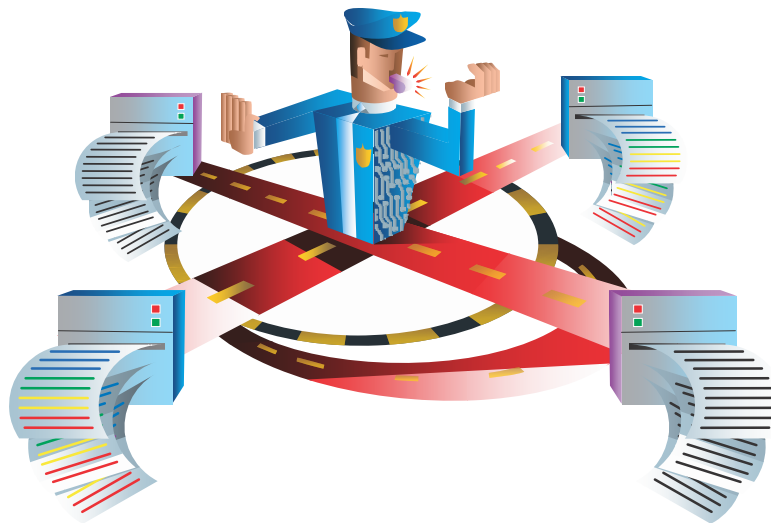


RoutXpress™

White Paper



Your Software Authority for Network Printing Management!

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INTRODUCTION

RoutXpress™ is a fully automated assessment, accounting, routing, and notification system or document management system for Windows Networks. Users can discover, control and account for all types of printing in their company through this system. RoutXpress operates on Windows servers, workstations and desktop systems. Mainframe, Macintosh, thin client, UNIX, Linux, and Web server interfaces will be provided in a future release.

MISSION

RoutXpress is designed to reduce print delays, reduce printing cost, and make Help Desk management of printers simpler and less stressful.

FUNCTIONALITY

RoutXpress is an off-the-shelf, plug-and-play Windows-compatible product. Since its components are scattered on different PCs and print servers, the communication is distributed architecture-designed to operate flawlessly.

RoutXpress has five main components: **Administrator Client**, **User Client**, **Server**, **Spooler Client**, and the Desktop Instant Messenger (IM) **Messenger Client**. RoutXpress also provides two auxiliary components that use the database developed by the Server, **Accounting Module** and **Optimizer**. Each component has its own specific functions.

Recognizing all printers on the network, including local printers connected directly to user desktop computers

The **Messenger Client** and **Spooler Client** recognize printers and print jobs across the network. When the Messenger Client detects a printer it launches the Spooler Client, which reports all printers to the Server. The Spooler Client detects newly installed printers, and notifies the Server. The Spooler Client also notifies the Server about new print jobs, and when the status of any printer has changed.

Notifying users when print jobs are completed

The **Messenger Client** alerts users via Instant Messaging (IM) when their print jobs are finished, and notifies them if RoutXpress has rerouted any jobs to an alternate printer.

Managing print jobs

The **Server** controls all print and user rule processing, print job accounting and recording, printer status tracking, and user notification. RoutXpress job routing is based on rules that the administrative user sets up through the **Administrator (Admin) Client**. This control capability streamlines network printing in any type of facility. Based on the established rules, RoutXpress routes each job to the specified printer, reroutes jobs to alternate printers,



IMs the user when the print job is complete, notifies the Help Desk if a print job or printer hangs, and more.

ROUTXPRESS 2.1 FUNCTIONALITY

The latest version of RoutXpress software adds additional features that make the program more flexible and adaptable. The changes are designed to custom-fit rules to particular users, and to improve the level of information RoutXpress sends to users.

System Improvements

- New RoutXpress Installer is much simpler and easier to use.

RoutXpress 2.1 Installer Features

Version 2.1 is also easier to install. The installer now:

- Installs all the components and Installs all services automatically
- Runs the RXServer and RX Spooler services automatically on Windows start-up
- Automatically installs SQL 2005 Express Edition and other pre-requisites.
- Installer has three different install modes. Demo, Network and Advanced. Demo mode is for demonstrating RoutXpress to end-user with all modules installed on one machine. Network mode is for the actual installation at the customer site across customer's network. After successful initial installation, Advanced mode can be used to re-install modules if need be.

Administrative Client Features

Version 2.1 upgrades allow the RoutXpress Administrator to:

- Assign any rule to one or more specific users, and update rules as needed
- Allow rules to be given start and stop times
- Allow authorized users to override a rule
- Email printer click counts to a third party
- Assign print jobs to specific account numbers
- Give reroute decision-making authority to the user
- Control which users may send print jobs to restricted printers and/or media printers
- Force the users to enter account numbers for a particular job before the job is released to the printer. This is for charge-back purposes.
- Now Print Log entries can be edited in the Print Log tab to reconcile with the accounting.



Accounting Manager Features

Version 2.1 upgrades allow the RoutXpress Administrator to:

- Create Printer Alert reports by printer from the Accounting Manager
- Create Meter Read reports by printer from the Accounting Manager.

Messenger Client Features

- Assign a job to a specific account number from a list as well as on-the-fly
- Assign a job (if authorized) to a secure printer
- Assign a job (if authorized) to a media printer
- Group print jobs
- Release grouped jobs
- Delete a print job

COMPONENT DESCRIPTION

RXServer

The **RXServer** is the brain of the RoutXpress software. RXServer also has a database where all data are stored; information contained in RoutXpress database includes rules, print activity, and alerts. RXServer is in contact with all other components and directs their behavior. Status of print jobs, printers, and tasks to perform when rule conditions are met are all part of RXServer's features.

Administrator Client

The **Administrator Client** is the RoutXpress interface used to drive printing through the program. Administrator users can:

- Discover all printers (local as well as network)
- Set up printer and user rules
- Add, modify, or delete printers
- Create printer pools
- Modify printer properties of printers controlled by RoutXpress
- Add, modify, or delete users
- Monitor all print activity
- Review how much users printed in the past month
- View past and current print job alerts



- Monitor which users are running the Messenger Client
- Buy a license for RoutXpress

User Client

The RoutXpress **User Client** is a reporting component that allows the Help Desk or IT personnel to monitor the status of all printers on the network, and view current and past print activity. In future releases the system will allow more than one User Client. The User Client cannot be used to make any changes to the existing RoutXpress configuration.

RXSpooler Client

The **RXSpooler Client** resides on the print server where the network printers are installed. Spooler Clients are also installed on computers running a print driver and attached to local printers. The Spooler Client detects printers and printer activity. When a user sends a job to the printer, the Spooler Client notifies the Server, and waits for the RXServer to direct it to handle the job according to administrator-set rules residing in the Administrator database. The Spooler Client obeys the instructions and releases the job to the default (local or network) printer, or transfers it to an alternate printer. The Spooler Client also keeps track of all current printers and their status. If any new printers are installed on the computer, or if any change occurs to the default or alternate printer, the Spooler Client captures the information and reports back to the RXServer.

Instant Messenger

The **Instant Messenger (IM)** communicates print job statuses to users. The IM consists of the **Messenger Server** and the **Messenger Client**. The Messenger Server resides on the same computer as the RoutXpress Server. When the RXServer needs to notify a user about a print job, it sends it via the Messenger Server. The Messenger Server then sends the message to the user's Messenger Client, running on the user's computer. The Messenger Client shortcut icon resides in the Windows Task Tray.

The Messenger Client displays two types of Job Complete messages: "Job finished printing on the primary printer", and "Job was rerouted to an alternate printer and has finished printing."

Job finished printing on the primary printer

When Messenger Client receives this message, it shows a message icon in the Task tray and the message appears from the icon. The user can also view the past messages by right clicking the icon and choosing "View Past Messages" from the menu.

Job was rerouted to an Alternate printer and has finished printing

When the print job was transferred to another printer and is ready to be picked up, the Messenger Client displays a pop-up message on the user's Desktop. In addition, RoutXpress changes the background color of the tray icon.



Paper

The Messenger Client also notifies the user if the print job could not be run. This happens when the job parameters like color, duplex, or page sizes doesn't match with the printer properties in the Admin Client. When this happens RoutXpress tries to route the job to an alternate printer. If successful, a transfer message is sent to the user. If the Administrator has given the Reroute Override permission to the user then he can cancel the RoutXpress decision and the job will stay at the primary printer. User can delete the job from the Delete jobs option in the MessengerClient and if needed, reprint the job to another printer.

The Messenger Client also notifies the user if printer he or she is trying to print to has an alert pending meaning if the printer is out of paper, user will see a message letting him know the condition of the printer. Alert messages will also be send to the user in case is print job is going to the printer.

If the user cannot receive IMs, RoutXpress Server will attempt to send the user the message via email. The system administrator must set up RoutXpress via the Administrator Client to communicate with users via email.

Account Manager

The **RXAccount Manager** module provides listings of the jobs printed. The print job databases are normally saved at the end of each month, and are used by both the Account Manager module and the Optimizer module. The Account Manager also provides summaries of printing costs, jobs by printer, jobs by user, and jobs by department, as entered into the Administrative Client. In addition, it also provides the summaries of Printer Alerts and Meter Counts as entered into the Administrative Client. General costs, based on the speed of each type of printer, are included by default. Accounting information may be exported in CSV, Excel, PDF, or Crystal Reports formats for further processing. The Accounting module is installed in the same location as the Administrative Client.

Optimizer

The RoutXpress **Optimizer** module lets you simulate the effect of making changes to your facility's printing system. By virtually replacing, adding, and moving printers within departments, or by changing printer rules, managers can review the effects on costs and speed. The Optimizer models the actual print traffic from the last month against the new configuration, and then reports the new costs, the time in seconds required to retrieve a print job, and delays to print job completion, also in seconds. As the modeling session progresses, the Optimizer reviews these costs against the original costs, allowing managers to evaluate system performance based on printing costs and convenience before making any changes. This module is installed at the same location as the Administrative Client.

Notification Via Email

RoutXpress sends major and minor printer alert notifications via email. **Major alerts** are issued when the printer is out of toner, or for any reason is not working. **Minor alerts** are issued when the printer is out of paper, or if there is a paper jam. RoutXpress **Soft alerts** are issued when the software was not able to find any appropriate alternate printer based on



the job parameters (color, duplex, page size) and also when the users have reached either their monthly, daily page or cost limits.

Real-time email alerts can be viewed from the Administrator or User Clients. RoutXpress automatically alerts the Help Desk or IT staff about any minor problems, such as paper jams or empty paper trays. If there is a major problem, such as lack of toner, or if the printer is down, RoutXpress will email both the Help Desk and the Administrator, so that they can take any action needed to fix the problem. RoutXpress will send real time printer alerts email from the printers that support SNMP or are SNMP compatible.

REQUIREMENTS

Software Installation

There will always be one Administrator Client. The number of Spooling Clients can equal the number of computers with print drivers installed on them.

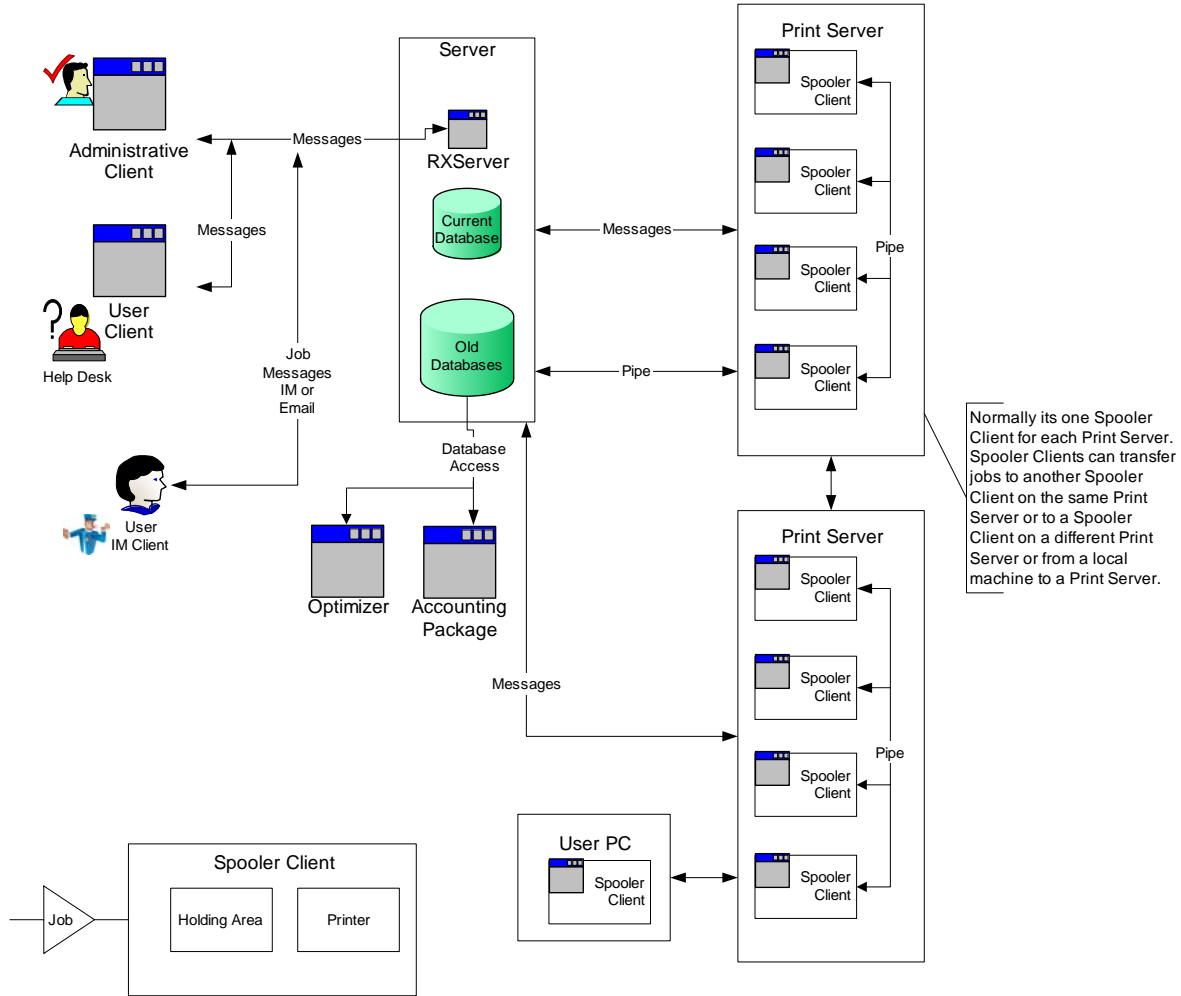
When all the printers reside on one print server, only one Spooler Client is required.

There is no set minimum or maximum number of users; all users who do any kind of printing can use RoutXpress. In order for the user to be able to get job notifications, users must have the Messenger Client running on their computer.

Installation of RoutXpress is designed to be user friendly, and usually takes only five to ten minutes, depending on the size of the network. The customer must enter the IP addresses of all the network printers in order for SNMP protocol to work and report printer status.

Once all modules have been installed, all that is needs to be done is to run the Spooler Client, Server, and the Admin and User Clients.





RoutXpress Process Flow

System Requirements

A typical existing system is any Windows network print environment. Whenever a user sends a job to a printer, it is queued on the printer, and depending on the printer availability the job is printed. If there are jobs ahead of this job, then the job must wait before the others have finished printing.

TERMINOLOGY

This section should contain all words or phrases having a special meaning for this project with a clear, concise, unambiguous statement on their meaning.



FUNCTIONAL DESCRIPTION

Administrator Client

The Administrator Client communicates only with the RXServer. It can set up the rules in the server to route each job. In appearance, the Administrator GUI is the same as the User Client.

The Administrator Client contains six tabs, each representing a function of the program.

- The **Queue** tab displays all the printers controlled by RoutXpress, their current status, and any print jobs they are printing.
- The **System Alert** tab shows the user the Major Alerts in the system that have not been corrected and that need attention. The Alert Log shows all current and past alerts.
- The **Print Log** tab shows the current month's print activity.
- The **Printer Pool** tab shows all the printer pools that users have created.

Special Note on Printer Pools: RoutXpress allows you to group printers into a pool of printers. Each pool accommodates up to 32 printers. Once you have created a printer pool, you can add the printer pool as an Alternate Printer in a RoutXpress rule. Thus, you can have up to 64 printers to transfer jobs to in the event the primary printer is down or unavailable

- The **User Tab** shows all the users on the network, their email addresses, if they are running the messenger client, and how many pages they have printed in the last month.

Special Note on Users: The administrator can enter in all users manually through the Administrator. Or, RoutXpress can add each user to the system the first time they print something to a printer controlled by RoutXpress. Thus, once every user on the network has at least printed one print job, they will all be added to the User Table.

Administrator Client Functions

- Setup printer and user rules in the RXServer database residing in the server.
- Add, modify and delete rules from the RoutXpress system.
- Add, modify and delete printers from the RoutXpress system
- Create, modify and delete printer pools
- Add, modify, and delete users from RoutXpress system.
- Interface between Administrator Client and Server
- Messages between Administrator Client and Server

When the administrator makes any changes to a User, Printer, Printer Pool, or Rule in the Administrator Client, the Administrator sends a message to RXServer to record the necessary changes in the database.



Paper

When a user views a log or the Queue tab, the Administrator sends a message to the RXServer to retrieve the requested information from the database; the Administrator is updated with the latest information.

The Server sends messages to update the Administrator on any status changes that have occurred, such as when a printer is uninstalled, a job is deleted from the Windows print spooler, a printer status has changed, or an alert has occurred.

User Client

The User Client is a subset of the RoutXpress Administrator; it is essentially a viewer for displaying the printing done on the network. Its function is to allow someone other than the printing administrator to monitor the status of their printer network, keep track of print jobs and alert activity, and respond to any problems that occur. It cannot create, modify or delete rules, printers, printer pools, or users; nor can it be used to buy RoutXpress licenses.

Server

The Server manages all RoutXpress actions. When a user sends a print job to a printer, the Spooler Client then sends a message to the server, notifying the Server that there is a new print job. Once the Server receives the message, it accesses the database to determine which rule(s), if any, apply to the job. If a rule applies, the Server will reroute the job according to the rule. If there is no rule, or if the rule parameters have not been met, the Server releases the job to the printer.

Once the Server releases a print job to a printer, it monitors it in one of two ways:

- If the printer is a network printer and supports SNMP, the Server pings the printer every few seconds until the printer has finished with the current print job.
- If there is no IP address or the printer does not support SNMP, the Server will use the printer type's per-page time rate to determine when the job will finish.

Often, Windows reports that a job had finished printing when the job may still be in a print queue. With RoutXpress, once the print job is actually complete, the record and associated data from the print job is recorded into the database, and notifications are sent to the user who printed the job, and to the Admin and User client. The Server also monitors the status of each printer, so that when an error occurs it updates the Admin and User Clients, and emails anyone who needs to know about the problem so that it can be fixed. The Server also updates the database when the Administrator makes any changes.

Server Functions

- Makes decisions based on rules.
- Populates the database.
- Updates the database after each action that requires any table update.
- Receives and replies to all the messages.



- Messages between Administrator Client and Server
- Messages between User Client and Server
- Messages between Spooling Client and Server

Spooler Client

Spooler Clients reside on the print server, and capture each job request coming from a user on the network and destined for the print driver. After capturing the job, the Spooler Client sends the request parameters to the Server. The Server stores all the relevant information needed to run print jobs against the RoutXpress rules. The Server uses Spooler Clients to handle redirections from one printer to another. Spooler Clients ping the RXServer every ten seconds to check print job status. If the Server does not direct the Spooler Client to transfer a job to an alternate printer, all the traffic is passed through to the print driver and subsequently to the default printer.

Spooler Client Functions

- Send message to the Server as soon as a new print job arrives, containing all the information of the job
- Transfer print job from another Spooler Client if directed by Server
- Ping Server every ten seconds to get a live signal. If no response is received, then the Server Client enters into pass-through mode and send print job to default printer
- If the job is flagged with a Rule, the Server Client copies the job into a storage space before releasing it to the printer. (Release 2.0)
- Accept Server messages containing instructions for handling print job.
- Pass Server instructions to default or alternate printer

Printer Rules

RoutXpress rules contain a number of flags that a user can select or customize in order to cause a job to be rerouted from the default printer. If any of the flags are met, the job is rerouted to another printer. Below is a description of each type of flag:

Out of Service

Two types of rules are considered:

- What to do if the printer has some paper problem, such as a paper jam, or empty paper trays.
- Failure, such as printer is out of order, or turned off.



Paper**Large Jobs**

If a print job is over a certain size, then it is sent to a specific printer, such as a production printer. The RoutXpress database Spooler Client Table records the cost for pages per minute (PPM); this value can be used to give the user an estimate of the job printing cost.

Load Balancing

If the primary printer is busy, then the job is sent to the alternate printer. A group of printers can be associated either with the job owner or with the job name, and can be polled to find the best available printer. For this, the administrator may need to guess the per-page job completion time.

Priority

Priority based on job owner or job name. For example, CEO jobs are given top priority for any job. (Release 2.0)

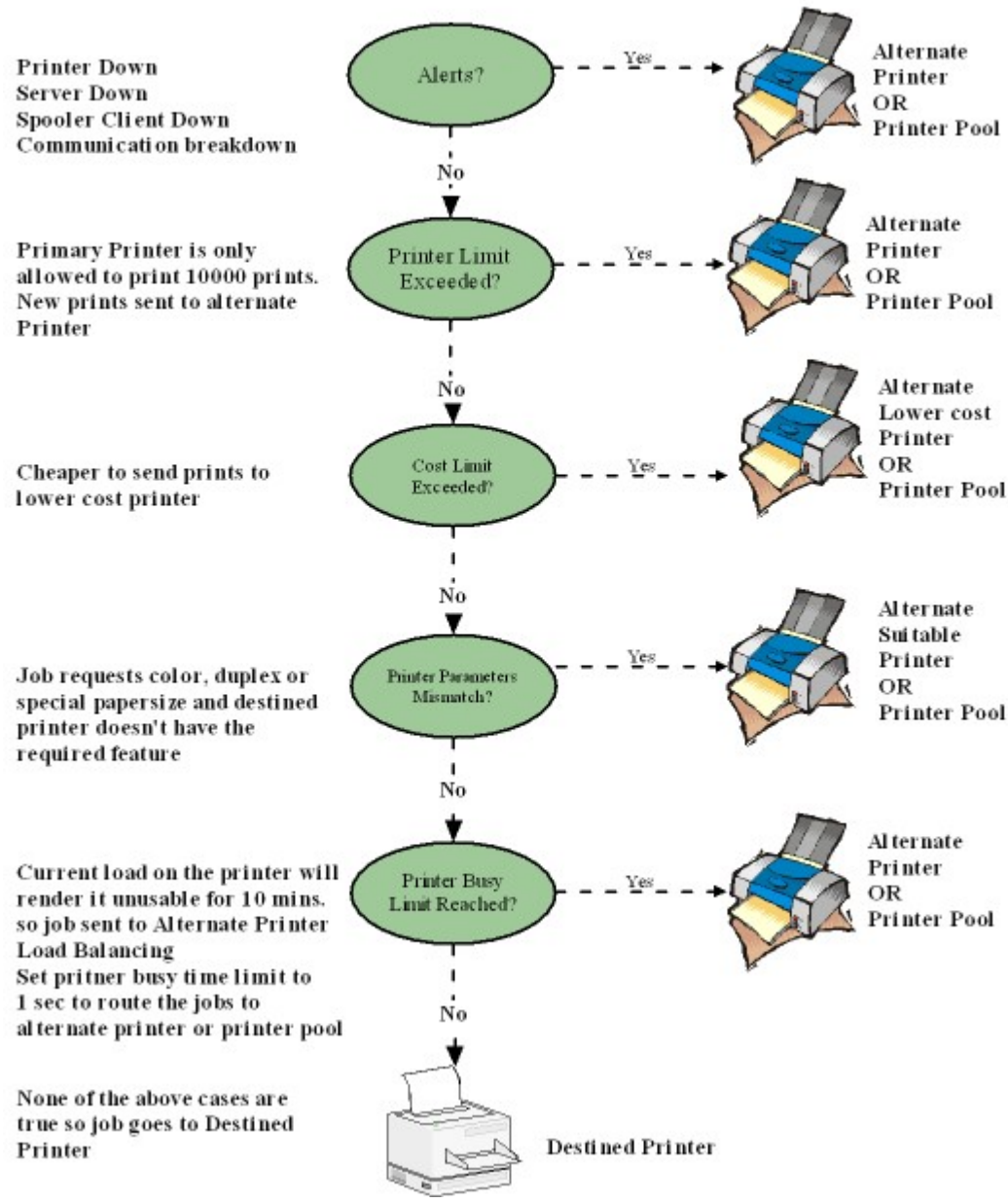
Printer Capability Matching

If the job needs to be duplexed or to be printed in color, and the destination printer lacks this capability, then the job is routed to another printer. For finishing options like punching, stapling, booklet printing etc., the user has the option to change the number of copies and control these finishing options. (Since commands that control these options are different from printer to printer, APWI is developing a database of these types of commands used by a range of printers in order to add this functionality to RoutXpress.)

Below is the graphical representation of the rules.



ROUTXPRESS RULES PROCESSING
Rules for Rerouting Jobs before job is printed on requested Printer



RoutXpress Rules Processing

User Rules

RoutXpress user rules contain limits that an administrator can set up for the users in order to control the users printing. Administrator can set up one rule and assign it to All Users (selecting from the drop down) or he can individually select users from the list and assign rules to them based on their position.



Paper

If any of the limits are met, the job is deleted and the user notified via Messenger Client Soft Alert. Below is a description of each type of limit:

User Daily Page Limit

You can set a limit on the number of pages a User may print in one print job.

User Daily Cost Limit

You can set a limit to the print cost a User may incur per day.

User Monthly Cost Limit

You can set a limit to the print cost a User may incur per month.

RoutXpress Optimizer

The function of the RoutXpress Optimizer is to provide a tool for printer system analysis, allowing network administrators to simulate the modification of a printer network, and then view how printing costs, delay times, and user convenience are affected. RoutXpress Optimizer provides both manual and automatic operations.

To use Optimizer, the user opens a database of a previous month's operation, generated by RoutXpress. The monthly database is stored in the DATABASE directory under the RoutXpress main directory.

The Optimizer GUI displays a table containing the printers in the printing network. This printer table lists the print drivers and the printers attached to them. The drivers form the *queue* and do not move when the location of printers in the list is changed. The printers listed in the Optimizer table can be moved manually by dragging and dropping printers from one row to another (such as in familiar spreadsheet software programs like Excel); or, automatically using the **Printer Optimization** button. When Printer A is dragged to another row in the list, the printer that was in the destination row (Printer B) is relocated to the row vacated by Printer A. Printers A and B effectively switch places in the queue. The job history for each queue does not move when the printers are changed. The only things that move are the printers and their characteristics.

Before relocating any printer's relative location in the queue, Optimizer lets users prevent the movement of key printers, such as the President's, CFO's, and Production printers.

The user can also instruct Optimizer to try all possible combinations of printers, and to provide the lowest-cost solution. The user can then fine-tune the configuration, generate a simulation, and then store the result. Configurations can be saved for later use. The configurations can be imported and exported in several modes; i.e., database, text (export only), and comma delimited database. After a configuration is settled upon, a simulation of the system can be tried to provide the final cost saving, the system average queue delays, and system cost.



BENEFITS OF ROUTXPRESS

RoutXpress Solves Printing Management Problems

Common print system problems include:

- All Network as well as Local printer discovery.
- No way of knowing when the print job finished printing.
- If a printer is busy, the job needs to wait till the printer becomes available. No option to change the destination printer or take precedence ahead of other jobs in the queue.
- If the network printer is busy, a user may send the job to a color printer, which can be unjustly costly.
- No accounting log.
- No print log.
- No printer error log.
- No way of knowing how much money is expended for printing in a month.
- No way of knowing if the printer is down for any reason — as simple as a printer out of paper or as severe as hard disk failure — and potentially causing unnecessary delays
- No reprint capability.
- No rule-based printing. Anybody can send any job to any printer on the network.
- No way of knowing what printers should be placed where in the system. The cheaper per-copy printers should be placed in the higher volume locations. Peak volumes may require different deployment. No planning tool to accomplish this task.

RoutXpress automatically manages your network printing system, and allows the print administrator to provide job-by-job printing control.

RoutXpress addresses common printing management challenges in the following ways:

- RoutXpress sends notification to users once print jobs are ready for pick-up. Notifications, delivered via email or IM, include the job name, time, status, and the destination printer name.
- RoutXpress notifies users when there is any problem with the destination printer that causes the job fail. These alerts tell users what happened to their print request, so they can adjust their printing activities as needed.
- A set of rules established by the administrator governs the printing process. Based on the rules, if the primary printer is busy, down, out of paper, has a paper jam, etc., then print jobs are sent to the alternate printer, and the user is notified. This saves time, effort, and aggravation.



Paper

- If a printer is to be used exclusively for a particular kind of job; for instance, check printing, RoutXpress makes it easy for the administrator to make it accessible only to specified users. If other users, based on RoutXpress rules, try to send print jobs to the check printer, RoutXpress notifies them that they lack permission to print on that particular printer, and they must resend their jobs elsewhere. Also, others could be advised of possible security or policy breaches via RoutXpress. (This feature can easily be turned off and on by the Administrator.)
- At any time, the print system administrator can obtain a complete accounting log from RoutXpress of the printing done by users on a monthly basis. The log, also displayed in the Print Log and User tables in the Admin and User Clients, reveals who printed each job, on what printers, and how many pages. Based on the print-per-page cost information for each printer, printing expenses are easily calculated.
- Each printer error is recorded in an Alert Log; this information is also in the Alert Log table in the Admin and User Clients. This permits the administrator to analyze how many times and which printers went down in a given time frame.
- RoutXpress logs help the administrator assess printing needs and plan ahead. Cheaper-to-operate printers can be relocated to higher volume locations; more expensive printers can be decommissioned; and more cost-effective printers can be procured. RoutXpress backs up future cost savings estimates and budget requests with real-time reports. With the information from the various logs, the print administrator can provide production-printing capability from a set of network printers.

JUSTIFYING ROUTXPRESS

Calculable Advantages of RoutXpress

The snapshot of our ROI calculator below will give you an idea of how much savings a reseller and an end user will have once they install RoutXpress on the network and it starts routing jobs from the local inkjet printers to the less expensive network printers.

700	Number of Networked B/W print devices you have
300	Number of Networked Color print devices you have
4,000	Number of Local User printers your customers have (industry projections are 4 to 1, mostly color inkjet)
250	Average number of pages each inkjet printer prints per month
60%	What percentage of all pages printed on inkjet printers have color on it?
10,000	Number of pages each B/W Network Printer is currently printing per month
7,000	Number of pages each Color Network Printer is currently printing per month
\$0.01	Cost per page for Network B/W printer
\$0.08	Cost per page for Network Color printer
\$0.20	Cost per page for B/W Local Printer (typically inkjet)
\$0.45	Cost per page for Color Local Printer (typically inkjet)
50%	What percentage of B/W print jobs that are currently printed on local printer will be routed to Networked printers?



60%

Suggest all print jobs 5 pages and more.
What percentage of **Color** print jobs that are currently printed on local printer will be routed to Networked printers?
Suggest all print jobs 2 pages and more.

\$ 70,000.00	Current amount End User(s) pays for network B/W printing
\$ 168,000.00	Current amount End User(s) pays network Color printing
\$ 238,000.00	Total dealer invoice to customer(s)
\$ 350,000.00	How much your customer(s) are paying for ink.

After RoutXpress™ is installed and routes print jobs AWAY from local printers and to your networked printers

\$ 72,000.00	Dealer invoice to customer(s) for B/W printing
\$ 196,800.00	Dealer invoice to customer(s) for Color printing
\$ 268,800.00	Total Dealer is now invoicing to your customer(s).
\$ 148,000.00	How much your customer(s) are now paying for ink.

\$ 30,800.00	MONTHLY INCREASED revenue due to increase in network printer prints (clicks)
\$ 22,916.67	Amortized monthly revenue from sale of RoutXpress™
\$ 53,716.67	Total INCREASED revenue to dealer
\$ 202,000.00	MONTHLY Amount the end user customer(s) saves.

1.3614 Number of months it takes RoutXpress™ to pay for itself.

This ROI calculator is available to anybody who wishes to use it through our Sales Department.

Other Advantages of RoutXpress

The “soft” advantages of RoutXpress are available to everyone who uses a printer in any type of organization operating more than two or three local printers. Users like receiving real-time notifications when their print jobs are completed or when some issue is delaying the job from finishing. Help Desk personnel will like RoutXpress’s automatic rerouting and real-time notification when there is a system malfunction affecting printing from operating normally.

Use Cases

Below are a few examples of how the RoutXpress system can be used.

Sending Big Jobs to Production (Cheaper) Printer

The administrator can set up rules that will allow jobs of certain page counts to go to the regular printers, and anything over that count is automatically rerouted to alternate (less



expensive) printers. This saves money because bigger printers are cheaper to print on than smaller ones, especially local desktop printers.

Load Balancing Among Printers

The administrator can set up rules so that jobs can be balanced among printers. Rules will have a job limit for each printer and alternate printers specified. If the primary printer is busy, then subsequent jobs go to alternate printers depending on their availability.

Accounting

The administrator can print accounting reports based on the monthly printing records. He or she selects the database from any of the previous months, and can print reports by department, by users and by printers. Reports can be either summarized or detailed. He or she can also pick and choose the different fields that are available for report printing to customize the reports based on his audience.

OTHER INFORMATION

User Community

RoutXpress software is appropriate for any-size organization running two or more networked printers.

Administration Functions

One Administrator Client is used to configure RoutXpress and to add, modify, and delete rules, printers, printer pools, and users. When the user runs the Administrator Client for the first time, they can enter a password to protect the Administrator program from use by unauthorized users. It is the user's responsibility to keep this password safe. If the user needs to change the password, it can be done in the Administrator Client.

Printer Error Handling

RoutXpress handles two types of errors:

Major Alert

If any of the following problems occur on a printer, RoutXpress generates a Major Alert, sending it to both the Administrator Client and the User Client. These alerts signal problems requiring attention by the Help Desk or the print administrator.

1. General Error
2. Printer is Unavailable or is offline
3. Printer is out of memory
4. Windows says the printer needs user intervention to fix the problem
5. Printer is Out of Toner



Minor Alerts

Minor alerts, listed below, signal problems that the user can typically fix. Depending on the RoutXpress configuration, the program will send an email or IM to the Help Desk or the administrator.

1. Paper Jam
2. Out of paper
3. Other Paper problems
4. Toner is low
5. The printer had to punt a page
6. The output bin is full
7. A door on the printer is open

Help

RoutXpress assistance includes the Setup Guide, User Guide, FAQs on the website, and Customer Support

Interfaces

User

The RoutXpress Administrator Client and User Client are the two User Interfaces. The Administrator Client is a control and configuration Interface; the User Client is a control interface.

Software

RoutXpress maintains interfaces between the Administrator Client and the Server, between the User Client and the Server, and between the Spooler Client and the Server.

Boundary Conditions

The number of RoutXpress users is unlimited. Number of printers is limited to 1000.

Constraints and Limitations

RoutXpress software needs to be installed on the administrator computer. The person installing the software needs to be the network administrator.

There is no partial printing or splitting of jobs among printers in the current version. These functionalities will be added in RoutXpress 2.0.

Platforms

RoutXpress runs on Windows 2000, XP, Vista, 2000 Server, 2003 Server

The Server must be installed on a computer with 2GB of available hard disk space. All other modules need just 25MB of hard disk space



Internationalization

RoutXpress currently displays only in American English. Support for other languages (e.g., Spanish, French, Italian, and Portuguese) is scheduled for future releases.

Performance

Capacity

RoutXpress has no inherent capacity limitations.

Response times

RoutXpress takes only a few seconds from the time a job is sent to a printer to completing its process rule-based decision-making and subsequent resubmission to the same or different printer.

Portability

RoutXpress Messenger Client currently runs on the Windows platform only. RoutXpress Messenger Client will be ported to other operating systems in the future.

Customization

Via the Messenger Client, RoutXpress users may customize management of their print jobs by assigning a job to a payer account; by grouping, ungrouping, and deleting jobs; and where authorized, sending a print job to a secure or media printer. RoutXpress administrators, via the Administrator Client, customize rules in order to control use of printers and Messenger Client options.

Support and Maintenance

APWI provides end user support. It is offered via email and phone, as well as a set of frequently-asked questions and answers (FAQs) available on the website (http://www.apwi.com/rx_faq.html).

Configuration Management

APWI emails existing customers notice of software patches, upgrades, and new versions. When an upgrade or new RoutXpress version becomes available, APWI provides discounts to existing customers wishing to upgrade their software version. Bug fixes (patches) are free.

Documentation

1. Setup Guide
2. User Guide

