt setting, select one of the following options in the Image Adapt box:**

### **Auto**

Use the Auto setting to let the printer use Image Adapt when it senses that there is not enough memory available to print a graphic image.

### **On**

Use the On setting if you want the printer to always use Image Adapt when memory is low.

### **Off**

Use the Off setting if you do not want the printer to use Image Adapt.

## Output Bin

If you have an HP LaserJet 4Si printer, you can use the Output Bin box to tell your printer to send printed pages to the upper (top) output bin or the Lower (rear) output bin.

### Upper

The Upper output bin is the default setting. Use the Upper output bin setting when you want pages to exit the printer face down in the bin on top of your printer. Pages sent to the Upper output bin will stack in the order that they are printed.

### Lower:

Use the Lower output bin setting when you want pages to exit the printer face up in the bin in the rear of your printer. Pages sent to the Lower output bin will stack in reverse order. (The last page sent to the printer will be on top, the first page will be on the bottom.)

**NOTE: If you select the Lower output bin, you must physically prepare your printer by opening the door in the rear of your printer and extending the lower output bin.**

## Print TrueType as Graphics

Select this option to send your TrueType images to the printer as graphics. This option is useful if you want to print graphic images over text such that only the exposed portion of a character is printed.

**NOTE: This option is only available if you have selected the Raster setting in the Graphics Mode box and if you have selected the High setting in the Graphics Quality box.**

## RET (Resolution Enhancement Technology)

RET (Resolution Enhancement Technology) refines the print quality of characters and graphics by smoothing out jagged edges which can occur around angles and curves in the print image.

**NOTE:** The choices that appear in the RET box depend on the printer you are using.

### To Change the RET Setting:

#### For the HP LaserJet 4/4M printers

The RET option for the HP LaserJet 4/4M printer has five settings: Printer Default, Off, Light, Medium, and Dark. The default setting for the HP LaserJet 4/4M printer is Printer Default. This selection will use the RET selection that is made on your front panel. If you choose Off, Light, Medium, or Dark, this driver will override your printer default setting.

The effects of different RET settings can be seen by printing out a printer self test. Look for the block on the self test print out that is label RET. In general, set RET so that the RET block on the self test page is uniform with no vertical lines or with vertical lines that are dark.

#### For the HP LaserJet 4L/4ML printers

The RET option for the HP LaserJet 4L/4ML printer has four settings: Off, Light, Medium, and Dark. The default setting for the HP LaserJet 4L/4ML printer is Medium. Experiment with the different RET settings to see which one works best for you.

#### For the HP LaserJet 4Si/4Si MX printers

The RET option for the HP LaserJet 4Si/4Si MX printer has three settings: Printer Default, Off, and On. The default setting for the HP LaserJet 4Si/4Si MX printer is Printer Default. This selection will use the RET selection that is made on your front panel. If you choose Off or On this driver will override your printer default setting. Experiment with the different RET settings to see which one works best for you.

### Related Topic:

Density

**HP LaserJet printers can print in portrait or landscape orientation.**

Select portrait orientation if you are printing a page that is taller than it is wide when you view the text upright.

Select landscape orientation if you are printing a page that is wider than it is tall when you view the text upright.

Refer to your printer user's manual or operator's guide for instructions about how to print a printer self test.

