SNA•ps 1.1.1: TrueType Fonts Affect Print Times (5/93)

Article Created: 4 May 1993

TOPIC ---

When I use Noiro TrueType font, and the TrueType INIT in 6.0.7 or System
7.1 with Noiro, my performance when printing a 3270 screen goes up to 1.5
minutes compared to 30 seconds without the TrueType font.   How can this be
overcome?

Configuration

• Software
  - SNA•ps Gateway 1.1.1
  - SNA•ps 1.1.1 client
  - System 6.0.7
  - TrueType INIT
  - Noiro font
  - Printer driver 7.0, 7.2
  - System 7.1

• Hardware
  - Macintosh: IIci, IIsi
  - Printers: IINT, IIf, HP

• Network
  - Client and Gateway on Token Ring
  - Printers on LocalTalk
  - Internet Router running between Token Ring and LocalTalk

Scenario

• When I'm in 3270 emulation, certain screen information from the mainframe
  is required for a print out to the local printers.

• When printing to my printers using 6.0.7 without TrueType, I was very
  happy getting average print times of 30 seconds.

• After some time I noticed the extreme right edge of the screen that's
  printed had 3 characters being "pushed" outside the print boundaries of

the print job. The kerning is different in the print out than screen
information, even though the screen information was accurate, the printed
output was missing characters.

• To correct the kerning effect, I was directed to use the TrueType INIT
  and Noiro TrueType font in 6.0.7. This corrected the kerning problems
  where now all characters were being printed properly, but the time it
  took to get the printouts increased to an unacceptable level of 1.5
  minutes.

• When Background printing is OFF, times are better, but with Background
  printing ON, it takes longer.

DISCUSSION --

Summary
------
1) For fastest printing (TrueType or Bitmapped) print in foreground. This
   is less of an issue when bitmapped fonts are used, more important when
   TrueType fonts are used.

2) The fastest printing is to use the Noiro Bitmapped fonts (delete the
   TrueType Noiro fonts from the system). The printout is very readable.

3) The Noiro TrueType font printing with the TrueType INIT performs the
   slowest especially with background printing on, to a printer without the
   TrueType Scaler in ROM. LocalTalk adds some to the overall print time
   as well.

We printed 3270 screens to try to understand the issues you raised.

SNA•ps 1.1 had a reported bug with screen printing which resulted in
chopping off 2 or 3 characters on the right side of the screen printout.
This problem was especially bad if the Noiro font was not installed.
SNA•ps 1.1 without Noiro defaults to Helvetica, which is not a monospaced
font and the screen print is really spaced poorly and not readable.
Characters are also chopped off on the right side of the screen print.

With SNA•ps 1.1.1 there is NO problem with characters being chopped off at
the right side of the screen print. Also, the Noiro font is used with either
TrueType, or bitmapped fonts when printing. If your customer is printing
screens which are displayed in 12-point font, the screen print will be done
with 12-point and some characters will be lost off the edge of the page,
because 80 characters of 12-point will not fit within the 8-inch maximum print
area. The solution is to use either 9-point font or print landscape. SNA•ps
1.1.1 prints screens perfectly.

The TrueType issue. In any System 7.X computer, IF Noiro is installed all
printing is done using the TrueType Noiro fonts, which are part of the Noiro
font suitcase shipped with SNA•ps 1.1.1. If the Noiro TrueType fonts are
removed from the System 7.0 fonts, then the print screen will use the
bitmapped fonts remaining from the Noiro font suitcase. (The Noiro font

suitcase contains both bitmapped and TrueType fonts.) If the bitmapped font is used, the TrueType features of System 7.X are not invoked. What if Noiro font is NOT installed? The SNA•ps 3270 1.1.1 emulator also has a built-in font called 3270 API font which is bitmapped only. The SNA•ps 3270 1.1.1 emulator will display valid 3270 screens with the numeric zero containing a dot inside (just like Noiro) and it will print a screen shot as well. So there are three distinctly different looking screen printouts (from a font perspective), depending on what is installed.

• NO Noiro   Uses 3270 API Font   Bitmapped NOT TrueType
  (This printout has rather thinly formed characters)

• Only Bitmapped   Uses Noiro Font   Bitmapped NOT TrueType
  (This printout has more fully formed characters)

• Full Noiro   Uses Noiro Font   TrueType
  (This printout has the most crisp, boldest characters, best formed)

With System 6.0.7 or 6.0.8, the same choices are available if the TrueType INIT is installed in the Macintosh.

There are a few things which affect printing speed (in seconds) regardless of the OS version of the Macintosh. Background printing tends to take longer than foreground. TrueType printing may take longer than bitmapped for this screen print job. Also, the printer may not have the TrueType Scaler in ROM and it has to be downloaded to the printer, extending the print job time. While it is generally agreed that the TrueType Scaler only has to be downloaded once per laser printer power-on, if there is a RAM space issue in the printer, subsequent print jobs using fonts which have to be downloaded may push out of the printer RAM the TrueType Scaler and it will have to be downloaded again. The printers you mentioned in your link don't all have the TrueType Scaler in ROM.

• LaserWriter IINT (no ROM based TT Scaler)
• LaserWriter IIf (ROM based TT Scaler)
• HP (no ROM based TT Scaler)

We printed to a LaserWriter IIg (has ROM Scaler) and a LaserWriter IINTX (no Scaler). We tested all three fonts options with SNA•ps 1.1.1 and a System 6.0.8 computer. The printer driver was version 7.0 . Most printing was done in the background but there were some tests done in the foreground to verify that option was faster. The IINTX was on LocalTalk, the IIg was on Ethernet, the Macintosh computer was on Ethernet. In all cases, the screen printout was complete with no characters chopped off since 9 point was used. Here are the results (all times in seconds measured from the OK in the print command until the paper fully dropped to the output tray in the printer):

Key

BM = bitmapped fonts
TT = TrueType fonts
Back = background printing
Fore = foreground printing

Font Used	BM or TT	TT INIT Used	Printer	Time	Back or Fore

• Ethernet for everybody

Font Used	BM or TT	TT INIT Used	Printer	Time	Back or Fore
3270 API	BM	Yes	IIg	60	Back
3270 API	BM	No	IIg	60	Back
Noiro	BM	Yes	IIg	35	Back
Noiro	BM	No	IIg	35	Back
Noiro	BM	Yes	IIg	30	Fore
Noiro	TT	Yes	IIg	60	Back
Noiro	TT	Yes	IIg	30	Fore

• Ethernet Mac, LocalTalk Printer

Font Used	BM or TT	TT INIT Used	Printer	Time	Back or Fore
3270 API	BM	Yes/No	NTX	65	Back
Noiro	BM	Yes/No	NTX	50	Back
Noiro	TT	Yes	NTX	90	Back

We saw times to the extreme you reported. The TrueType process is using a
refined font which prints the best output but appears, based on our
testing, to take longer than bitmapped fonts. We suspect that the download
of the TrueType Noiro font instructions to the printer is taking longer
than just dumping bitmaps of the screen to the printer. This may be an odd
situation since each print job is a part of one full page (one 3270 screen
with 80 X 24 characters, some of which may be blank depending on the
complexity of the welcome screen). If the print job included many pages, I
think the TrueType printout would perform better since the overhead of the
download of the TrueType fonts can be used over many pages.

Keywords: <None>

==

19960215 11:05:19.00

Tech Info Library Article Number: 12044