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QuickDraw GX: Four Printing Phases Described (2/95)

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TOPIC -------------------------------------------------------------


This article provides a description of each of the four printing phases within
QuickDraw GX.


DISCUSSION --------------------------------------------------------


Application Phase
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During the application phase of printing, the application calls QuickDraw GX and
interacts with you by displaying dialog boxes to establish printing parameters
such as page orientation and paper types.


Spooling Phase
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During the spooling phase of printing, the application spools the document pages
to disk in preparation for printing.  QuickDraw GX sends messages during this
phase to notify you when each page is about to be spooled.


Imaging Phase
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During the imaging phase of printing, each previously spooled page is rendered
into a form that can be printed on the output device.  This phase is composed of
two processes:  despooling and rendering.  Despooling is the process by which
each previously spooled page is read from the spool file.  During rendering,
each despooled page is converted into image data that can be printed by the
output device.  Some rendering messages, known as universal imaging messages,
are sent for all imaging systems.


Device Communications Phase
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During the device communications phase of printing, the data that represents the
rendered form of each page is sent to the output device.  Communication with the
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printing device is only possible during this phase.

Note: The spooling, imaging, and device communications phases of printing can occur on different devices. For example, an application can spool a document to a printer server on a network, which might then image the document to a disk that is taken to a printing service and printed on a high-resolution printer.

The four printing phases need not occur in a sequential order, with one following the completion of the other. When the same computer is performing both formatting and output of a document, the application and spooling phases are interleaved and the imaging and device communication phases are interleaved. The application initiates the printing of each page and this output is written to a spool file. When the printer is ready, each page is despooled, rendered, and sent to the device.

Printing extensions and printer drivers can override any of the messages that QuickDraw GX sends during each of these phases, allowing a tremendous degree of flexibility in controlling printing on a specific device.

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