

CheckStream™ Check Printing Software

Check printing risks and errors can cost your company time and money. Between costly pre-printed forms that are security risks and 'lost' print jobs that delay payments or payroll checks, too many companies incur costs that can be alleviated with innovative solutions. Optimizing printer assets is a great start to controlling these costs, but right-sizing printer fleets alone will not reduce wasted printing and ensure that business critical output is delivered in a timely and secure fashion.



Implementing CheckStream reduces total prints and streamlines document delivery, freeing up your company resources to concentrate on achieving core business goals.

CheckStream Implementation System Specs

CheckStream is designed to fit into your business-critical infrastructure without requiring additional server hardware dedicated to check printing. CheckStream typically resides on the same server that the application creating check print runs resides on, however this is not a requirement.

CheckStream runs on client choice of the following servers:

- Windows x86
- Windows x64
- Any Linux based OS (x86/x64)
- AIX
- Solaris (Risc or Intel)
- HPUX (Risc/IA)
- AS400

Hardware Requirements:

- Recommended Memory based on OS, minimum of 128Mb RAM to run/li
- Hard Disk space for installation, 260 MB
- Hard Disk space for spooling at least 20GB, higher the better, if print volumes are high
- Network card or Wireless Access Point

Additional Considerations:

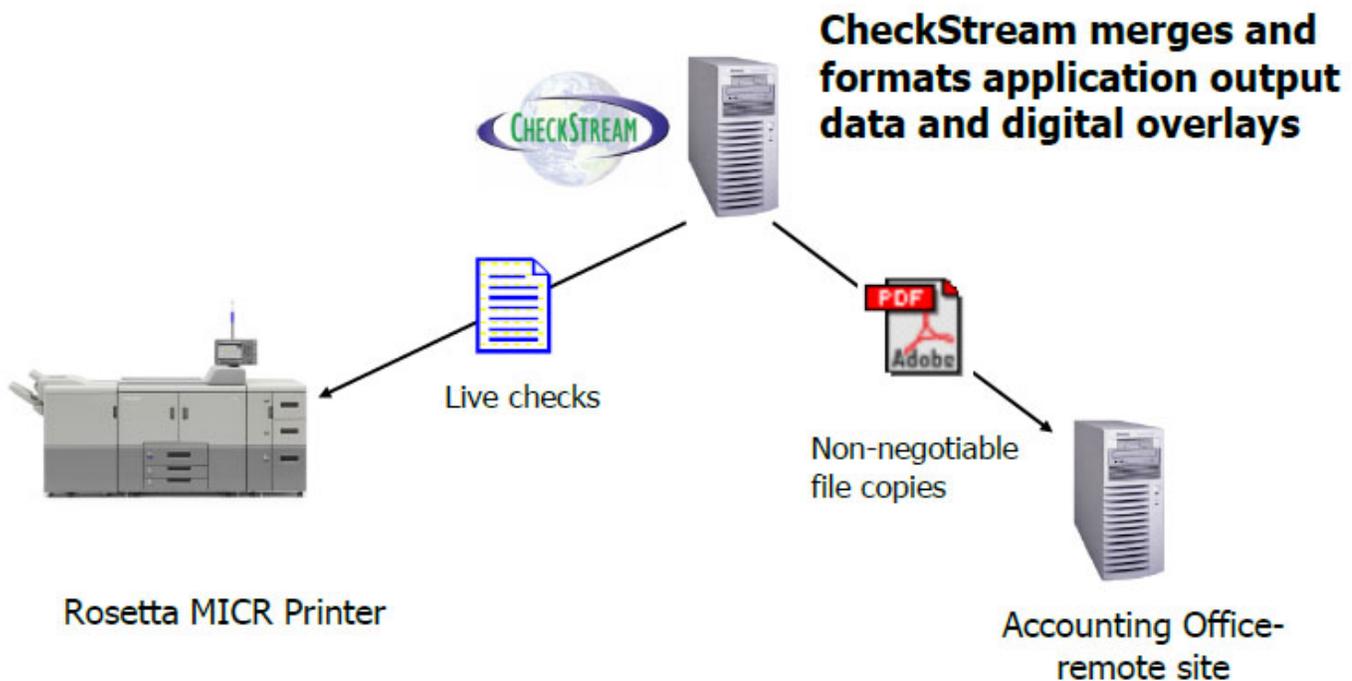
- Any UNIX/Linux server or
- Windows 7, 8, 10, 2008, 2012 or higher
- 260 megabytes free space for the programs, scripts, forms and configuration files

- As much spooling space as is required for anticipated server load and printing habits
- 64Mb RAM minimum; recommended 128 Mb
- CDROM drive or direct link download capability (to acquire installation files)
- TCP/IP networking capability
- (optional) Web Browser
- (optional) Web server capabilities
- Java Run-time (latest version from Oracle is required)
- .Net 3.5 enabled and .Net 4.0 or higher is required for Windows installations

Intelligent check printing

Issue/symptom - many business applications create printer-ready check output with only basic font, layout and form characteristics. This forces users to implement costly pre-printed forms, restricts data-driven customizations and restricts the ability to format and deliver documents digitally without extensive manual intervention.

Resolution with CheckStream: CheckStream contains PCL, Postscript and PDF conversion capabilities that allow data-driven form creation. As the following diagram illustrates, with a single print request, multiple documents are created, each with data-defined variable elements (such as barcodes, logos, marketing messages, etc.) and extensive layout selection:

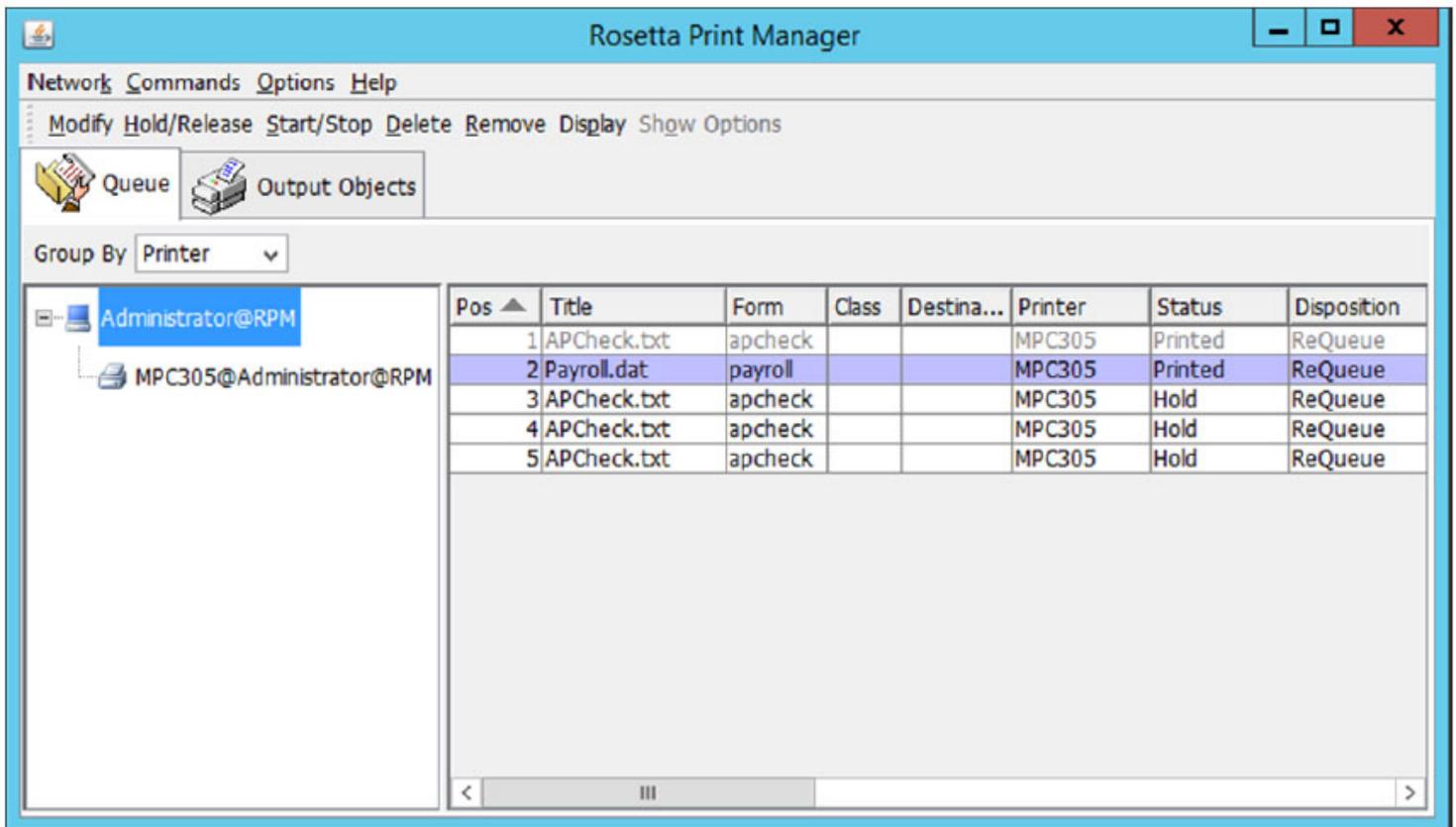


CheckStream's conversion technology:

- Accepts raw or printer-ready data (PCL, PS or ASCII format) from any business application running on any system (Unix, Windows, Linux, mainframe, AS/400, etc.)
- Eliminates the need for expensive pre-printed forms, enabling immediate ROI
- Creates customized output based on data for personalized documents
- Custom formats check application data from application vendors such as Oracle/PeopleSoft, SAP, QAD, etc.

- Provides complete control over the format of the system output - fonts (barcodes, MICR fonts, Postnet codes, UPCs), logos, images, orientation, margin, duplexing, collation, paper selection, graphs & charts
- Utilizes dynamic overlays for tag mapping to data fields (no need to learn proprietary overlay building software)
- Features a form composer tool that allows form fine tuning at many levels
- Offers both a programmer interface and an advanced output queue management interface

The picture below shows the CheckStream output manager interface. The main window of the manager applet provides a complete menu of control functions for jobs:



There are several notable features of CheckStream designed to make the system administrators life easier:

- In Windows environments, printers can be setup in CheckStream without having to install the same printer in Windows - in other words, CheckStream has its own set of printer device drivers and the CheckStream-defined printers do not have to be 'known' to the Windows print system
- Users can send print requests using CheckStream server as their main print server, the queue manager can use the Windows Account authorization system to allow or restrict control over the jobs in the queue
- The display can be sorted using any column heading (additional column headings are accessed by scrolling the interface)
- CheckStream is completely compatible with any standard (lpr/lpd) printing software -- it can receive print requests and send print requests. This means that it is easy to centralize all network printing on the Windows, Unix, Linux or AS/400 print server that is running CheckStream, including printing from a mainframe, Unix networks, etc.

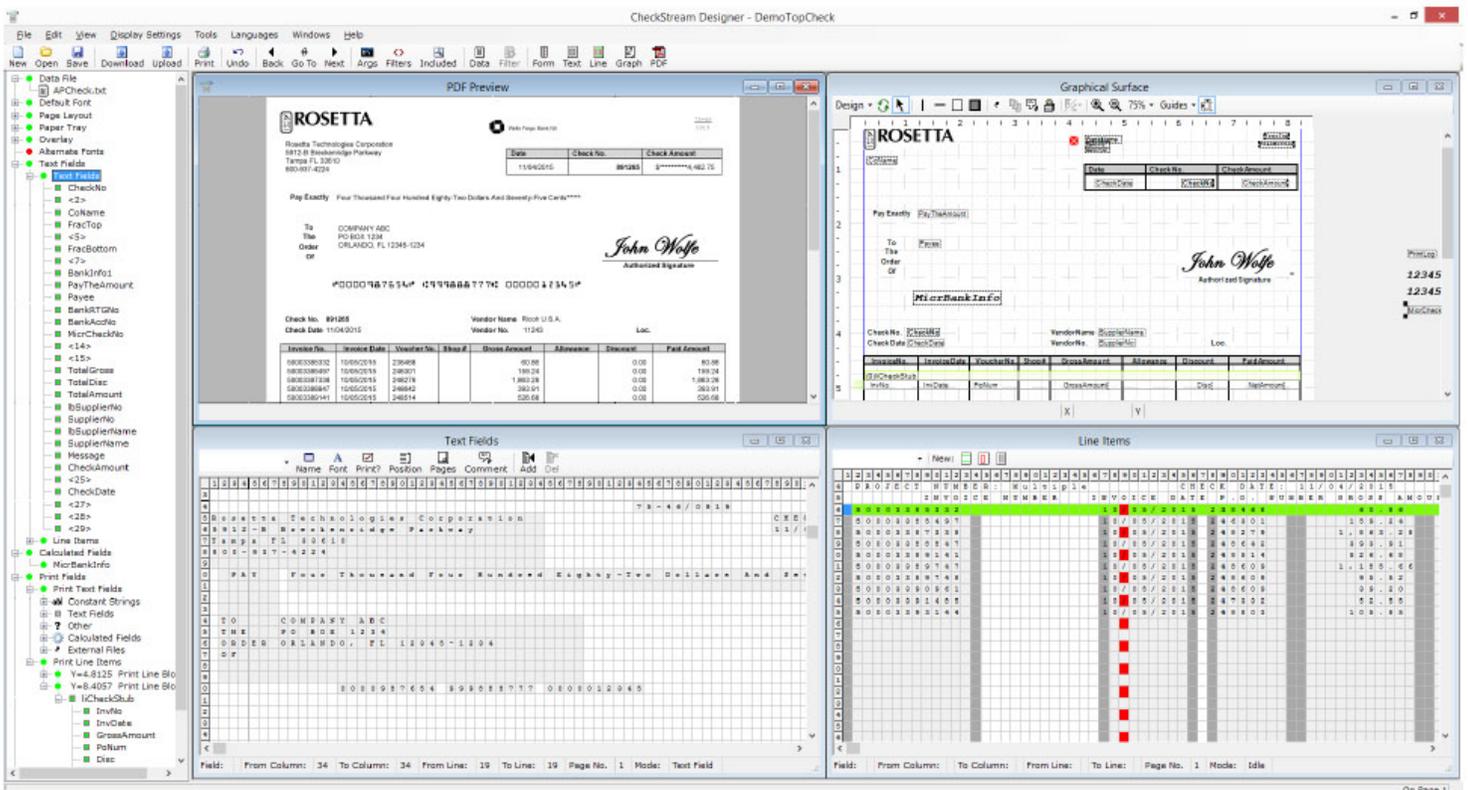
- CheckStream can be configured to automatically detect printer errors and reroute print jobs without operator intervention
- Users can receive email or Windows Messaging reports detailing the delivery of their print jobs
- Print metrics are automatically collected and can be analyzed for more efficient print job distribution and print cost tracking purposes
- CheckStream interfaces with printer device management utilities such as embedded Web Servers, giving administrators and help desk personnel end-to-end control over print streams and print devices

CheckStream's formatting capabilities are realized through CheckStream's optional graphical design engine. This powerful tool allows rapid form design and edits to create digital overlays and mapping commands that drive the variable output CheckStream produces. With CheckStream's form design tool, commands for mapping text files to digital overlays are set; once the design is complete the mapping commands and digital overlays reside on the host system of your choice (Unix, Linux, Windows or AS/400). There is no requirement to access the Windows-based design tool during printing.

CheckStream's conversion technology takes the text-based input file displayed on the bottom and outputs a personalized document as seen on the top.

Optional elements include logos, color font enhancements, variable line item formatting and a barcode to maximize the impact of the document and streamline document processing. The CheckStream form design tool easily sets the commands for these data driven elements in a user-friendly graphical design environment.

Note the extensive list of form element and datanaming options that are available through the easy to use tree structure and the variety of design screens available to speed form design and edits.



Issue/symptom: Users and/or applications often send print jobs to printers without verifying if the printer is online. Jobs stack up on offline printers and then print when the printer is brought back online. In the case of time-sensitive printing with items like payroll checks, delays due to printer availability can have serious consequences.

Resolution with CheckStream: CheckStream automatically detects printer status and sends jobs only to online, viable printers. With CheckStream:

- Bidirectional communication with printers determines a printers status and provides ensured delivery of print jobs
- Automatic rerouting upon device error eliminates extra printing by users and reduces time spent looking for lost print jobs
- Windows Message and/or email alerts prompt users to pick up jobs at the printer
- IT managers can view device dispositions remotely to verify printer availability

1. User/application submits Check run to a Rosetta printer.

2. CheckStream manages and communicates with printer.

3. CheckStream detects that the printer is down and routes the job to a back-up printer.



MICR Printer1



MICR Printer2

4. CheckStream notifies the User and IT Personnel via Windows Pop-up, Email, and/or Banner Page of the change in printing location.



In the example above, when the job arrives at the printer CheckStream determines that an error exists with the printer. Then CheckStream reroutes the print job to a designated backup printer. Backup printers can be securely established by the network administrator in the CheckStream Object Properties dropdown.

CheckStream monitors the printers and print jobs and intelligently determines where to send print jobs based on device availability. Users no longer need to wait for printers to be fixed and users no longer need to send redundant print requests.

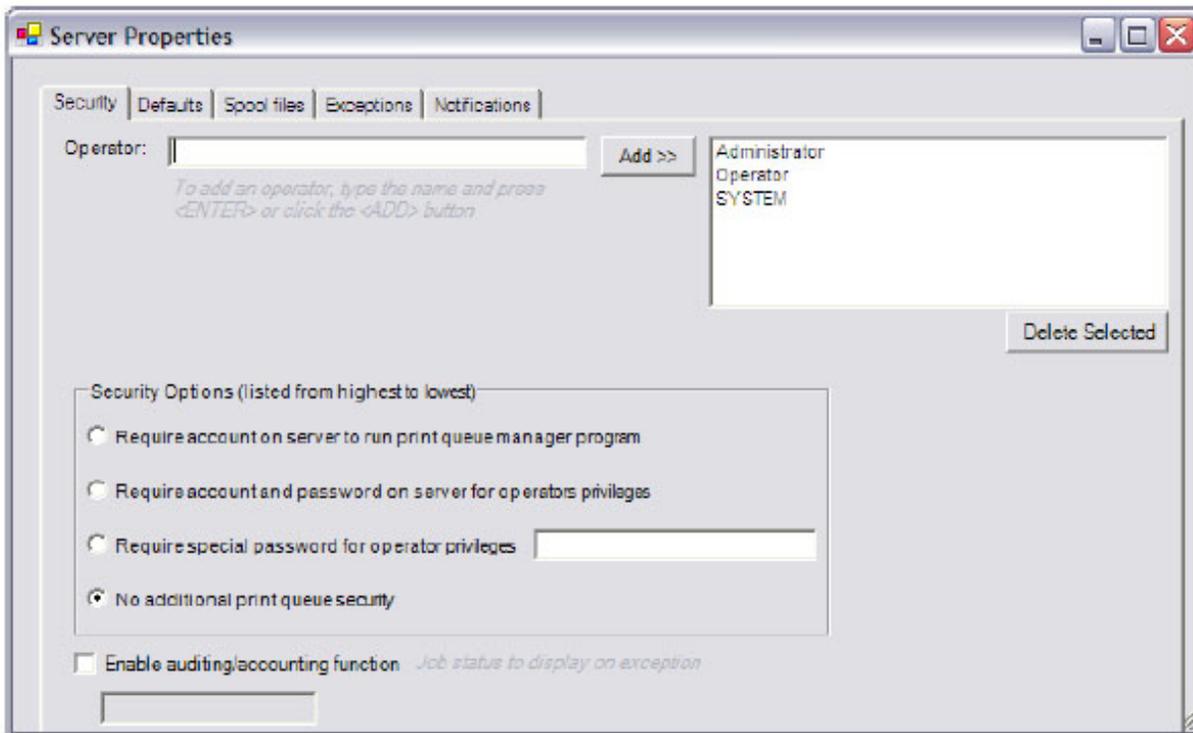
In addition, print metrics are collected for delivery verification and auditing purposes.

Securing Documents and Restricting Printer Access

Issue/symptom: most organizations have extensive security routines for keeping people out of their networks, but often overlook securing internal print processes and printed output. This risk is especially dangerous when personnel records, payroll information, trade secrets and customer records are printed. Another potential risk is document manipulation post-production, which can

lead to security violations as well as confusion and inaccuracies as versions are modified post-creation. All of these print-related risks can result in serious security breaches if steps are not taken to deter malicious activity. Finally, many print environments do not track user activity for security and compliance purposes, which makes it virtually impossible to determine who is violating printing security guidelines.

Resolution with CheckStream: CheckStream implements several layers of security, including document-level capabilities and server-based security and access rights.



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CheckStream can restrict user access to certain printers and/or forms so that even if sensitive data is captured, it cannot be properly formatted and delivered without access rights. CheckStream also keeps a log of all user activity and job dispositions for auditing print environments and identifying security breaches related to document production and distribution. With this information, security and compliance officers can review user behavior and rapidly discover violations or threats.

At the document level, CheckStream can add watermarks based on user profiles to record who has printed what. In addition, CheckStream's automatic PCL to PDF conversions (without the need for full version Acrobat) create non-modifiable documents that deter document manipulation post-production. From the user perspective, sending a document to PDF through CheckStream is as simple as selecting a printer from the local dropdown printer list.

CheckStream collects print metrics for all jobs submitted and routed through CheckStream. Therefore, it is easy to create reports that display printing behavior, identify prohibited printing activity and verify who printed what.

Mail Automation Module

Issue/symptom: in many high-volume mailing applications, special dedicated software (usually Windows-based) is required to insert Optical Mark Recognition (OMR) characters or barcodes. This adds a layer of complexity and another possible workflow break point/bottleneck. In addition, adding Windows servers dedicated just to run mail automation/OMR software causes additional overhead in UNIX, Linux and AS/400 environments.

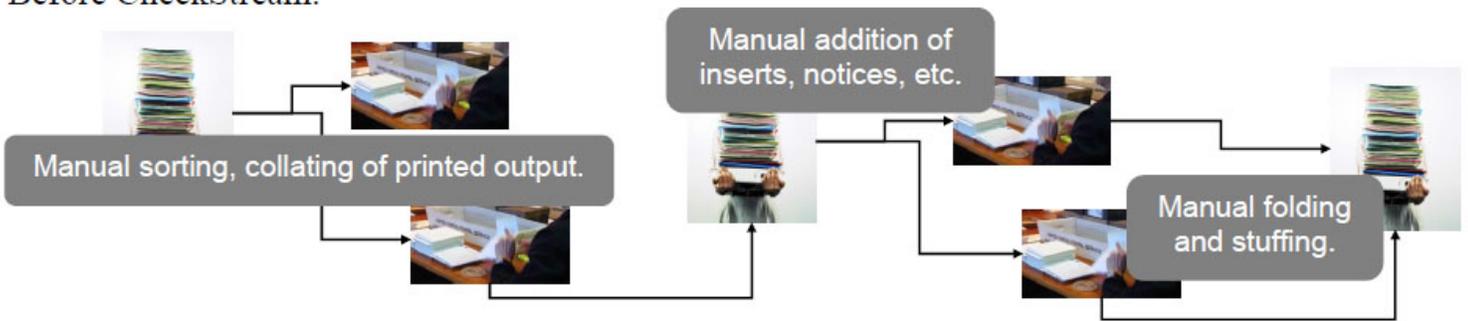
Resolution with CheckStream: CheckStream's Mail Automation Module integrates simple ladder Optical Mark Recognition characters and/or any barcode (3 of 9, 2-D, PostNet, interleaved 2 of 5, more) into the print job directly from application output. CheckStream can apply the appropriate machine commands for insertions, envelopes, etc. based on the content of the print job. CheckStream runs on Windows, UNIX, Linux and AS/400 servers, eliminating the need for a dedicated mail automation software server.

Benefits include:

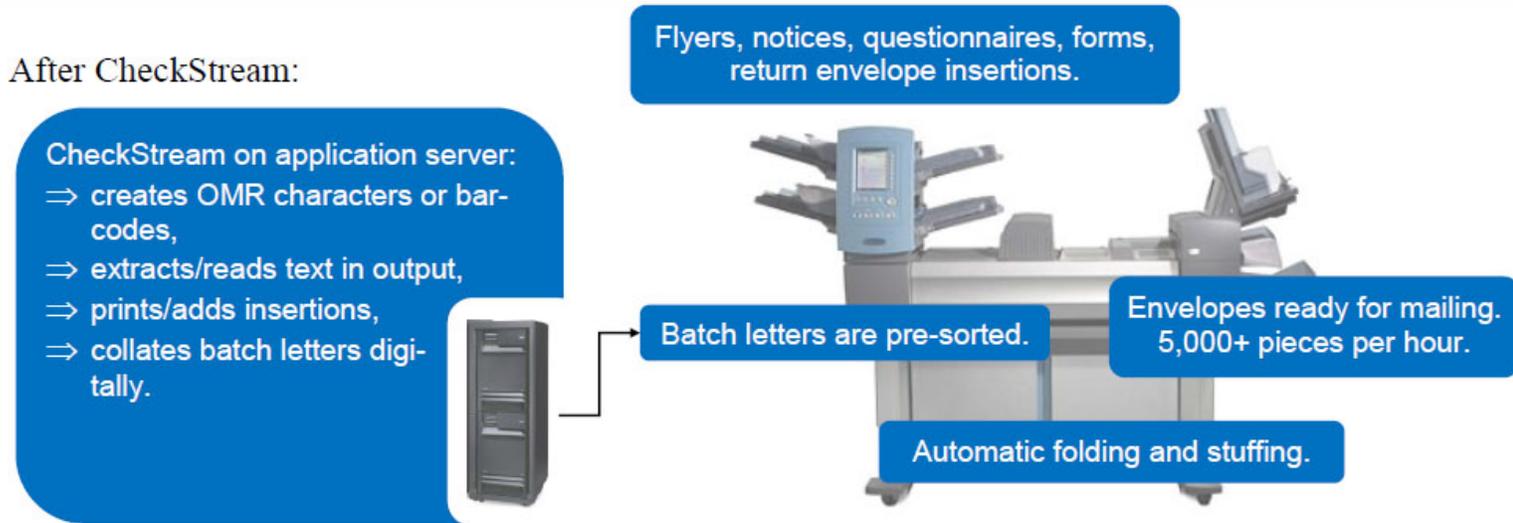
- Process improvements: Manual sorting, collating, folding, inserting, and sealing envelopes is automated.
- Employee efficiency gains: Manpower requirements are reduced by more than 70%, providing an aggressive return on investment.
- Mailing cost savings: Mail automation and duplex printing reduce postage by minimizing the use of 9" x 12" envelopes.
- Consumables cost savings: Paper costs are further reduced by using CheckStream to duplex print these documents.
- Security improvements: Automating the outgoing mail process eliminates human errors, increasing the security of personal information.

CheckStream's Mail Automation Module is compatible with Pitney Bowes, Neopost (and other Neopost brands) and Plockmatic hardware (contact us if another device is required)

Before CheckStream:



After CheckStream:



Conclusions

An inefficient check printing environment costs your company time and money. Rosetta Technologies offers a variety of customer proven methods to control these costs and streamline business critical check printing processes. The solutions we describe are just a glimpse into the capabilities of the Rosetta Technologies software solutions.

We encourage you to contact us if you have any secure printing environments that need further exploration. In addition to software development, Rosetta Technologies also offers a range of Professional Services that enable rapid deployment of the solutions described in this paper. Rosetta services can provide:

- Assessments
- Implementations
- Customized Scripts
- Updates
- Migrations
- Printer Consolidation Assistance