RPM Remote Print Manager®

Flexible LPD Print Server Solution

RPM Remote Print Manager®
Version 5.1

Brooks Internet Software, Inc.
November 2010

Flexible LPD Solution

- Receive print jobs over TCP/IP from any host system including mainframe, iSeries, Unix and Linux, and Windows

- Output to PDF, HTML, and plain text, or print to any printer on your Windows network

- Apply formatting, clean up data, invoke third-party applications, save or email print documents to any location or user

- Replace SNA or Novell servers with this low-cost full-featured print server

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Contact Information

We invite you to contact us with your questions or comments regarding this manual or our software products:

Brooks Internet Software, Inc.
1820 E. 17th Street, Suite 330
Idaho Falls, ID 83404-6400 USA

Phone: (800) 523-9175
            (208) 523-6970
Fax: (208) 523-9482
Email: support@brooksnet.com
Web Page: http://www.brooksnet.com

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This product includes software developed by ImageMagick Studio LLC.

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Introduction

RPM Remote Print Manager (RPM), a TCP/IP print server for Microsoft Windows platforms, was designed to receive print jobs from any host system and print those documents to any printer available to the Windows computer. RPM can receive print jobs from a wide variety of print clients including IBM mainframes, AS/400 systems, UNIX and Linux servers, and PC and Macintosh print clients.

RPM supports text printing features including fonts, margins, line wrap and others. It can pass print data directly to a printer without modification; open it in another Windows application, or archive the file to disk in plain text, PDF, or HTML format.

RPM's features include the ability to automatically modify the data according to your needs prior to output by removing PCL codes, translating EBCDIC or SCS data from IBM mainframes and iSeries computers to it's ASCII equivalent, and much more.

RPM takes cross-platform printing and processing documents from host systems to new levels receiving. Printing or archiving to Windows-based resources will lower your printing costs and make your printing processes more efficient. In short, RPM will streamline and improve your document workflows.

RPM Features

RPM Remote Print Manager offers numerous ways to customize print data. The following features all have real-world uses. Many of these features were added due to customer feedback. If you can think of ways our product could be adapted to meet your network printing needs, please contact us. Note that the features listed here are available in all versions of RPM unless otherwise noted.

Driver-independent printing	RPM prints directly to any Windows-based printer. No need to purchase expensive printers or additional hardware for your printer.
Convert Text to PDF and HTML	RPM converts print documents to PDF and simple HTML for easy viewing, archiving, and distribution and to eliminate paper costs. RPM Elite supports PDF security features as well.
Supports Multiple Printers	Supports multiple printers. With RPM Select, you can print to as many as 10 printers. RPM Elite supports 99 up to unlimited.
Additional Output Methods	In addition to printing, RPM can also archive to disk, run a program passing the file as an argument or standard input (stdin), email documents to a recipient, and/or send the job to another queue for additional processing.
Print-to-file archiving	You can save incoming print documents to any network storage device, a folder shared from another Windows system, or your own computer. The ability to archive your print documents can reduce or eliminate expensive printing costs such as paper, toner or ink, etc.
Replace preprinted forms	Replace preprinted forms by printing a background image behind the text in the incoming print document. Many image formats are supported. You can add watermarks to PDF documents as well.

Installation Guide

Prior to installing RPM, log on as the computer Administrator account or another account with administrative privileges.

Minimum Requirements

- An Intel compatible computer; Pentium minimum.
- Microsoft Windows 2000 Service Pack 4 or later
- 128 MB memory minimum. 512 MB or more is recommended.
- 100 MB free disk space for installed executables and other files.
- Adequate disk space for incoming data-recommended 1 GB minimum.

Note: Additional requirements may be necessary depending on the number of print jobs and complexity of the RPM configuration.

Install RPM

1. Run the setup program downloaded from our website or the single file executable located on the installation CD.

2. At the Welcome screen, click Next.

3. License Agreement After reading and agreeing to the terms of the end-user license agreement, choose I accept the agreement and click Next to proceed. If you do not accept the terms, setup will not continue.

4. Select Destination Location Click Browse if you want to change the destination folder for RPM. We recommend you accept the default: `C:\Program Files\Brooks Internet Software\RPM`. Click Next.

5. Ready to Install Review the installation information and click Install. During this step, an exception is added to the Windows Firewall to enable printing. After installation is complete, click Finish. Setup may prompt you restart your computer in certain circumstances. If prompted, choose Yes.

The RPM service is configured to start automatically. To begin configuring the software, select RPM from the program group in the Start menu.

Prior to Configuring RPM

There are a number of items to consider prior to configuring and managing RPM.

- [How to get print jobs to RPM (Protocols)](#)
- [Format of incoming print](#)
- [Final output destination (Actions)](#)
- [Desired output format (Transforms)](#)

How to get print jobs to RPM (Protocols)

RPM can receive print jobs in a number of ways. Some are automated; others may require an operator to perform some function.

1. RPM receives print documents via the LPR/LPD protocol. This protocol is documented in the Request for Comments (RFC) 1179. The RFCs document Internet protocols, practices and proposed standards. For more information about specific LPR clients, see the Appendix I: AS/400 Setup for V4R4 (Version 4.4) and Later.

2. RPM can also receive print jobs over a direct socket connection, commonly referred to as reverse telnet, raw, or streams printing. Many printers support this method of printing, but it is not often found in software print servers.

3. You can also drag and drop files over the RPM graphical user interface (GUI). This method is useful for testing files that have been transferred to your computer in other ways. If you use this for testing purposes, keep in mind that print systems may change the data prior to printing, but not when using file transfer protocols such as FTP.

Note: Using the direct socket connection or drag and drop methods, some information used to create filenames will not be available. To get the full functionality from RPM, we recommend using the LPR/LPD protocol.

Format of incoming print documents

Knowledge of the format of incoming print documents is a vital step to getting the most value from RPM. For instance, RPM can convert SCS, EBCDIC, ASA carriage control, or plain ASCII text files to PDF, but it cannot convert PostScript to PDF. Converting PostScript to PDF can only be accomplished using RPM together with 3rd party conversion software such as Ghostscript.

RPM Elite can convert PCL directly to PDF. RPM Select can remove PCL codes and format the remaining text (if any) to PDF but cannot convert PCL directly to PDF.

Desired output format (Transforms)

The output format is obtained by applying one or more transforms. Transforms modify incoming print documents prior to running your desired action.

If you are printing text documents to a printer, and the printer supports PCL natively, a PCL transform can be used. If your incoming documents are in PCL format, but are configured to go to the wrong paper tray, you can apply a string translation to search for the PCL tray command and convert it to another.

If you are saving documents to disk, a PDF transform might be your choice. For users to access documents through a company intranet, you can use an HTML transform.

RPM Elite users can access additional functionality including a filter transform. This transform allows RPM to run a program to convert or modify your print document, then continue to run additional transforms and/or output the job using your desired action.

Final output destination (Actions)

Actions are performed after all transforms have been completed. You can have actions that print to a printer, save output to a file on your local hard drive or remote storage device, email a recipient, or run a filter program to further customize or output your documents, such as saving them to a company database or transferring them via FTP to another server.

Multiple actions can be used. For instance, you can save a file to disk and email it to a recipient, or you can print text to multiple printers, even when the printers are dissimilar.

Configuring RPM

What is a queue A queue is a named object used to store print documents that have been received by, but not yet removed from, RPM. In RPM, queue names are not case sensitive. This means that if you create a queue called "lp," documents sent to "LP" and "Lp" will also be received in "lp."

Valid characters in queue names include digits, letters, and the following special characters: dollar sign ($), at sign (@), dash (-), underscore (_), period (.), plus sign (+), square brackets ([ ]), and parentheses ().

Firewall Exception For RPM to receive print requests, your firewall must be configured to allow an exception, or custom firewall rule. If you are using the Windows Firewall, an exception is added during installation. If you are using another hardware or software firewall, you will need to configure it to allow RPM to receive print requests; the application requiring this exception is `RpmSrv.exe`, or you can add an exception for each port on which RPM listens.

Working with Queues

Creating a Queue

Open the RPM user interface. Choose Create from the Queue menu. You can also use the keyboard shortcut Ctrl+N or the toolbar button.
Type a name for the new queue and press Create. The queue will be created.

Editing a Queue

Highlight the queue you wish to edit and choose Settings from the Queue menu or click the Queue Settings toolbar button.

Creating Transforms

To add the transforms you require RPM to perform on print documents sent to this queue, click Add Transform. You must be in the Queue Settings tab.

1. From the Select Transform list, select the transform you would like to run.
    i. String translation Convert one string of characters into another
        - Search The string or sequence of characters to be replaced.
        - Replace The sequence of characters with which to replace it.
          Note This transform supports regular expressions. See Appendix IV: Regular Expressions for more information.

    ii. Character set conversion Convert incoming print documents from one character set to another. Character sets are often referred to as code pages.
        - Input character set Select the encoding of the incoming data file. You can choose from a variety of codepages including EBCDIC codepages.
        - Output character set Select the encoding to which the print document will be converted.
    iii. Convert PCL to PDF (Elite only) Convert documents from PCL5 or PCL6 to PDF.
        - Specify page size Select this option to specify a page size. If the incoming document specifies a page size, it takes precedence. You must also select the paper type if this option is enabled.
        - Default to landscape If the orientation is not specified in the PCL, the default orientation is portrait. Select this option to change the default.
        - Rotate Specify the page rotation. Select this option if, when the file is opened in a PDF viewer, the text flows down or up the page or is upside down.
        Meta Information

- Keywords Make it easier for automated agents, like search engines and indexing software, to determine the file's content.
- Subject The subject of the file.
- Author The author of the PDF file. Select Use job owner to populate this field with the user who requested the print job.
- Title The title of the file. Select Use job title to populate this field using information from the incoming job.

Overlay

- Overlay existing PDF file Select this option to allow the new file to be overlaid with an existing PDF file. The existing PDF file is not modified.
- Where to use image Specify whether to use the image on the first page, the even or odd pages, every page, or all pages after the first page.
- File path Click Browse to locate the PDF file to use as an overlay file.

Security

- Owner password Add an owner password to the PDF file.
- User password Add a user password to the PDF file.
- Allow read Allow or disallow read permissions to the PDF file.
- Allow print Allow or disallow the ability to print the PDF file.
- Allow copy Allow or disallow the ability to copy the PDF file to a new location.
- Allow editing content Allow or disallow editing the PDF contents.
- Allow editing notes and annotations Specify whether to allow the user to edit notes and/or annotations which are features of a PDF file.

iv. Convert PCL to image format (Elite only) Convert documents from PCL5 or PCL6 to Postscript, TIFF, JPEG or Windows Bitmap.
- File type Select the type of file to which the PCL print document will be converted.
- Resolution (DPI) Enter the resolution in dots per inch.

v. UNIX to DOS Convert Unix-style newlines into Windows-style newlines. This option verifies each ASCII line feed character (0x0A) is preceded by a carriage return (0x0D) and eliminates stair-step printing.

vi. Remove null characters Remove null ASCII characters (0x00).

vii. Remove PCL Remove PCL and PJL commands from the data file. This removes all graphics, leaving plain text (if any).

viii. Remove bytes Remove a number of bytes at the beginning of the data file.
- Number of bytes to remove Enter the number of bytes you wish removed from each incoming document.

ix. Remove text markup Remove text markup commands. Text markup is created by other transforms.

x. Limit bytes Allows you to configure a maximum number of bytes of data to be processed.

- Number of bytes to limit The maximum number of bytes to be processed. If the incoming file is larger than the value specified here, it will be truncated.

xi. Limit lines Allows you to configure a maximum number of lines to be processed.

- Maximum number of lines The maximum number of lines to be processed. If the incoming file has more lines, they will be truncated.

xii. Remove lines Remove a configurable number of lines from the beginning of the data file

- Number of lines to remove Enter the number of lines you wish removed from each incoming document.

xiii. Remove until Remove all data until a specific string of characters is found. This transform is line-based meaning the entire line with the specified string will be preserved.

- Remove until File processing will start when this string is found. If the string is not found, the job will be discarded.

    Note This transform supports regular expressions. See Appendix IV: Regular Expressions for more information.

xiv. Remove after Process all data until a specific string of characters is found. This transform is line-based meaning the entire line with the specified string will be printed.

- Remove after File processing will stop when this string is found. If the string is not found, the entire job will be processed.

    Note This transform supports regular expressions. See Appendix IV: Regular Expressions for more information.

xv. Insert bytes Insert bytes at the beginning of the data file.

- Bytes to Insert Click Update to access the Edit Bytes dialog to customize the data to be inserted.

xvi. Insert file Insert a file at the beginning of the data file.

- File to Insert Click Browse to locate the file to be inserted.

xvii. Append bytes Append bytes to the end of the data file.

- Bytes to Append Click Update to access the Edit Bytes dialog to customize the data to be appended.

xviii. Append file Append a file to the end of the data file.

- File to Append Click Browse to locate the file to be appended.

xix. Break lines If lines are too long, or the file contains no line terminators, RPM can add them at configurable intervals.

- Line break length Any lines longer than this value will be separated by the line break delimiter.
- Line break delimiter The character(s) to be used as the line terminator. Windows-style newlines contain both a carriage return and line

feed. Click Update to access the Edit Bytes dialog to customize the delimiter.

xx. Text Banner Adds a banner page at the beginning of the document.
- Banner template Click Browse to locate a customized text banner page. If blank, the default banner page will be printed.

xxi. PCL Banner This transform inserts a PCL banner page.
- Content Select the content of the banner page.
- Input Tray The source tray from which the banner will be printed.
- Output Bin The printer specific output bin.
- Top Enter the top margin (in inches) to be applied to the banner.
- Left Enter the left margin (in inches) to be applied to the banner.
- Paper Type Select the paper type installed in the selected input tray.
- Select font The font to be used on the banner page. All text on the banner page will be printed in this font.
- Spacing Select whether to use proportional or fixed font spacing.
- Encoding Character encoding (codepage) to use.
- Font size Enter the size of the font in points.

xxii. PCL Separator Append a PCL separator at the end of each job.
- Input Tray The printer specific source paper tray.
- Output Bin The printer specific output bin.

xxiii. Text markup Convert plain text to text markup for use with transforms or actions which require text markup input.
- Page Margins Select the size (in inches) of the top, bottom, left, and right margins.
- Calculate layout Automatically rotate the page orientation and scale the font to fit the data within a given page size.
- Max portrait width If calculate layout is enabled, enter the maximum width, in characters, before the page is rotated to landscape.
- Use Longest Line If calculate layout is enabled, select this option to use the longest line as the actual page width.
- Trim trailing spaces While calculating layout, do not count trailing spaces when calculating characters per inch.
- Use Lines per inch When selected, the vertical size of the font will be scaled to print only the configured number of lines per inch.
  Note Use the following formula to calculate lines per inch.
  LPI = Lines / (Paper Height - (left margin + right margin))

- Fit lines per page When selected, the font size will be scaled to fit the configured number of lines on the page.
- Use Characters per inch When selected, the horizontal size of the font will be scaled to print the configured number of characters per inch.
  Note Use the following formula to calculate characters per inch.
  CPI = Characters / (Paper Width - (left margin + right margin))

- Fit columns per line When selected, the font size will be scaled to fit the configured number of characters horizontally on the page.
- Select Font Click the Font button to change the font to be applied to the entire document when printed.
- Input codepage The character set, or encoding, of the incoming print documents.
- Orientation Specifies the orientation to be used during output.
- Wrap lines RPM will add line breaks if a line does not fit within the printable width of the paper. If not selected, long lines will be truncated.
- Remove control characters Non-whitespace characters with an ASCII value less than 0x19 will be removed.
- Suppress blank pages If the document has any blank pages, they will not be printed. You may want this option turned off if you are printing duplex documents.

xxiv. SCS to text markup Convert SNA Character Set (SCS) files, typically System i (iSeries, AS/400, etc.) spooled files, to text markup

- Page Margins Select the size (in inches) of the top, bottom, left, and right margins.
- Use Lines per inch When selected, the vertical size of the font will be scaled to print only the configured number of lines per inch.

  Note Use the following formula to calculate lines per inch.
  LPI = Lines / (Paper Height - (left margin + right margin))

- Fit lines per page When selected, the font size will be scaled to fit the configured number of lines on the page.
- Use Characters per inch When selected, the horizontal size of the font will be scaled to print the configured number of characters per inch.

  Note Use the following formula to calculate characters per inch.
  CPI = Characters / (Paper Width - (left margin + right margin))

- Fit columns per line When selected, the font size will be scaled to fit the configured number of characters horizontally on the page.
- Select Font Click the Font button to set the initial font to be used when printing. SCS can change the font face and size during the course of printing.
- EBCDIC codepage Default EBCDIC encoding used on the System i (AS/400, iSeries, etc.) host.
- Orientation Specifies the orientation to be used during output.
- Wrap lines Add line breaks if a line does not fit within the printable width of the paper. If not selected, long lines will be truncated.
- Remove control characters Non-whitespace characters with an ASCII value less than 0x19 will be removed.

- Suppress blank pages If the document has any blank pages, they will not be printed. You may want this option turned off if you are printing duplex documents.

xxv.   ASA to text markup Convert ASA carriage control to text markup.

- Page Margins Select the size (in inches) of the top, bottom, left, and right margins.
- Use Lines per inch When selected, the vertical size of the font will be scaled to print only the configured number of lines per inch.

  Note Use the following formula to calculate lines per inch.
  LPI = Lines / (Paper Height - (left margin + right margin))

- Fit lines per page When selected, the font size will be scaled to fit the configured number of lines on the page.
- Use Characters per inch When selected, the horizontal size of the font will be scaled to print the configured number of characters per inch.

  Note Use the following formula to calculate characters per inch.
  CPI = Characters / (Paper Width - (left margin + right margin))

- Fit columns per line When selected, the font size will be scaled to fit the configured number of characters horizontally on the page.
- Select Font Click the Font button to change the font that will be applied to the entire document when printed.
- Input codepage The character set, or encoding, of the incoming print documents.
- Orientation Specifies the orientation of the orientation to be used during output.
- Wrap lines Add line breaks if a line does not fit within the printable width of the paper. If not selected, long lines will be truncated.
- Remove control characters When selected, non-whitespace characters with an ASCII value less than 0x19 will be removed.
- Suppress blank pages If the document has any blank pages, they will not be printed. You may want this option turned off if you are printing duplex documents.

The first byte of each line contains a control character, which RPM interprets this way.

0 (zero)	this line to be double spaced
1 (one)	this line to start on a new page
+ (plus)	overwrite the previous line; used to bold, underline, or overstrike words or characters.
- (dash)	this line to be triple-spaced
Any other character	this line to be single spaced

xxvi.   Apply COR to text markup Automatically rotate the page orientation and scale the font to fit the data within a given page size.

i.　Filter (Elite only) Run an external program for custom data transformation.

- Filter Program Click Browse and locate the program or batch file to be executed when print documents are received.

  Note Only compiled Windows programs with .com, .exe, or .bat extensions can be executed. Scripting languages such as vbscript can only be run by calling the script interpreter program here.

- Arguments If your program requires specific arguments enter those here. RPM provides the following tags which are substituted with information from the print job.

`%s`	full path to the file to be processed
`%o`	full path of the program's output file
`%n`	name of source file
`%j`	job name from control file
`%t`	title from control file
`%b`	banner from control file
`%c`	class from control file
`%h`	hostname specified by the lpr client
`%u`	user sent in the control file
`%i`	indent count from control file
`%e`	email field from control file
`%w`	width of output specified in control file
`%S`	queue sequence number
`%F`	format specified in control file
`%C`	control file name and path
`%q`	RPM queue name

  Note Use of the above tags is limited to jobs received using the LPR/LPD protocol. If jobs are received using other methods (i.e. telnet printing or drag and drop), most of these tags will be blank.

- Working directory Specifies the working directory when the program is started. The program can change its working directory during the course of operation.
- Terminate idle process after X seconds Select this option only if your filter program does not close after it has finished processing.
- Transfer file to filter using standard input The data is streamed to the filter program. Many programs with UNIX origins support standard input.
- Input filename Allows you to customize the name passed in the `%s` variable of the command arguments (see above).

  Note Many of the file format options are limited to jobs received using the LPR/LPD protocol. If jobs are received using other methods, most of these tags will be blank.

- Filter result is standard output If the filter program streams its result to standard output, select this option. Many programs with UNIX origins support standard output.
- Save standard error log Causes the program's standard error to be output to a file.

xxvii. Text markup to PDF Convert files with text markup into PDF
- Paper type Select the paper type to be used in the output file.

Meta Information
- Keywords Make it easier for automated agents, like search engines and indexing software, to determine the file's contents.
- Subject The subject of the file.
- Author The author of the PDF file. Select Use job owner to populate this field with the user who requested the print job.
- Title The title of the file. Select Use job title to populate this field using information from the incoming job.

Watermarks (Elite only)
- Image path Add a watermark to the PDF file using the image specified here.
- Inches from left margin The distance in inches from the left margin where the watermark will be placed.
- Inches from top margin The distance in inches from the top margin where the watermark will be placed.
- Image scale The scale in percentage of the image based.
- Where to use image Specify whether to use the image on the first page, the even or odd pages, every page, or all pages other than the first page.

Security (Elite only)
- Owner password Add an owner password to the PDF file.
- User password Add a user password to the PDF file.
- Allow read Allow or disallow read permissions to the PDF file.
- Allow print Allow or disallow the ability to print the PDF file.
- Allow copy Allow or disallow the ability to copy the PDF file to a new location.
- Allow editing content Allow or disallow editing the PDF contents.
- Allow editing notes and annotations Specify whether to allow the user to edit notes and/or annotations which are features of a PDF file.

xxviii. Text markup to PCL Convert text markup files to PCL
- Input tray The source paper tray from which the document will be printed.
- Output Bin The printer specific output bin.
- Paper type Select the type of paper installed in the selected paper source.
- Select font Select the default font to be used throughout the entire document.

- Spacing Select whether to use proportional or fixed font spacing.
- Encoding Character encoding (codepage) of incoming documents.
- Duplex Specify whether data will be printed on both sides of the paper.

xxix. Text markup to HTML Convert files with text markup into HTML

Creating Actions

To add the actions RPM will perform on print documents sent to this queue, click Add Action. You must be in the Queue Settings tab.

2. From the Type of action drop list, select the action to be performed.

    i. Archive to folder Saves the converted document to a specified folder

- Credentials Optionally, enter the username, password, and domain for an account with sufficient access to the destination folder.
- Folder Click Browse to locate the folder in which you would like to save these documents.

  Note If you browse to a mapped network drive, RPM will automatically convert the destination folder to a UNC path.

- File format Click Format to customize the name of the file(s) to be created.

  Note Many of the file format options are limited to jobs received using the LPR/LPD protocol. If jobs are received using other methods, most of these tags will be blank.

- File Creation If a file by the same name already exists; select whether to create a unique filename, overwrite the existing file, or append the contents of the incoming file to the existing file.

    ii. Text printer Prints documents to any printer using text formatting capabilities and features. This action requires Text Markup.

- Credentials Optionally, enter the username, password, and domain for an account with sufficient access to the destination printer. An account with full access to the printer will allow RPM to control the filename passed to the Windows spooler.
- Printer Click Browse to select the printer to which documents will be printed. By opening the print properties dialog, you can also specify additional printer finishing functions such as 2-sided printing, tray selection, etc.
- Interact with Desktop Some print drivers or port monitors may require a user to perform some predefined action prior to document output. For example, the FILE: port requires you to specify the filename. If your printer requires user interaction, select this option.

> Note When this option is selected, the job will be printed only when the user specified in Credentials is logged on. If Credentials are not specified, this option cannot be selected.

- Start page Begin printing all documents on the configured page number.
- End page Do not print any pages beyond the configured number. Specify 0 to print to the actual last page of the document.
- Suppress banner page This setting prevents RPM from creating and printing a banner page regardless of whether requested to do so by the print client. Note that during trial, a banner is always printed.

Watermark (Elite only)

- Image path Click Browse to locate the image to be printed behind the text.
- Inches from left margin Specifies the distance in inches from the left margin of the page where the image will be placed.
- Inches from top margin Specified the distance, in inches, from the top margin of the page where the image will be placed.
- Image scale Allows you to scale the watermark image to be printed.
- Where to use image Specifies on which pages the watermark will be printed.

iii. Raw printer Sends documents to a printer bypassing the print driver.

- Credentials Optionally, enter the username, password, and domain for an account with sufficient access to the destination printer. An account with full access to the printer will allow RPM to control the filename passed to the Windows spooler.
- Printer Select the printer to which documents will be printed.
- Interact with Desktop Some print drivers or port monitors may require a user to perform some predefined action prior to document output. For example, the FILE: port requires you to specify the filename. If your printer requires user interaction, select this option.

> Note When this option is selected, the job will be printed only when the user specified in Credentials is logged on. If Credentials are not specified, this option cannot be selected.

- Copies Each document will be printed the configured number of times.
- Start page Begin printing all incoming documents on the configured page number. This is an estimated position only and is not guaranteed accurate. Use this feature at your own risk.
- End page Do not print any pages beyond the configured number. Specify 0 to print to the actual last page of the document. This is

an estimated position only and is not guaranteed accurate. Use this feature at your own risk.

iv. Filter Run a program when a print document has been received.

- Credentials Optionally, enter the username, password, and domain for an account with sufficient access to the destination folder.
- Command Click Browse and locate the program or batch file to be executed when print documents are received.

Note Only compiled Windows programs with .com, .exe, or .bat extensions can be executed. Scripting languages such as vbscript can only be run by calling the script interpreter program here.

- Arguments If your program requires specific arguments enter those here. RPM provides the following tags which are substituted with information from the print job.

%s	name and path of the processed file
%n	name of source file
%j	job name from control file
%t	title from control file
%b	banner from control file
%c	class from control file
%h	hostname specified by the lpr client
%u	user sent in the control file
%i	indent count from control file
%e	email field from control file
%w	width of output specified in control file
%S	queue sequence number
%F	format specified in control file
%C	control file name and path
%q	RPM queue name

Note Use of the above tags is limited to jobs received using the LPR/LPD protocol. If jobs are received using other methods (i.e. telnet printing or drag and drop), most of these tags will be blank.

- Working directory Specifies the working directory when the program is started. The program can change its working directory during the course of operation.
- Interact with Desktop Select this option if your filter program requires user interaction.

Note When this option is selected, the filter program will run only when the user specified in Credentials is logged on. If Credentials are not specified, this option cannot be selected.

- Terminate idle process after X seconds Select this option only if your filter program does not terminate after it has finished processing.

- File Format Allows you to customize the name passed in the `%s` variable of the command arguments (see above).
  Note Many of the file format options are limited to jobs received using the LPR/LPD protocol. If jobs are received using other methods, most of these tags will be blank.

- File Creation If a file with the same name already exists; select whether to create a unique filename, overwrite the existing file, or append the contents to the existing file.
- Transfer file to filter using standard input The data is streamed to the filter program. Many programs with UNIX origins support standard input.
- Save Output Causes the program's standard output to be streamed to a file. This option allows you to customize the name of the file receiving the standard output.
  Note Many of the save output options are limited to jobs received using the LPR/LPD protocol. If jobs are received using other methods, most of these tags will be blank.

- Save standard error log Causes the program's standard error to be output to a file.

v. Email Send the received print documents to a mail recipient or group of recipients
  - From Email address of the sender. This is also the reply-to address.
  - To Recipients email address. Separate multiple recipients with a comma (,) or semicolon (;). If your email server supports it, we recommend using distribution groups rather than multiple email addresses.
  - Subject Allows you to customize the subject of the email. You can build a subject using job attributes.
    Note Many of the attributes are limited to jobs received using the LPR/LPD protocol. If jobs are received using other methods, most of these tags will be blank.

  - Use job Specifies whether to use the print job as the message body or as an attachment. To use the job as the message body, your documents must be plain text or HTML.
  - Message The email message body.
  - File format Allows you to customize the name of the file to be attached. You can build the filename using job attributes.
    Note Many of the attributes are limited to jobs received using the LPR/LPD protocol. If jobs are received using other methods, most of these tags will be blank.

- SMTP Server (optional) Causes the email to be relayed through an SMTP server. You should use either your company's or your Internet service provider's (ISP's) outgoing email server.
- Login If your SMTP server requires authentication (smtp-auth), enter the login or username here.
- Password If your SMTP server requires authentication (smtp-auth), enter the password here.

vi.   Copy to queue Copies the print job to another queue.

- Destination Select the queue where the document should be copied.

3. When finished configuring the desired action, press Save. Repeat step one to add as many additional actions as desired.

General Settings

General settings is where you to view and modify global settings, protocols and ports, and security.

Settings

1. Log Settings Configure how many days log messages remain until they are purged from the database. Once removed, they cannot be recovered.
2. Spool folder location Allows you to customize where RPM stores files it receives. This includes files it has received but not finished printing and jobs which have been archived.
3. Temp folder location Allows you to customize where RPM creates temporary files it creates while processing print jobs. This folder should not be used for any other purpose as any files in this folder are removed when RPM starts.
4. Alert email to When a job cannot be printed successfully, an alert email is sent to the recipient configured here. After the problem is resolved and the job prints, another alert is sent.
5. Alert email from Specifies the sender of the alert emails.
6. Status email from Specifies the sender of status emails. Status emails are sent if the LPR client requests it in the control file's *mail when printed* field.
7. SMTP Server (optional) Specify the server through which the email will be relayed. You should use either your company's or your Internet service provider's (ISP's) outgoing email server.
8. Login If your SMTP server requires authentication (smtp-auth), enter the login or username here.
9. Password If your SMTP server requires authentication (smtp-auth), enter the password here.
10. Require Admin user to make changes When enabled, only a member of the Windows Administrators group (or equivalent) will be able to make changes to the RPM configuration. Only administrators are able to see this option.

11. Print worker tasks (Elite only) RPM can support a number of worker tasks which can process jobs more quickly in an environment with many different devices. This setting has a limit of 256, but we recommend no more than the number of processor cores in your server.
12. Job drop options Specifies whether jobs are copied or moved when dragged to another queue.

Ports

This window shows the ports and protocols on which RPM listens for print requests. It also displays their current status and a diagnostic message.

Adding a Port

1. In the Ports window, click Add Port.
2. Select the desired protocol: LPR/LPD, Telnet, or HTTP (Elite only).
3. Enter a port number not in use by RPM or any other application running on your computer.
4. LPD Configure LPD settings with the appropriate values. In most situations, the default values should not be changed.
    a. Auto-create queues on request This option enables RPM to create a new queue if it receives a request for a queue which does not already exist.
    b. Enable zero length file transfers This option allows RPM to accept a print job even if the size is not specified by the requesting LPR client.
    c. Timeout Enter the amount of idle time, in seconds, RPM will wait before closing the connection.
    d. Save control files Enable this option if you would like RPM to create a file with the contents of the incoming control file.
5. Telnet This protocol allows RPM to receive print jobs over a direct socket connection, commonly referred to as reverse telnet, raw, or streams printing.
    a. User The arbitrary user name RPM will add to incoming print requests.
    b. Queue The queue where RPM will place incoming print requests.
    c. Job name Allows you to customize the name RPM will use as the title of the print job.
    d. Queue pages The number of pages RPM will buffer before printing.
    e. Timeout By default, RPM will not close the Telnet connection. Enter the amount of idle time, in seconds, to wait prior to closing the connection.
    f. Print pages when idle This causes RPM to consider a print job completed if there is a period of inactivity over the connection.
6. HTTP (Elite only) Add an HTTP port to enable the Remote Print Administrator (RPA). This allows you to access and modify RPM configuration using a web browser like Internet Explorer or Firefox.
    a. Port Enter the port number on which RPM will listen for HTTP requests.
    b. Connection settings You must enter the IP address or hostname of each host for which you would like to allow access. You can also add multiple hosts or a range of addresses. To enter a range of hosts by name, use the

asterisk character (i.e. *.brooksnet.com). To allow your entire network, leave one or more octets blank (i.e. 192.168.1.).

Security

RPM optionally performs an access check for each connection it receives. Connections include print requests, queue status requests, and others. RPM is able to deny access based on the identity of the remote computer. If access is allowed, then the request proceeds without the print client being aware that a check has taken place. If the access is denied, RPM closes the connection, shutting off the request.

Only allow computers in the list to print When selected, only computers with the IP address or hostname listed will be allowed to print. If RPM gets a request from any other computer, the request will be denied and a message logged.

Block computers in the list from printing When selected, all computers that are not in the list will be allowed to print. If RPM gets a request from a computer in the list, the connection will be rejected.

Note Security is for network printing protocols only. Drag and drop functionality is not restricted.

Display

This view allows you to turn helpful balloon-style tips on or off depending on your level of experience.

1. Display help balloon tips Turn all help tips on or off.
2. Queue navigation balloon tip Toggle tips on or off in the Queue window.
3. Job list balloon tip Toggle tips on or off in the Job window.
4. Job archive balloon tip Toggle tips on or off in the job archive window.
5. Queue settings balloon tip Toggle tips on or off in the Queue Settings window.
6. Connection failure balloon tip Toggle tips on or off for the connection icon in the status bar.

Remote Print Administrator

The Remote Print Administrator (RPA) is a feature included with RPM Elite only which allows you to connect to and configure RPM locally or remotely using Internet Explorer, Firefox or other AJAX-compatible web browsers. Using the RPA, you can configure queues and modify or view nearly every configuration option you choose.

Minimum Requirements

- RPM Elite
- Internet Explorer 7.0 or later or,

- Firefox 2.0 or later

Enabling

For security reasons, the web service which enables the RPA to function is disabled. Turn it on by following the steps below.

1. Open General Settings. In the Ports window, click Add Port.
2. Select the HTTP Protocol.
3. Enter a port number not already in use by RPM or any other application. If the computer does not already have a web server running, use port 80.
4. HTTP settings By default, RPM blocks all HTTP requests from even the local host. Enter the IP address of each host for which you would like to allow access. The Localhost button enters all local addresses.

   You can also add multiple hosts or a range of addresses. To enter a range of hosts by name, use the asterisk character (i.e. *.brooksnet.com). To allow your entire network, leave one or more parts of the IP address blank (i.e. 192.168.1.).

Connecting

1. Once the port has been configured, go to the computer of any host to which you have allowed access.
2. Open your Internet browser to the following address: `http://[host]:[port]`. Substitute appropriate values for items in brackets. If you used port 80, `:[port]` can be omitted.
3. To show only jobs for a particular queue, enter the following address: `http://[host]:[port]/index.html?queue=[queue]`. Again, substitute appropriate values for the items in brackets.

Appendix I: AS/400 Setup for V4R4 and Later

To print to RPM from a System i (iSeries, AS/400, etc.), a remote output queue (OUTQ) is used. To create the remote OUTQ, use the CRTOUTQ command. To modify an existing OUTQ, use the CHGOUTQ command. The remote OUTQ should have the following characteristics. You should substitute appropriate values in place of [OBJECT_NAME], [RPM_QUEUE], and [IP_ADDRESS].

```
Output queue  . . . . . . . . . . . . . : [OBJECT_NAME]
  Library . . . . . . . . . . . . . . . : QUSRSYS
Maximum spooled file size:
  Number of pages . . . . . . . . . . . : *NONE
    Starting time . . . . . . . . . . . :
    Ending time . . . . . . . . . . . . :
Order of files on queue . . . . . . . . : *FIFO
Remote system . . . . . . . . . . . . . : *INTNETADR
Remote printer queue  . . . . . . . . . : [RPM_QUEUE]
Writers to autostart  . . . . . . . . . : 1
Queue for writer messages . . . . . . . : QSYSOPR
  Library . . . . . . . . . . . . . . . : *LIBL
Connection type . . . . . . . . . . . . : *IP
Destination type  . . . . . . . . . . . : *OTHER
Host print transform  . . . . . . . . . : *NO
User data transform . . . . . . . . . . : *NONE
  Library . . . . . . . . . . . . . . . :
Manufacturer type and model . . . . . . : *HP4
Workstation customizing object  . . . . : *NONE
  Library . . . . . . . . . . . . . . . :
Image configuration . . . . . . . . . . : *NONE
Internet address  . . . . . . . . . . . : [IP_ADDRESS]
VM/MVS class  . . . . . . . . . . . . . : A
Forms Control Buffer  . . . . . . . . . : *NONE
Destination options . . . . . . . . . . : XAIX XAUTOQ
Print separator page  . . . . . . . . . : *YES
User defined option . . . . . . . . . . : *NONE
User defined object:
  Object  . . . . . . . . . . . . . . . : *NONE
    Library . . . . . . . . . . . . . . :
  Object type . . . . . . . . . . . . . :
User driver program . . . . . . . . . . : *NONE
  Library . . . . . . . . . . . . . . . :
Spooled file ASP  . . . . . . . . . . . : *SYSTEM
Text 'description'  . . . . . . . . . . : PRINT TO RPM REMOTE PRINT MANAGER
Display any file  . . . . . . . . . . . : *NO
Job separators  . . . . . . . . . . . . : 0
Operator controlled . . . . . . . . . . : *YES
Data queue  . . . . . . . . . . . . . . : *NONE
  Library . . . . . . . . . . . . . . . :
Authority to check  . . . . . . . . . . : *DTAAUT
Authority . . . . . . . . . . . . . . . : *USE
```

Appendix II: Windows Setup for 2000 and Later

There are two methods for printing a file to RPM from Windows 2000 or later operating systems. Method one should be used when testing a file obtained from another operating system, or when simply testing RPM's ability to receive print jobs.

Method 1

1. From the Start menu, choose Run. Type CMD.EXE and press OK.

2. At the command prompt, issue the CD command (change directory) to move into the folder where the file is found. For instance, if the file is on your desktop, type the following command (be sure to substitute your Windows username where appropriate).

```
CD "C:\DOCUMENTS AND SETTINGS\[USERNAME]\DESKTOP"
```

3. Issue the LPR.EXE command and all relevant parameters. If the filename has spaces, enclose it in quotation marks (be sure to substitute your computer's IP address, the name of the RPM queue, and the filename where appropriate).

```
C:\WINDOWS\SYSTEM32\LPR.EXE -S [ADDRESS] -P [RPM_QUEUE]
[FILENAME]
```

The following method should be used when a Windows application is your production system and you wish to print documents from it through RPM. To test RPM's ability to receive print requests locally, use the above method. To verify your existing configuration will work with a particular file on your computer, drag and drop is recommended.

Method 2

1. Open the Printers [& Faxes] folder and choose Add Printer from the File menu to invoke the Windows Add Printer Wizard. Review the wizard's introduction page and press Next.

2. Choose Local Printer and deselect automatically detect and install my Plug and Play printer. Click Next. Note that Windows traditionally considers a TCP/IP printer to be local and network printers are only those "shared" from another Windows PC.

3. Choose Create a new port and select Standard TCP/IP Port. Review the Add Standard TCP/IP Port Wizard's introduction page and click Next.

4. In the Printer name or IP address field, type the IP address or hostname of the computer running RPM. A port name is automatically filled in for you, but can be customized if necessary. Click Next.

5. The next page requests more information about the print server. Choose Custom and press the Settings button.

6. Choose the LPR protocol and enter the name of the queue in which print requests will be received from this Windows printer. We recommend selecting LPR Byte Counting Enabled. Press OK.

7. Click Finish and continue through the Add Printer Wizard. Choose the correct manufacturer and model of the printer. It should not be necessary to print a test page.

Appendix III: Common UNIX Printing System (CUPS)

The Common UNIX Printing System (CUPS) is commonly used on a wide variety of UNIX systems, including most Linux distributions. Configuring CUPS to print through RPM is a simple process. Note that the steps to create a printer may be different depending on the CUPS configuration tool you use.

1. We suggest performing a telnet test to verify your UNIX/Linux server can connect to RPM. At a command prompt on your CUPS server, issue the following command (in place of `[ADDRESS]` substitute your RPM host's IP address or DNS name). After a connection is made, pressing Enter should close the connection.

```
telnet [ADDRESS] 515
```

2. Check the RPM log window to verify the connection was made properly. You should see a warning message similar to: Unknown LPD command 0x0D. If this message appears, the server running CUPS can successfully connect to RPM.

3. Start the CUPS administration tool, either the graphical or text tool depending on your system configuration and installed programs.

4. From the Printer menu, choose Add Printer or select the New Printer icon. The Add a Printer wizard is displayed.

5. In Printer Type, select Network Printer. The type of network printer will be UNIX printer (LPD). Once this is selected, you can enter your RPM host computer's IP address in the Host field and the RPM queue name in the Queue field.

6. In the next step, choose the type of printer. We recommend selecting a raw printer without a filter (print driver). This should ensure plain text data is sent to RPM.

7. The final steps prompt you for information about the printer. The Name field is the name of the printer as known on your UNIX server. The other fields are informational only and may be omitted.

8. If you would like to test this printer, enter the following command at a terminal window (substitute your CUPS printer name and a valid filename where appropriate).

```
lpr -P [PRINTER] [FILENAME]
```

Appendix IV: Regular Expressions

Regular expressions allow more complex search and replace functions by identifying repetition or patterns of characters. RPM allows regular expressions in the string translation transform in both the search and replace fields.

Symbol	Function
\	Indicates the next character has a special meaning. "n" on it's own matches the character "n". "\n" matches a linefeed or newline character. See examples below (\d, \f, \n etc).
^	Matches/anchors the beginning of line.
$	Matches/anchors the end of line.
*	Matches the preceding character zero or more times.
+	Matches the preceding character one or more times. Does not match repeated newlines.
.	Matches any single character except a newline character. Does not match repeated newlines.
(expression)	Brackets or tags an expression to use in the replace field. A regular expression may have up to 9 tagged expressions, numbered according to their order in the regular expression. The corresponding replacement expression is \x, for x in the range 1-9. Example: If (h.*o) (f.*s) matches "hello folks", \2 \1 would replace it with "folks hello".
[xyz]	A character set. Matches any characters between brackets.
[^xyz]	A negative character set. Matches any characters NOT between brackets.
\d	Matches a digit character. Equivalent to [0-9].
\D	Matches a nondigit character. Equivalent to [^0-9].
\f	Matches a form-feed character.
\n	Matches a linefeed character.
\r	Matches a carriage return character.
\s	Matches any white space including space, tab, form-feed, etc but not newline.
\S	Matches any nonwhite space character but not newline.
\t	Matches a tab character.
\v	Matches a vertical tab character.
\w	Matches any word character including underscore.
\W	Matches any non word character.

Examples

p.t matches "pat", "pot", and "put" but not "part".

Pa+st matches "past", "paast", "paaaast" etc. BUT NOT "pst".
Pa*st matches "past", "paast", "paaaast" etc. AND "pst".
[aeiou] matches lowercase vowels
[,.?] matches a comma (,), period (.), or question mark (?).
[0-9a-z] matches any digit or lowercase letter
[^0-9] matches any character except a digit (^ means NOT the following)

You may search for an expression A or B as follows. This will search for an occurrence of Chase or Justin or John. There should be nothing between the expressions.

"(Chase|Justin|John)"

You may combine A or B and C or D in the same search as follows, which will search for Chase or Justin or John followed by Jones or Smith.

"(Chase|Justin|John) (Jones|Smith)"

Glossary

Action
An action is the output function performed on print documents that have been received and processed by RPM. RPM can perform multiple actions on each incoming print document.

Credentials
Access to Windows resources, both local and remote, requires a username, password, and domain. Collectively, this is known as your credentials. If your computer is not a member of a domain, your computer name should be used, not the workgroup.

Queue
A queue is a named object used to store print documents that have been received by, but not yet removed from, RPM.

Text Markup
An intermediate document format used internally by RPM. Some transforms can create Text Markup such as ASA to text markup or SCS to text markup. The PCL, PDF, and HTML transforms, as well as the text printer action, require text markup.

Transform
Transforms modify incoming print documents prior to running actions.