

DocuLynx Mercury Integration with HP Exstream

A Madison Advisors White Paper

February, 2009



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EXECUTIVE SUMMARY

Companies that produce transactional documents such as financial statements, bills, explanation of benefits (EOBs) and other critical customer communications must properly archive these documents as a key step in the document lifecycle. The long-term archive provides a permanent record for legal audits, reprints, and online viewing. High volume transactional (HVTO) corporations and service bureaus that produce millions of these documents daily are particularly challenged to meet the operational or regulatory archiving requirements for security, high volume processing, search and viewing functionality, and user-friendly administration. An archiving solution that integrates directly with a document composition engine such as HP Exstream can deliver a level of performance in these areas that is far superior to a stand-alone solution.

Further, the ability to archive directly from a document composition engine enables the archive to capture critical data points, such as page counts, processing date, and system of record, which would not appear on the printed output. An archive that does not offer direct integration with the document composition system can only index data elements which appear in the print stream.

DocuLynx Mercury is well-positioned to provide the kind of seamless integration required by HVTO producers. It is a feature-rich, high-speed archive solution with secure web-based and distributed presentment capabilities as well as a packaged integration with HP Exstream.

DocuLynx commissioned Madison Advisors to conduct an independent analysis of Mercury 3.2. Madison Advisors is a consulting firm that helps organizations advance their print and electronic communications strategies and solutions. Madison Advisors specializes in offering context-specific guidance for a range of content delivery strategies, particularly those addressing enterprise output technologies and customer communications.

Madison Advisors found Mercury to be a robust archive solution capable of quickly converting and ingesting a wide range of data formats. The product creates easily accessible portable archives that allow users to save documents or extracts to the desktop. Mercury Manager accepts HP Exstream index files and merges them with its own indexing data. Mercury Web communicates with an archive through a secure channel to deliver encrypted and compressed documents to the end-user. Also of value to the customer - DocuLynx offers flexible licensing and hosting options.

The remainder of this paper reviews Mercury in terms of its ability to meet the needs of HVTO producers. It includes a detailed review of the product suite, as well as discussion of the strategic benefits that it delivers.



ARCHIVING HIGH VOLUME TRANSACTIONAL OUTPUT

The document archive is an integral part of the document lifecycle. Internal production operations often focus on the production and delivery of high volume printed output with little thought as to how best to archive these documents to meet retrieval requirements. Organizations need centralized, distributed, and off-line retrieval options that include support for line data and image formats.

Further, strong security protocols must be maintained regardless of the method of access. A thin client can leverage the secure socket layer available through the web browser, but an archiving solution should provide additional protections. Encrypting and compressing each document transmitted for remote viewing requires decryption and decompression by the viewer, but provides an additional layer of protection warranted for most transactional documents, such as bank statements or healthcare notices. In addition, users often need to save or collect information from an archived document for use with other applications.

Service bureaus also benefit from multiple access points. A service bureau that prints a client's documents also hosts the documents on its servers and offers web-based access to the repository or creates CD-ROMs for distribution to remote agents and field offices. The service bureau distributes administrative functions to the clients, allowing each to manage their own user access and settings. Centralized logging allows a service bureau to track usage and events across one or more repositories.

As part of the document lifecycle, a document archive needs to connect with other production components such as document composition and print management solutions. A document archive ingests print ready output and index data from the document composition engine for distribution throughout an organization or for reference by associates, clients, and end-users. A document archive delivers data and documents to a print management solution or on demand as required by business processes.

HOW DOCULYNX MERCURY MAKES A DIFFERENCE

DocuLynx Mercury offers corporations and service bureaus a single, integrated solution for managing long term storage and retrieval of high volume transactional documents, line data and images. The Mercury product suite provides distributed administration and viewing capabilities coupled with a flexible security model, which administrators configure to support local desktop printing and downloading of documents from a repository.



With an embedded viewer and multiple clients, Mercury enables organizations to implement security across centralized and distributed document repositories. With Mercury, administrators define specific access rights, which Mercury encodes into the repository itself to prevent unauthorized access - even when the repository is distributed on CD-ROM.

Mercury Web provides online access to remote data repositories. Distributed users, such as customer service representatives (CSRs) and service bureau clients, use Mercury Web to connect to, search through, and retrieve documents from one or more remote repositories. Mercury delivers documents to the user in a compressed and encrypted format, which the Mercury Viewer decompresses and decrypts.

With proper access rights, users can also save documents from the archive. Once Mercury presents users with the results of a search request, users have the option to download one or more documents or select columns and rows for pasting into spreadsheets, reports, or other desktop applications.

Finally, DocuLynx provides packaged integration between Mercury and HP Exstream for corporations and service bureaus using HP Exstream for document composition. Mercury ingests job-related data and indexing information generated by HP Exstream. Mercury uses this data to supplement its own indices, which eliminates duplicate index processes and allows Mercury clients to leverage both data sets to search for jobs through Mercury's document repositories.



AN UP-CLOSE LOOK AT MERCURY

This section provides an overview of DocuLynx and Mercury.

Headquarters	Omaha, NE	Company is privately owned
Company Overview	DocuLynx offers software and services that help companies manage and add value to high volume transactional output (HVTO) print streams. DocuLynx data processing center offers data processing, web hosting, custom programming, and a complete archive/retrieval ASP solution. DocuLynx is focused on print and mail specialty service bureaus and vertical market resellers.	
Product Focus	DocuLynx Mercury archives high volume transactional output (HVTO) print streams including PDF, line data, and image formats. The product suite supports CD-ROM production, desktop, and web-based clients. An embedded viewer enables secure search and viewing capabilities across centralized, distributed, and remote document repositories.	
Key Strengths	<ul style="list-style-type: none">▪ DocuLynx provides customers with easy access to documents and an open data format that allows clients to save data and documents from the repository▪ Secure transmission and access for each repository▪ DocuLynx business model offers licensed software, complete hosting with unlimited queries, and hybrid solutions for HVTO archive▪ Two fully redundant and geographically diverse data centers	
Areas of Caution	<ul style="list-style-type: none">▪ Print streams converted to PDF for indexing and viewing▪ Mercury Web does not save searches or document history▪ Requires third-party product for OCR scanning	

PRODUCT ARCHITECTURE

Mercury is a Microsoft Windows-based application for creating document archives in a document repository. The multi-threaded processing engine supports multiple processes and uses file-level locking to prevent over-writing. The engine performs both field-level and full-text indexing. Administrators use Mercury Manager to define the settings and processes for a production job, which generates one or more document archive databases.

DocuLynx provides multiple client interfaces including Mercury Build, Mercury Search, and Mercury Web. Administrators use Mercury Build to manage and edit existing archives. Desktop users access and search archives through Mercury Search, which allows document extraction and printing. Mercury Web is a browser-based application written in C# and running in an ASP.NET environment. Mercury Web



includes a robust ActiveX viewer, but also supports both MIME type viewers and Adobe Reader.

Mercury utilizes a SQL layer on top of the database for authentication and access control. Administrators define access rights for each user or group and store these settings with the archived repository. This mechanism supports full security control over centralized archives as well as archives distributed on CD-ROM. Mercury uses the Blowfish algorithm to protect repositories across all media types.

Client interfaces support encrypted communications with repositories. In the case of Mercury Web, the Mercury Web Viewer communicates with the Mercury Web Server by exchanging encryption keys based on the IP and MAC addresses in use. The Mercury Web Server supports communications between Mercury Web sessions and the Mercury repositories.

DocuLynx Mercury Web includes a Web Services engine that allows organizations to access Mercury repositories using Web Services. The engine provides web applications with access to documents and data within a document repository. The engine allows for cross-platform communications between an application and a Mercury repository.

DocuLynx provides a COM API for integration into Mercury Any application that can utilize the Mercury COM API can add, delete, search, and retrieve documents from the Mercury document repositories. In addition, Mercury Manager's processing engine supports an event handler that allows external programs to be called at different stages of the document parsing process. The event handler uses the external applications to customize the document ingestion process

Mercury integrates with document composition systems by ingesting data files created by a document composition system at the same time as a print ready file. DocuLynx's HP Exstream/Mercury Plug-In ingests PDF output created by the HP Exstream PDF e-driver module. The plug-in also accepts XML index files created by HP Exstream using its standard Report File or the HP Exstream XML Output module.

FUNCTIONAL OVERVIEW

The DocuLynx Mercury suite is a robust document archive solution for high-volume transactional documents that supports secure access to centralized and distributed document repositories. Mercury accepts a range of input file types and quickly processes files utilizing a unique data compression algorithm. Mercury deposits the documents in the Mercury Database which supports a wide array of storage options. The Mercury suite offers packaged integration to document composition systems that minimize processing requirements for high volume applications by leveraging existing data.

The figure below shows the various Mercury modules involved in the archival process.

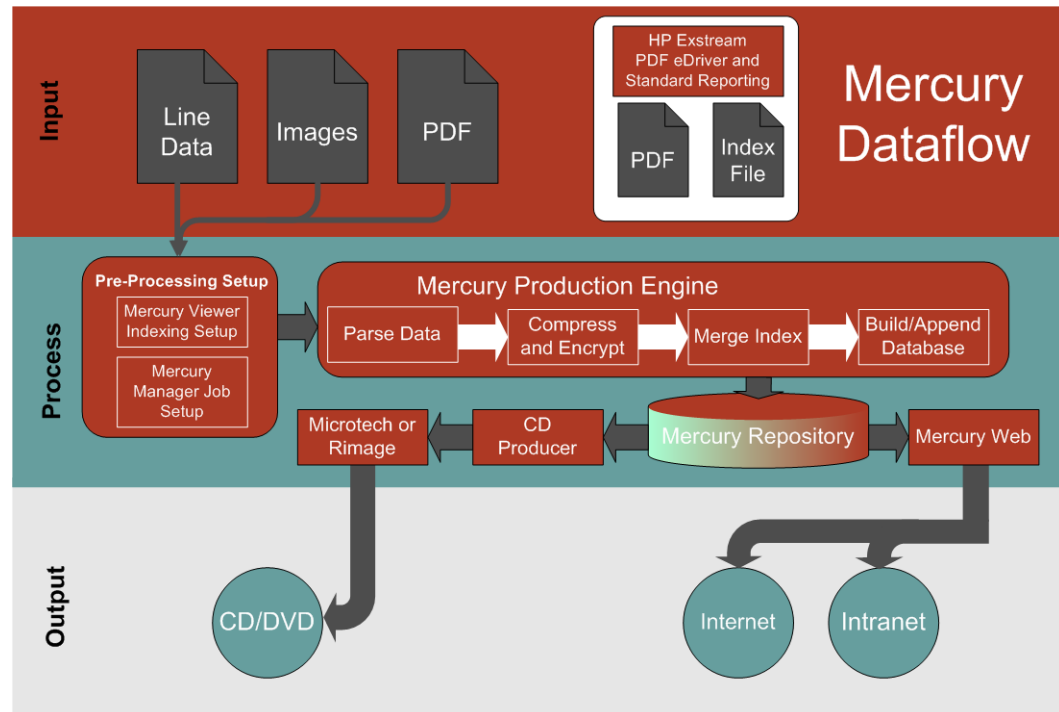


Figure 1 – DocuLynx Mercury Archival Process (graphic provided by DocuLynx)

Mercury accepts a broad range of document types, including PDF files, ASCII and EBCDIC line data, and multiple image formats. Mercury also accepts Office documents and print-ready data streams as inputs. The product utilizes industry-leading transforms for conversion to PDF, if necessary.

Mercury's production engine parses and indexes incoming files to create an archive and integrate with existing production workflows. Mercury Manager allows administrators to create individual job profiles that specify a source input, an



indexing template, and a destination file. For each job, administrators can select reporting options, bursting options, and additional events or processing steps.

The Mercury Manager event handler offers organizations the ability to integrate Mercury into the production workflow by calling additional data sources or pre-processing steps and post-processes, such as move the resulting file or triggering print production. Mercury also supports CD-ROM production through MicroTech and Rimage.

Mercury Search is a Windows-based client that allows end-users to access and search document archives. Users perform key word and full-text searches for documents within the archive. An embedded viewer allows users to view documents from the search results. With the proper access rights, users select one or more documents within the search results and save the documents or index data to a local hard disk.

Mercury Web is a browser-based client that allows remote users or service bureau clients to search document archives. Each user configures Mercury Web to control how the product displays search results and the software saves these settings for each user. Users select and save data and documents to a local hard drive. Users can also e-mail one or more documents as embedded text, attached PDF files, or a compressed ZIP file.

KEY DIFFERENTIATORS

Madison Advisors found the Mercury product suite to be differentiated from similar products in four critical areas: the breadth of its client interface options; its unique encryption/decryption protocol for web access and CD-ROM distribution; its packaged HP Exstream integration solution; and its flexible, hybrid business model. Those four areas of distinction are discussed below in greater detail.

Mercury's varied client interfaces enable different business roles across service bureaus and corporations to work with document archives. Centralized administrators use Mercury Build to manage and edit archives. Corporate business users access archives with Mercury Search. Distributed administrators and users, such as CSRs or field agents rely on Mercury Web to remotely access archives. In addition, service bureaus hosting an archive configure security to allow clients access to documents via Mercury Web. This breadth of client interfaces provides organizations with significant flexibility for both repository administration and distribution.

In addition to embedding security information into each archive, Mercury encrypts and compresses each document requested by the browser client for added security. Service bureaus and other organizations hosting archives for remote clients need to ensure their clients of a remote system's security. By embedding the access rights with each archive, Mercury ensures that even archives distributed via CD-ROM support the assigned access rights. When remote users request documents from a hosted repository, Mercury Web generates unique encryption keys that secure the document during transmission.

Mercury integrates with HP Exstream to ingest both print-ready output and associated data files. Organizations with HP Exstream and DocuLynx Mercury benefit from automated indexing and reduced processing requirements for ingestion of high volume output. The packaged integration allows organizations to access data from HP Exstream about the composed file, such as job characteristics and indices.

DocuLynx's Mercury HYBRID Solutions enable customers to migrate between in-house and full-service application service provider (ASP) offerings as well as intermediate stages that allow clients to off-load some processing or storage requirements. In addition to simple, server-based licensing, DocuLynx operates two redundant processing centers for clients interested in outsourcing some portion or their entire document processing and archiving. DocuLynx provides HVTO processing, indexing, splitting, CD-ROM production, and web hosting. DocuLynx's services provide customers with the flexibility to grow into an archive solution with minimal risk as well as balance production requirements against available resources.



IN SUMMARY

For service bureaus and corporations producing high value transactional documents, a secure, robust archive represents a key component of the document lifecycle. Document archives act as the legal backup for many types of printed business communications and meet strict requirements for retention. Mercury makes the document archive readily accessible to corporate personnel, customer service agents, and distributed clients, which allows a service bureau or corporation to offer a higher level of access to vital records.

In addition to wide-reaching access, Mercury also allows clients to easily print and share documents from the archive. Using the embedded viewer, clients quickly and easily extract data for other business applications, save or print documents for reference, as well as e-mail documents to others as part of a business process or in response to a customer inquiry.

Finally, DocuLynx Mercury does not operate independently of the organization's production processes. The product suite offers seamless integration with document composition solutions, such as HP Exstream, and its open API allows for further integration with production processes, such as print management.



ABOUT MADISON ADVISORS

Madison Advisors exists to advance the print and electronic communications objectives of Fortune 1000 companies. Madison Advisors specializes in offering context-specific guidance for a range of content delivery strategies, particularly those addressing enterprise output technologies and customer communications.

Madison Advisors offers services and expertise primarily through short-term, high-impact consulting services. With no-nonsense, quick engagements (measurable in days or weeks, not months), Madison Advisors directly helps our clients achieve very hard and specific return on investment (ROI) related to their print and electronic communications initiatives.

Madison Advisors' analysts are dedicated to technology and market research that is delivered through short-term project engagements as well as articles, publications, and presentations. We specialize in customer communication technologies including enterprise output management, content management, customer relationship management, e-billing, and infrastructure technology.

For more information about Madison Advisors, visit our web site:

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