



# Tech Info Library

## 32-Bit QuickDraw Information (12/95)

Article Created: 18 April 1989

Article Reviewed/Updated: 6 December 1995

TOPIC -----

This article defines 32-Bit QuickDraw, its components, and hardware requirements.

DISCUSSION -----

32-Bit QuickDraw is a collection of extensions to Color QuickDraw. It is also called "Full Color QuickDraw (FCQD)," but not "24-Bit QuickDraw." 32-Bit QuickDraw supports three modes.

- The first is the standard Color LookUp Table (CLUT) mode -- the method used by standard Color QuickDraw. This mode supports 1, 2, 4 and 8 bit colors.

The second and third modes use direct RGB values instead of CLUTs.

- The first of these two modes supports 16-bit direct color values (only the first 15 bits are significant).
- The second supports 32-bit direct color values (only the first 24 bits are significant).

The key features of 32-Bit QuickDraw include:

- Support for very large frame buffers  
32-bit addressing of graphics devices
- Support for "Direct" Devices  
Pixel values directly specify a color for "Direct" devices, so CLUTs are not used.
- Up to 16 million colors per pixel.  
Color values contain up to 8 bits for each of the three RGB direct components, with 8 bits of padding, resulting in a maximum of 24 significant bits out of 32. The two direct RGB value frames supported by 32-Bit QuickDraw are these:

32-BIT DIRECT RGB VALUE FRAME: 00000000 RRRRRRRR GGGGGGGG BBBBBBBB

16-BIT DIRECT RGB VALUE FRAME: 0 RRRRRR GGGGGG BBBB

- Extensions to the PICT file format  
Support for up to 32 bits per pixel (up to 24 of which are significant)

#### Components for System 7 or later

-----

32-Bit QuickDraw is integrated in System 7, and the 32-Bit QuickDraw INIT is no longer needed to get the benefits of 32-Bit QuickDraw. The System 7 Installer will delete the old 32-Bit QuickDraw INIT from your System Folder during installation.

#### Components for System 6.0.x

-----

32-Bit QuickDraw files consist of the following and are found in the System Folder:

- General control panel, a version that fixes a desktop pattern editor bug.
- Monitors control panel, a version that recognizes direct devices and lets the user control them.
- 32-Bit QuickDraw INIT, a file containing the patches to Color QuickDraw and a version of the Slot and Palette Manager. This file is not an INIT. However, this file uses a startup-file mechanism included in Macintosh System Software, starting with version 6.0.3. This mechanism was created specifically for 32-Bit QuickDraw.
- LaserWriter 6.0 includes three files: LaserWriter, LaserPrep, and PrintMonitor. They support color PostScript, printing in gray scale, full 32-bit addressing, and double-byte PostScript (such as Kanji).
- LaserWriter 7.0 only has 2 files: LaserWriter and PrintMonitor.

Once you have put all these files into the System Folder, the computer must be restarted. Once 32-Bit QuickDraw is installed, the Finder presents a multi-colored icon for the 32-Bit QuickDraw file. The presence of this icon shows that 32-Bit QuickDraw is running.

NOTE: Those who want to print to a LaserWriter initialized with the LaserPrep file must update their systems to at least System Software v 6.0.3 and to the LaserWriter 6.0 resources. If your hardware does not support 32-Bit QuickDraw, you need not install the new Monitors, General, or 32-Bit QuickDraw files.

#### Hardware Requirements

-----

To get the full benefits of 32-Bit QuickDraw, you must have a direct device video card. In other words, the video card must be able to accept direct color values, instead of receiving a color value that is an index number into a CLUT. Monitors that support 32-Bit QuickDraw are dictated by the available 32-Bit

video cards.

However, for those who are not using a direct-device display, 32-bit QuickDraw lets software create 32-bit images off screen. This means that programs using 32-Bit QuickDraw to its full potential can actually save 32-bit images, regardless of what the actual hardware can display.

#### Software Compatibility

-----  
32-Bit QuickDraw does not add or eliminate any QuickDraw procedure or function calls. Applications that make standard Color QuickDraw calls should have no problems. However, applications that do any of the following things may have problems with 32-Bit QuickDraw:

- Draw directly to the screen
- Fail to put values in all of the necessary fields in the pixmap and newGDevice records
- Manually clone gDevice pixmaps
- Assume that a pixmap has a CLUT

#### Article Change History:

06 Dec 1995 - Updated with System 7 or later information.

24 Sep 1992 - Revised to expand on Kanji example, reviewed for accuracy.

#### Support Information Services

Copyright 1989-95, Apple Computer, Inc.

Keywords: kcompat

=====  
This information is from the Apple Technical Information Library.

19960215 11:05:19.00

Tech Info Library Article Number: 3605