

Integration Data Sheet

eReview takes enterprise document viewing/markup/print technology to a whole new plane by offering on-line web based **native viewing, annotation, redaction, printing** from within one single intuitive interface. eReview is an intelligent, native viewer that views, prints and redlines multiple file formats (over 200)... scanned images (Tiff, MO:DCA), Office documents, PDF, HPGL and print formats, AutoCAD, etc. without the need of the originating application that created these files. Being highly flexible and interoperable, eReview supports out-of-the box integrations with a number of other ECM/PLM/CRM solutions. It is seamlessly integrated with IBM Content Manager (CM) and this integration allows view, markup, redaction and printing of documents directly out of the CM repository. eReview's seamless and tight integration with the CM Content Engine allows users to conduct online document reviews, right from within the CM Web interface.

eReview is a viewer at its core and does not modify the original or base document; **Redlining** is allowed as a layer on top of the base document. Non-destructive markups get saved in separate corollary files which are cross-referenced to the original documents and are saved back into the CM repository. The original document is never changed, markups provide a history of suggested changes. This process prevents uncontrolled changes to a document and protects the integrity of the document under review. Moreover, to insure content-security, eReview provides for **Redacted Viewing** where certain users/groups can be restricted from viewing selected portions of confidential documents. The redaction layer is burnt into the document at the server-side, and the document is streamed back to the client, thus leaving no scope of disassociation of the redaction layer from the base document. The sensitive data remains completely protected as the redaction layer cannot be unloaded at any point.

The entire streamlined document review-redact-print cycle through eReview thus allows paperless digital sharing, review, markup, redaction and approval of documents while keeping the organization's digital IP private and secure.

Why eReview is Unique?

- **Robust, Enterprise Ready, Scalable, Distributed Architecture**

eReview is a robust, scalable multi-format viewer that is "enterprise ready" to work with multiple repositories at the back-end as well as a number of applications at the client end. It has a distributed architecture that supports load-balancing and Web farm clustering. As a result eReview can support a large user base and scales to sustain worldwide deployments. Geographical proximity detection detects the client location and the closest server location and selects the nearest server from among several geographical locations globally. This greatly improves the user experience as the nearest server is always the fastest.

- **Secured Viewing, Printing and Annotation**

eReview enables organizations to view, annotate, redact and print hundreds of formats stored across the enterprise from a single browser interface, but ensures document sanctity at the same time. The viewer provides superior view, print annotation and redaction features to facilitate efficient information sharing and reliable access to original documents without the originating software or the conversion programs. Intelligent native viewing reads and displays the original elements of the files, but the original document is never edited since markups and redactions are separate layers on the base document, thus ensuring complete document sanctity.

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- **Customizability**

The eReview skin/user interface is highly customizable. The toolbars, menubars, tools, menu items, panels can all be tailored as per needs. eReview allows the user to add his own personalized buttons in the toolbar. Role-based user profiling allows one to create various levels or groups of users with interfaces ranging from very simple (say, with only viewing tools) to complex (with advanced collaboration tools) . The user profiles can be mapped to the user roles of CM.

- **Interoperability: Robust and Flexible set of APIs**

eReview has a robust set of APIs make the full spectrum of view, markup, redact and print capabilities available to the application developers and integrators. Being highly interoperable, the eReview client can be integrated with multiple repositories and can fetch documents from multiple repositories. The advanced API Toolkit helps integrate eReview with any existing application at Web, Desktop or Server level.

- **Modular Architecture**

eReview has a modular architecture that allows a range of configurations from a simple viewer to a full collaborative platform.

- **Ease of Deployment, Server-centric, Zero-client administration**

Being web-based and server-centric, eReview eliminates the need of installing and maintaining the software on each client machine. All upgrades can be made at the server and are automatically propagated to the clients.

- **BPM Compatibility : From both UI and process perspective**

eReview easily fits into the exact business process of an organization. Not only can the user interface be customized to match the precise requirements of an organization, eReview supports visual workflows, asynchronous and real-time collaboration as well.

- **Adherence to Regulatory Compliance**

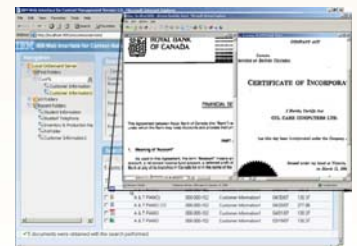
eReview supports an open, heterogeneous platform and helps enforce compliance. It leaves audit trails of review sessions and keeps track of important decisions that have been made. Redact tools protect sensitive information from unauthorized access. For example, for compliance with FOIA , documents need to be distributed, but certain classified information can be redacted before the distribution.

ROI Benefits:

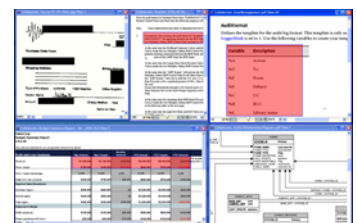
- Eliminates the cost of maintaining multiple software to view, print and comment on myriad of documents. The originating application is not required to view the documents, provides one single interface to print all types of documents.
- Fits into the exact business process of an organization as it the software is highly customizable and configurable
- Reduces total time-to-market significantly- Helps organizations take better decisions faster with instant reliable access to latest information by keeping all internal teams and external partners and customers updated. Reviewers' comments and annotations are saved as corollary files with date and timestamp and can be easily referred to later on

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*Sample Integration with CM:
 View, Markup from within IBM on
 Demand Interface*



eReview Viewer Interface

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- Helps all types of users across the enterprise participate in review procedures and provide feedback using one simple-to-use Web based product. Role-based user profiling helps scale the product interface according to the user's profile, novice or advanced
- Keeps the learning curve minimal for new users and eliminates training costs. The skin and UI can be easily configured to match the user's current experience
- Ensures better quality control and increased productivity- A broad spectrum of customers, employees, suppliers and stakeholders can access accurate information at the right time and costly errors can be detected and avoided
- Helps achieve and adhere to regulatory compliance, leaving audit trails of review sessions, keeps track of important decisions. Paperless digital sharing, review, markup, redact and approval of documents while keeping the digital IP private and secure
- No migration cost involved from hardware or software perspectives as the software is cross-platform,server-centric and runs on all flavors of UNIX,Windows,Sun-Solaris, Red-Hat Linux and MAC-OS/X
- eReview being a zero-client administration solution, all upgrades are made only at the server. This reduces operational costs significantly

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eReview and CM Integration Facts:

- The integration allows Co-View, Co-Markup, Printing and Redaction of documents directly out of CM Webi, eClient Web Interfaces
- eReview User Interface can be customized for users of IBM default viewer to provide quick adoption of eReview tools so that it matches the current user experience and the learning curve is minimal
- The CM user roles can be mapped to customized user profiles where depending on specific access control privileges the viewer skin can be modified to match the requirements of novice to the most advanced of users
- eReview annotations are saved into CM secured Annotation objects and are cross-referenced to the original documents. Load, unload, save of annotations can be configured exactly according to requirements
- The eReview viewer is flexible to be integrated into the business processes of an organization
- Ad-hoc workflows allow easy dissemination of information within review teams

eReview and CM Integration Architecture:

eReview is based on Model-View-Controller (MVC) architectural design pattern. It organizes an interactive application into three separate modules: one for the application Model with its data representation and business logic, the second for Views that provide data presentation and user input, and the third for a Controller to dispatch requests and control flow. eReview supports both client-side and server side integration and has a rich set of APIs to facilitate these integrations. eReview integration architecture is a best fit to CM web based document management requirement. eReview integration with CM can be a two-way integration where either the user would log into the CM system and depending on his access rights and privileges, he would be able to view and annotate documents from

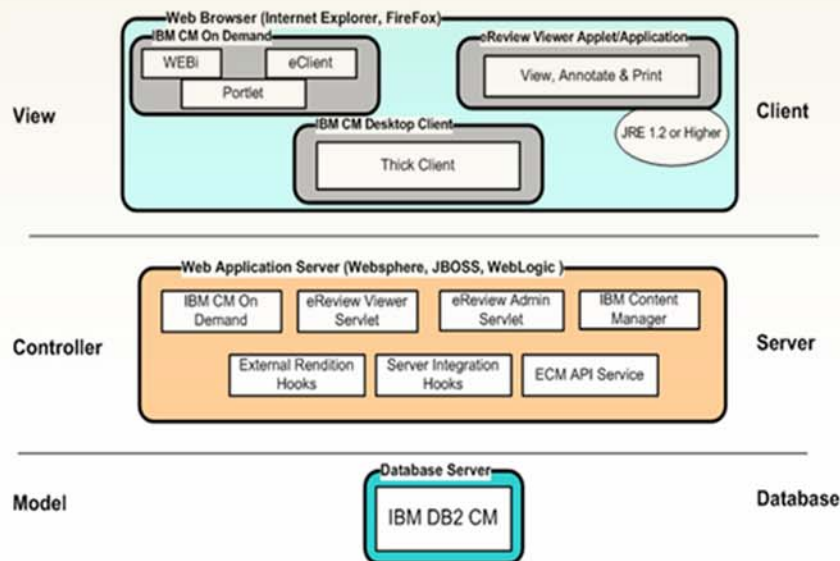
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the CM document repository or alternatively the user would login to eReview and CM related metadata can be accessed and viewed within the viewer. In both cases, markups would be stored separately but would have the option of being cross-referenced to the original document.

eReview servlets and applets are integrated and deployed in CM hosted web application server. Security requirements are taken care of as applets stream encrypted data over http/https protocol. Server integration hooks get the requests from the client and makes the CM API calls to grab the content from the CM repository. Then the content is transmitted to the viewer client. eReview respects the roles and security of CM and different customized user profiles can be mapped to the CM user roles. The eReview integration layer is flexible to support multiple integration paradigms.

eReview has a rich set of APIs that can make Java calls, Web Service calls, send HTTP Requests or call .NET APIs. The application independence of the eReview integration frameworks makes it easy to plug-and-play new upgrades.

The following diagram portrays the eReview and CM integration architecture.



eReview-CM Integration architecture

The rich set of flexible APIs facilitate integrations at various levels. Some of the important implementations include the following:

- Implement HTTP request-response mechanism to start eReview viewer applet
- Customize applet look-and-feel with configurable profile selection
- Open one or more documents to compare using simple HTTP requests
- Load applet to view selected page from a document with redaction applied on the page
- Create batch print action on selected documents and print on a printer connected to the server

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- **Extend server side integration class to apply customized business rules**
- **Configure eReview server to connect to multiple ECM repositories. Simply works as a federated service implementation**

eReview Viewer Framework:

eReview has extended its viewer framework into four different forms.

- **Java Applet:**
eReview Java applet allows using a generic document viewer on any Web browser
- **Java Application:**
eReview is installed as a Windows desktop application and the file extension is associated with ereview MIME Type to view and annotate documents from local hard drives
- **Viewlet (A combination of Java Application and Applet):**
eReview Application is installed through a thin client applet (Viewlet) from eReview Application Server and allows viewing and annotation of documents from both eReview Application Server and client desktop
- **ActiveX Component**
An ActiveX wrapper is layered around eReview Java Beans to provide viewer extension for customized windows applications. Custom viewers can be developed in Visual Basic or Visual C++ with eReview ActiveX Component

eReview Features:

Viewer Features:

- **MDI:** eReview has a multiple document interface where a host of formats (over 200... scanned images (Tiff, MO:DCA), Office documents, PDF, HPGL and print formats, AutoCAD, etc.) can be viewed in within the same instance of the viewer.
- **UI Customizability :** eReview can be customized and configured to look very simple to very sophisticated depending on requirements. XML-driven user profiles control the look-and-feel of the UI and a user can be assigned a specific profile depending on his access privileges. The user profiles can be administered through an intuitive administration module.
- **Intelligent Native Viewing:** Reads the original elements of the files (Brightness, Contrast etc of Raster, Bookmarks in PDF) which are exposed through a Drawing controls dialog
- **Powerful Streaming Technology:** eReview supports a very powerful streaming technology where large multipage documents can be viewed extremely fast as the pages are streamed from the server to the client progressively. That is, the user can view the first few pages, while the rest of the pages are gradually streamed down. Thumbnail view of the pages are available and the user can select a particular thumbnail to load that page on demand.

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- **Extract Pages-Save As:** This feature allows users to extract a page from a document and save the page or the view (zoomed or panned in onto the right area), with or without annotations, as an image (JPG, TIFF, PNG or others). This image can be saved locally or on the server. Using eReview's built-in e-mail messaging interface, it can be e-mailed to any other user(s) right from within the eReview interface (this particular feature may require some customization, but the basic hooks are available).
- **Combine Documents- Virtual Document:** eReview allows users to load multiple documents and create a "Virtual Composite Document", "Briefcase" or a "Docket". The user is able to treat the entire set of documents as one entity within the viewer, step through pages and annotations, forward it to the next user in a workflow, etc.
- **Navigation Control :** Navigation tool makes it easy to find information and browse to a specific view or page in a multipage document
- **Standard Viewing Tools:** Zoom, Pan, Rotate, Flip, Scroll on different pages or views of the document. Use birds-eye-view or overview tool to view into complex documents. Thumbnail view, Bookmarks are supported.
- **Document Comparison-Side-By-Side and Overlay Compare :** Compare multiple documents of different formats in Side by Side mode inside eReview viewer frame window. Overlay compare similar document revisions to detect minor changes

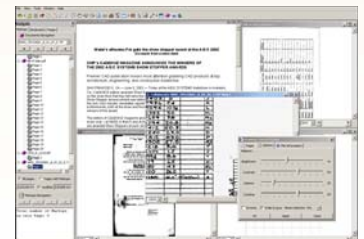
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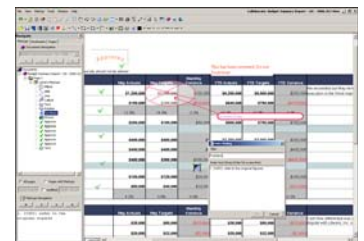


Annotation Features:

- Multiple file, layer, author support for any document and Easy point-and-click creation and editing of markups
- Support for Select, Copy, Paste and Rotate Markups
- Markup properties, attributes, and primitives, textual comments to markups
- Automatic Loading and Saving of Markups
- Manage and track markups: show/hide layers, authors. Save annotations with date, author name and timestamp
- Search markups using navigation tool. Search based on time, filter pages with or without annotations
- Digital sign-off, Symbols, Pictures, Callouts, Sticky Notes, WSIWYGText, Chat, Stamp-Host of graphical and text-based markups-optionally iconize markups to clear viewing area
- Support for composite markup- A user can combine markup primitives to create and save his own markup
- Markups can be burnt into images and saved and emailed to other reviewers
- Markup consolidation: Markup layers created by a number of users can be consolidated by a super user into one layer for archiving and simplification
- Special redaction tools can hide certain sensitive information before content distribution, This is particularly useful for FOIA compliance. eReview provides support for Redaction on any document through pre-created annotations



True Multiple Document Interface



Multi-layer Markup Paradigm

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Printing or Plotting Features:

- Streamlined printing and plotting thru Web interface, desktops or servers – single interface to print all types of documents
- Print or plot current view with or without annotations
- Print header and footer with different margin settings
- Print preview before sending to the printer
- Print redaction markups always with correct extent
- Print with watermarks
- Java Print on Non Windows System
- Print as Monochrome or Color format
- Server or Client-based Batch Printing in Background

User Interface Customization:

- Customize the entire skin or UI is - The buttons, toolbars, menus can be modified according to requirements, to match the user experience
- Personalize viewer based on user roles using eReview load configuration XML API
- Dock, undock, move or float eReview toolbars inside eReview viewer frame window
- Limit eReview functionality through addition or removal of action menus and buttons

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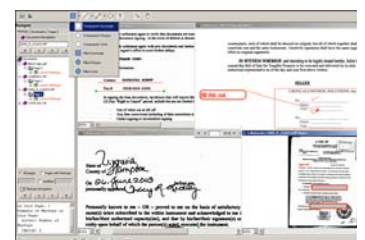
Integration with other ECM/PLM/CRM Solutions:

eReview View and Annotation tool is integrated with many other leading ECM solutions available in the industry. The customized visual workflow is developed and implemented to solve many specific business challenges in day-to-day enterprise activities. eReview has out-of-the-box integrations with the following ECM/PLM/CRM applications:

- **IBM FileNet Solutions**
 - P8 Workplace
 - Workplace XT
 - Image Service Open Client
 - Image Services Resource Adapter (ISRA)
 - Application Connector for SAP (ACSAP)
 - Government
 - Team Collaboration Manager
- Documentum WebTop
- Hummingbird DM Extension
- Hummingbird WebTop
- Oracle Files
- eMatrix/ENOVIA
- Xerox Docushare
- Open Text Live Link
- Siebel CRM
- Primavera Project Collaboration System
- Alfresco Open Source ECM



Redacted Viewing



Customized UI