



Tech Info Library

PostScript: Printing Process (11/93)

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TOPIC -----

Are there any documents that explain the printing process in detail?
What is going on inside the Macintosh from the moment the print
command is initiated until the page comes out of the printer?

Also, does the type of Macintosh one uses plays a big role in printing
speed?

DISCUSSION -----

With regard to the questions on the printing process and varying print
speed from different Macintoshes, there is no single document we are
aware of that goes into detail about this.

To start off, here is a brief outline of the printing process.

1. User selects Print from the File menu.
2. The LaserWriter driver then utilizes QuickDraw bottleneck
procedures to transform the QuickDraw screen image into PostScript
commands.
3. If background printing is selected, then the resulting PostScript
output is spooled to disk, and PrintMonitor is launched in the
background to communicate with the printer.
4. PrintMonitor makes a connection with the printer and sends the
PostScript file to the LaserWriter. PrintMonitor is actually
making calls to the AppleTalk stack to open the PAP connection and
"packetize" the PostScript file.
5. The PostScript interpreter in the LaserWriter then takes the
PostScript input stream and renders the resulting image on paper.

In terms of how different computers affect printing speed, you can refer to the outline above to realize where a faster computer might have an advantage. To summarize, speed gains can be achieved in the overall "processing of data" before it gets to the printer:

- faster conversion from QuickDraw to PostScript.
- faster spooling the PostScript file to disk.
- larger number of processor time-slices to PrintMonitor due to finishing tasks faster.
- faster "packetizing" of the data by the AppleTalk stack.
- if Ethernet is being used, built-in Ethernet (as in the Quadra) will be faster than Nubus Ethernet cards.

Thus, what you are seeing in terms of increased speed with a Macintosh Quadra, as opposed to a Macintosh IICx, is expected.

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