

Workflow Descriptions

1. Basic System Description

The “Basic System Description” diagram shows how all of the pieces of the CREW System fit together into a workflow. Not all of these modules are standard or required for all types of setups.

Programs can be separated into five main categories:

- CREW modules
- 3rd-party programs that are designed specifically to work with CREW
- 3rd-party programs that are designed to work with Job Controller 2.x
- 3rd-party programs that are not designed to work with either system above
- Programs designed to communicate directly with the Sierra print engine

CREW Modules

CREW modules currently include:

- CREW Task Server
- CREW Task Generator
- CREW Hotfolder Client
- CREW Render (local)
- CREW Render Remote
- **CREW Plug-In for Adobe Photoshop (Macintosh)

CREW modules communicate with each other using an industry-standard language known as “XML” over an industry-standard communications protocol called “TCP/IP”. This system provides active 2-way communication that allows the modules to talk directly with one another.

This is a robust and versatile system that makes CREW a significant improvement over older systems that connect through hotfolders where communication is done by “passing notes”.

In the CREW System, the CREW Task Server application is the central hub of communications and activity. “Client” modules (modules that submit jobs to the system) connect to the Task Server directly, and the Task Server routes jobs and messages between modules as required.

****Note:** In version 1.0 of the CREW Plug-In for Adobe Photoshop (Macintosh), it communicates with the Task Server through the CREW Hotfolder Client rather than directly with the Task Server via a socket connection. This method is described in the following section, “3rd-Party Programs Designed for CREW”.

3rd-Party Programs Designed For CREW

3rd-party programs that are designed to work with CREW connect directly to the Task Server program in the same manner as CREW Modules do. This method is the most versatile and powerful system for working with CREW due to the dynamic feedback that the system provides. External will be highly encouraged to utilize this system when developing applications.

As an alternative, developers have the option of using our new XML command language through the existing “hotfolder” system, rather than programming the direct link with the Task Server application. This provides them the new capabilities in the XML command set, while keeping programming hassles to a minimum. This option is well suited to custom software, or software that is developed in-house by our customers. The “command file / response file” method of communication that existed for Job Control is utilized in the CREW Hotfolder Client module, but uses XML rather than the older JC-FPCL language (it actually accepts both types of command files, see below).

3rd-Party Programs Designed For Job Control 2.x

There are many programs on the market that have already been written to communicate with our older Job Control 2.x system. These programs use a hotfolder “command file / response file” system to submit jobs to the system and receive status information back. Although we do not encourage this interface for new applications (due to the advanced capabilities of our new interface), we have provided backwards-compatibility with this system through our CREW Hotfolder Client module.

Programs that functioned correctly with Job Controller 2.x should work the same with the CREW System using CREW Hotfolder Client.

Examples of programs that currently use this interface are:

- Graphx RasterPlus Network Print Software for CREW
- TimeStone NeoPack, NeoPack+, NeoGroup, and NeoComposite

Please note that applications that are designed for the FotoPrint FPCL language are not compatible with the CREW System.

3rd-Party Programs Not Designed For Either System

Ideally, Thomas Electronics could provide applications to suit every need of every customer that we have. However, this is obviously not possible. In order to ensure that

the needs of our customers are met, two important interfaces to the CREW System are provided via the Graphx RasterPlus Network Print Software for CREW package:

- A “Network Printer” interface that allows users to print to CREW through RasterPlus as a normal network printer
 - By using the normal “File → Print” command in almost any Windows or Macintosh application, images are sent to the RasterPlus program, converted to a bitmap image, and automatically submitted to the CREW System for printing
 - Printing options are selected in the “Print Dialog” window as you would do for any normal printer
 - Special options such as package prints and multiple copies can be specified through this interface
 - Almost any program that can print to a normal printer can use this interface to print to the CREW System
- An image file based “hotfolder” system that automatically prints images using defaults set up by the user for that folder.
 - Users can set up multiple folders with different defaults to suit their needs.
 - Any program that can output properly formatted images (in the supported file formats, which are diverse and include PostScript) can use this method of submitting images to the CREW System for printing

Programs That Communicate Directly With The Sierra Engine

The “Sierra Engine” is the actual printing device and the hardware/software that control it. Normally in a CREW workflow, the CREW Task Server application “sits in front of” the Sierra Engine, and handles all transactions with the engine itself.

Although the interface to the CREW Task Server is much more robust, simpler, and flexible, some applications bypass it altogether and communicate directly with the engine, for various reasons. These programs must handle all of their own color processing, image management, queuing operations, and feedback from the Sierra hardware systems.

Such applications do not need CREW modules, including Task Server, to print to the engine. However, even in these situations, CREW is generally installed to handle printing from other applications, even if used only for diagnostic purposes or occasional special circumstances. Because the print engine can only talk to one application at a time, it is not possible to use multiple front-ends simultaneously. This is another advantage of using the CREW Task Server rather than a direct connection to the engine.

Examples of applications that communicate directly with the Sierra engine are:

- Repri
- Ellegro

2. A Basic Workflow System

A “basic” workflow system is comprised of a digital printer (Netprinter 812, Netprinter Digital Station, or Mileca), the standard CREW System modules, and the customer’s front-end software/hardware of choice.

Depending on the customer’s needs, some or all of the standard modules may be used.

In the most basic setup, the customer has one “Workstation” computer connected to the printer. The Workstation is used to create image files and prepare them for printing. This includes scanning, importing from CD or digital camera, and any other typical image-acquisition processes. When the image is ready, the operator uses CREW Task Generator to format the images on a page and submit them to the CREW Task Server for printing.

This workflow assumes that the operator can provide Task Generator raster image files on disk that are ready for printing. Operations such as resizing, rotation, center cropping, and sharpening can be selected within Task Generator to expedite the production process and limit the up-stream preparation required.

3. Medium Sized Workflow System

For labs that have slightly more complex needs, such as printing directly from within applications, it is simple to add capabilities to the CREW System to fit their desired workflows.

The Graphx RasterPlus Network Print Software for CREW application provides three powerful alternatives for interfacing with CREW from “normal” applications. This software is standard with the Netprinter 812, and optional for the Netprinter Digital Station (NPDS) and Mileca printers.

- **Network Printer Interface.** When RasterPlus is installed on a networked Windows computer, the application can be ‘shared’ on the network in the same manner as a network printer is. Other users on the network can connect to this printer from any Macintosh or Windows application that can print to a network printer, and print to the CREW System automatically. Note that Macintosh computers may require additional software in order to communicate with the Windows RasterPlus computer (DAVE on the Macintosh, PC MacLan on the RasterPlus computer, or a Windows “Server” OS on the RasterPlus computer)
- **Image Hotfolder Interface.** For users using applications that output “raster” or “PostScript” image files (i.e. TIFF, Targa, JPEG, PS, EPS, PDF or other supported formats), this interface provides automatic printing capabilities with the CREW System. Images that are saved into a “hotfolder” for RasterPlus will be processed and printed using the user-defined defaults for that folder. Multiple folders can be created if different setups are required.
- **Direct Printing through RasterPlus.** If desired, users can select image files directly through the RasterPlus user interface for printing to the CREW System. Similarly to CREW Task Generator, files are selected from disk and formatted as necessary prior to printing.

RasterPlus also adds other valuable printing capabilities to the CREW System. Users can select “package prints” from the Print Dialog when submitting images. Several standard packages are available with RasterPlus, or users can create their own using the optional PackagePlus application. Packages can include different sized images, overlays and text, and can automatically format images to fit the desired aspect ratios in the package.

In summary, this type of workflow allows users to easily print images using the CREW System from almost any 3rd-party upstream input application.

4. 3rd-Party Software Workflows

An important aspect of the CREW System is that it is open for 3rd-party programs to interface to it. There are several ways that a program can interface with CREW to make prints, and which option is best depends on the particular application. The options available to customers as well as to developers are covered in detail in section 1 above.