

# DocuLynx Mercury® Web Seamless Access to Document Archives

**A Madison Advisors White Paper**

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## EXECUTIVE SUMMARY

One of the great challenges many organizations face today is establishing and managing access to the millions of documents they generate and receive in the course of conducting business. Companies create documents such as bills and financial statements that are sent to customers and they create internal documents that are distributed across multiple corporate sites and divisions. Fast and secure online access across document archives greatly enhances an organization's ability to support internal research, deliver more efficient customer service, satisfy regulatory obligations, respond to litigation, and provide decision support.

In addition, demand for self-service access to document archives from external parties is growing. For instance, with direct access to financial or medical documents, end-consumers can obtain current and historical records without having to search through their personal papers or contact a customer service agent. With the proper archive solution, organizations can provide their customers with immediate access to a secure repository of documents and data. Self-service opportunities can reduce reliance on customer service call centers, which in turn reduces costs.

DocuLynx Mercury is a robust archive solution that is well-positioned to provide secure web-based and distributed presentment capabilities. It is a highly scalable product that is a practical option for small operations and a powerful solution for high volume operations. The Mercury Web client enables immediate and simultaneous access to multiple document repositories by customer service representatives (CSRs), management, and end-user customers.

DocuLynx commissioned Madison Advisors to conduct an independent analysis of Mercury Web 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 Web to be a feature-rich, browser-based interface for DocuLynx's Mercury archive solution. Mercury Web communicates with a Mercury archive through a secure channel to deliver encrypted and compressed documents to the end-user. The product includes a document viewer and leverages the security policies defined for the archive to control access to documents and specific, defined data elements within a document that have been indexed for search and retrieval.

The remainder of this paper reviews Mercury Web in terms of the business problems that it solves. The paper includes a detailed description of the product and an analysis of the features and functions that it delivers.

## ACCESSING DOCUMENT AND DATA ARCHIVES

The document archive is an integral part of the document lifecycle. Organizations often focus on the production and delivery of documents with little thought as to how best to archive these documents to meet compliance and retrieval requirements. Organizations need centralized, distributed, and off-line retrieval options and the best of these will include zero-footprint, browser-based access and integration with existing applications.

Due to the sensitive content of many documents, the archive client software must also support strong security protocols. 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.

Finally, organizations benefit from incorporating archive search capabilities into existing business systems to provide associates or end-consumers with direct access to archived documents through their primary applications. The embedded archive clients provide seamless access to documents while supporting the branding established by the organization. For a CSR, the integration minimizes training requirements and keeps the CSR focused on a single application. For an end-consumer, the integration simplifies the user-experience, which reduces concerns and calls to customer service.

## HOW DOCULYNX'S MERCURY® WEB MAKES A DIFFERENCE

As part of the Mercury product suite, Mercury Web offers users browser-based access to remote and distributed repositories. Distributed users, such as customer service representatives and end-consumers, connect to, search through, and retrieve documents and specific, defined data from one or more remote repositories using Mercury Web. Mercury Web Server delivers documents to the user in a compressed and encrypted format, which the Mercury Viewer decompresses and decrypts. A single search request can simultaneously query multiple databases and search across multiple database repositories without further specifications by the user.

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 exporting into spreadsheets, reports, or other desktop applications.

DocuLynx Mercury Web enables organizations to distribute access to documents across different organizations, departments, and individuals regardless of physical location. However, IT and other relevant departments maintain access control rights over search, presentation, print, and download capabilities.

Organizations also have the opportunity to integrate any or all of the Mercury Web functionality into a web-based application. DocuLynx developed a full Web Services API for Mercury Web that allows developers to embed document archive search and retrieval functionality into customer service and self-service applications.

## AN UP-CLOSE LOOK AT MERCURY® WEB

This section provides an overview of DocuLynx and Mercury Web 3.2.

<b>Headquarters</b>	Omaha, NE	Company is privately held
<b>Company Overview</b>	DocuLynx offers software and services that help companies manage and add value to high volume transactional output print streams. DocuLynx data processing center offers data processing, web hosting, custom programming, and a complete archive/retrieval ASP solution. Historically DocuLynx solutions were found in service bureaus specializing in print and mail. DocuLynx has expanded its focus to include financial, government, health care, utilities, and insurance verticals	
<b>Product Focus</b>	DocuLynx Mercury Web allows users in numerous verticals to conduct fast, secure, and efficient document/data retrieval activities related to customer service, research, marketing, regulatory requirements, litigation, intelligence, and decision support. Mercury Web enables secure search and viewing of high volume transactional output print streams (including PDF, line data, image files, voice, and video formats as well as specific data elements within a document) across centralized, distributed, and remote document repositories and can be integrated into existing applications via web services.	
<b>Key Strengths</b>	<ul style="list-style-type: none"> <li>▪ Zero-footprint, browser-based client for accessing document archives</li> <li>▪ Supports dual custom application development methods – templates and Web Services API</li> <li>▪ Secure transmission and access for each repository</li> <li>▪ Backwards compatibility with earlier versions of the software.</li> </ul>	
<b>Areas of Caution</b>	<ul style="list-style-type: none"> <li>▪ Does not present a folder hierarchy for documents</li> <li>▪ Does not save searches or document history</li> </ul>	

## PRODUCT ARCHITECTURE

Mercury is a Microsoft Windows-based application that allows organizations to ingest, index, compress, encrypt, and archive enterprise-scale amounts of data, and access/retrieve specified data instantaneously. 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.

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 a MIME viewer and Adobe Reader, for environments where ActiveX is not allowed by corporate I.T. policy. Other than the viewer, Mercury Web does not install software components on the user's computer.

Mercury Web 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. Administrators may also use security settings within Mercury Web. This mechanism supports full security control over centralized archives as well as archives distributed on CD/DVD.

Mercury Web 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.

Mercury Web integrates with other web-based applications through a Web Services API. The XML-based API provides cross-platform access to all client and administrative functions on the Mercury Web Server and supports SOAP communications protocol. The system supports anonymous access, which allows organizations to scale the application horizontally by adding servers without locking up the document database. Anonymous access eliminates the extra step of logging into the Mercury Web Services.

## FUNCTIONAL OVERVIEW

The DocuLynx Mercury suite is a robust document archive solution for documents and data that supports secure access to centralized and distributed document repositories. Mercury accepts line data, PDF, image, voice and video 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. Mercury Web enables web-based access to multiple and distributed databases.

Organizations can support multiple document databases with a single Mercury license. The Mercury Production Engine ingests, indexes encrypts, and archives documents and data from multiple divisions within an organization or from multiple clients supported by a single service bureau. Mercury allows for multiple security levels to manage access rights across one or more organizations. The Mercury Reprint Module enables users to efficiently reprint one or more documents without re-spooling or re-running the entire job.

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

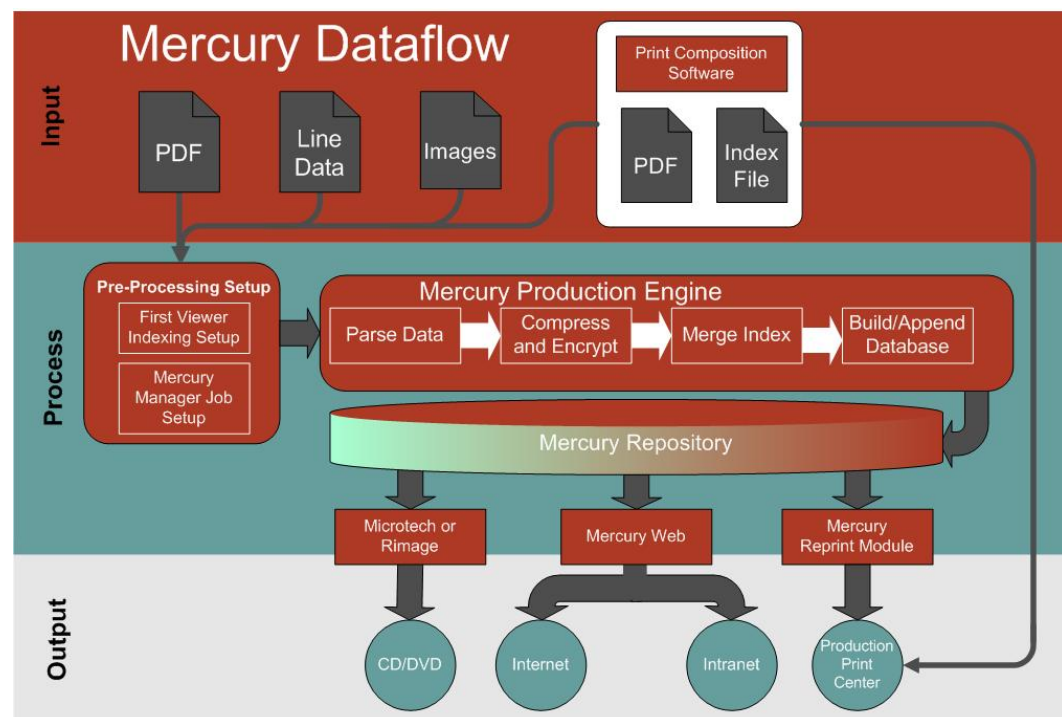


Figure 1 – DocuLynx Mercury® Archival Process (source: DocuLynx)

Mercury Web is a browser-based client that allows remote users to search document archives. System administrators create templates that control the search capabilities and presentation of data. The templates enable colors, fonts, data entry screens and pop-up windows that can be configured to match corporate branding. Role-based security for templates allows administrators to control access to specific functions to limited number of users.

The document databases use a similar role-based security model to control access to individual documents. The security model shields the user from the complexity of selecting specific databases and directs the user's search request to only operate on the repository accessible to the user.

Mercury Web supports metadata searches, full-text search, and wildcards using Boolean operators. In addition, each user configures Mercury Web to control how the product displays search results and the software saves these settings for each user. The product allows users to control the sort order on available fields. With Mercury Web, users perform data mining on documents and reports by nesting multiple searches and filtering the results. The search capabilities extend across multiple databases. The sophisticated search and filtering options enable users to quickly access specific documents without complex or repetitive operations.

Mercury Web allows system administrators to set limits on searches. If one request generates too many results, Mercury Web creates a separate page accessible via secure link to keep one server or one client from slowing down the system with a runaway search.

Mercury Web utilizes encryption when communicating with the repository. The product suite encrypts the search data and results as well as any downloaded documents, which it also compresses at the server and decompresses at the web-based client. The secure download capabilities extend corporate access rights and polices across a distributed environment.

## KEY DIFFERENTIATORS

Madison Advisors found Mercury Web to be differentiated from similar products in four critical areas: the breadth of functionality; its unique encryption/decryption security; its vertical and horizontal scalability; and its ability to integrate with web-based applications. Those four areas of distinction are discussed below in greater detail.

**Mercury Web's robust functionality enables employees, partners, and customers immediate access to document archives.** The variety of search functions and filters allow easy access to documents contained within very large repositories and across repositories if authorized. This breadth of functionality allows organizations to open access to more varied types of users. Users perform data mining, research, and customer- or self-service without needing to understand the repository structure or location.

**Referencing the security information embedded into each archive, Mercury Web only allows authorized users access to documents.** By embedding the access rights with each archive, Mercury ensures that even distributed archives support the assigned access rights. When Mercury Web users request documents from a hosted repository, the software generates unique encryption keys that secure the document during transmission. Customer Service Representatives, field agents, and customers are able to securely view, download, and distribute documents.

**Mercury Web's architecture supports vertical and horizontal scalability.** A single repository contains one or more document databases. System administrators add new databases or append existing ones with updated documents to increase the volume of searchable documents. Using the virtual repository model, Mercury Web searches across multiple document databases. An organization extends support to more distributed users by adding additional Mercury Web Servers. In addition, DocuLynx hybrid licensing model allows smaller organizations to take advantage of DocuLynx own processing and hosting capabilities.

**A Web Services API allows organizations to fully integrate Mercury Web with existing web-based applications.** Developers call any Mercury Web function through the Web Services API to access a document repository without introducing customer service representatives or customers to a new interface. The integration opportunity reduces training requirements throughout an organization.

## IN SUMMARY

For organizations seeking to expand access to document archives to distributed users, Mercury Web offers a secure, flexible and feature-rich solution with multiple options for implementation.

The product's template-driven interface allows developers to create and publish branded applications to specific groups of users. Alternatively, the Web Services API allows developers to embed the Mercury Web functionality into an existing web-based application.

Once a user has access through Mercury Web, the product offers a wide set of features. The product enables users to search and retrieve documents, 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.

Mercury Web delivers the functionality described above while maintaining strong control using a role-based security model. Mercury Web verifies security parameters on each repository to limit access and enforce government compliance and corporate standards. For both page fidelity and non-repudiation, the Mercury archive does not allow users to change documents and Mercury Web tracks any requests or changes to document status for auditing purposes.

## 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:  
[www.Madison-Advisors.com](http://www.Madison-Advisors.com).