



Tech Info Library

LaserWriter: Diablo 630 Emulation Mode (10/94)

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TOPIC -----

I have a LaserWriter that I want to use in Diablo 630 emulation mode. How do I set this up, what are some of the issues I will encounter, and what are some of the specifications of Diablo 630 emulation mode?

DISCUSSION -----

To select Diablo 630 emulation mode for the LaserWriter, set the switch on the rear connector panel to Special and use standard RS-232C cabling. You may use either a DB-9 or a DB-25 connector for data input. The data transfer rate is 9600 Baud with Xon/Xoff protocol and no parity: the LaserWriter ignores the parity bit. Once data has stopped arriving, all Diablo printer settings (margins, tabs, spacing, and so on) remain in effect until a printer reset occurs.

It is also possible to switch a LaserWriter to Diablo 630 emulation mode from PostScript. Below is a PostScript routine that puts the LaserWriter in Diablo 630 emulation mode for the remainder of the job (until ^D is received). This is the same Diablo emulation that can be selected with the side-panel switch setting, except for one limitation: when Diablo mode is selected from software, the serial port remains sensitive to the seven control characters ^C^D^T^S^Q and CR,LF. Diablo 630 output uses some of these codes, so the potential for problems is fairly high.

%!
%PostScript code to call Diablo emulator from AppleTalk or serial input stream
% This code should go on the front of a Diablo file.

```
/doDiablo {/printpageflag false def
           {statusdict begin
            62 eescratch fontname
            61 eescratch dup 0 eq {pop 1} if fontname
            60 eescratch
            59 eescratch
                                     /diablo load
           }
           end
           exec
```

```

    } stopped pop
  printpageflag {showpage} if
    } def

/fontname {$idleTimeDict begin
  dup ROMnames length ge {pop 0} if
  ROMnames exch get
  end
    } def

doDiablo

```

In Diablo 630 Emulation mode, the LaserWriter prints a page under two conditions:

- when it reaches the end of a page, or
- when it receives a form feed

The LaserWriter cannot detect the end of a document; it simply assumes that the document has come to an end when data stops arriving.

If the last page of a document isn't full and doesn't end with a form feed, the printer doesn't print it immediately; instead, it waits for a printer timeout, which occurs:

- As soon as the next document arrives, or
- After 30 seconds, if no document arrives before that.

You can avoid this delay by being careful to include a form feed at the end of your document's last page.

The Diablo emulator has some limitations. For instance, the emulator will only print in portrait mode. If you want to print a document in landscape mode, you must use PostScript.

In the LaserWriter and LaserWriter Plus, PostScript can change parameters controlling functions of the Diablo 630 emulation mode. These Persistent Parameters can be found on Page 302-303 of Addison Wesley's Postscript Language Reference Manual (Red Cover). The table on Page 302 gives an index number for each parameter and the default setting at that index. For example, index 62 is the 'normal' font location used in Diablo mode and index 61 is the 'bold' font location. The default value for index 62 is 0 and the default value for index 61 is 1, selecting Courier for the 'normal' font and Courier-Bold for the 'bold' font.

Here is a sample program to change one of these Persistent Parameters:

```

serverdict begin 0 exitserver
statusdict begin
62 4 seteescratch

```

This program changes the definition of the 'normal' font used in Diablo 630 emulation mode from Courier to Times-Roman by writing the value shown, the second number, into the EEROM. Index 62 is the 'normal' font location and the

second number is the font selection number taken from the following table:

- 0 Courier
- 1 Courier-Bold
- 2 Courier-Qblique
- 3 Courier-BoldQblique
- 4 Times-Roman
- 5 Times-Bold
- 6 Times-Italic
- 7 Times-BoldItalic
- 8 Helvetica
- 9 Helvetica-Bold
- 10 Helvetica-Qblique
- 11 Helvetica-BoldQblique
- 12 Symbol
- 13 AvanteGarde-Book
- 14 AvanteGarde-BookOblique
- 15 AvanteGarde-Demi
- 16 AvanteGarde-DemiOblique
- 17 Bookman-Demi
- 18 Bookman-DemiItalic
- 19 Bookman-Light
- 20 Bookman-LightItalic
- 21 Helvetica-Narrow
- 22 Helvetica-Narrow-Bold
- 23 Helvetica-Narrow-BoldOblique
- 24 Helvetica-Narrow-Oblique
- 25 NewCenturySchlbk-Roman
- 26 NewCenturySchlbk-Bold
- 27 NewCenturySchlbk-Italic
- 28 NewCenturySchlbk-BoldItalic
- 29 Palatino-Roman
- 30 Palatino-Bold
- 31 Palatino-Italic
- 32 Palatino-BoldItalic
- 33 ZapfChancery-MediumItalic
- 34 ZapfDingbats

Given the limited write capability of any given location in the EEROM (approx. 10,000 writes), this program should be used only to change parameters that need to be changed infrequently. Beware that some fonts don't work in some situations, for example, assigning the Symbol font as the default font.

DIABLO 630 Control Codes

Characters Per Inch:

CPI Code

- 4 Escape, Control-Underscore and Control-Underscore
- 5 Escape, Control-Underscore and Control-Y

- 6 Escape, Control-Underscore and Control-U
- 8 Escape, Control-Underscore and Control-P
- 10 Escape, Control-Underscore and Control-M
(From Apple IIe, Apple IIc, or Apple IIGS using an Apple interface and AppleWorks, use Escape, Control-Underscore and Control-M, Escape, D, Escape, D)
- 12 Escape, Control-Underscore and Control-K
- 15 Escape, Control-Underscore, Control-I,
(From Apple IIe, Apple IIc, or Apple IIGS using an Apple interface and AppleWorks, use Control-I, Control-A, Escape, Control-Underscore, Control-I, Control-A, and Control-I.
- 20 Escape, Control-Underscore and Control-G
(Note that these letters at 20 CPI may overlap.)

Lines Per Inch:

LPI Code

- 6 Escape, Control-^, Control-I
(From Apple IIe, Apple IIc, or Apple IIGS using an Apple interface: Control-I, Control-A, Escape, Control-^, Control-I, Control-I, Control-A
- 8 Escape, Control-^, Control-G

Other Commands:

	Code	Begin:	End:
	Escape-	Escape-	
Boldface	O		&
Underline	E		R
Subscript	U		D
Superscript	D		U

Diablo commands NOT supported by the LaserWriter:

- Print suppression
- HY-PLot
- Extended Character Set (ECS)
- The ability to download printwheel information, including program mode
- The ability to override printwheel spacing for proportional fonts, although the proportional spacing offset can be changed
- Page lengths other than 11 inches
- Paper feeder control, such as Manual Feed
- Hammer energy control
- Remote diagnostic
- Backward printing control, though reverse printing is supported

Article Change History:

- 17 Oct 1994 - Reviewed for technical accuracy, revised formatting.
- 14 Dec 1992 - Corrected to correct information about print modes.
- 23 Sep 1992 - Rewritten to combine several articles.

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