

Printers

PJ Hutchison

COLLABORATORS

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WRITTEN BY	PJ Hutchison	January 12, 2023	

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Chapter 1

Printers

1.1 Contents

A Guide to Printers on the Amiga

by Peter J Hutchison

Workbench Preferences Drivers

Public Domain Drivers

Commercial Drivers

What do the drivers do?

Printer driver service

Writing Printer Drivers

1.2 Workbench Preference Drivers

From the very first Workbench, printer drivers have been provided for the range of printers that were available at that time. In the 1980s, the majority of printers available were dot-matrix and laser printers.

Installation is very simple:

Workbench 1.3

Run a CLI or Shell and insert the Extras disk. Copy the files in devs/printers to devs:printers on your Workbench disk. Run the Prefs/Printer program and select the printer required and Save the new preferences.

Workbench 2.0

Insert the Extras disk, open the disk icon to show its contents,

from the Windows menu select Show/All Files. Find the Devs/Printers directory and drag the appropriate printer driver files on to your Workbench disk in devs/Printers. Run the prefs Printer program to select the printer and save. Run the PrinterGfx prefs program to change the graphics preferences.

Workbench 3.0

Do the same as WB 2.0 but the printer drivers are located on the Storage disk.

Upto WB3.0, the following printers are supported:

CalComp_ColorMaster	CalComp_ColorMaster2
CanonBJ10	CBM_MPS1000
Diablo_630	EpsonQ
EpsonX	EpsonXOld
Howtek_Pixelmaster	HP_DeskJet
HP_DeskJetOld	HP_LaserJet
HP_PaintJet	HP_ThinkJet
ImagewriterII	NEC_Pinwriter
Okidata_293I	Okidata_92
Okimate_20	PostScript
Seiko_5300	Seiko_5300a
Sharp_JX-730	Tektronix_4693D
Tektronix_4696	Toshiba_P351C
Toshiba_P351SX	Xerox_4020

Limitations of the preference drivers:

- No new printers since 1992 have been added to the printer drivers esp. new Laser and Inkjet or Bubblejet printers.
- Limited to a maximum of 4096 colours, so true colour pictures are not possible.
- Workbench does not support PC GDI printers.

1.3 Public Domain Drivers

Since no new printer drivers have been provided by Commodore or Amiga Technologies, then the Amiga developers and users have written their own Printer drivers. Information on writing a printer driver is available in the Amiga Rom Kernal Reference Manual : Devices (p.196).

Some new printer drivers have been released to the public and its a case of finding them. Be wary though, these drivers may not have been thoroughly tested and may cause unpredictable results. See docs with the drivers for further information.

The following suppliers are known suppliers of printer drivers:

Underground PD, 54 Carmania Close, Shoeburyness, Essex SS3 9YZ.
Tel 01702 295887. (HP, Cannon, Epson and others)

PDSOft, 217-219 Hamstel Road, Southend-on-Sea, Essex SS2 4LB.
Tel 01702 306060 or 306061. (Panasonic, HP, Canon, Citizen, Epson etc)

Software 2000, 8 Falcon, Wincote, Tamworth B77 5DN. Tel 01827 287377

Software 2000, 9 Wills St, Lozells, Birmingham B19 1PP. Tel 0374 678068
(Star, Seiko, Panasonic, Citizen, Canon and others)

Ask your nearest or favourite PD supplier to see if they have the printer driver you require! If you have a modem, try calling your local BBS and see if they have any on their file base. If you have internet access, you can try Aminet sites (text/print) to download drivers or you can call the printer manufacturer's sites such as:

<http://www.europe.canon.com/>
<http://www.hp.com/>
<http://www.epson.com/>

1.4 Commercial Printer Drivers

The latest commercial software for the Amiga such as Word processors, Desktop Publishing and Paint packages do provide their own printer drivers. Some may be additional preference drivers or drivers specific to that program.

There are two software packages available that replace the preferences drivers altogether and provide new features for today's high speed, colour printers:

- a) Print Studio II
Cost: 49.99
Suppliers: First Computer Centre, Power Computing
- b) Turbo Print 4.1
Cost: 49.99
Suppliers: Wizard Developments
- c) EnPrint (for Epson Stylus Printers)
Cost: 29.99
Supplier: Eyetech

These provide a wide range of drivers for old and new printers and have new features that overcome the limitations of Workbench printer drivers such as true colour printing and supports higher resolution output. Both of these cost fifty pounds (you can get it for less if bought with a printer).

1.5 What do drivers do?

To print on a printer requires special codes which tell the printer about the text or graphics to print. There are many standards for these printer languages such as Epson ESC sequences, Hewlett Packard's PCL language and there's the high end Postscript language for top of the range lasers.

Each printer has its own features and limitations and therefore each printer requires a driver to access these features from Workbench.

When printing something from a program, the output is usually sent to the PRT: device, this is handled by the printer.device located in

the DEVS drawer.

Workbench supports a list of printer commands (see p.9-23 in the Workbench User Guide for these codes) and most Amiga programs use these codes for printing text or graphics.

Obviously, these codes are understood by Workbench only and do not relate to any specific printer. To convert them to a format the printer understands requires a driver for each different printer type. The driver then converts the Workbench printer codes to real printer codes. For example, if we had an Epson compatible printer (NB: <ESC> = Code 27):

Description	Workbench code	Epson code
Init Printer	<ESC>#1	<ESC>@
Boldface on	<ESC>[1m	<ESC>E
Italics on	<ESC>[3m	<ESC>4
Underline on	<ESC>[4m	<ESC>_1

and so on these are stored in a command table in the printer driver.

Special printer commands are dealt with a dospecial.c program which does specific things for certain commands.

To send graphics two other programs are written called render.c and transfer.c which sets up the printer, the graphics data and transfers this data to the printer.

1.6 Printer Driver Service

If you cannot find the driver you want or unsure which driver to use, please send one floppy and a -stamped- SAE with the following details and I'll return you a driver or a recommended driver for you to buy (or both):

Printer Make _____

Printer Model _____

Emulation modes _____

Type of Printer Dot Matrix ___ Dasiy Wheel ___

 Inkjet ___ Bubblejet ___

 Mono Laser ___ Line Printer ___

 Colour Laser ___ Postscript ___

Currently used driver (if any) _____

Amiga model _____

Workbench version _____

OFFICE USE

Supplied driver _____

Recommended driver _____

Send to: Peter Hutchison, 75 Lower Skircoat Green, Copley Lane, Halifax, W Yorks HX3 0TG.

1.7 Writing Printer Drivers

Writing a printer driver is more complex than you think and requires some programming knowledge, an assembler or compiler that can produce object code and access to the Amiga Development Kit on floppy or CD.

Information on writing a printer driver is available from:

Amiga ROM Kernel Reference Manual: Devices p196 - 245
description of files and programs to write inc. examples of Epson & HP driver!

NDUK 3.1 Example source

You might be able to get hold of the example files in the NDUK kit to help you.

To write a driver you need the following files:

macros.i	Contains printer device macros
printertag.asm	Contains printer specific characteristics such as density, char sets and colour.
init.asm	Open various libraries for the printer
data.c	Contains printer RAW commands and extended char set
dospecial.c	Printer specific special processing for commands such as aSLRM and aSFC
render.c	Processing for graphics output and fill buffer
transfer.c	Processing called by render.c to output the buffer to the printer.
density.c	Constructs proper printer density commands

Other requirements:

PrinterSegment	Contains printer extended data structures See devices/prtbase.h
CommandTable	Converts ANSI data commands to printer specific commands. See devices/printer.h
ExtendedCharTable	Contains definitions for characters from \$A0 to \$FF.
ConvertChar()	Function to do character conversion for one character to a combination of others.
Render()	Graphics output function.
Transfer()	Output buffer to printer.
SetDensity()	Constructs density setting commands.

Once all these data tables and functions are written they can be combined to produce a printer driver that will reside in dev:printers.
