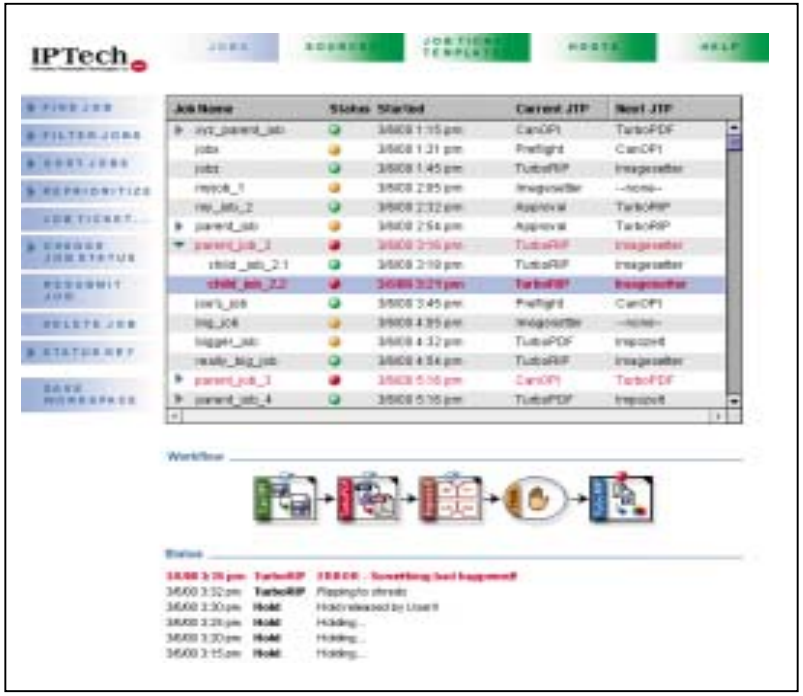
nAct

Intelligent Workflow Architecture

The nAct Implementation of Workflow

nAct is a workflow architecture that employs a centralized Workflow Engine to orchestrate the simultaneous processing of a large number of diverse jobs (customer orders) by multiple applications, running on multiple devices throughout the network. All of the information necessary to process each job to completion is carried in a Job Ticket that is attached to the job at the time of submission. This is done either automatically, when the job is submitted to a preconfigured Source (a shared folder or printer), or manually by the user when he or she submits the job via nAct's web browser-based graphical user interface (GUI). The Job Ticket remains an integral part of the job throughout its life cycle. Job Ticket Templates (JTTs) can be created and used as models when creating new Job Tickets, providing a means for storing and reusing any number of standardized workflows.

Once a user submits a job, it is picked up by the Workflow Engine, which uses the instructions in the Job Ticket to guide the job through the workflow. The Workflow Engine directs the job in turn to the appropriate processor on the appropriate computer, while supplying the processor with the appropriate processing parameters (configuration). These processors are referred to as Job Ticket Processors (JTPs). They serve as the interfaces through which applications present themselves to the Workflow Engine. They provide the basis for the distributed, modular nature of nAct: New JTPs can be added on the network at any time; the Workflow Engine will automatically detect and register them as available to the workflow. JTPs also provide a means of integrating people into the workflow, e.g., for proofing, editing and corrections.



nAct's Workflow Engine maintains a dynamic internal database, which presents an overview of the entire production workflow, with current disposition and detailed status of every job, via nAct's web browser-based Job Monitoring and Control GUI.

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Job Ticketing

Users and administrators use the nAct Job Ticket interface to control how new jobs enter the workflow and receive routing instructions (Job Tickets). Administrators easily create shared folders and printers without having knowledge of the operating system. Users design Job Ticket Templates by simply selecting from a palette a sequence of icons representing JTPs and selecting from a pull down list on of a series of "Named Configurations" available for each JTP. They then associate these templates with the shared folders and printers. As new jobs are submitted to these input "Sources," the appropriate preconfigured workflow is assigned to each one. Jobs can also be uploaded directly via the web browser interface, allowing submission of jobs from remote locations, using a either a user-configured Job Ticket or one that is based upon an existing Job Ticket Template.

Regardless of how a Job Ticket is initially assigned, it can be modified at any time via the GUI's Job Ticket Editor.

Open Architecture

nAct has been designed with a modular, object-oriented architecture. This means that the nAct controlled workflow is flexible and expandable and can be tailor-designed to meet your needs. nAct does not require static hot folders to link prepress activities; instead, job routing is dynamic. Because each job carries its own independent processing instructions in a unique Job Ticket, customizing the prepress workflow, for all jobs or for individual jobs, requires no reconfiguration of the workflow architecture itself.
A benefit of nAct's modular design, individual job processors and job activities can be reconfigured (or even moved to a new server) with no impact on other processors in the workflow.

Multiple instances of the nAct modules can run on multiple computers throughout your company, taking advantage of faster processors as they are introduced. Commonly used modules, such as preflight, color management, imposition, OPI, RIP, PDF creation etc. are currently available for nAct. Additional modules can be added at any time, as your company grows and your needs change. IPTech will continue to provide new modules for mainstream products in the future, and customized modules can be provided at attractive pricing.

nAct JTP's

• **Hold JTP:** The customization of a workflow may entail "hold" stages for various purposes. For example, it may be necessary to suspend processing of a job pending approval of a proof. Hold Work Orders can be placed at strategic points within the Job Ticket to provide for these requirements.

• **InterAct JTP:** A very powerful control module for checking files during production. InterAct Work Orders placed within the Job Ticket provide an interface through which jobs in progress can be viewed, edited – automatically invoking Adobe Acrobat for this purpose, or downloaded to your local workstation for viewing or editing with your favorite application. The edited job is then returned to the workflow.

• **Save JTP:** Automatically makes backups of jobs anywhere in the workflow. The saved job can be resubmitted after modifying the Job Ticket or after an error downstream, so that the job need not be sent again from the beginning.

• **Branch JTP:** Used to create branching parallel workflows of any complexity.

• **Notify JTP:** Integrates messaging into the workflow, providing another dimension through which human participants can play a variety of roles. The Notify JTP will email the appropriate personnel when a job has completed designated stages in its workflow, or when a particular action is required.

• **Approve JTP:** Manually approve or reject and restart the job.

• **Task JTP:** Assign a user-defined task at any stage during the workflow.

• **Load Balancing JTP:** Increases productivity by distributing the prepress workloads across multiple devices, e.g. a print job distributed across multiple printers.

• **Snapshot JTP:** Automatically exports nAct job data to Microsoft Excel and other popular applications.

• **TurboPDF JTP:** IPTech's PostScript-to-PDF conversion application. It complements IPTech's support for PDF workflows already provided by PressPage and TurboRIP. TurboPDF automatically creates PDF 1.3 in the workflow. IPTech has tuned TurboPDF's default settings to create prepress-optimized PDF files for downstream processing in nAct. Prepress optimization includes the automatic creation of PDF trim boxes based on crop marks in files from QuarkXpress™, Adobe PageMaker®, and other design applications. Settings can also be tuned to your own preference.

• **ConnAct JTP:** IPTech's bridge to 3rd party software applications (Harlequin RIP, Preps, CanOPI (Sun), preflight applications, etc.) that have no JTP interface. IPTech has developed the ConnAct JTP module to accommodate the many diverse software packages on the market. This module can integrate most 3rd party applications seamlessly into the nAct workflow via scripts, macros and/or hot folders.

• **CanOPI JTP:** Connects to IPTech's Open Prepress Interface (OPI) program, CanOPI. CanOPI provides both hot-folder and in-place creation of low resolution "sample" files (FPOs) from JPEG, TIFF, EPS, DCS, PDF, Photoshop Native and Scitex image formats, for page layout and web publishing purposes. Low resolution proxies placed using a page layout program are automatically substituted with the original high resolution images during output.

• **PressPage JTP:** Connects to IPTech's imposition program, PressPage. PressPage makes performing imposition a fully automated part of the workflow. Once layout templates are designed, the correct template for each job can be specified in that job's Job Ticket. PressPage matches one or more nAct jobs to the appropriate layout file, and signatures are prepared for the next prepress activity. Final, imposed PDF files can be stored as reliable digital masters for each job.

• **TurboRIP JTP:** Connects to IPTech's Adobe-certified PostScript 3™ RIP, TurboRIP. This high-performance RIP handles PDF 1.3 and provides Adobe In-rip trapping. TurboRIP produces raster-file output and drives a wide range of image- and platesetter devices. TurboRIP can also print proofs to any device connected to its host server using Microsoft® Windows NT® and Windows® 2000 Server print drivers.

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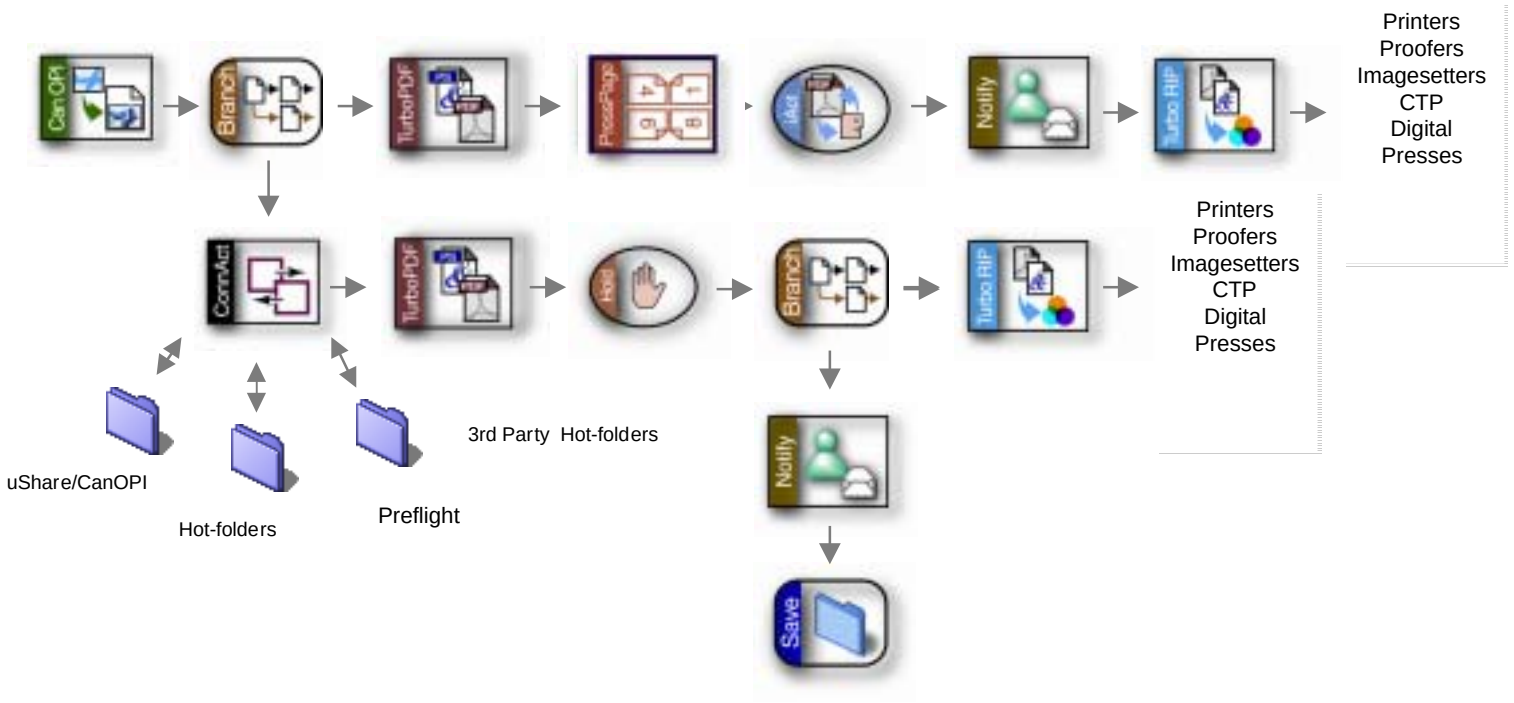

nAct's Modular Architecture

Just as every print job is unique, every printing environment requires specialized workflows. nAct's task JTP's and optional component applications, CanOPI™, TurboRIP™, and PressPage™, can easily be incorporated into a real-world computer-to-film, computer-to-plate, and digital press scenario.
nAct also incorporates 3rd party applications by means of a set of Application JTPs. Management and control features are provided by a set of IPTech Control JTPs.

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Summary of Features

Job Monitoring and Control

❖ The browser-based interface runs from any location on the network with no special client installation. The interface provides the ability to:

- View status and messaging for a single job or multiple jobs at a glance
- View a graphical representation of each job's workflow and progress
- Filter job lists based on status, source, current process, or next process
- Obtain instant error notification and location
- View jobs as they move from one process to the next
- Monitor individual processes

❖ **Job Submission**

- Accepts composite and pre-separated PostScript and PDF jobs
- Publishes job submission hot folders and print spoolers
- Supports Apple® Macintosh® and Windows clients
- Source JTP and Workflow Engine associate incoming jobs with Job Ticket Templates for automated job ticketing
- Supports manual job submission and Job Ticket assignment
- Supports remote job submission via internet/extranet/intranet

❖ **Job Prioritization**

- Job can be assigned top, high, medium or low priority

❖ **Job Ticket Editing**

- Job Ticket Templates automate standard workflows
- Each job has its own ticket and editable workflow
- Each job has its own Job Notes, providing additional information to operators, accounting, production managers and customer.
- Users can create, edit, and maintain workflows without requiring hot folders between processes

nAct System Requirements

- Pentium III or IV Series Processor.
- 256 MB of RAM.
- Graphics card with 4 megabytes VRAM.
- Windows NT Server 4.0 with Service Pack 5.0 or later or Windows 2000.
- Network Interface Card 10/100BaseT.

TurboRIP Requirements

- It is recommended that TurboRIP be installed on a stand-alone machine
- Pentium III or IV Series Processor.
- 512 MB of RAM.
- 4-gigabyte Ultra Wide SCSI drive and controller.
- Graphics card with 4 megabytes VRAM.
- Windows NT Server 4.0 with Service Pack 5.0 or later or Windows 2000.
- Network Interface Card 10/100BaseT.

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