

White paper

OpenText™ xPression™ service-oriented architecture

A Customer Communications
Management platform

This white paper provides an overview of the architecture and components of the OpenText xPression software suite, an award-winning Customer Communications Management solution. It describes how xPression's multi-tier service-oriented architecture (SOA) provides a set of tools and applications to administer, design and publish a variety of highly-customized and personalized communications in real time, near time and/or high-volume batch. xPression's SOA is unique in that it provides both real-time, web-based document fulfillment and optimized high-volume batch generation. Competing products that are designed primarily as online systems do not perform well for large-batch document production, and vice versa. Moreover, because xPression is built on the power of Java EE, it supports industry-leading operating systems, application servers and databases.

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Executive summary

The award-winning xPression software suite is a market-leading Customer Communications Management solution. xPression personalizes a range of customer communications through a technology called dynamic content publishing (DCP), which includes the creation, assembly and multichannel delivery of a variety of highly customized and personalized communications. Using DCP, organizations can publish unique content simultaneously across many types of communications and tailor content to engage individual customers via their chosen formats, including tablet, smartphone, computer or print.

xPression's multi-tier service-oriented architecture (SOA) provides a set of tools and applications to administer, design and publish a wide variety of customer communications in real time, near real time, and/or high-volume batch.

Introduction

This white paper provides an overview of xPression's SOA and describes the major components of the server, its application layers and its integration capabilities. It also discusses how xPression integrates with other enterprise applications and business workflows to significantly streamline business processes and help organizations deliver more accurate, relevant and effective customer communications.

xPression overview

Organizations worldwide use xPression software to optimize the customer experience by automating the creation and delivery of engaging, highly personalized customer communications, including customized marketing collateral, contracts, policies, relationship statements and correspondence.

xPression uses DCP for the creation, assembly and multichannel delivery of customer communications, including:

- Legal contracts and negotiated agreements, such as ISDA master agreements and group healthcare contracts.
- Insurance policies, forms and certificates.
- Statements, financial reports and consolidated investment reports.
- Trade confirmations, correspondence and other trading documentation.
- Claims and customer service correspondence.
- Graphically rich, printed and HTML email correspondence.
- Invoices, bills, notices and alerts.
- Account opening and welcome kits.
- 1:1 personalized marketing collateral, mailers, catalogs and newsletters.
- Personalized web landing pages for secure communications.

The generation of such document types requires content assembly driven by rules that specify how to select the right version of the content and how to personalize the content based on data and business logic, a capability xPression provides. The solution also formats documents for distribution across many output channels, including web and email formats, such as HTML and Adobe® PDF, and high-volume print formats, such as Adobe® PostScript® and IBM® AFP™.

xPression also integrates with other systems in the enterprise, such as customer relationship management (CRM), Enterprise Content Management (ECM) and claims administration systems.



xPression architecture

xPression's open architecture is based on the Java EE standard, web services and XML. Its architecture is designed to ease integration into an organization's existing business workflows and data/content repositories.

Its multi-tier SOA is unique in that it provides both real-time, web-based document fulfillment and optimized high-volume batch generation. This differs from other products, which are designed only as optimized batch engines and, therefore, are unable to support the requirements of real-time or near-real-time publishing systems. Moreover, because xPression is built on the power of the Java EE standard, it supports industry-leading operating systems, application servers and databases.

In addition, xPression leverages operating system, application server and database support for clustering. Therefore, it can scale up or down to run on a variety of platforms, including modest hardware (all components, including the database, can be run on a single laptop), a horizontal cluster of many small servers, a large vertically clustered server or anything in between.

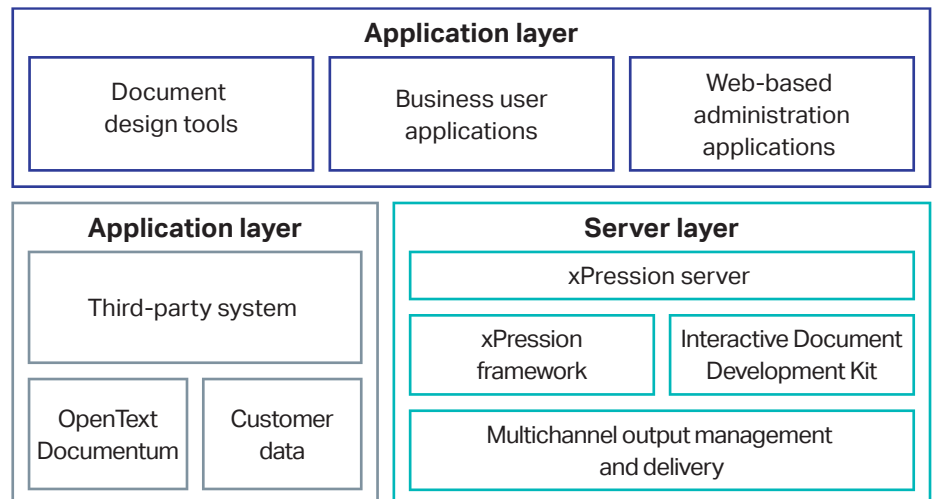


Figure 1: xPression architecture

xPression's architecture has the following major components:

Application layer

- **Document design tools:** Designed for ease of use and functionality for document designers
- **Business user applications:** Built for business users, emphasizing ease of use and domain-specific functionality
- **Web-based administration applications:** Geared toward IT operations staff in charge of document production and system administration

Server layer

- **xPression server (Based on Java EE, XML and web services):** Allows IT architects to integrate xPression with other enterprise systems and run inside a Java EE application server, which contains its own content database as an alternative to external data sources
- **xPression framework:** Incorporates core xPression functionality in other applications or for developing custom applications

- **Interactive Document Development Kit:** Adds xPression interactive document development capabilities to third-party or custom line-of-business applications
- **Multichannel output management and delivery:** Enables the design of a single document template that contains variations of content and styling suitable for email, print, web and archive delivery.

Integration

- **Third-party systems, OpenText™ Documentum™ and customer data:** Designed to integrate with third-party enterprise resource planning (ERP), CRM and ECM systems to produce and distribute documents, as well as update these systems using standards-based integration protocols and methods. An additional level of integration for Documentum is included. xPression can leverage either XML or relational database customer data for personalization.

Each component is described in more detail in the sections that follow.

Document design tools

Unlike competitive offerings, xPression enables document designers to use familiar and popular content authoring tools from Microsoft® and Adobe. Designers do not need to learn a new proprietary interface that attempts to satisfy a broad range of document types and delivery channels through a “least common denominator” approach. Instead, xPression provides a universal plug-in technology, called OpenText™ xPresso™, to extend dynamic content design capabilities to the most popular content authoring tools, including Microsoft® Word, Adobe InDesign® and Adobe Dreamweaver®. xPression also provides a document packaging tool called xDesign for combining complex, hierarchical document packages.

The following pages will discuss the main concepts of xPresso, the specific capabilities of each xPresso product and provide an overview of xDesign.

xPresso technology

xPresso is a plug-in technology that extends widely-used content authoring tools with rules (for content customization), variables (for content personalization) and deployment for high-volume and multichannel production by the xPression server. xPresso comprises five main concepts:

- **WYSIWYG design:** The document designer works from within the content authoring tool, such as Microsoft Word, to develop a dynamic document template. The template is an XML specification that contains all of the rules and variables that make the document dynamic. The document designer can validate the document template by applying XML test data to generate personalized instances, all from within the content authoring tool.
- **Business logic:** The xPresso plug-in displays the template in a schematic palette, which allows the user to define and modify all of the business logic rules in the document for content selection and customization.
- **Variables:** Content is personalized with variables that are replaced at document generation time with values that come from customer data. xPresso provides a palette for defining all of the variables in a document and mapping these variables to data. A separate palette allows the user to load a data schema and map its elements to the variables.
- **Collaboration through subdocuments:** Each document template can be modularized into a set of subdocuments contained within a master document. As a result, different document designers can work on different subdocuments at the same time and merge them into the master document for testing.

- **Deployment packaging:** Once the designer has completed template development and testing, it can be packaged for deployment to the xPression server. The packaging process transforms the template and all of its content into Java code, which the xPression server executes by applying variable data to generate many personalized documents from a single template.

These five concepts are used in all of the xPresso design tools, as explained below.

xPresso for Microsoft Word

xPresso for Microsoft Word enables business users to add variability to new or existing Word documents, creating a single document template for fast and easy document generation and delivery via print, web, email, text messaging and other channels of choice. xPresso for Word makes it easy for users to create business rules that specify the type of communication and mode of delivery based on activity, regulatory requirements and customer preference. It is commonly used to design correspondence, proposals, contracts and other textual documents that are a good fit for Microsoft Word and adds specific features relevant only to Word, such as text wraparound, as well as versioning and content approval workflow capabilities.

xPresso for Adobe InDesign

xPresso for Adobe InDesign uses the same technology and concepts as xPresso for Microsoft Word, but is based on Adobe InDesign. xPresso for Adobe InDesign is ideally suited for designing highly personalized, graphically rich, frame-based documents, including statements, financial reports, bills, invoices, marketing collateral, mailers and catalogs. It also provides specific capabilities for designing statements and marketing collateral, such as advanced dynamic charting, table and page flows, image cropping, scaling and rotation and calculations.

xPresso for Adobe Dreamweaver

xPresso for Adobe Dreamweaver is used to develop rich HTML emails and personalized web pages and HTML documents. It uses the same technology and concepts as the other xPresso tools but allows the document designer to work within an HTML authoring environment and use interactive HTML features, such as dropdown menus, action buttons and hyperlinks.

xDesign

xDesign was developed to design granular, complex documents with compliant, regulatory content, such as hierarchical, multi-part contracts, insurance policies, and packages of multiple, mixed documents. It is a Microsoft® Windows®-based client application that allows a document designer to combine subdocuments from various xPresso templates as well as create dynamic content using Microsoft Word from within xDesign. xDesign delivers all the features provided by xPresso, plus the following:

- **Content versioning:** The ability to store content fragments as objects in the xPression database and version the objects so the appropriate version can be included in a personalized document based on customer data.
- **Multi-data source access:** A single xDesign template can read data from multiple data sources through structured query language (SQL), providing powerful data access when it is time to generate a document.
- **Content approval workflow:** Each content fragment in an xDesign template can go through an approval workflow to ensure that only approved content versions are deployed to production for use during document generation.



- **Mixed document packaging:** A single xDesign template can contain subdocuments that are a mix of xPresso documents. For example, designers can create a complex document that includes a cover letter that is an xPresso for Word document, a statement that is an xPresso for InDesign document, a marketing insert that is also an xPresso for InDesign document and a set of legal disclosures created from within xDesign using Microsoft Word.

The combination of xPresso and xDesign provides designers with the most comprehensive document design suite in the industry, enabling them to work with the tools they already use. This eliminates the often daunting task of transferring a design created in Word or InDesign into a proprietary tool, which typically takes a long time and often results in differences between the approved design and the final result.

User applications

xPression includes several applications designed for business users that address requirements for quick, ad hoc, interactive responses, such as those that often take place in a customer service environment.

xResponse

xResponse is a web-based application for real-time document previewing, editing and generation. It is ideally suited for use where real-time, customized customer communications are required, such as in call centers, agent automation environments or within claims processing systems. xResponse provides secure access to one or more xPression servers and allows the user to generate a personalized document for a specific customer by pulling in customer data from a predefined source or capturing the data online. The user can then edit this document in an ad hoc fashion, select a distribution mechanism and submit the document for publication in either real time or as a scheduled batch job. xResponse also provides the ability to define and apply an approval process that ensures all documents are approved prior to distribution.

xRevise

xRevise is a web-based application that enables the controlled customization of complex documents. Changes to the document are stored and the user can generate multiple versions of the customized document. It is used most often to customize a base contract for a particular recipient. xRevise uses an enhanced version of Microsoft Word for a superior yet familiar interactive document editing experience.

To modify a specific document, users can make changes directly within the document or through its Table of Contents if they want to focus on specific document sections. Search features allow users to quickly find and apply changes that other users may have performed to the same base document for other recipients. With xRevise, users can automatically customize a document based on its change history, which means applying the same customizations performed for one recipient to hundreds or even thousands of other recipients. xRevise alerts users when customizations cannot be automatically applied and initiates manual review processes. Once a customized document is complete, users can deliver it directly to a customer via all supported xPression distribution mechanisms.

Interactive Document Development Toolkit

The Interactive Document Development Toolkit (IDDK) supports interactive capabilities from other web-based applications and is the ideal choice when more complex customizations or complete custom applications are required. Additional information regarding the IDDK is provided in the xPression Development Kits section below.

Administration applications

The xPression software suite includes two web-based applications to administer and monitor the xPression server.

xAdmin

xAdmin is a web-based application for administering the xPression server. Its interface is geared toward IT operations/system administrators and designed to help them reduce system management costs by streamlining the configuration of the following aspects of xPression:

- **Template management:** Users may leverage any Document Sciences xPression design tools to create templates. The administrator can deploy these templates on the xPression server using xAdmin, which provides the following document management capabilities:
 - **Document categories:** Organize document templates into logical categories that are linked to pre-defined data sources, security permissions and approval workflow definition.
 - **Data source groups:** Map Universal Content, relational data, XML or XQuery sources of widely used formats, including flat files, mainframe data and XML-based sources. Data sources can be grouped where each group shares the same unified schema.
 - **Attribute sets:** Define a set of attributes that are automatically applied to document templates.
 - **Resource management:** Define and organize shared resources, such as fonts, images, connectors to ECM systems and external content sources. These resources can then be used in any document publishing job.
 - **Output management:** Define device details for print, email and archive, including formatting, fonts, trays and finishing options, such as bar coding, sorting and packaging.
 - **System management:** Configure license control, migrate from one xPression environment to another and perform other system-related functions.
 - **CompuSet:** Enable and configure the CompuSet composition engine.
 - **Database:** Configure xPression's internal database.

xAdmin stores configuration details in the xPression database, where they can be accessed and read by other xPression components.

xDashboard

xDashboard is a web-based application for defining, executing and monitoring batch publishing jobs. Its intuitive, easy-to-use interface enables IT operations staff to quickly run production batch jobs to produce millions of highly personalized and customized documents without any coding. Its major features include:

- **Job management:** Create job definitions, execute batch jobs and define input data sources, output profiles and job logging.
- **Job monitoring:** Show the current jobs running in the system, including job names, start time and progress.
- **Job history:** Display a searchable list of previously run batch jobs to view job status, start and end time, failure records and detailed error messages.
- **Server management:** View the email, print and archive distribution status for queued distribution tasks. Server statistics display information for executed jobs and documents.

xPression server

The xPression server is the core of the xPression software suite. It consists of all of the components necessary for assembling, publishing and distributing documents. The components in the server are written in Java and hosted on a Java EE application server. Supported server products include Apache Tomcat®, IBM® WebSphere®, BEA WebLogic® and JBoss®. Using Java in both the xPression components and the application server delivers multi-platform compatibility and functionality on several operating systems, including Windows Server® 2008, IBM® AIX®, Oracle® Solaris, Red Hat® Linux® and SUSE® Linux. The xPression server has four core components: xPression Assemble, xPression Publish, xPression Distribute and xPression Batch. In addition, it provides a public interface called xPression Framework for writing additional applications on top of the server.

xPression Assemble

The xPression Assemble component collects the appropriate content for a particular customer. It determines which content items or fragments to include by executing the set of assembly rules defined in the template produced by the xDesign or xPresso design environments (see earlier). xPression Assemble can retrieve content from a content management system, file system or xPression's database.

xPression Assemble also replaces variables in content items with variable data obtained from various sources. It is written as an Enterprise JavaBean (EJB) that runs in a container provided by the application server. Multiple instances of the xPression Assemble EJB can be invoked to process simultaneous document assembly requests. xPression Assemble is written as a stateful session EJB to enhance the performance of client applications, such as xDesign, which employ user sessions that must pass information from one operation to the next. The EJB has a public API that each requesting application can access. To start sending requests to the xPression Assemble component, an application must "start" the EJB by creating an instance of it. Once created, the instance will maintain its state and handle all requests from the same application session until it is "stopped." Starting and stopping the Assembly Engine EJB typically occurs at log-in/log-off from a xPression application.

xPression Assemble produces an XML object that contains the values for all of the resolved variables in the document template and the unique identifiers for all of the content fragments to be retrieved. The engine then uses this XML to produce an Assembled Document by retrieving and merging the actual content fragments identified in the Assembly List. The resulting assembled document is the input of the xPression Publish component.

xPression Publish

xPression Publish is responsible for the composition, formatting and distribution of documents that are assembled by xPression Assemble. Composition involves determining all of the margins, line breaks, page breaks, headers/footers, fonts and colors. Formatting involves laying out the document in a particular page description language, such as PDF, PostScript or AFP. In addition, xPression Publish is responsible for any post-composition processing to create document packages, sort documents within packages and add finishing information, such as bar codes. Distribution involves sending the formatted documents or packages of documents to the appropriate channel(s), including email, printer, web or an archive system. xPression Publish comprises multiple EJBs and Java classes to perform all of the services described above. Its multi-threaded Java publishing engine can process the document templates created by any of the xPresso products or xDesign faster than all other document composition engines. In addition, the xPression's legacy composition engine and CompuSet provide a sophisticated set of composition, emitter and output-processing operations.



xPression Distribute

The xPression server has several controllers. Prominent among these is the Distribution Controller, which is responsible for interfacing with the supported distribution channels in xPression, including SMTP email, print and archive. Its archival capabilities include automatic, multi-threaded output to Documentum for high-volume online archival. The Distribution Controller is a stateless session EJB and operates asynchronously through a queuing mechanism to reliably deliver output to channels that do not reliably support multi-threaded input. The Distribution Controller determines which distribution channel(s) to use based on information provided by the Output Processing Controller.

xPression Batch

xPression Batch is a multi-threaded Java application that executes and manages high-volume batch jobs. It runs outside the application server in a separate process and accesses the xPression Assemble and xPression Publish components through their public interfaces within the xPression Framework API. For superior performance, it is configurable to optimize the number of threads it runs of each component. Through built-in scheduling services, it can be started manually or scheduled to start at a certain time. xPression Batch receives its processing instructions through a Job Definition, an XML specification that can either be manually generated or created through xDashboard.

xPression development kits

Two development kits are packaged with xPression to add xPression capabilities to existing customer applications or to develop custom applications.

xPression Framework

xPression Framework, the published API for xPression, includes a comprehensive set of WS-I-compliant, SOAP and RESTful web services. This enables rapid integration of xPression's rules-based assembly and document output capabilities with new or existing enterprise systems, while having complete control over the user experience. xPression Framework enables developers to integrate xPression's high-volume batch generation and publishing capabilities with virtually any kind of external system, including CRM, ECM, ERP and/or line-of-business applications. It also facilitates reporting and auditing of document production.

xPression Interactive Document Development Kit

The xPression Framework provides services for straight-through document assembly and publishing. The Interactive Document Development Kit (IDDK) enhances xPression Framework capabilities with a focus on interactive document features. With the IDDK, customers can invoke xPression services as needed to include all the interactive and customization capabilities of xResponse and xRevise within their own applications and workflows. For example, from a web application portal, customers can invoke xPression web services to generate dynamic documents that can be previewed, tailored, versioned, managed and published to multiple channels. IDDK capabilities include optional paragraph selection, external content selection, editing, tracking and reporting capabilities. The services from both the xPression Framework and IDDK can be added into existing third-party applications or new standalone custom applications.

xPression Database

In standalone instances, xPression provides a fully indexed database that can store three types of information: xPression metadata objects, text objects and binary objects, such as images. It also provides version control on text and binary objects.

The xPression Database can be installed on relational database platforms, including DB2/ UDB, Oracle and SQL Server. Note that only one xPression Database can exist for each installation of xPression. Where multiple xPression servers exist in a cluster, the xPression Database is shared among all servers participating in the cluster.

Universal Content

xPression templates created in xDesign, xPresso for Word and xPresso for InDesign can pull static content at document publishing time from an ECM system. Universal Content includes external PDF files that can be included on a page basis and Word format files (.doc, .docx) that can be included on either a page or subpage basis. For example, a legal disclosures section that is authored in Word can be inserted into an xPression template as Universal Content so that the legal team can maintain and update this content using Microsoft Word. Customers without an ECM system can include Universal Content from any file system path that is accessible to the xPression server at runtime.

Content and data integration

The dynamic generation of documents involves content, rules and variable data. Content is comprised of fragments that may have variables in them. Assembly rules determine which content fragments belong in the dynamic content. Variable data is used to resolve the variables in the content and to execute assembly rules.

Third-party systems

Third-party systems, such as ERP, CRM and ECM systems, can integrate with xPression to produce and distribute documents using standards-based integration protocols and methods.

- **Real-time integration:** Directly calls HTTP(S)-based web services and GUI components in the xPression development kits for synchronous document display and editing.
- **Batch integration:** Complies with batch processing industry standards. Enterprise-class job scheduling tools can integrate data collection, file transfer, xPression document production and document distribution batch jobs in a coordinated sequence.

Customer (or variable) data

Users can provide variable data to xPression in any format. Natively, xPression can process data in a variety of XML formats or in one or more relational database formats. The Customer Data Reader is a multi-threaded Java component responsible for processing variable data. It is called by other xPression server components to retrieve either XML data or relational data. The Customer Data Reader can read any XML structure through a combination of XML Schema Definition (XSD) to define the schema and XPath to define where the data is within the XML data tree. To better facilitate querying XML data, the Customer Data Reader creates an in-memory database that stores all of the retrieved data from the XML file as in-memory relational tables. This functionality also allows the document designer to develop a single document that can be used with a variety of data sources, depending upon the business need.

The Customer Data Reader can also retrieve relational data from any RDB using Java Database Connectivity (JDBC). Document Sciences xPression supports Oracle, DB2/UDB and SQL Server certified databases. Instead of executing raw SQL statements directly against the databases, the Customer Data Reader takes Java objects and translates them into SQL code that is customized for each of the supported vendors' adaptations of SQL. This allows xPression to be database-independent. In addition to the Customer Data Reader component, xPression provides a "Java exit" mechanism, whereby an external program can be called to access data from any source, including a VSAM file on a mainframe or a flat file. It can then manipulate this data by performing calculations on

it and produce streamlined XML data required for document assembly and publishing. xPression includes support for XQuery through integration with the industry-leading Data Direct XQuery drivers. XQuery allows users to access, merge and transform many types of data sources into a target XML file, which is then automatically fed into the xPression server for high-speed customized document production. Stylus Studio Enterprise Suite, a desktop data design and transformation application, makes it easy to design and test XQuery packages. The possibilities for integrating data into xPression are practically endless with this powerful toolset.

OpenText Documentum integration

xPression integrates with the Documentum content management system through its Universal Content capability as described above. In addition, the xPression design clients take full advantage of the robust content collaboration features available from Documentum, such as check-in/check-out, versioning, advanced search and retrieval and secure access control. With the combination of xPression's dynamic document design tools and Documentum's core content services, multiple teams across the enterprise can collaborate and control shared content without relying on IT personnel. For example, the business team can change content to meet revenue goals; the marketing team can ensure content and designs adhere to corporate branding; and the legal team can approve all regulated content.

Once a document is created, users can automatically route the communications for review. Upon approval, a document can be generated and published immediately or added to a scheduled batch process using the robust multichannel publishing capabilities of xPression. Delivery options include print, email, web, fax and mobile devices.

xPression document generation and publishing can also be integrated with transactional business processes through OpenText™ Documentum™ TaskSpace. TaskSpace enables business users to build a transactional business process using a graphical, drag-and-drop interface. A xPression icon can be dropped anywhere within the process flow to generate or distribute documents.

Multichannel output

xPression provides a variety of powerful mechanisms for selecting the right content for the right output channel. For example, from a web portal, documents that share some content but differ in other content, can be generated depending on the output channel selected by the user. A letter may contain detailed headers/footers and styling for printing on a color printer, whereas another version of the letter intended for plain-text email may contain only the crucial body in simple styling. This provides a richer, channel-specific experience, while still enabling the reuse of common content across channels.

xPression's multichannel support does not stop there. With a set of fit-for-purpose design tools, the document designer may create multiple presentations that are best suited for specific channels, while reusing some of the same content, if appropriate. For example, the document designer can develop a rich HTML document in xPresso for Dreamweaver for an interactive web experience. They can then use some of the same content in an xPresso for Adobe InDesign document to provide the most advanced print media experience through creative layout, full-color, graphical design and other print-specific concepts.

The document designer may also designate specific pieces of content for inclusion in a document to specific recipients. This enables simultaneous production of multiple document packages with different content intended for different recipients (for example, the policy holder vs. the insurance agent). The various packages may also be channeled to different output devices to provide different levels of document quality as necessary.



Migrate Utility

The Migrate Utility provides a mechanism to transfer documents and all related objects, including web and print job definitions, output profiles and document streams, from one xPression server environment to another. This is useful when one server is used in a development environment and a second is used in a production environment. In such a case, the Migrate Utility can retrieve documents created on the development server and import them into the production server.

xPression's Migrate Utility can also be used to export a document into a Portable Document Package (PDP) so that it can be delivered to another server for import. The administrator can execute the Migrate Utility manually from xAdmin or schedule it to run at a specified date/time using the standard scheduling services of the operating system. The input provided for a scheduled migration is an XML Migrate Definition, which can either be generated manually or through xAdmin.

Conclusion

OpenText xPression is the leading platform for high-volume document generation. It is characterized by the following five facets that make it the best choice for consolidating all document generation and publishing needs within an enterprise or a department in the enterprise. xPression:

- Provides best-in-class DCP performance and capabilities that allow organizations to assemble content fragments into highly customized and personalized documents in real time, near real time and/or high-volume batch processing.
- Delivers a Java EE/XML SOA that makes it easy to integrate with other enterprise applications and business workflows.
- Offers multichannel capabilities for publishing of the same content for traditional print (AFP, PostScript, PCL), online and email distribution (PDF and HTML) and archive (indexed PDF and AFP).
- Includes open content authoring environments based on Microsoft Word, Adobe InDesign and Adobe Dreamweaver that enable importing of existing styled content from Word, the most widely used document editing format, Adobe InDesign and QuarkXPress®.
- Complies with open standards, enabling it to run on industry-leading operating systems, Java EE application servers and databases.

By tightly integrating with existing systems, data and workflows, the xPression architecture can significantly streamline business processes and help organizations deliver more accurate, relevant and effective customer communications.

About OpenText

OpenText, The Information Company™, enables organizations to gain insight through market leading information management solutions, on-premises or in the cloud. For more information about OpenText (NASDAQ: OTEX, TSX: OTEX) visit: opentext.com.

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