Current Printer Information

This module provides information about the characteristics of the currently selected printer hardware and software.   This information can be useful in determining whether the driver selection is the best match for the hardware installed in the system.

When Windows is installed it selects a set of device drivers for the hardware.   All further interaction with the hardware takes place through the device driver.   If a selected device driver does not take advantage of all the capabilities of the hardware those capabilities will not be used.   In some cases this can result in less than optimal performance since all the under utilized functions will be emulated within the Windows kernel libraries.   This software emulation can be much less efficient than their native hardware equivalents.

Available Help Topics:

Device Driver Information
Device Characteristics
Other Capabilities

Device Driver Information

This section provides information about the device driver controlling the hardware.

Device Name - The name of the device driver controlling the printer.   This assignment is controlled by the Windows Control Panel application.

Port Connection - The name of the output port to which the printer is connected. This may be a serial port (COM1, COM2 etc.), a parallel port (LPT1, LPT2 etc.), a file (FILE:) or another type port for which Windows was installed.   This assignment can be modified by using the Windows Control Panel application.

Driver Version - The internal device driver version number.   This number usually matches the version of Windows.   If you are using a driver from a previous version of Windows it may not function properly in the advanced operation modes.   Contact your hardware vendor to secure a printer driver created specifically for Windows version 3.

Device Technology - The nature of the underlying hardware.   The possible values are:

Vector Plotter - A device which has the ability to randomly address points on the output surface via series of X and Y coordinates.   Most pen plotters are in this category.

Raster Printer - A device which creates images by drawing from top to bottom, right to left.   Most dot matrix and laser printer are in this category.

Metafile - A device which understands the Windows GDI commands.   This type device simply "plays" the output.

Device Characteristics

This section provides information about the drivers perception of the physical characteristics of the hardware.

Width in pixels - The horizontal resolution of the printer.

Height in pixels - The vertical resolution of the printer.

Color bits per pixel - The number of contiguous bits used to determine the color of each pixel.

Number of color planes - The number of sets of bits used to determine the color of each pixel.   This value multiplied by the color bits per pixel value is the total number of bits used to store the pixel color.

Number of background patterns - The number of background patterns the display driver is capable of simultaneously tracking.

Number of text and line colors - The number of foreground colors the display driver is capable of simultaneously tracking.

Number of device fonts - The number of fonts the hardware "knows" how to draw. For most displays this value is 0.

Number of device colors - The number of colors the hardware is able to display simultaneously.   This value is related to the number of color bits per pixel and the number of color planes.   The formula for calculating this value is:

$$\text{Device Colors} = 2^{(\text{Color bits per pixel} * \text{Color planes})}$$

The next three values are used to determine the adjustments necessary to render geometric objects on the output surface.   Windows uses these values to keep circles round and squares square.

Horizontal aspect ratio - The relationship between the number of horizontal pixels and the width of the output surface.

Vertical aspect ratio - The relationship between the number of vertical pixels and the height of the output surface.

Diagonal aspect ratio - The diagonal width of a pixel.

Logical horizontal pixels per inch - This value is used to convert lengths into a number of horizontal pixels.

Logical vertical pixels per inch - This value is used to convert lengths into a number of vertical pixels.

Other Capabilities

This section describes the capabilities of the hardware and device driver.   Any function not supported by the hardware/driver combination must be performed by the Windows Graphics Engine GDI.   Performance can be substantially improved through the use of hardware with the capabilities described below since these are particularly time consuming calculations.

Clipping Capabilities - This measurement determines whether the hardware has the ability to restrict drawing to a defined area of the output surface.

Raster Capabilities - These qualifications describe the capabilities of the hardware and driver software to perform a variety of operations which relate to the movement of graphical objects from a location in memory to the output surface.

Curve Capabilities - These qualifications describe the capabilities of the hardware and driver software to draw a variety of curve based graphical objects.

Line Capabilities - These qualifications describe the capabilities of the hardware and driver software to draw a variety of line based graphical objects.

Polygonal Capabilities - The ability of the hardware and driver software to draw graphical objects based on polygons.

Text Capabilities - The ability of the hardware and driver software to perform a variety of transformations on text based graphics objects.