Tech Info Library

LaserWriter: Diablo 630 Emulation Mode (10/94)

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Security:       Everyone
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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.


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DIABLO 630 Control Codes
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```
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
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Article Change History:
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23 Sep 1992 - Rewritten to combine several articles.

Support Information Services

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