opentext™

OpenText™ Exstream™

Getting Started

Design and Production Documentation

Release 16.6.0

OpenText™ Exstream
Getting Started
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Contents

Chapter 1: About Exstream 6
1.1 Components of the Exstream platform 7
1.1.1 Exstream desktop applications 7
1.1.2 Exstream web applications 8
1.1.3 Communications Server layer 10
1.1.4 Shared services layer 10
1.1.5 External applications 11
1.2 How Design and Production works 11
1.3 What Exstream can do for your business 13
1.3.1 Increase communication effectiveness 14
1.3.2 Reduce complexity 15
1.3.3 Streamline document processes 16
1.4 Types of communications Exstream can produce 17
1.4.1 Correspondence 18
1.4.2 Marketing 18
1.4.3 Publications 19
1.4.4 Transactional 20
Chapter 2: Setting up your environment 21
2.1 Downloading software 21
2.1.1 Exstream Runtime common installer 21
2.1.2 Exstream Design Tools common installer 22
2.1.3 Additional Exstream components 23
2.2 Installing the Exstream platform 24
2.3 Upgrading to the current version 25
2.3.1 Upgrading from version 16.2.0 or later 25
2.3.2 Upgrading from classic Exstream 26
Chapter 3: Licensing information 27
3.1 Design and Production license key 27
3.2 Design and Production license file 28
3.3 Communications Server license file 28
Chapter 4: Design and Production modules 30

4.1 Design and deployment 30
4.1.1 Design interface 31
4.1.2 Rapid migration 33
4.2 Data and content integration 34
4.2.1 Data integration 34
4.2.2 Content enablement 35
4.3 Interactive editing 37
4.3.1 Empower documents 38
4.3.2 Live documents 39
4.4 Interactive forms 40
4.5 On-demand delivery 40
4.6 Production output and testing 44
4.6.1 Enterprise document creation 44
4.6.2 Enterprise document production 46
4.6.3 Testing tools 48
4.6.4 Output formats 49

Chapter 5: Accessing Exstream documentation 54
5.1 Documentation overview 54
5.1.1 Release notes and software overview 54
5.1.2 Installation and configuration 55
5.1.3 Design 56
5.1.4 Interactive editing 57
5.1.5 Business authoring 57
5.1.6 Production and engine orchestration 58
5.1.7 Reference 58
5.2 Accessibility information for Exstream 59

Chapter 6: Using Design and Production 60
6.1 Signing in to the design environment 60
6.2 Viewing your access privileges 61

Chapter 7: Design environment at a glance 62
7.1 Design Manager 62
7.2 Designer 64
7.3 Customizing Design Manager and Designer 67
7.3.1 Creating keyboard shortcuts 68

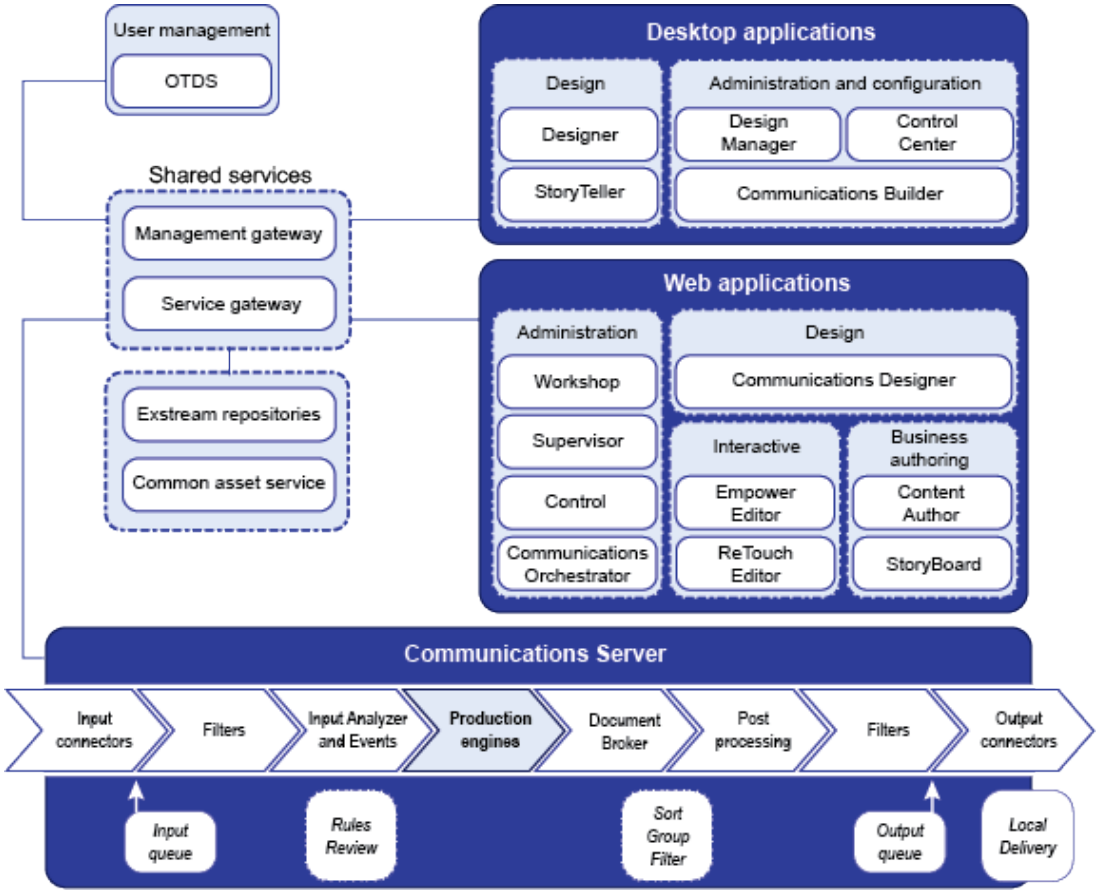
7.3.2 Changing the working language 69
7.3.3 Setting personal options in Design Manager 69
7.3.4 Setting personal options in Designer 69
7.4 Working with design databases 70
7.5 Changing data source names (DSNs) 70
7.6 Working in the Library 72
7.6.1 Changing the Library view 73
7.6.2 Creating an object 75
7.6.3 Cloning an object 76
7.6.4 Moving an object 77
7.6.5 Renaming an object 77
7.6.6 Setting an expiration date on an object 78
7.6.7 Organizing objects in the Library 78
7.6.8 Maintaining object version control 85
7.6.9 Deleting an object 95
7.7 Searching the design environment 95
7.7.1 Finding and replacing text in Design Manager 96
7.7.2 Finding and replacing text in Designer 97
7.7.3 Finding and replacing variables in Design Manager 100
7.7.4 Finding and replacing variables in Designer 101
7.7.5 Finding objects in Design Manager 102
7.7.6 Finding objects in Designer 103
7.7.7 Finding where an object is used in an application 104
7.8 Working in the design window 105
7.8.1 Saving an object in the design window to the library 107

Chapter 1: About Exstream

The Exstream platform provides an integrated software solution for creating, managing, and delivering customer communications of any type, regardless of complexity, variability, or delivery channel, and enables you to eliminate many systems and point solutions by using the comprehensive omni-channel delivery capabilities of the platform. The fully integrated, robust, and flexible capabilities of Exstream let you streamline business processes with end-to-end processing of documents—from content ingestion through composition to output. Sophisticated capabilities such as campaign management, dynamic whitespace management, data-driven charting, multi-language support, and more help you acquire, retain, and grow customer relationships.

Classic Exstream software (Design and Production) is a part of the integrated Exstream platform and provides you with robust capabilities for designing, managing, and delivering customer communications using Design Manager, Designer, and Logic Designer with the Exstream production engine.

The following graphic provides a high-level view of Exstream and the components of the Exstream platform:



1.1 Components of the Exstream platform

The Exstream platform provides you with a comprehensive solution to meet various business requirements. The way your organization installs and implements the following components of Exstream depends on your specific business requirements:

- "Exstream desktop applications" below
- "Exstream web applications" on the next page
- "Communications Server layer" on page 10
- "Shared services layer" on page 10
- "External applications" on page 11

1.1.1 Exstream desktop applications

The Windows-based applications in the Exstream platform are used for designing customer communications and for modeling, implementing, and administering communication workflows.

- **Design Manager**

  Design Manager lets document designers create and manage the design objects that make up a Design and Production application, including design templates, data files, variables, printers, and production equipment. Additionally, system administrators in Design and Production can perform administration tasks such as managing users and design groups.

  After you have set up your application in Design Manager, you can design your customer communications in Designer. You can then use Design Manager to compile your Design and Production applications and configure test and production runs for delivering communications to customers.

- **Designer**

  Designer provides the graphic design interface for designing and modifying Design and Production applications. With this tool, document designers can create and format content for pages and messages, design graphic elements, insert variables to customize documents, and put together the overall design and layout for customer communications. The device preview feature provides a convenient way to see how the customer communications look when viewed as different output formats on various devices.

- **StoryTeller**

  StoryTeller provides the graphic design interface to create the basic structure and layout of templates that can be used as building blocks for creating customer communications using the StoryTeller engine. You can access StoryTeller from within Communications Builder.

- **Communications Builder**

  Communications Builder is the main tool for modeling communication workflows in the Exstream platform. In Communications Builder, system administrators and document designers can use the connectors, filters, and queues that are available in the tool to define the collection and delivery of data and specify how Communications Server will produce customer communications. These communication workflows are stored as Communications Builder projects.

- **Control Center**

  Control Center is used to deploy and administer Exstream jobs. To run a job and produce customer communications, Communications Builder projects are deployed to Communications Server applications, and these applications are then run and administered from the Control Center interface.

1.1.2 Exstream web applications

The Exstream web applications are intended for many different scenarios, such as campaign and resource management, interactive editing, business content authoring, and job monitoring. Each web application is available as a standalone application and can be hosted in an existing business application or as part of a workflow.

- **Workshop**

  Workshop provides a graphical interface for interacting with resources that are stored in the common asset service (CAS) or another external repository connected through the CAS (such as OpenText Media Management). The CAS provides a connection to a central shared repository that provides access to and storage for the resources used in Exstream solutions. This includes image assets, Design and Production application package files, StoryBoard templates, and Communications Builder projects.

- **Communications Designer**

  Communications Designer lets users design communications in an intuitive web-based design environment. Users can leverage data files and output queues created in Design and Production to create customer output from communications that are designed in Communications Designer.

- **Content Author**

  Content Author lets business users add content to Design and Production or Communications Designer designs without requiring them to re-package their applications. You can use Content Author in conjunction with Workshop to create and modify themes generated from Design and Production or Communications Designer templates, and then publish the updated content to include it directly in the next engine run.

- **Empower Editor**

  The Empower Editor is a browser-based interactive editing experience for personalizing communications based on customer interactions. In Empower Editor, business users can update documents that have been created in Design and Production. These interactions include making selections from pre-defined options, changing text and images, updating variable data, adding additional documents and recipients, previewing the communications, and initiating the fulfillment process.

- **StoryBoard**

  In StoryBoard, business users can enhance StoryTeller templates and personalize communications by adding text, images, and rules. Users can also use the device preview capabilities of StoryBoard to see how communications look in print and email format, and on different devices.

- **ReTouch Editor**

  ReTouch is a lightweight web application that lets business users interactively edit documents generated from StoryBoard templates.

- **Supervisor**

  Supervisor is a web application that lets system administrators track and manage jobs and documents as they move through the Exstream repositories and queues during their lifecycle. The application also provides a basic statistics view where administrators can monitor job processing statistics.

- **Control**

  Control provides a browser-based way for operations and system administration users to perform many common job deployment and monitoring functions. An extension to the desktop Control Center product, this thin client interface provides an easy-to-understand dashboard with status information for all applications within a domain. It also allows users to start and stop Control Center applications, as well as redeploy Communications Builder projects to existing Control Center applications configurations. Control is supported on touch mobile devices.

- **Communications Orchestrator**

  Communications Orchestrator is a web application that lets users create flow models for customer communications management processes.

1.1.3 Communications Server layer

The Communications Server is the central layer of the Exstream platform that connects to your enterprise systems, creates customer communications, and delivers communications in print or electronic format. Communications Server generates output based on communication workflows that are designed using Communications Builder.

You can use Communications Server along with Communications Builder and Control Center to orchestrate production jobs by connecting your data sources, designs, and connectors to produce customer communications, and by defining how and when to deliver the output. The following processing engines are available in Communications Server:

- **Exstream engine**

  The Exstream engine is the production engine used in Design and Production. It is a high-throughput, multichannel engine used to generate communications by processing Design and Production applications. When you use Communications Server to run Exstream engine jobs, you can take advantage of the connectors and orchestration features that are available in the Exstream platform.

- **StoryTeller engine**

  Communications Server automatically invokes the StoryTeller engine to generate customer communications based on configurations made in StoryTeller, StoryBoard, and ReTouch.

1.1.4 Shared services layer

Communications Server applications and other Exstream applications, such as service gateways, run on the Exstream framework, which contains a management gateway and core platform services.

The management gateway connects the Exstream desktop applications to the user management component and the Exstream repositories, as well as to other Exstream desktop applications, such as Communications Builder and Control Center.

The service gateway connects the web applications to the Exstream repositories and to the CAS.

1.1.5 External applications

The following external software applications are used for critical user management and monitoring functions and are installed separately from the Exstream platform:

- **OpenText™ Directory Services**

  OpenText Directory Services (OTDS), is an OpenText identity management system that provides access control for the Exstream platform. OTDS can synchronize with external identity providers like Microsoft Active Directory to retrieve user and group information, and map that information to OTDS access roles, providing secure access to each platform component. OTDS can be downloaded from My Support and is installed separately from the Exstream platform.

- **OpenText™ Experience Analytics**

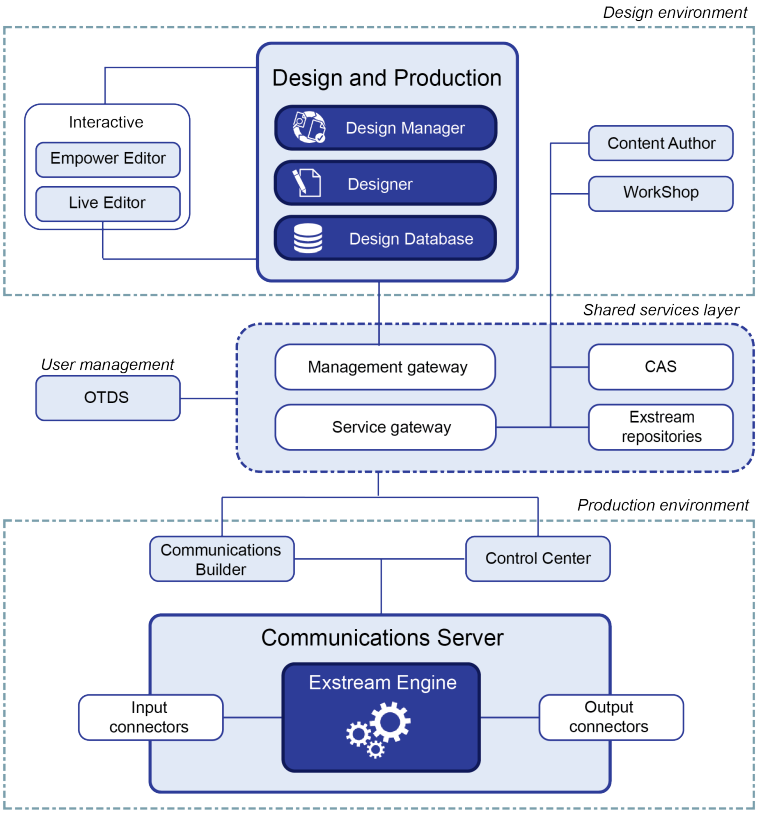
  Experience Analytics is used for end-to-end tracking of communications through the document tracking framework. Experience Analytics can be downloaded from My Support and is installed separately from the Exstream platform.

1.2 How Design and Production works

Design and Productionis a modular solution that offers robust capabilities for reducing complexity, streamlining business processes, and creating higher quality, more effective communications for delivery in high-volume, on-demand, and interactive environments.

When using Design and Production within the integrated Exstream platform, users have access to new design and content authoring, resource management, and engine orchestration capabilities that are available with the platform. The following graphic provides a high-level view of how Design and Production fits into the Exstream platform and interacts with other platform components:

Design and Production architecture



Design Manager and Designer form the desktop design environment that is used to design and set up customer communications in the form of Design and Production applications. Interactive documents (Live documents or Empower documents) are created in the same design environment as standard Design and Production applications, and leverage all of the available content integration and delivery capabilities.

Users interact with the Exstream platform through this design environment, which is connected to the design database and shared services. After Design and Production applications are designed, your files are packaged for production, and processed by the Exstream engine. The shared services layer connects the desktop design environment to the Exstream engine in the server production environment. In particular, the management gateway connects Design and Production to the OTDS user management system and the common asset service (CAS), and enables access to the Communications Server layer that is used for engine orchestration.

Various capabilities are available in this production environment for high-volume, on-demand, and interactive delivery. Sorting and bundling capabilities let you group document applications to reduce print and mail costs. Testing tools let you easily review documents to ensure changes are made and that document outputs are correctly produced. Design and Production can pull content from nearly any data source, including legacy systems. The software can receive data through web systems for creation of on-demand or interactive documents. Design and Production can then process all of the received data to re-enter and update your systems.

If you have licensed the Communications Server component in the platform in addition to Design and Production, you can use Communications Builder to model communication flows and use the connectors, filters, and queues that are available to you to configure your output delivery in Communications Builder projects. Based on these projects, you can then orchestrate Exstream production engine jobs using the Control Center to deploy the projects to Communications Server.

1.3 What Exstream can do for your business

Your business has made investments to manage and govern the vast amounts of content continually flowing in and out of your organization. And, as new technology continues to emerge, so will the content you need to manage. The key to fully differentiating your organization is the integration and deployment of systems and efficient processes to not only capture, manage, and govern content, but to get maximum value from it by creating a better and more effective experience for your customers through variable data publishing and multiple channel delivery.

Exstream is a single platform for producing documents of any type, regardless of complexity, variability, or delivery channel. You can eliminate many systems and point solutions simply by using Exstream. The fully integrated, robust, and flexible capabilities of Exstream let you streamline business processes with end-to-end processing of documents—from content ingestion through composition to output. Sophisticated capabilities such as campaign management, dynamic whitespace management, data-driven charting, multi-language support, and more, help you acquire, retain, and grow customer relationships.

Exstream provides the following major value propositions to help you improve and grow your business:

- "Increase communication effectiveness" below
- "Reduce complexity" on the next page
- "Streamline document processes" on page 16

1.3.1 Increase communication effectiveness

The integrated marketing and dynamic whitespace capabilities of Exstream allow you to ensure every customer communication includes timely, relevant offers and informative messages that improve the customer experience and cross-sell additional products and services. Using Exstream, you can prioritize and incorporate only the most relevant messages and promotions into documents based on business rules, available white space, or the point of need (for example, to explain a complex billing line item). Exstream can also drive inserters to select or remove pre-printed inserts based on customer criteria or other factors you define.

In addition to relevancy, the key to improving customer satisfaction is clarity and the ability to deliver communications through preferred channels. Exstream offers a comprehensive feature set for producing visually appealing documents that simplify complex information, including data-driven charts of almost any type and support for all color modes.

From one application design, you can deliver documents to customers in their native language. Exstream even includes a spell checker for 28 languages. You can also easily deliver documents to customers through their preferred channels (for example, email only).

With Exstream, you can create high-quality, easy-to-understand, and timely communications for customers, increasing their satisfaction and reducing expensive calls to your call center.

Exstreamincreases the effectiveness of customer communications

Reduce complexity

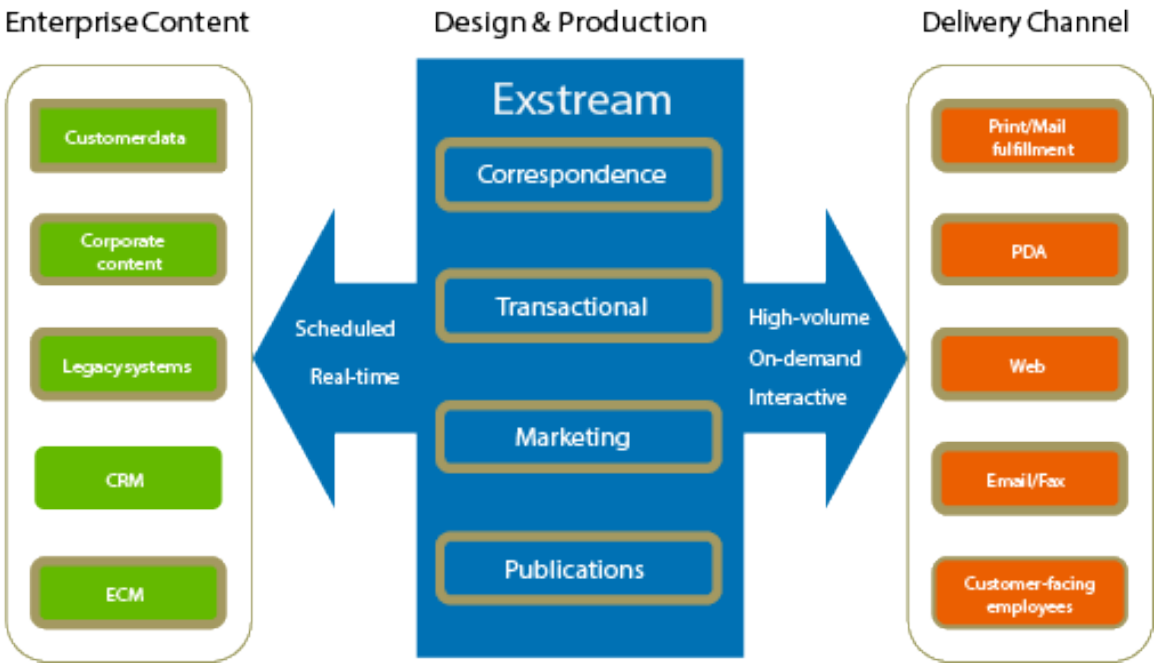
1.3.2 Reduce complexity

Most organizations have significant costs tied up in multiple document creation technologies and processes that connect silos of information to customer document applications. Exstream software provides a single solution for design through delivery of any type of document across the enterprise, regardless of complexity, variability, or output channel—from fully customized high-volume statements, bills, and complex publications, to on-demand marketing and self-service web applications, to personalized correspondence and proposals produced interactively by customer-facing employees. The ability to do all of this using a single software platform allows you to integrate (or even eliminate) silos, significantly reducing costs and ensuring consistency across all customer communications.

Exstream was designed from the ground up to easily fit into any IT environment, including Service-Oriented Architectures (SOAs). Through web services and its comprehensive connector technology, Exstream directly accesses content from enterprise systems and data sources to drive the creation of personalized customer communications, eliminating the need for systems that consolidate disparate data. Exstream can directly access and process in one pass multiple data sources of almost any type, structured or unstructured.

With Exstream, you design objects and combine them together to build applications in an object-oriented fashion. All design elements are stored in a common database so they can easily be re-used across applications, significantly reducing document development and maintenance time.

Exstream reduces complexity in IT environments and business processes



1.3.3 Streamline document processes

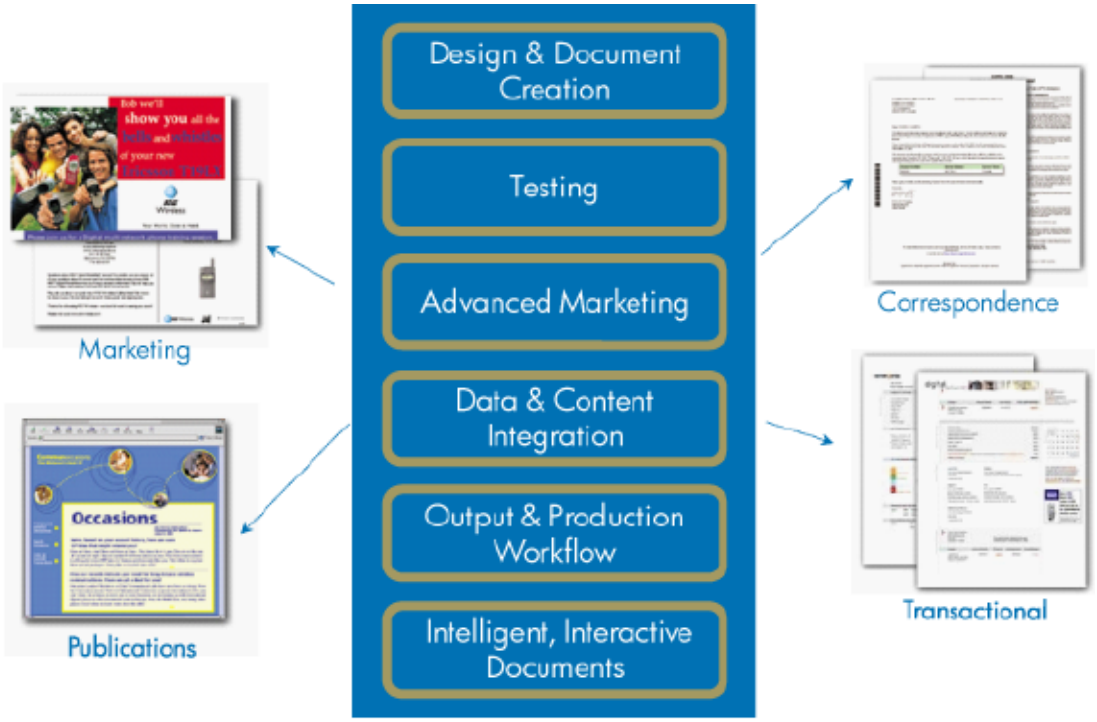
The Exstream software platform provides fully integrated capabilities for end-to-end document processing, including variable design, testing, real-time composition, advanced data and content integration, output to a variety of formats, high-volume optimization and workflow, and controlled editing of interactive documents. The robust graphical design environment of Exstream gives developers all the capabilities they need to design any kind of document, regardless of complexity, type, or variability. Browser-based design collaboration with built-in approval workflow allows marketing and line of business users to remotely create variable messages that are integrated into documents at run time, ensuring relevant and current information is communicated in a timely manner.

Exstream includes many capabilities for testing document applications, significantly improving productivity and optimizing performance. The design interface doubles as an online viewer so you can immediately prototype, review, and modify documents online, and other tools are provided for comparing output, simplifying test data, analyzing marketing campaigns, and performing regression testing.

The same high-performance Exstream engine is used to compose millions of variable documents at a time for high-volume print or mail delivery, or to compose a single document on demand when called by a Web service or custom interactive system. Exstream produces fully personalized document output up to 10 times faster than alternative solutions in customer benchmark tests.

From one template design, Exstream can natively produce more than 20 different print and electronic output formats. Rules can drive different output for different customers in a single run.

Exstream streamlines enterprise document processes



8

The comprehensive capabilities Exstream provides for high-volume print/mail environments eliminates the need for post-processing programs and maximizes production efficiency by allowing you to control postage weights, prepare data for postal sort, drive inserters, and household documents to save unnecessary paper and postage costs.

Any Exstream document can be designed and deployed as an interactive document (a Live document or an Empower document) to be completed at the point of need by customer-facing employees. Edited interactive documents can be sent back to the Exstream engine to drive other processes, such as automating fulfillment, updating corporate systems, records management, and archive systems, or making copies of the edited document in other formats.

1.4 Types of communications Exstream can produce

The types of personalized customer communications you can create are virtually limitless with Exstream. It has been used as a proven solution for several types of document applications in many industries.

With Exstream, you can produce the following common types of communications:

- "Correspondence" below
- "Marketing" below
- "Publications" on the next page
- "Transactional" on page 20

1.4.1 Correspondence

Delivering accurate, consistent, and effective correspondence is one of the most important relationship-building opportunities companies have with customers. Yet, executed poorly, correspondence can damage or even end customer relationships, and can also be one of the most expensive processes companies incur. Unclear, confusing, or incorrect communications result in poor perception from the customer and require even more correspondence to correct the situation.

From personalized letters sent out to millions of customers at a time, to welcome kits generated on demand over the web, and customer service responses or sales proposals created ad hoc, Exstream provides a common platform that allows you to regain control over customer correspondence, reducing costs and ensuring communications are of the highest quality.

Correspondence applications built with Exstream can do the following:

- Lower IT costs
- Streamline processes
- Reduce errors and miscommunications
- Ensure compliance
- Support multiple languages
- Optimize high-volume output
- Enforce branding standards

1.4.2 Marketing

When it comes to marketing applications, timeliness and relevance are of primary importance, so marketing and business users must be empowered to work independently of IT to achieve aggressive time-to-customer goals. Exstream is designed better than any other solution to meet the varying requirements of different users with different skills—from marketing and line of business managers to operations and IT—helping you create more attractive, easier to

understand, relevant marketing communications that encourage buying and other desired behaviors based on individual customer data.

The role-based Windows design interface of Exstream can be configured so various users across the extended enterprise can easily and independently manage different aspects of the workflow process, such as design, versioning, message creation, business rules, and output controls.

Exstream marketing applications include personalized newsletters, email, direct mail, TransPromo communications, pitch books, and more. Campaigns can be linked and tracked for targeted, round-trip campaign management. Using Exstream, some companies have seen 30 percent improvements in customer response rates and have gone to market up to 85 percent faster.

Marketing applications built with Exstream can do the following:

- Achieve simple and seamless integration
- Cut paper and postal costs
- Boost response with color and graphics
- Automate time-consuming design steps
- Ensure brand compliance
- Utilize Web-based variable messaging
- Reward your best customers

1.4.3 Publications

Industry-leading companies worldwide are building customer loyalty by efficiently producing timely, customized insurance policies, new member booklets, travel guides, catalogs, prospectuses, financial plans, and more—and they are doing this all with Exstream software. Publications such as these are often complex and contain multiple pages. Exstream lets you easily create documents that include tables of contents, footnotes, cross-references, and indexes.

No other enterprise document automation software provides a single platform to create complex documents as well as customer correspondence, statements, and marketing applications. Exstream lets you replace many existing software products and in-house systems with a single, comprehensive platform for creating all document types—regardless of delivery channel or environment (for example, high-volume, interactive, on-demand)—resulting in significant reductions in maintenance and development costs.

Publication applications built with Exstream can do the following:

- Simplify sophisticated publications
- Improve productivity and reduce costs

- Reduce document inventory
- Ensure compliance
- Boost response with color and graphics
- Make documents more accessible
- Eliminate repetition in section-based documents

1.4.4 Transactional

Exstream offers an unparalleled ability to quickly and easily produce sophisticated, complex transactional documents, and helps you comply with the U.S. Securities and Exchange Commission (SEC) filing process, including creation of EDGAR HTML for SEC-required revision tracking. Our software automates document workflow processes and handles the most elaborate composition requirements, regardless of variability and customer delivery channel requirement, as much as 10 times faster than alternative solutions according to customer benchmark tests. And, the software's unique functionality to create automated, transactional-driven tables of any type is unmatched in the industry. From automated rows and columns to rounded corners, no other solution provides as much flexibility and as many options to easily present information in tabular format.

Additionally, with Exstream you can easily turn ordinary transactional documents into targeted communications that improve the customer experience. Through integration with your CRM system, you can deliver communications based on customer segmentation. For example, you might choose to send color statements (on higher quality paper if printing and mailing) to one set of customers, but send monochrome statements to another set of customers. Furthermore, the software's sophisticated whitespace management and rules-based messaging capabilities let you maximize the use of available white space and dynamically insert only relevant information and promotions into customer statements, bills, and other transactional documents based on individual demographics, preferences, and buying patterns.

Transactional applications built with Exstream can do the following:

- Integrate with leading BPM, CRM, and ECM solutions, as well as other front and back end office systems
- Utilize data from any source on any platform
- Automatically prioritize targeted messages
- Create messages in the customer's preferred language
- Store whether a customer responded or not
- Allow custom graphics based on customer-specific information
- Maximize the use of available white space
- Control message placement in regulated documents

Chapter 2: Setting up your environment

Design and Production is installed as part of the Exstream platform. Whether you are installing Exstream for the first time or upgrading an existing Exstream implementation, you must download and use the common installers to install the core components of Exstream16.6.0.

> **Note:** This section is intended to provide a high-level overview of installation and upgrade options for Design and Production, and using the Design and Production interface. For information about system requirements for installing Design and Production and any additional upgrade considerations, see *Installation and Upgrade Information* in the Exstream Design and Production documentation.

The following sections provide information about how to set up your Design and Production environment:

- "Downloading software" below
- "Installing the Exstream platform" on page 24
- "Upgrading to the current version " on page 25

2.1 Downloading software

The Exstream platform and related software packages are available for download from My Support.

You must download and use the Runtime and Design Tools common installers to install or upgrade Exstream on the Windows and Linux platforms. You must also separately download and install OpenText Directory Services.

Depending on your Exstream implementation, you might need to install additional Exstream components that are not included in the common installers. You can download installation packages for additional Exstream components from My Support.

2.1.1 Exstream Runtime common installer

The Runtime installer includes the server components and the applications that are required to operate a Windows or Linux server environment. You can use either the Windows installation package (`exstream-runtime-<version>-win.zip`) or the Linux installation package (`exstream-runtime-<version>-suse-linux-release.tar.gz`). The following table lists the

installation options and the associated installation components that are available in the Runtime installers:

Installation option	Installed components
Communications Server	• Communications Server • Exstream framework, including the management gateway and the core platform services
Exstream Engine	Production engine for Design and Production
Web Applications	• WorkShop • Supervisor • StoryBoard • ReTouch • Writer • Rule Editor • CAS Browser

2.1.2 Exstream Design Tools common installer

The Design Tools installer (`exstream-design-<version>-win.zip`) installs the desktop applications on Windows systems. The following table lists the installation options and the associated installation components that are available in the Design Tools installer:

Installation option	Installed components
Design Manager	• Design Manager • Designer • Logic Designer
Communications Builder	• Communications Builder • StoryTeller • TDTransformation • Windows Driver Tool • UTF Edit
Control Center	• Control Center • Describer

2.1.3 Additional Exstream components

Depending on your Exstream implementation requirements, you might require additional platform components that are not included in the common installers. You must download installation packages for the following platform components separately from My Support:

Component	Installation packages	Exstream folder in My Support
Design and Production engines	• AIX 64-bit SBCS and DBCS engine ZIP files • HPUX 64-bit SBCS and DBCS engine ZIP files • Linux 64-bit SBCS and DBCS engine ZIP files • Solaris 32-bit SBCS and DBCS engine ZIP files • Windows 64-bit SBCS and DBCS engine ZIP files • z/OS 32-bit SBCS and DBCS engine ZIP files • z/OS 64-bit SBCS and DBCS engine ZIP files	Software > Platform
Design and Production add-ins	• Advanced bar chart ZIP file • Advanced line chart ZIP file • Advanced pie chart ZIP file	Design and Production Add-ins
Exstream web applications: • Communications Designer • Content Author	Exstream WAR file	Software > Business Authoring
Exstream Empower	Empower Editor ZIP file Empower Server ZIP file	Software > Interactive
Exstream Live	• LiveEditor ZIP file • LiveViewer ZIP file	Software > Interactive

2.2 Installing the Exstream platform

Complete the tasks described in the following table to install and configure the Exstream platform. After you complete these tasks, you can configure Design and Production for your specific business requirements.

Step	Explanation	Related documentation
1. Use the Design Tools common installer to install the design environment for the Exstream platform.	This step installs the components required to design customer communications. These components are installed on Windows systems.	*OpenText Exstream: Installation Guide*
2. Use the Runtime common installer to install the server environment for the Exstream platform.	This step installs the server environment required for engine orchestration and output delivery.	*OpenText Exstream: Installation Guide*
3. Install and configure OpenText Directory Services (OTDS).	OTDS is used for user management in the integrated Exstream platform. This step requires you to set up OTDS partitions, groups, and tenants for use with Exstream. **Note:** This step is required only if you plan to use the integrated Exstream platform features, or if you want to use OTDS for user management.	*OpenText Directory Services Installation and Configuration Guide*
4. Configure the Exstream server environment.	To use Design and Production in the Exstream platform, you must install and configure all of the components of the Exstream server environment. This step requires you to set up and configure Exstream repositories and services and connect them to your OTDS instance. **Note:** This step is required only if you plan to use the integrated Exstream platform features.	*OpenText Exstream: Communications Server Administration Guide*
5. Create design and tracking databases for use with Design and Production.	Design databases are used to store information about system configurations and design objects and are required to use Design and Production. Tracking databases are used to store tracking information that is generated when you run the Exstream engine to produce output.	*System Administration* in the Exstream Design and Production documentation
6. Sign in to Design Manager and set up your licensing information.	You must use your license key to sign in to Design and Production for the first time. If you are using a specific licensing method, you must also set up your licensing server and add the appropriate license files.	*System Administration* in the Exstream Design and Production documentation

Step	Explanation	Related documentation
7. Download and install additional Exstream components, if required.	If your Exstream implementation requires additional Exstream components that are not installed using the common installers (for example, Exstream Live, Exstream Empower, Exstream Content Author, or additional Exstream production engines), you must download and install these components separately.	*Installation and Upgrade Information* in the Exstream Design and Production documentation

2.3 Upgrading to the current version

Depending on the version of your existing Exstream implementation, you can use one of the following two upgrade options to upgrade to Exstream 16.6.0:

- "Upgrading from version 16.2.0 or later" below
- "Upgrading from classic Exstream" on the next page

For detailed information about preparing for a Design and Production upgrade, see *Installation and Upgrade Information* in the Exstream Design and Production documentation.

2.3.1 Upgrading from version 16.2.0 or later

If you are upgrading from Exstream 16.2.0 or later, you can use either of the following upgrade methods, depending on your existing implementation and upgrade requirements:

To	Do this
Upgrade the Exstream platform	1. Run the common installers to upgrade the Exstream platform components. For information about installing Exstream using the common installers, see *OpenText Exstream: Installation Guide*. 2. Use the Database Administration utility to upgrade your existing Design and Production design and tracking databases. For more information about database administration and maintenance, see *System Administration* in the Exstream Design and Production documentation. 3. Configure your new Exstream platform repositories and migrate your existing data. To upgrade your existing repositories and migrate the data in these repositories to your new installation, contact OpenText Customer Support. For information about migrating your released Communications Builder projects from your existing tenant repository into the new tenant repository, see *OpenText Exstream: Upgrading Design Center Projects and Migration Reference Guide*.
Upgrading Design and Production only	If your existing Exstream implementation uses only the Design and Production component of the Exstream platform, you can upgrade this component in the same way that you would upgrade a classic Exstream implementation.

2.3.2 Upgrading from classic Exstream

If you are upgrading from a version of Exstream earlier than version 16.2.0 (classic Exstream), you can continue to use Design and Production in the same way as your existing implementation, or install and use the integrated platform. Keep in mind that to use all of the features in Design and Production, including the new orchestration and delivery capabilities, you must install and configure the Exstream platform.

To upgrade your existing implementation:

1. Download the Design Tools common installer and use one of the following methods to upgrade your design environment:

To	Do this
Replace your existing version of Design and Production	Double-click the `<setup directory>\ExstreamSetup.exe` file.
Install the new version of Design and Production in addition to the existing version	Double-click the `<setup directory>\Software\DesignManager\OpenTextExstream_setup_x64_<version>.exe` file.

2. Download the Runtime common installer and use one of the following methods to install the Exstream production engine:

To	Do this
Install a new version of the Exstream engine using the Runtime installer	a. Extract the contents of the Runtime installer ZIP file to a local setup directory. b. Double-click the `[setup directory]\ExstreamSetup.exe` file and use the wizard to install the Exstream engine.
Install a new version or replace the current version of the Exstream engine using the contents of the Runtime installer ZIP file	a. Extract the contents of the Runtime installer ZIP file to a local setup directory. b. Copy the contents of the `Engine` folder in `[setup directory]\Software` to an engine installation folder on the hard disk of your Windows production machine. Do not move any file to another directory.
Install a new version or replace the current version of the Exstream engine using an engine ZIP file downloaded from My Support	a. Extract the contents of the engine ZIP file to a local setup directory. b. Copy the contents of the setup directory to an engine installation folder on the hard disk of your Windows production machine. Do not move any file to another directory.

3. Use the Database Administration utility to upgrade your design and tracking databases. For more information about database administration and maintenance, see *System Administration* in the Exstream Design and Production documentation.

Chapter 3: Licensing information

After you purchase Exstream, you receive an email that contains a Software Delivery Receipt. The Software Delivery Receipt email contains a URL that will take you to the electronic download page where you can redeem your licenses for the software you have purchased.

The Design and Production license key (`*.ekf`) is required to use Design and Production. Depending on your purchase agreements, you might also require the Design and Production license files (`*.lic`) and the Communications Server license file (`strs.lic`).

3.1 Design and Production license key

The Design and Production license key file (`*.ekf`) contains information about the Design and Production modules that you have licensed and lets you activate those modules for use in your environment.

Design and Production modules enable various features in the software and provide the flexibility and integration necessary for creating effective communications for delivery in high-volume, on-demand, and interactive environments. Many of these modules also provide support for Double-Byte Character Sets (DBCS) for your international customer needs. Because of this modular design, you can choose to license only those modules that you require. As your requirements change, you can license other modules to enable additional functionality by activating a new product key.

The license key file is required to use Design Manager, Designer or Communications Designer, and to run the Exstream engine. The license key also contains information about the FlexNet license options for your organization.

> **Note:** Depending on your license terms, you may receive a production license key, or a development license key, or both. You can use the development license key to design communications and run the design engine. However, you must use a production license key to create production output. If you produce output without using the production license key, a `Demonstration Powered by Exstream` watermark is placed at the top of each page in your output.

3.2 Design and Production license file

Depending on the license options specified in your license key, you must set up the appropriate license file (`*.lic`) on any workstation that is running Design and Production software.

- **Node-locked licensing**

  Node-locked licensing lets users select a dedicated license file for running the software on a specific workstation. System administrators are required to perform a one-time process to download licenses that are managed by the external license server. Users can then request a license file in Design Manager, which locks the license to the workstation's MAC ID and cannot be used on other workstations until that workstation is unlicensed.

- **Floating licensing**

  Floating licensing lets users request a license for their workstation only when needed and return it automatically when it is not in use. System administrators are required to set up a license server machine on the local network and provide each user with a floating license file on their workstation. The license server hosts all of the license files that are available for your organization. When a user signs into Design and Production software, the installed license file communicates with the local license server and allows users to run the software on their workstation.

For more information about configuring license files in your Design and Production environment, see *System Administration* in the Exstream Design and Production documentation.

3.3 Communications Server license file

In addition to the key-based modules that are available in Design and Production, you can separately license the Communications Server component of the Exstream platform. This license is required to use the integrated orchestration and delivery capabilities of the Exstream platform with the Exstream production engine, and to produce output from the Exstream web applications—Communications Designer and Content Author. If you have not licensed Communications Designer or Content Author, contact your Exstream account manager or a sales representative for more information about these software components.

Note: If you choose to use transaction-based pricing for your Exstream implementation, you are not required to purchase the Communications Server license separately. For information about the transaction-based pricing model, contact your Exstream account manager or a sales representative.

In the Exstream platform, you can use the Exstream production engine in the Communications Server layer to create output from the following:

- Design and Production applications
- Exstream applications (created in Communications Designer)
- Content Author themes (created in Content Author, from Design and Production applications or from Exstream applications)

To create production output, you must connect the `strs.lic` file to your Communications Server applications. You can request a Communications Server license file (`strs.lic`) using the New License Key Ticket request form on My Support at https://support.opentext.com/portal/site/css?customView=newTicketLicenseKey.

If you do not have a connected license file, you can still produce output from Communications Server applications; however, the applications run in demo mode and your output will contain multiple random instances of the text string `Demo`. For information about connecting and managing Communications Server license files, see *OpenText Exstream: Communications Server Administration Guide*.

Chapter 4: Design and Production modules

Design and Production is a modular solution that includes over 60 fully-integrated modules that enable various features in the software. The Design and Production license key file (`*.ekf`) contains information about the modules that you have licensed and lets you activate those modules for use in your environment.

- To view the modules that are available on the Design and Production license key, in Design Manager, go to **Library > System > System Settings > Key** tab.
- To activate or deactivate the modules that you have purchased, go to **Library > System > System Settings > Basic** tab, and click **System configuration**, and then click the **Key** tab.

The minimum configuration required to build a personalized customer communication includes the following modules:

- Designer
- 1:1 document creator
- At least one output driver

You can license additional modules based on your requirements from the following functional categories:

- "Design and deployment" below
- "Data and content integration" on page 34
- "Interactive editing" on page 37
- "On-demand delivery" on page 40
- "Production output and testing" on page 44

4.1 Design and deployment

The design and deployment capabilities of Exstream provide the core of the Exstream offering by letting you design a variety of document applications—such as complex transactional communications, long policy documents, direct marketing communications, online

correspondence, and much more. These applications include features such as variable color, messaging, 3-D charts, and transactional tables. From one design interface, an unlimited number of users with varying organizational roles across the enterprise or in distributed locations can collaborate on content, design, and rules creation to produce any type of fully-personalized customer communication for high-volume, on-demand, or interactive delivery. Design components can be stored in a design database for reuse or re-purposing across many applications, so that you can design once and use anywhere. You can also leverage existing content in multiple formats stored in enterprise systems.

The design and deployment modules are organized into functional categories, which this section discusses in the following topics:

- "Design interface" below
- "Rapid migration" on page 33

4.1.1 Design interface

The design interface is made up of several modules that provide the functionality to create design components, define business rules and production characteristics, and add personalization to customer communications.

Design interface modules

Module name	DBCS Application Support	Description
Designer	Yes	The basic module for Exstream, Designer consists of a design interface and design database. The design interface lets users create design objects and define business rules, production characteristics, and personalization based on variables. These design objects and variable rules can be created once and then reused in multiple applications for multi-channel delivery, significantly reducing design time. In the design interface, different users can manage different aspects of the design process, and users can also use the built-in viewer to review documents immediately. The design database houses all of these objects and the processes associated with applications, including security access, version control, workflow definitions, campaign management rules, and application packaging. The Designer module includes two software components: Designer and Design Manager. Designer is the visual design interface that offers a robust set of tools for designing full-color layouts, including rotatable text and graphics, 3-D charts, and tables. Design Manager is the interface that offers tools for managing objects in the design database and configuring printers and production equipment. Designer runs on supported Microsoft Windows platforms and it is installed on each user's workstation.

Design interface modules, continued

Module name	DBCS Application Support	Description
1:1 Document Creator	Yes	1:1 Document Creator provides the basic functionality required to build personalized documents for print and electronic delivery in high-volume, on-demand, and interactive processing environments. With 1:1 Document Creator, Exstream can do the following: • Read in one pass any number of data input files, including variable, fixed, or delimited records; ASCII or EBCDIC character sets; COBOL copybooks and other formats, eliminating the need to prepare and consolidate data into a single file for processing • Dynamically create fonts, images, overlays, and other resources for targeted output devices and color models • Compute variables and process rules • Dynamically manage white space by placing 1:1 messages into available space on the document • Control page sequence in a document based either on the order of data or on how the document was designed • Creates any number of user-defined output report files (fixed, variable, or delimited records)
Advanced Tables	Yes	Advanced Tables lets you create statements and other documents using several types of transaction-driven tables that flow dynamically from one page to another. Table entries are automatically populated from input data at run time. Section-based tables are supported, as well as controls that ensure headers and footers are properly handled when tables flow onto multiple pages. Tables can include an unlimited number of levels, and widow and orphan control is automatic. This module also lets you do the following: • Use section-based processing. • Place rules on columns and rows. • Create tables with dynamic, repeating, and grouped rows. • Take advantage of multi-column flow. • Use multi-level headers and footers. • Calculate subtotals and running totals on each page automatically. • Highlight or color table cells based on variable conditions. You can also sort and analyze tables for possible errors and create multiple table sections.
Dynamic Charting	Yes	Dynamic Charting lets you create data-driven, full-color, variable charts—including pie, line, area, bar, progress bar, stacked bar, comparative bar, horizontal bar, comparative horizontal, range, radar, and scatter charts, as well as calendars. Charts can be displayed in 3-D and shadow mode or with data-driven, conditional colors for front and edges of chart elements (pie slices, bars, lines, and area fills). Text for legends, titles, and labels can be controlled independently. For example, with Dynamic Charting, you can create intelligent pie charts that combine or omit slices with less than a certain numerical value or percentage, consolidate narrow slices into a single "other" slice, and provide automatic sorting of slices from largest to smallest or smallest to largest; or, you can create dynamic calendars with data-driven reminder dates.

4.1.2 Rapid migration

Exstream Exchange Format (DXF) is an XML format that lets you create programs for converting third-party designs for import into the design environment. Converting other types of files into the DXF format lets you take advantage of design capabilities, such as editing content, or adding variable or dynamic content to most objects on the pages of your converted design.

Exstreamprovides tools to migrate several types of files to DXF format, which can be imported to the design environment, and also supports importing PDF files directly from Designer.

Rapid migration modules

Module name	DBCS Application Support	Description
Design PDF	Yes	Design PDF lets you import multiple-page PDF files, including PDF forms, and single-page EPS files as background images or as printer-targeted design layers in Designer. Color information is stored in the database so no color definitions are lost. This improves performance and reduces the required disk space for output devices that support the embedding of PDF and EPS images. Ghostscript is a commercially available PostScript and PDF conversion and rendering tool. For information about installing Ghostscript, see *Installation and Upgrade Information* in the Exstream Design and Production documentation.
InDesign Converter	No	InDesign Converter is a tool that lets you maintain the integrity of original Adobe InDesign files when converting them into DXF files for import into Design Manager. Most InDesign objects are available for conversion to DXF, but there is an option to omit advanced InDesign objects that are not currently supported (for example, text shadowing or text on curved paths) or import them as static, bitmap images. InDesign Converter is available for both Mac and Windows environments, so it allows seamless integration with graphic designers and their workflow.
Metacode Converter	No	Metacode Converter is a tool that lets you convert normalized Metacode files to DXF files, and import them into Design Manager. This allows you to leverage Metacode forms produced with legacy applications or older technology into your document applications, which means you no longer need a separate tool to create and maintain them.
OGL Converter	No	OGL Converter is a tool that lets you convert Overlay Generation Language (OGL)—a legacy IBM AFP overlay language used to define and create forms—into DXF files. After they are in Designer, the objects on the pages can be edited and enhanced with variable content. This allows you to leverage OGL forms produced with legacy applications or older technology into your document applications, which means you no longer need a separate tool to create and maintain them.
PDF Converter	Yes	PDF Converter is a tool that lets you convert a batch of PDF files into DXF files and import them into Design Manager. Transferring and converting PDFs into the DXF format lets you take advantage of the design environment capabilities of Exstream, such as editing, modifying, or adding dynamic content to your converted design.

Rapid migration modules, continued

Module name	DBCS Application Support	Description
Quark Converter	No	Quark Converter is a tool that includes Quark Xtensions, so you can maintain the integrity of original Quark files when converting them into DXF files for import into Design Manager, or for converting DXF files into Quark files. Most Quark objects are available for conversion, but there is an option available to omit advanced Quark objects that are not currently supported (for example, text shadowing or text on curved paths) or import them as static, bitmap images. Quark Converter is available for both Mac and Windows environments, so it allows seamless integration with graphic designers and their workflow.

4.2 Data and content integration

Exstream simplifies integration with existing enterprise IT environments and corporate systems by letting you dynamically access data and content from multiple sources. Exstream can share data with enterprise systems through standard file access methods, message queues, and Web services to acquire content, update systems, or create documents in real time.

For information about the modules required for real-time document processing, see "On-demand delivery" on page 40.

The data and content integration modules are organized into functional categories, which this section discusses in the following topics:

- "Data integration" below
- "Content enablement" on the next page

4.2.1 Data integration

You can visually map data directly in Design Manager from a wide variety of formats, including columnar, delimited, JSON, XML, ODBC sources, and legacy data formats like COBOL copybooks and print files.

Data integration modules

Module name	DBCS Application Support	Description
Open Database Connectivity (ODBC) Access	Yes	ODBC Access lets the production engine access (for retrieval or update) relational databases and other enterprise data sources directly in real time during document creation. With ODBC Access, you can access and map variables to the contents of ODBC relational databases without building custom programs or mapping variables to flat files. You can use the built-in database table viewer to map to database tables, views, and stored procedures, and store the information on the data source mapping as a library component. Design Manager provides an automapping feature, which lets you create variables and map them in one simple operation.
Print Miner	No	Print Miner lets you extract data from an existing print file (output files created for line printers) to use as input to repurpose applications, including reformatting, changing colors, adding marketing messages, or converting to multiple outputs. With Print Miner, you can map variables to whole paragraphs, tables, array data, and other complex elements from the print file. Based on absolute page positioning or relative locations called "spots," variables are mapped so they will be populated from the print streams at run time. Standard channel codes for both ANSI and machine carriage controls are used to break the line data file into pages.
XML/JSON Input	Yes	XML/JSON Input lets you use XML or JSON formatted data files as input to drive the creation of applications. You can use XML data files regardless of the document type description (DTD) or schema. You can also manually map your data files using the drag-and-drop visual data mapper, or you can take advantage of the time-saving automatic mapping feature, which also creates the necessary variables.

4.2.2 Content enablement

Exstream can dynamically access and import text, images, logos, and more from content management systems. The content enablement modules provide many capabilities for PDF integration. PDFs can be imported as images for delivery to certain output channels, and PDF forms can be pre-filled and mined for useful data and content.

Content enablement modules

Module	DBCS Application Support	Required modules	Description
Dynamic Content Import	Yes	N/A	Dynamic Content Import lets you insert external image and text files into documents at run time. This is especially useful if content changes often. Instead of continuously updating objects in the Library, you create placeholder variables that insert into the print stream the contents of an external file in your corporate network. With Dynamic Content Import, you can do the following: • Import any CCITT G4 black-and-white TIFF image, Rich Text Format (RTF), or ASCII text file • Import JPEG, grayscale and color TIFF, and LZW images if sending output to devices that natively support these formats • Use variable names to define what to import based on customer data
PDF Form Miner	Yes	Dynamic Content Import (only if you want to import multiple PDF-XFA forms using a placeholder variable)	PDF Form Miner lets you extract data from PDF forms that use the XML Forms Architecture (XFA) to integrate with your document applications. With PDF Form Miner, you can drag and drop Exstream variables to PDF-XFA tag names using a visual data mapper, or you can use the built-in XML automapping feature of Design Manager. PDF Form Miner also lets you recreate the completed form for records management regardless of format, including PDF/A and AFP. **Note:** The PDF Form Miner module is not supported on z/OS.
PDF Form Pre-Fill	Yes	Dynamic Content Import	PDF Form Pre-Fill lets you pre-fill and personalize existing PDF forms that use the XML Forms Architecture (XFA) with customer information available in other systems or data sources. With PDF Form Pre-Fill, you can drag and drop Exstream variables to PDF-XFA tag names using a visual data mapper, or you can use the built-in XML automapping feature of Design Manager. As Exstream retrieves the form to be sent to the PDF output, the form's fields can be filled in automatically, so a customer's information can then be used to pre-populate their individual form, saving them time in the long run. After the pre-filled PDF form is created, a user can edit it with Acrobat. After editing, the form can be re-introduced to Exstream through PDF Form Miner. **Note:** The PDF Form Pre-Fill module is not supported on z/OS.

Content enablement modules, continued

Module	DBCS Application Support	Required modules	Description
PDF Import as Image	Yes	Dynamic Content Import	PDF Import as Image lets you include PDF content in a document as an image at run time for AFP, Metacode, Composed XML, or any other output format that does not support native PDF or EPS files. This is especially helpful for organizations that use numerous forms or marketing materials in PDF form and want to incorporate them into applications at run time without reformatting them. With PDF Import as Image, you can use placeholder variables to reference PDF file locations and create rules that determine when to include or omit PDFs as images. To create and import rasterized PDF content at run time, the PDF Import as Image module temporarily stores data in your package file directory before the engine reads it into a buffer. To enable this process, you must have write permission to the package file directory when you run the engine. Alternately, if you do not have write access to the package file directory, you can use the GSTEMPDIR switch to specify a different directory as the temporary directory. **Note:** The PDF Import as Image module is not supported on z/OS. Ghostscript 9.0 or later is required to use PDF Import as Image. Ghostscript is a commercially available PostScript and PDF conversion and rendering tool. For information about installing Ghostscript, see *Installation and Upgrade Information* in the Exstream Design and Production documentation.

4.3 Interactive editing

Interactive documents (Live documents or Empower documents) provide users with a controlled, interactive editing experience. Interactive documents are created in the same design environment as standard Design and Production applications, and leverage all of the available content integration and delivery capabilities.

The interactive editing modules are organized into two functional categories, which this section discusses in the following topics:

- "Empower documents" on the next page
- "Live documents" on page 39

4.3.1 Empower documents

As with Exstream Live documents, Empower documents are designed and developed in a visual, collaborative Exstream design environment, just like any other Exstream document. Empower documents also let you add interactive elements so that you can manage user interactions. You can then use the edited document as input to the engine for data extraction, to trigger events, to create other documents, or as content within another document, which can be delivered in any output format.

Unlike Exstream Live documents, however, Empower documents do not require that end users install a separate desktop application for editing. Instead, end users can edit Empower documents directly in a web browser.

Empower document modules

Module	DBCS Application Support	Required modules	Description
Empower Output	Yes	Engine as a Web Service (EWS) InteractiveInput Dynamic Content Import (required for the InteractiveInput module) PDF Output	The Empower Output module is required to produce files that support the Empower document capabilities of Exstream. Empower documents are used to present and collect data and content from Empower Editor end users.
Empower Server	Yes	N/A	The Empower Server hosts the Empower Administrative Console and the Empower Services Layer. The Empower Services Layer uses REST APIs to communicate with the Empower Editor to provide interactive pages to end users. The Empower Editor supports the following API calls: • Open document • Export document • Import document
Empower Editor	Yes	N/A	The Empower Editor provides editing capability for interactive documents directly though a web browser. The Empower Editor eliminates the need to deploy and install software on individual devices. If you are a Design and Production customer, you can use existing content from your Exstream Live applications with Empower. Empower provides a subset of the functionality provided in LiveEditor.

4.3.2 Live documents

Live documents are designed and developed in the visual, collaborative Exstream design environment just like any other Exstream document. Using Exstream, you can add editing controls and rules to the Live document application to manage user interactions, making some areas of the document editable, while locking others down. Live documents can be used as input to the engine for data extraction, to trigger events, create other documents, or be used as content within another document, which can be delivered in any output format.

Live document modules

Module	DBCS Application Support	Required modules	Description
Live Certificates	Yes	N/A	Live Certificates lets you configure a DLF so that it can be edited by end users of LiveViewer as well as end users of LiveEditor. This allows you to distribute a DLF to a wide audience and provide them with limited editing capabilities in the free LiveViewer.
LiveEditor	Yes	N/A	LiveEditoris a desktop tool that is separate from Exstream. It provides a controlled, interactive user experience for DLF files. Each DLF file can have unique end user permissions, formatting, and controls that are also enforced by the DLF itself. This approach lets your enterprise deploy documents rapidly while maintaining control of the editing experience. LiveEditor supports common offline document functions, including: • Saving as DLF or PDF format • Revision tracking • Spelling, grammar, and excluded word lists check • Local printing
InteractiveFulfillment	Yes	InteractiveInput	InteractiveFulfillment lets you use a DLF file as a template in place of a customer driver file in on-demand or high-volume production. When used as a template, DLFs can support applications for documents that must be edited before printing, such as direct mail offerings, sales brochures, and form letters. When the DLF is reintroduced to the engine as a template, the engine populates the variables and triggers the rules in the DLF, and completes fulfillment processing by producing individual documents for each customer in the run.
InteractiveInput	Yes	Dynamic Content Import	InteractiveInput lets you use DLF (Live document) or MPW (Empower document) files as data files to drive data and content extraction, trigger events, or create other documents. It also lets you use DLF or MPW files as content to be included in another document and delivered in any format.

Live document modules, continued

Module	DBCS Application Support	Required modules	Description
LiveOutput	Yes	N/A	LiveOutput is required to produce files that support the Live document capabilities of Exstream. Interactive documents are used to present and collect data and content from LiveEditor end users. DLF is a proprietary file format that is Open Packaging Convention (OPC)- compliant. DLF files contain the data and content as binary and XML files within a compressed folder structure. When you license the LiveOutput module, you automatically have access to the functionality included with the Web Services Interface module.
LiveViewer	Yes	N/A	LiveViewer lets you view and print a read-only version of a DLF.

4.4 Interactive forms

The OpenText Exstream Interactive Forms module lets you design and deliver an interactive PDF form experience to your customers. You design interactive forms in the Exstream design environment, just like any other Exstream document. Your customers can then use the interactive form features to enter information or make selections.

The Interactive Forms module is supported for both SBCS and DBCS applications. The PDF Output module is required to use the Interactive Forms module.

For more information about designing interactive forms, see *Designing Customer Communications* in the Exstream Design and Production documentation.

4.5 On-demand delivery

The on-demand delivery capabilities of Exstream provide a document service solution that integrates with an enterprise's existing message layers and custom-built systems to produce fully personalized documents in real time. On-demand delivery can be integrated with your enterprise applications using Web services or Dynamic Data Access (DDA) connectors. The Web services interface capability seamlessly integrates Exstream applications into your Service-Oriented Architecture (SOA), allowing data and content to be incorporated during the document creation process, or allowing documents to be passed for subsequent processing. DDA connectors provide seamless integration with messaging technologies used in your enterprise architecture. DDA Connectors can send information to or receive information from your enterprise systems using message queues. The information passed from your enterprise systems to the engine can be used to create on-demand custom communications.

On-demand delivery modules

Module	DBCS Application Support	Required modules	Description
Application Query Service (AQS)	Yes	• DDA • On Demand Delivery	AQS is a library service that allows real-time applications to query a package file and obtain a manifest of objects present in an Exstream application. The XML-based manifest presents a hierarchical, property-centric overview of the documents, pages, campaigns, messages, sections, paragraphs, variables, and rules included in the application. With AQS, this application information can be used to drive user interactions and document processes in real time. Libraries for Java and .NET platforms are provided.
Dynamic Data Access (DDA)	Yes	N/A	DDA provides the connector architecture module for Exstream. DDA connects the Exstream production engine to any system or database in your enterprise infrastructure to collect data, update data, write reports, or execute user-written routines. This allows Exstream to process transaction data in real time, support encryption/decryption applications, and read or write to any corporate database or application. With DDA, you can choose to write your own connectors to your enterprise databases or systems, or you can choose to license pre-built connectors for the following messaging technologies: • IBM WebSphere Message Queue (MQ) • Java Messaging Service (JMS) • Microsoft Message Queue (MSMQ) • Simple Mail Transport Protocol (SMTP) • Simple Object Access Protocol (SOAP) • Short Message Service (SMS)
Email Delivery	Yes	• DDA (if implemented as a DDA connector) • On Demand Delivery (for on-demand document applications)	Email Delivery lets you communicate with customers by sending documents through email or by sending Short Message Service (SMS) text messages. A platform-independent utility, the Email Delivery module can be implemented as a DDA connector, or as a stand-alone executable program. Production workflows can be customized to allow automated recovery, multiple sending attempts, and the capture of extensive auditing information in communication logs.
IBM Content Manager (IBMCM) Connector	Yes	• DDA • Dynamic Content Import • On Demand Delivery (for on-demand document applications)	IBMCM Connector extracts content (for example, text, TIFF files, or other supported placeholder variable types) from IBM Content Manager and then passes it to the engine to populate a placeholder variable. Open parameters control the behavior of IBMCM Connector. IBMCM Connector is supported on the Windows platform only.

On-demand delivery modules, continued

Module	DBCS Application Support	Required modules	Description
IBM WebSphere MQ (WSMQ) Connector	Yes	• DDA • On Demand Delivery (for on-demand document applications)	WSMQ Connector lets the engine interact with the IBM WebSphere MQ enterprise messaging software using user-written applications. IBM WebSphere MQ supports the following: • Multiple correlation IDs (one input to multiple outputs) • Sending messages to remote queues • Simultaneous access by multiple engines • Synchronous and asynchronous messaging WSMQ Connector is supported on the following platforms: • Linux (Red Hat and SuSE) • Mainframe (z/OS) • UNIX (AIX, HP-UX, Solaris) • Windows
Java Messaging Service (JMS) Connector	Yes	• DDA • On Demand Delivery (for on-demand document applications)	JMS Connector lets the engine communicate with JMS-compliant enterprise messaging software, such as Sun Java System MQ and IBM WebSphere MQ, using user-written routines. JMS Connector is part of the open J2EE platform, and can be used effectively for Web applications, particularly transaction processing. It supports the following: • Sending messages to remote queues • Synchronous and asynchronous messaging JMS Connector is supported on the following platforms: • Linux (Red Hat and SuSE) • UNIX (HP-UX) • Windows • z/OS (SBCS only)
Microsoft MQ (MSMQ) Connector	Yes	• DDA • On Demand Delivery (for on-demand document applications)	MSMQ Connector lets the engine communicate with MSMQ messaging software using user-written applications. MSMQ Connector supports multiple correlation IDs (one input to multiple outputs). MSMQ Connector is supported on the Windows platform only.

On-demand delivery modules, continued

Module	DBCS Application Support	Required modules	Description
On Demand Delivery	Yes	DDA	On Demand Delivery provides greater convenience and self-service capabilities by allowing current customers, prospective customers, and customer service representatives to submit online requests for account information and other real-time electronic documents. With On Demand Delivery, you can keep one or more engines running continuously, depending on the volume of traffic expected, so you can produce output in real time. In addition to its scalability, On Demand Delivery is also flexible, as it can be integrated with your enterprise applications using Web services or DDA connectors.
SOAP Connector	Yes	• DDA • On Demand Delivery (for on-demand document applications) • XML/JSON Input	SOAP Connector lets the engine communicate with user-written Web services, regardless of how those services were built. SOAP Connector is supported on the following platforms: • Linux (Red Hat and SuSE) • UNIX (AIX, HP-UX, Solaris) • Windows
Watched Directory Connector	Yes	• DDA • On Demand Delivery (for on-demand document applications)	Watched Directory Connector monitors a directory for a specific file type, and, when it appears, Watched Directory passes data to the engine to create output in real time. Watched Directory Connector is supported on the following platforms: • Linux (Red Hat and SuSE) • UNIX (AIX, HP-UX, Solaris) • Windows
Web Services Interface	Yes	N/A	Web Services Interface allows applications to process data delivered by a Web service during the document creation process. Additionally, content can be delivered to a Web service for archiving, notification purposes, or subsequent processing. You can also use the Web Services Interface module to integrate DLF files with your enterprise systems. With Web Services Interface, you can configure URLs for test and production environments separately, and can configure documents to be produced online or as an attachment. Web Services Interface supports HTTPS, SOAP 1.1, and SOAP 1.2 specifications, as well as REST architecture. When you license the LiveOutput module, you automatically have access to the functionality included with the Web Services Interface module.

4.6 Production output and testing

The production output and testing capabilities of Exstream allow you to produce more than 20 output formats from a single design, optimize high-volume production, define document workflows, and test document applications.

The production output and testing modules are organized into functional categories, which this section discusses in the following topics:

- "Enterprise document creation" below
- "Enterprise document production" on page 46
- "Testing tools" on page 48
- "Output formats" on page 49

4.6.1 Enterprise document creation

The enterprise document creation capabilities of Exstream let you build more effective and complex publications, manage and track the effectiveness of marketing campaigns, and manage content by effective dates and jurisdictions for regulatory compliance or other business reasons. Additionally, you can define a custom workflow approval process to ensure that your content and designs meets your corporate standards.

Enterprise document creation modules

Module	DBCS Application Support	Description
Advanced Campaign Management	Yes	Advanced Campaign Management includes all the capabilities of Campaign Management, and adds the ability to link campaigns together, track every campaign that goes to every customer, and analyze campaign results. You can link campaigns so that follow-up campaigns can be sent based on what was sent to a customer in a prior campaign, or based on a customer's response to a prior campaign. Campaign tracking, which can be done at a summary or individual customer level, lets you better manage message distribution for all applications and outputs. The tracking information can be integrated with external systems (for example, CRM or customer response systems) to analyze campaign results, or used to automate the inclusion of follow-up messages based on the customer's response (or lack of one) to a previous campaign. Advanced Campaign Management also lets you store customer response data for future targeting and provides distribution reports for charge-back and audits. With customer response data, you can discontinue messages after a customer has responded and analyze the effectiveness of campaigns.

Enterprise document creation modules, continued

Module	DBCS Application Support	Description
Advanced Design Workflow	Yes	Advanced Design Workflow extends the basic workflow functionality provided in 1:1 Document Creator by supporting user-defined workflow approval processes for document design. System administrators can define workflow approval processes for objects and route them to different business groups—such as legal, compliance, marketing, and quality assurance. For example, an investment company might require a more stringent approval workflow process for documents distributed to customers than those for internal groups. Objects can be routed using single group (serial) or multiple group (parallel) paths. Administrators can easily track workflows, verify object status, review comments, and maintain different versions in separate folders. Rejected objects are sent back to the originator for changes and re-submission.
Campaign Management	Yes	Campaign Management lets you create and manage fully-formatted messages that you can integrate into 1:1 marketing or informational messages into your customer communications. These messages can include an unlimited amount of variable text, charts, and imported images, and can be designed to target specific customer profiles based on qualification rules or date ranges. With Campaign Management, messages can be placed in collections called campaigns, which control how these messages are sent to specific customers using specific targeting and prioritization rules and available white space. Campaigns offer increased functionality in creating unique, personalized for the customer. This module provides a long list of campaign features, including the capability to do the following: • Control the total number of times or length of time a campaign is sent. • Prioritize campaigns and target messages based on qualification rules and parameters. • Limit marketing content to control postage costs. • Leverage white space more effectively by incorporating dynamic messages at run time.
Compliance Support	Yes	Compliance Support is commonly used by insurance companies, but can be beneficial to any organization that must maintain varying content that complies with state and national government regulations. This module makes it easy to manage content by effective dates and jurisdictions (or locations), using a visual interface instead of complex coding. Compliance administrators and other business users can ensure that appropriate content is automatically included in (or excluded from) documents based on effective dates and/or jurisdictions. For example, insurance companies are often required to produce policies based on a customer's state and the language approved by that state's insurance commission as of the date the policy contract was signed. By specifying the customer's state and effective date, Exstream automatically picks from various versions of text or paragraphs. Compliance Support also lets you produce documents from any historical or future date.
Electronic Signature Integration	Yes	Electronic Signature Integration allows you to create applications designed specifically for use with an electronic signature solution, such as a cloud-based offering. When you license this module, you can designate areas on documents that must be signed electronically. The information you provide about these areas, such as the types of signatures required, is published in an XML file and can then be used to integrate the document in your larger workflow processes.

Enterprise document creation modules, continued

Module	DBCS Application Support	Description
Publication Support	Yes	Publication Support lets you create features commonly used in complex documents, including the following: • Multi-level tables of contents (customer and chapter/document levels) • Dynamic creation of indexes, with up to three hierarchical levels for each index key word • Folio by chapter numbering • Dynamic generation of footnotes in tables and text boxes • Style sheets for formatting text and paragraphs
SEC Filing	Yes	SEC Filing lets you create EDGAR HTML output required by the Securities and Exchange Commission (SEC). The module also includes a blacklining feature for marking revisions, which is also required by the SEC.

4.6.2 Enterprise document production

The enterprise document production capabilities of Exstream provide the tools necessary for processing vast quantities of documents through a high-volume printing and mailing facility. You can maximize high-volume production efficiency by controlling postage weights, preparing data for postal sort, driving inserters, and householding documents to save on postage. Exstream also supports the audit and distribution process needed for high-volume Internet delivery. Most automated document factory models are also supported, automating file-based inserting concepts, printing, and archival requirements.

Enterprise document production modules

Module	DBCS Application Support	Required modules	Description
Application Consolidator	Yes	• Output Sorting and Bundling • High-Volume Delivery	Application Consolidator lets you combine documents from several runs of the same application or different applications into a single print stream to increase volume for higher postal discounts. Or, you can break large, high-volume production runs into smaller, more manageable ones. With Application Consolidator, you can perform enhanced sorting capabilities for consolidated documents, such as consolidating documents from multiple applications into a single customer envelope to eliminate multiple mailings to the same household.

Enterprise document production modules, continued

Module	DBCS Application Support	Required modules	Description
High-Volume Delivery	Yes	N/A	High-Volume Delivery lets you build output files for delivery through multiple print and electronic channels in a single pass. To streamline distribution, outputs can be routed to different queues based on the number of pages, weight, or other rule-based specifications. With High-Volume Delivery, you have access to the following features: • Multiple output queues—documents can be routed to many queues simultaneously • Dynamic output file naming • Multiple-up support—allows any number of logical pages per physical page • Creep—pages are moved toward the center according to paper thickness so that margins are consistent after booklet is trimmed • Preparation of documents for processing on a specified inserter; barcodes are automatically placed on page insert stations and are variably set based on the inclusion of the insert • Banner page creation • Audit and quality control files • Convenience breaks—output file names can either be static or variable, and files can be segmented into smaller, more manageable volumes for shop floor production efficiencies • Queue breaks by document and page • Imposition and page reversal
Output Sorting and Bundling	Yes	High-Volume Delivery	Output Sorting and Bundling lets you reorder and group customer communications into "bundles" after document composition but before output is created. This offers additional post-processing controls that can save money on postage. Additionally, cover and trailer pages can be created around bundles and barcoded with the documents. With Output Sorting and Bundling, you have access to features that provide more flexibility in high-volume production processing, and allow you to simplify processes and improve overall processing performance, including the following: • Conduct extensive sorting with third-party postal cleansing and mail sorting programs. • Produce only certain customer documents from an existing output file. • Send certain pages from documents to the print stream. • Reprint specific documents from an existing output file. • Add tray breaks for post-processed output so you can break the output into sizes that will fit in standard mail trays or any size containers.

Enterprise document production modules, continued

Module	DBCS Application Support	Required modules	Description
Workstation Engine	Yes	N/A	Workstation Engine provides a low-volume licensed production engine on your workstation. It is useful when creating design samples or when processing low-volume production runs. The output does not contain the "Demo-Powered by Exstream" banner on each page.

4.6.3 Testing tools

The testing tools of Exstream let you test applications, document output, campaign and message targeting, document processing, variable computation, and rule processing. You can also run reports, compare composed documents, and use the built-in Output Viewer to review test output.

Testing tools modules

Module	DBCS Application Support	Description
Exstream Compare	Yes	Exstream Compare is a visual comparison tool that lets you compare the Exstream Composed File (ECF) produced by two different runs. This is especially useful when you are moving to a new version of Exstream, during regression testing, or when you want to ensure all changes are recognized in a regulated environment.
Exstream Batch Compare	Yes	Exstream Batch Compare lets you compare the layout, structure, and content of multiple Exstream Composed Files (ECFs) produced by two different runs. This function is especially useful when moving to a new version of Exstream, during regression testing, or for ensuring all changes are understood in a regulated environment. Exstream Batch Compare produces a report that identifies the number and type of differences between the two files. You can use Exstream Compare to visually show the difference.
Rule Analyzer	Yes	Rule Analyzer lets you run a data file against an application to generate a report detailing the coverage of business rules within the application. For each business rule, the report indicates whether or not the rule was processed, and if it was, the number of times it was executed. It also provides statistics showing how many times each rule was true and false. Rule Analyzer supports both simple (one parameter) and complex (multi-parameter) rules.
Test Data Capture	Yes	Test Data Capture lets you collect a minimal set of test data that fully exercises all lines of the named and unnamed rules included in an application. Optionally, it can generate a new customer driver file with the test data set and a test data capture report. When used in conjunction with Exstream Compare, Test Data Capture can reduce application testing time by reducing the amount of records in test files, reducing the amount of test output that must be analyzed and evaluated.

4.6.4 Output formats

To deliver communications to your customers, you must produce output. Although you are required to license only one output format, Exstream offers licensing for more types of output than any other product on the market. With Exstream, you can create your customer communications for multiple outputs simultaneously using a single application design.

Supported output formats

Module	Driver type	DBCS application support	Description
3211 Line Data Output	Print	No	3211 Line Data Output lets you produce the necessary resources to support the print stream for 3211 impact line printers. Features supported by 3211 Line Data Output include record separation, text overflow, ANSI or machine carriage controls, ASCII/EBCDIC output character sets, number of lines per inch, number of characters per inch, blank line removal, and line overprinting.
AFP Output	Print	Yes	AFP Output lets you produce the necessary resources to support the print stream for IBM's Advanced Function Presentation (AFP) format printers. AFP Output supports Image Output Content Architecture (IOCA), Bar Code Object Content Architecture (BCOCA), and Image Format 1 (IM1) formats; raster font creation and inclusion; Graphic Object Content Architecture (GOCA) shading and drawing components; Tagged Logical Elements (TLEs); No Operation (NOP) record creation; full-color, AFP OCA, or black-and-white color; and three levels of optimization.
Empower Output	Electronic	Yes	Empower Output module lets you produce files that support the Empower document capabilities of Exstream. Empower documents are used to present and collect data and content from Empower Editor end users. For information about modules related to the Empower document capabilities of Exstream, see "Empower documents" on page 38.
LiveOutput	Electronic	Yes	LiveOutput lets you produce DLF files that support the Live document capabilities of Exstream. For information about modules related to the Live document capabilities of Exstream, see "Live documents" on page 39.

Supported output formats, continued

Module	Driver type	DBCS application support	Description
HTML Output	Electronic	Yes	The HTML Output module supports the following output formats: • HTML output—HTML output lets you produce HTML files (HTML5, HTML 4.01 Transitional, or MIME HTML) that use Cascading Style Sheets (CSS) and GIFor Scalable Vector Graphics (SVG) images. These files are used for web-based communications. For more information about using cascading style sheets (CSS) to control the final appearance of container design output, see *Designing Customer Communications* in the Exstream Design and Production documentation. • HTML (email) output—HTML (email) output lets you produce HTML files that are used for email-based communications. You can produce HTML (email) output only when delivering container designs in the output. For more information about container designs, see *Designing Customer Communications* in the Exstream Design and Production documentation. • Edgar HTML output—EDGAR HTML output is a subset of HTML output that is used to file forms with the Electronic Data Gathering, Analysis, and Retrieval (EDGAR) system used by the United States Securities and Exchange Commission (SEC). EDGAR performs automated collection, validation, indexing, acceptance, and forwarding of submissions by companies and others who are required by law to file forms with the SEC. The SEC Filing module offered by Exstream limits standard HTML features to fit SEC specifications. For more information about the SEC Filing module, see "Enterprise document creation" on page 44.
IJPDS Output	Print	Yes	IJPDS Output lets you produce the necessary resources to support the print stream for proprietary Inkjet Printer Data Stream (IJPDS) file format for Kodak digital printers. IJPDS Output supports black-and-white, highlight color, and full-color modes for high-volume, transaction-oriented production.
Metacode Output	Print	No	Metacode Output lets you produce the necessary resources to support the print stream for Xerox high-speed laser printers. Metacode Output supports on-the-fly image and font creation; highlight color, halftone, and black-and-white color modes; and optimization. It extends base Metacode functionality by also supporting kerning and tracking for fonts and enhanced shading and area patterns.
MIBF Output	Print	Yes	MIBF Output lets you produce the necessary resources to support the print stream for the proprietary Memory Image Bitmap File (MIBF) file format for Miyakoshi Corporation's inkjet printers. MIBF Output supports high-speed, full-color production and high-quality plane separation for CMYK JPEG and CMYK TIFF images.

Supported output formats, continued

Module	Driver type	DBCS application support	Description
PCL Output	Print	No	PCL Output lets you produce the necessary resources to support the print stream for the proprietary Printer Command Language (PCL) file format for HP PCL4 and PCL5 printers. PCL Output supports black-and-white, grayscale, highlight color, and full-color modes for low- to mid-volume production.
PDF Output	Electronic	Yes*	PDF Output lets you produce fully-composed PDF files that are automatically bookmarked and searchable using Adobe's Acrobat Reader. PDF Output supports PDF security features, binary compression, and base 14 or TrueType fonts. You can add accessibility tags to these files to control and optimize the way the document is read by a screen reader or text-to-speech converter. Exstream can also produce PDF/A and PDF/VT output.
PostScript Output	Print	Yes	PostScript Output produces the necessary resources to support the print stream for Level 2 and Level 3 PostScript printers. PostScript Output automatically builds forms and images and places them at the top of the print stream so they can be pre-ripped and referenced. PostScript Output supports Type42 (available in PostScript v.2.013 and later) and Adobe Type1 fonts; full-color, highlight color, grayscale, and black-and-white color modes; and paper bin selection.
PowerPoint Output	Electronic	Yes	PowerPoint Output lets you produce files formatted for Microsoft PowerPoint 2002 or later.
Personalized Print Markup Language (PPML) Output	Print	Yes	PPML Output lets you produce an XML-based structure that encapsulates all the objects needed to send the print stream to the printer, which can hold the data in memory to reference as needed for each customer. Exstream supports PPML version 2.0. **Note:** PPML is not supported on z/OS.
TIFF Output	Electronic	Yes	TIFF Output converts each page in the design to a black-and-white bitmap file and compressed with Tagged Image File Format (TIFF) Group 4 compression, the standard format for faxing or for storing documents in archival and retrieval systems.
TOP Output	Print	Yes	TOP Output lets you produce the necessary resources to support the print stream for TruePress Optimized PostScript (TOP) printers. TOP is an extension to the PostScript language. This primarily print-media language supports raster image processing (RIP) of pages and uses pre-rasterized elements to speed the printing process.
Variable Data Exchange (VDX) Output	Print	Yes	VDX Output builds on the strengths and implementation base of PPML. A VDX output file is a PDF file with an embedded PPML layout file. The production environment embeds the PPML in the PDF file, which is called thick or strict VDX. As a result, VDX has many of the same options supported for PDF, but all printer product intent commands are handled using PPML data.

Supported output formats, continued

Module	Driver type	DBCS application support	Description
Variable Data Intelligent PostScript PrintWare (VIPP) Output	Print	Yes	VIPP Output lets you produce the necessary resources to support the print stream for Xerox printers that use VIPP, an extension of PostScript developed for variable-data applications. It is optimized for speed and overlay caching for high-volume variable full color output. With VIPP Output, Exstream can use objects that have been through raster image processing and stored in the cache memory to produce high-volume color output at incredibly fast speeds—particularly with the Xerox iGen3 color printer.
Variable Print Specification (VPS) Output	Print	Yes	VPS Output lets you produce the necessary resources to support the print stream for Xerox printers that use VPS, an extension of PostScript developed by Creo that provides a structured definition of the documents being processed. VPS supports raster image processing of pages at the rate required for digital color printing, using pre-rasterized elements to speed the production of personalized business documents. Exstream can produce VPS output in one of two formats: thin or thick. Thin VPS uses resources (images and overlays) as separate files the printer can RIP and store for later use with many print files. This saves time, both in the engine processing, and in print production. All resources are composed when you run the engine, and the resources are placed in the same directory as the composed file. Thick VPS embeds all resources at the top of the print stream and makes each print file a complete job. The thick version of VPS will not reference external resources.
Word(*.docx)/RTF Output	Electronic	Yes	The Word (*docx)/RTF Output module supports two separate output formats: • Microsoft Word (DOCX) output—DOCX output lets you produce Open Office XML files that can be viewed and edited in Microsoft Word versions 2007 and later. • RTF output—RTF Output lets you produce Rich Text Format (RTF) files ready for word processing programs. Both of the output formats provided with the Word (*docx)/RTF module can be easily distributed and edited by document recipients, as needed.
XML (Composed) Output	Electronic	Yes	XML (Composed) Output lets you produce fully-composed XML files ready for web presentation, including page design, text formatting, and all design objects (for example, pages and images) sent to the print stream. These files are created in the Exstream Exchange Format (DXF), which is based on the W3C standard XSL-FO (Exstensible Stylesheet Language-Formatting Objects).
XML (Content) Output	Electronic	Yes	XML (Content) Output lets you produce XML files that contain the structure and content of your design (including design objects), but not the layout or formatting (such as colors and fonts). These files are used most often to mine content from documents for archival purposes.

Supported output formats, continued

Module	Driver type	DBCS application support	Description
XML/JSON (Data) Output	Electronic	Yes	XML/JSON (Data) Output lets you produce XML or JSON formatted report files. These files contain only the variable mapping that exists at the application or queue level, not the page or document content.
XML (Multi-Channel) Output	Electronic	Yes	XML (Multi-Channel) Output lets you produce Multi-Channel XML output, which is XML that can be transformed for delivery to different media channels (for example, Short Message Service (SMS) messages, social media posts, and VoiceXML-based speech applications). To transform the Multi-Channel XML output from Exstream into output that is ready for these media channels, you provide an Extensible Stylesheet Language (XSL) file. After Exstream creates Multi-Channel XML output, the output file is sent along with the XSL file to the embedded XSL Transformation (XSLT) engine during the production run. The transformed output produced from the XSLT engine can be used for many different media formats, as determined by the XSL file you provide.
ZPL Output	Print	Yes	ZPL Output lets you produce the necessary resources to support the print stream for Zebra printers that use ZPL II commands. Exstream produces a black-and-white image using the Zebra compression algorithm, and includes the necessary ZPL II commands to produce the image from a compatible printer.

Chapter 5: Accessing Exstream documentation

Exstream user documentation is available from within the software as well as on My Support at https://knowledge.opentext.com/go/ExstreamDocumentation. The online documentation that can be accessed from the software is hosted on the OpenText Global Help Server and provides users with live access to the latest version of the documentation. In the Design Manager and Designer, you can access the documentation by pressing `F1`, or selecting **Help > Search Documentation**, which opens the online documentation in a browser. The HTML and PDF versions of the documentation are also available on My Support.

You can also deploy an OpenText Private Help Server instance to provide local access to downloaded documentation. The Private Help Server lets users access the online documentation within their private corporate network. After you set up the server, you can then redirect help requests from Exstream Design and Production software to the Private Help Server instance rather than the Global Help Server. For information about setting up the Private Help Server, see *System Administration* in the Exstream Design and Production documentation.

5.1 Documentation overview

Regardless of the type of Design and Production application you are producing (whether an interactive Empower document that leverages the interactive functionality of Exstream or a more traditional application that can be published to multiple formats), you will likely use many different areas and features of the software to create your required output.

You can find more information about how to use the different functional areas of Design and Production and the other Exstream platform components and how to complete various tasks by reading the Exstream user documentation.

5.1.1 Release notes and software overview

Use the following documentation for a high-level overview of the software and the new features and updates that are available in the latest release:

See this guide	For this information
OpenText Exstream - Software Release Notes *OpenText Exstream Design and Production Software Release Notes*	Release notes for the current version of Exstream
Getting Started with Exstream Design and Production	Overview of the Exstream platform and getting started with using Exstream Design and Production in the platform environment
Getting Started in the Exstream Design and Production documentation	Introduction to Exstream Design and Production, including an overview of the Design Manager and Designer interfaces
What's New in Exstream Design and Production documentation	Summary of the new and updated features that are available in the current version of Exstream Design and Production

5.1.2 Installation and configuration

Use the following documentation for information about installing and configuring Exstream, as well as the steps required to upgrade from a previous version of Exstream Design and Production or Streamserve to the integrated Exstream platform:

See this guide	For this information
OpenText Exstream: Installation Guide	Installing the Exstream platform on Windows and Linux systems using the Common Installers
Installation and Upgrade Information in the Exstream Design and Production documentation	Upgrading Exstream Design and Production and installing the Exstream production engine on other operating systems Use this information in conjunction with the *OpenText Exstream: Installation Guide*.
Installing or Upgrading Empower	Installing Empower on a supported application server or upgrading to the latest version of Empower
OpenText Exstream: Communications Server Administration Guide	Configuring the Exstream platform, including setting up and maintaining the components and repositories required to use the integrated platform features and engine orchestration Use this information in conjunction with the *OpenText Exstream: Installation Guide* and *Installation and Upgrade Information* in the Exstream Design and Production documentation to install and configure the Exstream platform.
Using Exstream Web Applications in the Exstream Design and Production documentation	Setting up Communications Designer and Content Author for use with Design Manager Use this information in conjunction with *OpenText Exstream: Communications Server Administration Guide* to set up the Exstream web applications in your environment.

See this guide	For this information
System Administration in the Exstream Design and Production documentation	Configuring and customizing Exstream Design and Production based on business requirements, including database administration, user management, corporate branding standards, and regulatory compliance Use this information in conjunction with the *OpenText Exstream: Installation Guide* , *Installation and Upgrade Information* in the Exstream Design and Production documentation, and the *OpenText Exstream: Communications Server Administration Guide* to set up Exstream Design and Production in the Exstream platform.

5.1.3 Design

Use the following documentation for information about using the different design tools that are available in the Exstream platform and leveraging the capabilities of these design tools to create customer communications:

See this guide	For this information
Designing Customer Communications in the Exstream Design and Production documentation	Creating Exstream Design and Production applications, including using Design Manager to set up applications and other Library objects to support complex document solutions, as well as using the design tools in Designer to design customer communications
Design and Production add-ins documentation	Using add-ins for dynamic content in Design and Production applications
Importing Designs in the Exstream Design and Production documentation	Importing designs from other design platforms, and instructions on using the Exstream Design and Production conversion tools
Importing External Content in the Exstream Design and Production documentation	Leveraging external content in formats such as RTF or PDF, and setting up applications to import external content directly into a design or dynamically during a production run
Using Data to Drive an Application in the Exstream Design and Production documentation	The variable data processing capabilities of Exstream, and information about using different data file types to meet business requirements
Using Logic to Drive an Application in the Exstream Design and Production documentation	The logic capabilities of Exstream, and information about using rules, formulas, and functions to meet business requirements
Managing Marketing Messages in the Exstream Design and Production documentation	Placing marketing messages in a design using marketing campaigns, and tracking customer responses to campaigns
OpenText Exstream: Storyteller Configuration Guide	Designing customer communications by defining the structure, content, and layout of a business document that can be exported and deployed as a Communications Server application
OpenText Exstream: Workshop User Guide	Managing common resources in the Exstream platform that are available in the common asset service (CAS)

See this guide	For this information
Communications Designer Help	Creating customer communications using the web-based design environment in Communications Designer

5.1.4 Interactive editing

Use the following documentation for information about using the interactive editing tools that are available in the Exstream platform:

See this guide	For this information
Designing for Exstream Empower Editor in Exstream Design and Production documentation	Designing Design and Production applications for use with Exstream Empower Editor Use this documentation in conjunction with *Designing for LiveEditor* in the Exstream Design and Production documentation when developing Design and Production applications that create or fulfill Empower documents.
Exstream Empower Editor Setup and Administrative Help	Using the Empower Server Console and the Empower API to manage the Empower Services Layer and move documents in and out of the Empower Services Layer
Empower Editor Help	Editing Empower documents generated from Exstream Design and Production applications
Designing for LiveEditor in the Exstream Design and Production documentation	Designing Design and Production applications for use with LiveEditor, including setting up interactive areas that allow end users to customize documents, setting up document processing options, and controlling the end user editing experience
OpenText Exstream: ReTouch User Guide	Editing communications generated from Storyboard templates

5.1.5 Business authoring

Use the following documentation for information about using the business content authoring tools that are available in the Exstream platform:

See this guide	For this information
Using Exstream Web Applications in the Exstream Design and Production documentation	Designing applications for use with Exstream Content Author Use this documentation in conjunction with Exstream Content Author Help when using Content Author to modify your designs and produce customer communications from Design and Production applications in the Exstream platform.
Exstream Content Author Help	Editing customer communications generated from Exstream Design and Production applications

See this guide	For this information
OpenText Exstream: Storyboard User Guide	Enhancing StoryTeller templates and adding text, images, and rules to personalize communications generated from a StoryTeller document

5.1.6 Production and engine orchestration

Use the following documentation for information about using engine orchestration features to produce output and deliver customer communications to multiple output channels.

See this guide	For this information
Creating Output in the Exstream Design and Production documentation	Creating and delivering output in multiple formats and setting up delivery to all supported channels, as well as information about the Exstream features that support high-volume delivery requirements
Preparing Applications for Production in the Exstream Design and Production documentation	Packaging applications and setting up the production environment and testing applications before running the production engine
Configuring Connectors in the Exstream Design and Production documentation	Setting up connections to existing enterprise architectures using Exstream Design and Production connectors and web services to support on-demand delivery requirements
OpenText Exstream: Communications Builder Event Configuration Guide	Configuring the event tools for setting up different input formats for Communications Server applications
OpenText Exstream: Communications Builder Process Configuration Guide	Configuring the process tools for setting up different output formats for Communications Server applications
OpenText Exstream: Communications Builder Configuration Guide	Setting up workflows and creating Communications Builder projects for producing customer communications
OpenText Exstream: Communications Server Administration Guide	Deploying Communications Builder projects to create and deliver customer communications
OpenText Exstream: Supervisor User Guide	Tracking and managing production jobs in the Exstream platform

5.1.7 Reference

Use the following documentation for reference information:

See this guide	For this information
DXF Reference in the Exstream Design and Production documentation	Reference information for the Exstream Exchange Format (DXF) language, uses and structure of DXF files, and available DXF elements

See this guide	For this information
Switch Reference in the Exstream Design and Production documentation	Reference information for switches that are available in Exstream Design and Production for use with the Exstream engine, the Database Administration utility, the Packager utility, and Designer
OpenText Exstream: Communications Builder Scripting Reference Guide	Reference information for the Communications Builder scripting language specifics and available script functions

5.2 Accessibility information for Exstream

OpenText is committed to developing products, services, and information that are accessible to everyone, including people with disabilities or age-related limitations.

For information about how OpenText supports accessibility, go to http://www.opentext.com/who-we-are/copyright-information/accessibility.

For information about the accessibility of a specific product, go to http://www.opentext.com/what-we-do/industries/public-sector/voluntary-product-accessibility-template.

Chapter 6: Using Design and Production

During the application design process, you will be expected to complete tasks specific to your job role, such as designing page layouts, creating variables, writing logic, or setting up how data is used in an application.

The following sections provide information about how to complete the following tasks, which are general to most Design and Production users:

- "Signing in to the design environment" below
- "Working with design databases" on page 70
- "Working in the Library" on page 72
- "Working in the design window" on page 105
- "Searching the design environment" on page 95

6.1 Signing in to the design environment

After you have installed and configured Design and Production, you can sign in to the design environment using a user name and password set up in Design Manager.

1. Open Design Manager or Designer.

   The sign-in screen opens. By default, your Windows user ID from your system is displayed in the **User** box.

2. In the **User** box, enter your user name.
3. In the **Password** box, enter your password.

   Passwords are case-sensitive in Exstream.

4. Click **OK**.

   Depending on the settings implemented by your system or database administrator, you might be prompted to sign in to a database.

6.2 Viewing your access privileges

The system administrator determines your system access privileges, and associates these with your sign-in information for the design environment.

To view your access privileges:

1. In Design Manager, select **File > User Access Report**.

   The **Your System Access** dialog box opens. From this dialog box, you can view your user name, the groups you belong to, and your access privileges.

2. Click **OK**.

Chapter 7: Design environment at a glance

Design and Production is an object-oriented solution, meaning that users design objects (such as data files or style sheets) and then combine them together to build document applications. The Design and Production design environment consists of a design interface and design database. The design interface allows users to create design components and add personalization to customer communications; it can be configured so that different users can manage different aspects of the design process (such as formatting, versioning, or workflow controls). The design database allows users to store the design objects and associated design processes.

You use the following two programs, which make up the design interface, to create and manage applications:

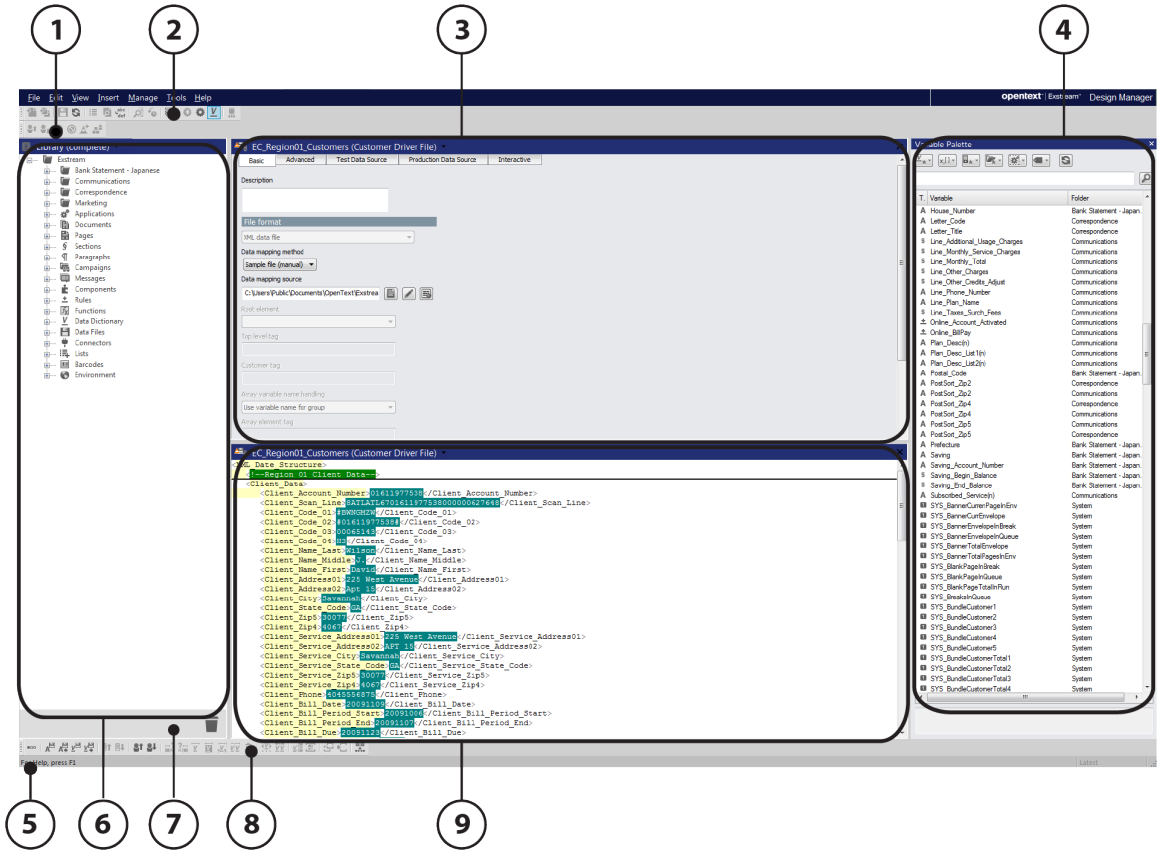
- **Design Manager**—Lets you create and manage all designed objects, specify the contents and settings of each run of the Exstream engine, and configure your printers and other production equipment
- **Designer**—Lets you design multifaceted communications using formatted text and graphic elements

7.1 Design Manager

Design Manager lets you create, configure, and manage the design objects that make up an application, including data files, variables, printers, or production equipment. Additionally, you can perform system administration tasks, such as creating and managing user and design groups, customizing the design environment for users, or defining design components (such as security or allowed fonts and colors). It is in Design Manager that you compile applications and configure test and production runs for delivery to customers.

The following illustration shows the default configuration for Design Manager with all available modules licensed. Since configurations can vary, some menu options or toolbars might not be available. Additionally, toolbars and palettes can be hidden, docked along the outer edge of the interface, or float, so the interface might appear differently on different computers. To hide a toolbar or palette, select it from the **View** menu. To move a toolbar or palette, click and drag it to the desired location.

Design Manager interface



1	**Management toolbar**—Control the state of an object by locking, unlocking, checking in, checking out, or selecting an approval or workflow option. You can also view an object's approval history.
2	**Standard toolbar**—Create, clone, test, or save an object; search the Library; view an object's version history; or package an application and run the engine.
3	**Property Panel**—Configure objects in the Library. To configure an object, drag it from the Library to the Property Panel. The settings that you see in the Property Panel might vary based on which modules you have licensed.
4	**Variable Palette**—View a list of the variables that are available in the Library or select a variable to map to a data area. You can also search for a variable or filter based on type, location, or metadata.
5	**Status bar**—View information about the current object.
6	**Library**—Create new objects, assemble components of applications, and move information between databases. As its name suggests, the Library contains all of the objects that are in the design database, and stores them in an organized manner. Like any good library, the Library offers ways to search its contents, provides a means of exchanging information, and enables users to check out objects. The objects that you see in the Library might vary based on which modules you have licensed.

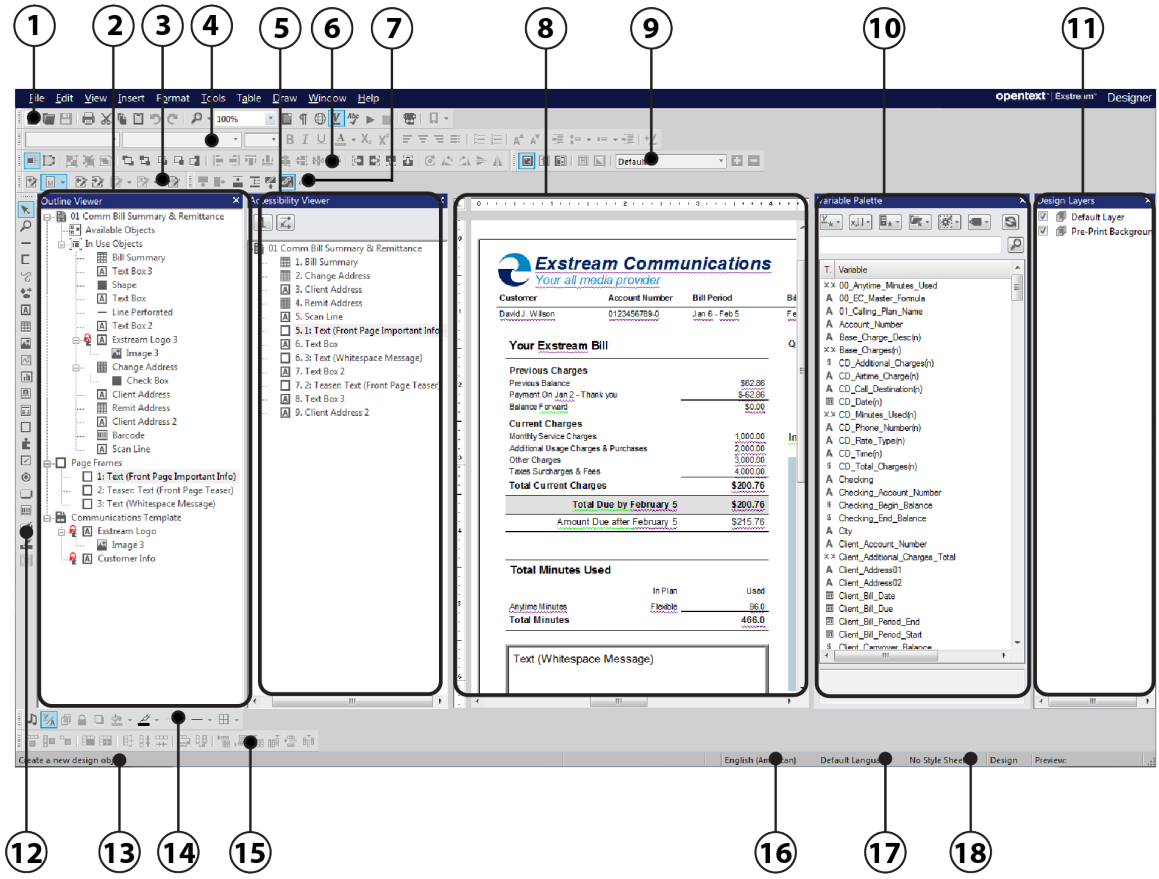
7	**Trashcan**—Remove objects from the Library. Items in the trashcan can be restored to the Library until you permanently delete them.
8	**Data Mapping toolbar**—Set up the mapping for a data file by configuring data areas and mapping record indicators and variables. You can also search variables or navigate through existing variables, sections, and customers in the data file.
9	**Edit Panel**—View lists, the contents of any folder in the Library, the contents of objects that contain other objects, or an object's version history. You can set special properties for an application, document, or campaign, or edit their contents; or, you can view, map, and test data files. To work with an object in the Edit Panel, drag it from the Library. If you drag some objects (for example, a page or a message) to the Edit Panel, the object opens in Designer for you to edit.

7.2 Designer

Designer provides the graphic design interface for your application that lets you create and format content for pages and messages, design graphic elements, insert variables to customize documents, and put together the overall design and layout for customer communications.

The following illustration shows the default configuration for Designer with all available modules licensed. Since configurations can vary, some menu options or toolbars might not be available. Additionally, toolbars and palettes can be hidden, docked along the outer edge of the interface, or float, so the interface might appear differently on different computers. To hide a toolbar or palette, select it from the **View** menu. To move a toolbar or palette, click and drag it to the desired location.

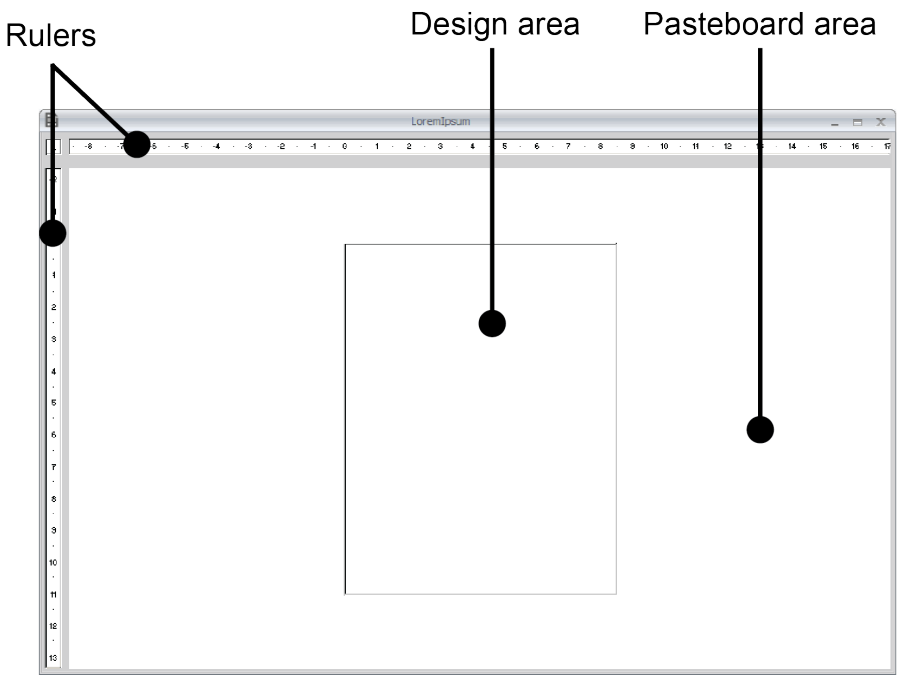
Designer interface



1	**Standard toolbar**—Create new or open existing design objects; cut, copy, and paste design objects; undo or redo actions; search, save, print, or check the page for spelling errors; or change language layers.
2	**Outline Viewer**—View a list of all the design objects associated with the current page, message, or multiple-up sheet. Drawing objects that are associated with the overall page design are listed in the following two categories: • **In Use Objects**—Drawing objects that are used in the standard design for the current page, message, or multiple-up sheet. In-use objects are listed in the order that they appear in the design. • **Available Objects**—Drawing objects that are available for use in the standard design and that might be in use in a container design associated with the current page. Special objects, such as frames, appear together in separate groups. Embedded objects are placed below the object in which they are embedded. This makes it easier to recognize object relationships. If the page is duplex, the front components and back components are listed in separate groups. To make it easy to recognize objects at a glance, each object has its own icon in the Outline Viewer. For example, each type of chart has its own icon, making it easy to know which type of chart you have placed on a page. If an object is a Library component,  appears next to the object's icon in the Outline Viewer. If the Library component is locked, a lock also appears. You can use the Outline Viewer to quickly perform actions, such as change the frame fill order and update object properties.

3	**Review toolbar**—Track and navigate changes that have been made to text, and accept or reject the changes.
4	**Formatting toolbar**—Apply formatting to selected text, including styes, fonts, alignment, or spacing; or insert a variable.
5	**Accessibility Viewer**—View and change the read order of design objects that have accessibility settings enabled.
6	**Position toolbar**—Change the placement of design objects on the page, such as the placement on the grid or layers, alignment, or rotation. You can also group design objects for placement as a single object.
7	**Flow Management toolbar**—Configure design objects to grow to accommodate text, or place objects in the design relative to the placement of other objects.
8	**Design window**—Place and edit design objects so that you can create the overall layout and design of a customer communication. For more information about specific interface areas within the design window, see "Designer" on page 64.
9	**Design Views toolbar**—Switch between design views, and show or hide the Container Viewer. You can also toggle between thick or thin container borders.
10	**Variable Palette**—View a list of the variables that are available in the Library or insert a variable into the design. You can also search for a variable or filter based on type, location, or metadata.
11	**Design Layers Palette**—Turn on or off available design layers.
12	**Drawing Objects toolbar**—Insert design objects, such as lines, shapes, text boxes, images, charts, tables, frames, and buttons. Clicking a button on this toolbar changes the cursor, so that you can draw the selected design object when you click and drag the cursor in the design window.
13	**Status bar**—View information about the current object.
14	**Properties toolbar**—Toggle between design modes, lock design objects so that they cannot be edited, or change the line or fill color.
15	**Table toolbar**—Design the appearance of tables by joining cells, grouping rows, or configuring grid lines and row and column spacing. You can also insert and delete rows and columns.
16	**Dictionary indicator**—View the current dictionary used to check spelling and grammar.
17	**Language Layer indicator**—View the current language layer being edited.
18	**Style Sheet indicator**—View the name of the style sheet that is applied to the current page or message.

Design window interface



In the **design area**, you can create and edit the appearance of customer content.

Using the **rulers**, you can view the specific measurement and placement of the objects in the design. You can change the unit of measurement that is applied to the rulers in the **Designer Preferences**. For more information about changing your preferences in Designer, see "Setting personal options in Designer" on page 69.

The **pasteboard area** lets you move, place, or arrange the objects that for whatever reason you do not want to place in the design area. For example, you can use the pasteboard area to keep your design free of clutter as you create customer content. Note that objects inside the design area that overlap the pasteboard area are cropped automatically at the design area border in the final output, unless you are generating multiple-up output that supports bleeds. For more information about using bleeds to prevent unprinted edges in trimmed multiple-up output, see *Creating Output* in the Exstream Design and Production documentation.

7.3 Customizing Design Manager and Designer

The system administrator configures your company's interface for Design Manager and Designer, including which menu and toolbar options are available to you.

After your system administrator configures the design environment, you can further customize your workstation by completing the following tasks as needed:

- "Creating keyboard shortcuts" below
- "Changing the working language" on the next page
- "Setting personal options in Design Manager" on the next page
- "Setting personal options in Designer" on the next page

For more information about configuring the design environment, see *System Administration* in the Exstream Design and Production documentation.

7.3.1 Creating keyboard shortcuts

The built-in key combinations used for keyboard shortcuts are visible when you navigate through the options on the Menu bar and the right-click menus, and in the tooltips visible when you hover the mouse over a toolbar button. You can create keyboard shortcuts for those commands that you perform frequently and that do not have a built-in keyboard shortcut defined. You cannot remove built-in keyboard shortcuts, but you can add multiple keyboard shortcuts for the same command. Keyboard shortcuts are program-specific, so you can create keyboard shortcuts in Design Manager and Designer that are independent of one another.

To create a keyboard shortcut:

1. In Design Manager or Designer, select **Tools > Customize**.

   The **Keyboard Shortcuts** dialog box opens.
2. In the **Categories** list, click the Menu bar name on which the command is located. For commands not on a menu, select **Other** or **All Commands**.
3. In the **Commands** list, select the command for which you want to create a keyboard shortcut.
4. Place the cursor in the **Type a new shortcut key** box.
5. Press the key combination you want to assign to the command.
6. Click  .

   The key combination appears in the **Shortcut keys** list.
7. Repeat steps 2 through 6 for all commands for which you want to create keyboard shortcuts.
8. Click **OK**.

7.3.2 Changing the working language

1. Select **Tools > Languages**.

   The **Select Language** dialog box opens.

2. Select the radio button next to the language you want to use.
3. Click **OK**.

7.3.3 Setting personal options in Design Manager

1. Select **Tools > Options**.

   The **Options** dialog box opens.

2. Select the personal options you want in Design Manager:

   - In the **General** area, you can set general options for how Design Manager works. For example, you can control how Design Manager responds to double-clicking headings and objects, or specify the default unit of measure.
   - In the **Data Mapping** area, you can set options for how Design Manager handles data file mapping, and specify text editors to use when editing data files.
   - In the **Database** area, you can set options for how Design Manager connects to the design database, such as the time allowed for a query before timing out. You can also specify a specific tracking DSN and schema.
   - In the **Packaging\Engine** area, you can set options for how Design Manager packages an application and creates a preview. For example, you can select an alternative viewer for AFP files.

3. Click **OK**.

7.3.4 Setting personal options in Designer

1. Select **Tools > Options**.

   The **Designer Options** dialog box opens.

2. Click the **Designer** tab.
3. Select the personal options you want in Designer:

- In the **Designer** area, you can set general options for how Designer works. For example, you can enable Designer to automatically save, specify the default unit of measure, or specify a text editor.
- In the **Design Indicators** area, you can control which non-printing design indicators are visible in the design window, such as invisible text characters and indicators for the object's versioning status.
- In the **In-place Active Controls** area, you can control whether or not Designer displays object controls for a selected object. For example, you can choose to hide or display the  and  buttons or paragraph indicators on active objects.
- In the **Design Assist** area, you can set options that help prevent common errors or make designing easier and faster when working in Designer. For example, you can have relative objects move together or show objects from background layers.
- In the **Document Section Editing** area, you can set options that make it easier for you to work with sections and paragraphs in Designer. For example, you can turn on an option that lets you highlight text across multiple paragraphs or automatically check out a section or paragraph when you begin to edit it.
- In the **Exstream Live Simulation Mode** area, you can select the default theme to use when designing interactive documents. You must have licensed the Live Design module to design interactive documents.

4. Click **OK**.

7.4 Working with design databases

When you are working with objects in Design Manager and Designer, the objects and all of their associated settings are stored in a design database. In the Windows environment, data source names (DSNs) let you connect to the design database through open database connectivity (ODBC) technology. Exstream supports connections to Oracle, PostgreSQL, SQL Server, and DB2 databases—with or without multiple database schemas.

When working in the design environment, you must be able to change data source names (DSNs).

7.5 Changing data source names (DSNs)

If you want to work in a different design database than the one currently connected to the design environment, you can change the data source name (DSN) to which you are connected. In order to change the DSN to which you are connected, you must have permission to connect to the design database that you want and the credentials to sign in to that database.

To change DSNs:

1. Select **File > Change Database**.

   The **Select Database** dialog box opens.

2. From the **Select the type of database** area, select the database to which you want to connect. If the database name to which you want to connect is not listed, then you must add a DSN using the Windows ODBC Data Source Administrator.

3. If you are connecting to a database that contains multiple schemas, select a schema from the **Database Schema** drop-down list, or enter the schema name. Design Manager stores the 30 most recent database schemas and their settings.

4. If you have permission to do so, you can change the database sign-in method. If you are unsure about which option to select, contact your system administrator.

To	Do this
Use the default user name and password to connect to the database	From the **Database authentication method** drop-down list, select **Default Exstream user and password**. The database server uses your sign-in information for the design environment to authorize you.
Use the security built into the Windows network to connect to the database	From the **Database authentication method** drop-down list, select **Windows authentication**. The database server uses your Windows ID to authorize you.
Use a separate user name and password to connect to the database	a. From the **Database authentication method** drop-down list, select **Specify user and password**. The **User** and **Password** boxes become active. b. In the **User** box, enter a user name. c. In the **Password** box, enter a password. You receive a prompt for the Exstream user name and password to authorize you to use the design environment. If the DSN user name and password are incorrect, you receive a second prompt for the correct DSN user name and password.
Use the same user name and password to connect to both the design environment and the database	From the **Database authentication method** drop-down list, select **Database and Exstream user/password identical**. For more information about default user names and passwords, see *System Administration* in the Exstream Design and Production documentation. You receive a sign-in prompt that authorizes you to use both the design environment and the database.

5. If you want to save database password credentials, select the **Remember passwords** check box.

   By default, the **Remember passwords** check box is not selected. If you save database password credentials and then clear the check box, Design Manager clears all previously saved passwords. Keep in mind that passwords are weakly encrypted when they are

saved to the registry.

6. Click **OK**.

7.6 Working in the Library

The Library provides a way to organize design objects in Design Manager. As its name suggests, the Library contains all the design objects, and stores them in an organized manner. Like any good library, the Library offers ways to search its contents, provides a means of exchanging information, and enables users to "check out" objects. The objects you see in the Library can vary based on the modules licensed.

Each of the headings in the Library contains a specific type of object, which is identified by a descriptive icon.

Library objects, icons, and descriptions

Library object	Icon	Description
Folder		A container used to organize design objects in the Library
Application		An object that contains all the objects needed to create a personalized communication
Document		An object that contains pages or messages
Page		An object within a document that generally corresponds to a piece of paper designed to be used in a personalized communication
Section		An object that contains paragraphs and other sections in a hierarchy
Paragraph		An object within a section that contains text or graphics
Campaign		An object that contains marketing messages, generally intended for a specific audience for a specific period of time
Message		An object within a campaign or document that contains text or graphics
Component		An object you design and save in Designer, which can be reused in other designs
Rule		An object that contains a set of custom conditions used to control the behavior of an object

Library objects, icons, and descriptions, continued

Library object	Icon	Description
Function		An object that contains custom functions or subroutines used in logic
Data Dictionary		An object that represents a variable value
Data File		An object that contains information about how to read an external data source and how data should be used during an engine run
Connector		An object that contains information about the location and operating parameters of external user-written routines for use with Dynamic Data Access (DDA)
List		An object that contains a collection of references to non-system objects in the Library

When working in the Library, complete the following tasks as needed:

- “Changing the Library view” below
- “Creating an object” on page 75
- “Cloning an object” on page 76
- “Moving an object” on page 77
- “Renaming an object” on page 77
- “Setting an expiration date on an object” on page 78
- “Organizing objects in the Library” on page 78
- “Maintaining object version control” on page 85
- “Deleting an object” on page 95

Note: Design Manager sorts objects beneath each heading alphabetically, with objects whose names begin with SBCS characters appearing before those that begin with DBCS characters. Therefore, if a heading in your database contains a large number of objects—some whose names begin with SBCS characters, and some whose names begin with DBCS characters—you might need to scroll down in order to see objects whose names begin using DBCS characters.

7.6.1 Changing the Library view

You can change the objects you see in the Library by changing your Library view. Different views provide access to different objects based on specific requirements for different jobs. For example, if your job role is in marketing, you will likely need to see marketing campaigns and

messages; however, if your job role is in Development, you will likely need to see data files and rules.

If you want to view only the objects in the Library related to your job role, click the Library title bar and select a view. The following table lists the objects available in each view.

Library view

Job role	View	Objects in view
Create the content, layout, and design of customer communications	Document View	• Applications • Documents • Pages • Sections • Paragraphs • Library Components
Create marketing campaigns and messages to place in customer communications	Marketing View	• Campaigns • Messages
Develop logic for applications or set up connections between an application and other enterprise systems	Data View	• Connectors • Data Files • Functions • Rules • Variables
Set up Design and Production for other types of users or complete other system administration tasks, such as setting up connections between an application and printers	Environment View	• **System**—This heading includes objects that relate to the system setup, such as approval processes, custom dictionaries, and users. • **Design**—This heading includes objects that relate to design standards for your organization, such as colors, fonts, and style sheets. • **Delivery**—This heading includes objects that relate to the production process for your documents, such as printers and barcodes. • **Interactive**—This heading includes objects that relate to interactive documents, such as the colors that guide end users of LiveEditor or Empower Editor through the editing process. For information about system administration settings for interactive documents, see *Designing for LiveEditor* in the Exstream Design and Production documentation.

If you want to view all available objects in the Library, click the Library title bar and select **Complete View**. The available objects might vary based on your user permissions and the modules you have licensed.

Using the options available under the Library title bar, you can also apply filters to narrow the objects that are visible in your view. If you select **Hide Empty Headings**, any headings in your Library view that do not contain objects will not be visible. If you select any of the options from

the **Versions to Show** menu, only objects that match the version criteria you selected will be visible in your Library view.

When you make changes to the Library, you might not see the changes immediately. You can refresh the Library to see the result of your changes.

To refresh the Library, select **Edit > Refresh**.

7.6.2 Creating an object

The process for creating a new object is similar, whether you are creating a new campaign, data file, or page. There are two best practices associated with naming objects. First, use descriptive names for your objects. Second, include thorough descriptions, since this information is included in engine reports and messages. Having accurate and descriptive information associated with objects makes it easier to search for specific objects or to determine which object to use during application development.

To create an object:

1. In the Library, click the folder in which you want to store the new object.
2. Select **Insert > [Object]**.

   The **New [Object]** dialog box opens.

   For example, if you select **Insert > Document**, the **New Document** dialog box opens.
3. In the **Name** box, enter a name. In the **Description** box, enter a description (optional).
4. If additional dialog boxes open, complete them and click **Next**.

   The number of dialog boxes you must complete to create an object depends on the type of object you are creating and the settings that system administrators have put in place.
5. Click **Finish**.

   The object opens in the Property Panel.

Create once, use everywhere

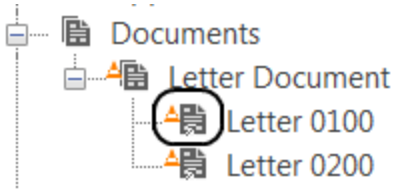
Instead of creating the same object to use for each application, you can create an object once and reuse it in multiple locations by creating a reference to it. For example, suppose you have a marketing message that will be used in multiple customer communications. You can create the message once and reference it as needed.

To reference an object, drag the original object from its location in the Library to another object of higher order. For example, you can create a reference to a page within a document by dragging the page object and dropping it on the document object. If there are multiple object references within an object, the order in which the objects are listed indicates the order in which they are processed, unless priority options have been used.

If you delete a referenced object, you are deleting only the reference to the object, not the object itself.

For information about deleting objects, see "Deleting an object" on page 95.

Referenced object indicator



7.6.3 Cloning an object

When you clone an object, you create an exact copy of the object in the Library. You can use clones as a quick start for creating a new object with similar settings to an existing object, or to test changes to settings without changing the original object.

When cloning, you must have permission to update the folder where you want to clone. If you are cloning an object, you must have permission to at least view the object you want to clone. If you are also cloning the object references in an object, you must have permission to revise the higher-level object.

To clone an object:

1. In the Library, select the object you want to clone.
2. Select **Edit > Clone**.

   The **Clone [Object]** dialog box opens.

   For example, if you select a document and then select **Edit > Clone**, the **Clone Document** dialog box opens.
3. In the **Name** box, enter a name. In the **Description** box, enter a description (optional).
4. In the **Folder** box, click  .

   The **Folders** dialog box opens.
5. Select the folder in which to place the clone. If you are cloning referenced objects, you must clone the object to a new folder.
6. Click **OK**.

   The **Folders** dialog box closes.
7. If the object contains referenced objects that you want to clone:

a. Select the **Clone referenced objects** check box.

b. Click **OK**.

The **Select object references to clone** dialog box opens.

c. From the list in the **Select object references to clone** dialog box, select the referenced objects you want to clone.

8. Click **OK**.

The cloned object appears in the Library in the folder you selected.

7.6.4 Moving an object

In the Library, you can move objects by dragging an object or Library heading from one folder to another. You can select multiple objects to move by holding down the `CTRL` key while clicking each object you want to move.

When you move an original object, it is moved only in the Library; however, when you move a reference to an object, the **Move or Copy** dialog box opens. Make a selection based on whether you want to move the reference or copy the reference to the new location in the Library. If you are moving multiple objects, you can select the **Apply to all** check box if you do not want to make a selection for each object being moved. Click **OK** to move the object(s).

7.6.5 Renaming an object

You can change the name of objects. However, keep in mind that if you rename a data file, references to the data file name within rules, formulas, or functions driving your application are not updated. To ensure the logic is valid, you must update the data file name in every instance within rules, formulas, or functions where it is used.

To rename an object:

1. In the Library, click the object you want to rename.
2. Select **Edit > Rename**.
3. In the Library, the object name is highlighted.
4. Enter the new name for the object and press `ENTER`.

The original object and all object references are renamed throughout the Library.

7.6.6 Setting an expiration date on an object

If you want to restrict the use of an object beyond a specific date, you can set an expiration date. For example, if your company's current logo is stored in the design database as a Library component, but you need to use a new logo starting January 1, 2010, you can set an expiration date on the Library component for the current logo for December 31, 2009.

To set an expiration date on an object:

1. Select **Manage > Administer**.

   The **Administration** dialog box opens.

2. Click the **Basic** tab.
3. In the **Expiration date** area, select the **Expiration date** check box and then select the expiration date from the year, month, and day boxes.
4. Click **OK**.

7.6.7 Organizing objects in the Library

In Design Manager, there are two types of objects you can use to easily organize the other objects you use when developing applications:

- “Folder objects” below
- “List objects” on page 82

Folder objects

A folder object is an object that lets you organize and add security to your application development projects. For example, you can create folders for specific projects or for specific departments and give only particular users access to those folders. Folders can also contain subfolders, so you can create a folder for your marketing department and then a subfolder for each project.

The root folder, which is the top-level folder in your design database, is the starting folder that automatically opens when you start Design Manager. If you are the system administrator or are authorized to perform folder administration, complete the following tasks as needed:

- “Creating a folder” on the next page
- “Restricting user access to a folder” on the next page
- “Enforcing an approval process on folder contents” on page 80
- “Restricting the types of objects in a folder” on page 81

Creating a folder

1. In the Library, click the root folder or another folder where you want to add a subfolder.
2. Select **Insert > Folder**.

   The **New Folder** dialog box opens.
3. In the **Name** box, enter a name. In the **Description** box, enter a description (optional).
4. Click **Finish**.

Restricting user access to a folder

1. From the Library, drag the folder to which you want to add user restrictions to the Property Panel.

2. Select the appropriate options based on the restrictions you want to place on the folder:

To	Do this
Use the same access restrictions for users that are on the parent folder	Select the **Access and approval are the same as parent folder** check box.
Specify the default access level for all users	a. If necessary, clear the **Access and approval are the same as parent folder** check box. b. From the **World access** drop-down list, select the level of access you want to allow.
Specify different access levels for users in specific design groups	a. If necessary, clear the **Access and approval are the same as parent folder** check box. b. Click  The **Select a group to add to the list** dialog box opens. c. From the list, select the group for which you want to specify an access level. d. Click **OK**. The **Select the access to provide** dialog box opens. e. Select the level of access you want to allow. f. Click **OK**. g. Repeat steps 1 through 6 for each group you want to assign a specific access level. **Caution:** Permissions specified in the **Group access / Approval groups** area override the access level selected from the **World access** drop-down list. For example, suppose you select **View** from the **World access** drop-down list, and then add the marketing design group with **Create, edit, and delete** access to the **Group access / Approval groups** area. The marketing design group has full access to create, change, and delete objects in that folder, while all other users can only view the objects available in that folder.

3. Select **Edit > Save**.

Enforcing an approval process on folder contents

1. From the Library, drag the folder where you want to enforce an approval process to the Property Panel.
2. Select the appropriate options based on the approval process you want to enforce for the folder:

To	Do this
Use the same approval process that is used on the parent folder	Select the **Access and approval are the same as parent folder** check box.

To	Do this
Use a specific approval process for all objects and subfolders within the selected folder	a. If necessary, clear the **Access and approval are the same as parent folder** check box. b. From the **Approval process** box, click . The **Select Approval Process** dialog box opens. c. From the list, select an approval process. d. Click **OK**. e. In the **Group access / Approval groups** area, add the design groups that can approve objects: i. Click . The **Select a group to add to the list** dialog box opens. ii. From the list, select the group for which you want to specify an access level. iii. Click **OK**. The **Select the access to provide** dialog box opens. iv. Select the level of access you want to allow. v. Click **OK**. **Note:** Even if the access level assigned to the design groups in the **Group access / Approval groups** area is the same as the default access level specified in the **World access** drop-down list, you must add the design groups to the **Group access / Approval groups** area so that group members can approve objects. This lets you specify different approvers for different folders.

3. If you have licensed the Advanced Design Workflow module and you want Design Manager to generate emails for objects as they proceed through the approval process, select the **Send approval/rejection email notifications** check box.
4. Select **Edit > Save**.

Restricting the types of objects in a folder

If you restrict the types of objects that are allowed in a selected folder, you cannot copy, move, or create that object type in the selected folder, but you can reference that object type. For example, if you restrict a folder content to contain only applications, you can still reference objects that are not allowed to be stored in the folder (for example, data files and campaigns) in the applications.

A folder cannot have object restrictions specified if you want to clone an object and its references. If you have object restrictions specified and then load an XOB file to the folder, Design Manager changes the folder restrictions dynamically to allow the load.

To restrict the types of objects that are allowed in a folder:

1. From the Library, drag the folder to which you want to add object restrictions to the Property Panel.
2. Select the appropriate options based on the restrictions you want to place on the folder:

To	Do this
Use the same content restrictions as are on the parent folder	Select the **Contents restricted same as parent folder** check box.
Specify objects to allow in the selected folder	a. If necessary, clear the **Contents restricted same as parent folder** check box. b. Select the **Restrict to specified content** check box and select the check box next to one or more types of object from the list.

3. Select **Edit > Save**.

List objects

A list object is a static or dynamic collection of references to a series of objects for future reference or use. If you want to view available lists in the Library, click the Library title bar and select **Complete View**, **List View**, or **Favorite List View**. You can create two types of lists: static lists and dynamic filter lists.

Creating a static list

A static list is a list that contains specific objects, such as those you use frequently. You select the objects to place in the list and add them one at a time.

To create a static list:

1. In the Library, click the folder in which you want to store the new object.
2. Select **Insert > List**.

   The **New List** dialog box opens.
3. In the **Name** box, enter a name. In the **Description** box, enter a description (optional).
4. Click **Next**.

   The **Select the List Properties** dialog box opens.
5. Select the **Static** radio button.
6. If you want to restrict other users from accessing the list, select the **Private list** check box.
7. Click **Finish**.

The list opens in the Property Panel.

8. To add objects to the list:
   a. Click the **Static Items** tab.
   b. Click  .

      The **Select List Items** dialog box opens.
   c. From the **Look in** box, select the folder that contains the object you want to add:
      i. Click  .

         The **Folders** dialog box opens.
      ii. From the list, select a folder.
      iii. Click **OK**.
   d. From the **Type** drop-down list, select the type of object you want to add.
   e. From the scrolling box below the **Name** box, select the object you want to add.
   f. Click **OK**.

      The object is added to the list object.
   g. Repeat steps b through f until you have added all the objects you want.
9. Select **Edit > Save**.

   To view the list contents, click and drag the list from the Library to the Edit Panel. To sort the list, click the list headings for any column.

Creating a dynamic filter list

A dynamic filter list is a list that changes based on which objects are currently available in the Library that meet specified criteria, such as object type or approval status. Design Manager conducts a filtered search based on the criteria you specify and dynamically creates the list each time you view it in the Edit Panel.

To create a dynamic filter list:

1. In the Library, click the folder in which you want to store the new object.
2. Select **Insert > List**.

   The **New List** dialog box opens.
3. In the **Name** box, enter a name. In the **Description** box, enter a description (optional).

4. Click **Next**.

   The **Select the List Properties** dialog box opens.

5. Select the **Dynamic filter** radio button.
6. If you want to restrict other users from accessing the list, select the **Private list** check box.
7. Select **Finish**.

   The list opens in the Property Panel.

8. If you want to make the list available when you select **Favorite List View** as your Library view, select the **Add to favorite lists** check box.

   For more information about Library views, see "Changing the Library view" on page 73.

9. From the **Filter folder** box, select the folder you want to search for list objects:

   a. Click  .

      The **Folders** dialog box opens.

   b. From the list, select a folder.

   c. Click **OK**.

   d. To include subfolders, select the **Check subfolders** check box.

10. In the **Object types** box, select the types of objects you want to include in the list.
11. Click the **Dynamic Filter** tab.
12. In the **Criteria** area, select general criteria to use in the search (for example, the names of the object, folder, or object creator; creation, modification, or expiration dates; or where the object is used).
13. In the **Approval criteria** area, select approval criteria to use in the search, such as the object status, the approver, or approval date. For example, suppose you are an approver. You can create a dynamic list that contains the objects waiting for your approval by selecting the **Awaiting my approval** check box. You can search for approval criteria only on objects that are part of an approval process.
14. In the **Check out and lock criteria** area, select workflow criteria to use in the search (for example, object status, the user name of the person who last changed the status of the object, or the date the status changed).
15. Select **Edit > Save**.

    To view the list contents, click and drag the list from the Library to the Edit Panel. To sort the list, click the list headings for any column. If you want to save a dynamic filter list as a static list, right-click the gray bar at the top of the Edit Panel, and select **Save as static list** from the shortcut menu.

7.6.8 Maintaining object version control

Design Manager offers the following features to help you maintain control of object versions:

- "Check in and check out" below
- "Object locking" on the next page
- "Workflow" on page 88

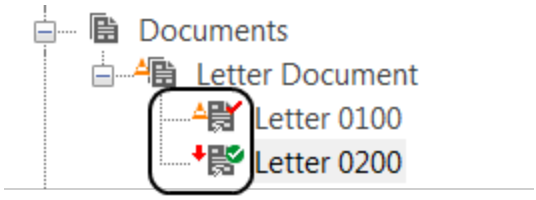
Check in and check out

If the system administrator has enabled the check in and check out feature in Design Manager, your organization can maintain version control on objects by restricting multiple users from editing the same object simultaneously. With the check in and check out feature enabled, objects must be checked out before they can be edited.

You can check out all objects except folders, headings, and system settings. If the system administrator has enabled a workflow, you can check out only objects with a Work In Progress status. When you check out an object, no other users have access to the object for editing until you or a user with super user privileges checks the object back in.

When you have an object checked out, a green check mark appears next to the icon in the Library. When another user has an object checked out, a red check mark appears next to the icon in the Library.

Check out indicators



Checking out an object

If the system administrator has enabled the check in and check out feature in Design Manager, you must check out an object before you can edit it. You can check out objects individually. You can also check out dependent objects, even if you cannot check out the parent object.

To check out an object:

To	Do this
Check out a single object	Right-click the object in the Library and select **Check Out**.

To	Do this
Check out an object and the objects on which it is dependent	1. In the Library, select the object you want to check out. 2. From the Menu bar, select **Manage > Check Out with dependencies**. The **Mass Check Out** dialog box opens. 3. In the **Types to check out** area, select the types of dependent objects you want to check out. Select **Select All** to select all of the dependent object types. The **Objects to check out** area updates to show the objects being checked out. 4. Click **Check Out All**.

Checking in an object

If the system administrator has enabled the check in and check out feature in Design Manager, you must check in an object after you finish editing it. If you do not check in the object, other users cannot make changes to the object. You can check in objects individually. You can also check in dependent objects, even if you cannot check in the parent object.

To check out an object:

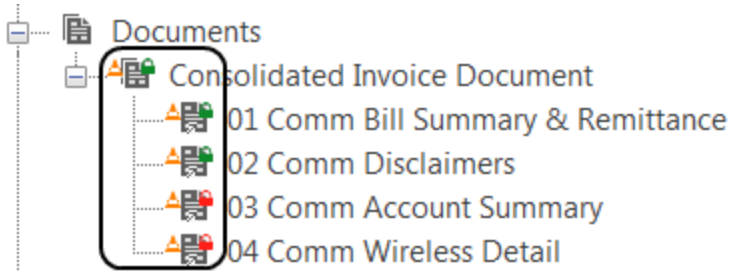
To	Do this
Check in a single object	Right-click the object in the Library and select **Check In**.
Check in an object and the objects on which it is dependent	1. In the Library, select the object you want to check in. 2. From the Menu bar, select **Manage > Check In with dependencies**. The **Mass Check In** dialog box opens. 3. In the **Types to check in** area, select the types of dependent objects you want to check out. Select **Select All** to select all of the dependent object types. The **Objects to check in** area updates to show the objects being checked out. 4. Click **Check In All**.

Object locking

If the system administrator has enabled the object locking feature in Design Manager, your organization can maintain version control on objects by restricting users from editing or deleting particular objects.

You can lock all objects except headings and system settings. When you lock an object, no other users have access to the object for editing until you or a user with super user privileges unlocks the object. When you have an object locked, a green lock appears next to the icon in the Library. When another user has an object locked, a red lock appears next to the icon in the Library.

Lock indicators



Locking an object

If the system administrator has enabled the object locking feature in Design Manager, you can lock an object to prevent other users from making changes to the object. You can lock objects individually. You can also lock dependent objects, even if you cannot lock the parent object.

To lock an object:

To	Do this
Lock a single object	Right-click the object in the Library and select **Lock**.
Lock an object and the objects on which it is dependent	1. In the Library, select the object you want to lock. 2. From the Menu bar, select **Manage > Lock with dependencies**. The **Mass Lock** dialog box opens. 3. In the **Types to lock** area, select the types of dependent objects you want to lock. Select **Select All** to select all of the dependent object types. The **Objects to lock** area updates to show the objects being locked. 4. Click **Lock All**.

Unlocking an object

If the system administrator has enabled the object locking feature in Design Manager, you must unlock an object before another user can make changes to the object. You can unlock objects individually. You can also unlock dependent objects, even if you cannot unlock the parent object.

To unlock an object:

To	Do this
Unlock a single object	Right-click the object in the Library and select **Unlock**.

To	Do this
Unlock an object and the objects on which it is dependent	1. In the Library, select the object you want to unlock. 2. From the Menu bar, select **Manage > Unlock with dependencies**. The **Mass Unlock** dialog box opens. 3. In the **Types to unlock** area, select the types of dependent objects you want to unlock. Select **Select All** to select all of the dependent object types. The **Objects to unlock** area updates to show the objects being unlocked. 4. Click **Unlock All**.

Workflow

If the system administrator has enabled the version control feature in Design Manager, your organization can track the progress of all objects through a workflow, from working copies to final approved versions. Workflows can help your company ensure that content is consistent and conforms to company standards.

When version control is enabled, objects are assigned a status, such as Work in Progress or Submitted, as they move through the approval process. An object's status symbol is located to the left of the object in the Library. Versions of an object, including the approval stages it has been through, are automatically tracked in Design Manager and can be reviewed at any time.

Object status and symbols

Object Status	Description	Symbol
Work in Progress **Note:** You can have only one Work in Progress version per object.	The object's design and properties are editable. This status is the default status.	
Submitted	The object has been submitted for approval.	
Approved **Note:** You can have only one Approved version per object.	The object has been approved by all of the required users.	
Rejected	The object has been rejected by one or more of the approvers. The object's design and properties are editable and the object can be submitted again for approval.	

Object status and symbols, continued

Object Status	Description	Symbol
Archived **Note:** The number of saved Archived versions can be infinite. However, the system administrator can limit the number of saved Archived versions to control excessive memory use when many users are creating versions.	The object has been approved and then archived because a newer version of the object was approved. For example, if version 1 has a status of Approved, and then version 2 is Approved, the status of version 1 changes to Archived.	
Quick Fix in Progress **Note:** You can have only one Quick Fix version per object at a time.	The object is in a Quick Fix state and is being updated. The object's design and properties are editable.	
Quick Fix Submitted	The object is in a Quick Fix state and has been submitted for approval.	
Quick Fix Rejected	The object is in a Quick Fix state and has been rejected by one or more of the approvers. The object's design and properties are editable and the object can be submitted again for approval.	

Design Manager offers two levels of workflow:

- **Basic workflow**—Included with the base product, basic workflow provides a simple workflow that allows users to create Work In Progress objects and submit them for approval, and then have designated users approve or reject the objects. You cannot have multiple levels of approval when using basic workflow, nor can you require more than one designated user to approve an object.
- **Advanced workflow**—Included when you license the Advanced Design Workflow module, advanced workflow lets you create a custom workflow, which can have multiple levels of approval or require a specific number of designated users to approve an object to move it forward in the approval process. Additionally, you can set up a workflow that requires a different group or groups—such as marketing, sales, or legal—to approve each step of the approval process.

Though the number of approval steps can vary based on whether your company uses basic or advanced workflow, the way you submit objects for approval, and then approve or reject them is the same.

Workflow and versioning for Library objects

In Design Manager, when objects move through the workflow, they are assigned incremental whole numbers for versioning. For example, if you have version 1 of a Work in Progress object, and it is approved, the current Work in Progress becomes version 2. When version 2 is approved, version 1 is changed to archived status and version 2 is changed to approved status, and the current Work in Progress becomes version 3. If you clone the Work in Progress version of the object, the clone becomes version 1.

Unlike objects with other statuses, Quick Fix objects are assigned minor version numbers with incremental decimal numbers. An object can have up to 99 Quick Fix versions per major version. For example, if you convert an approved object with a version number of 3, the first Quick Fix version is 3.01. When the Quick Fix version is approved, it is stored in the Library as the approved version 3.01 alongside the approved version 3. You can create up to 99 Quick Fix versions for an object.

If you move a Quick Fix version to the Trashcan, and then later restore it, the restored version is assigned the next minor version number in the Library. For example, suppose you delete version 3.01, and then create versions 3.02 and 3.03. When you restore version 3.01, the restored version becomes 3.04.

Submitting an object for approval

If the system administrator has enabled the version control feature in Design Manager, in most cases, you are required to submit an object before it can be approved. You can submit objects individually. You can also submit dependent objects, whether or not the parent object is also a Work in Progress.

To submit an object for approval:

1. To select the object or objects you want to submit, do one of the following:

To	Do this
Submit a single object	Right-click the object and select **Submit for Approval.** The **Submit for Approval** dialog box opens.
Submit an object and the objects on which it is dependent	a. In the Library, select the object you want to submit. b. From the Menu bar, select **Manage > Submit with dependencies**. The **Mass Submit** dialog box opens. c. In the **Types to submit** area, select the types of dependent objects you want to submit. Click **Select All** to select all of the dependent object types. The **Objects to submit** area updates to show the objects being submitted. d. Click **Submit All**. The **Submit for Approval** dialog box opens.

2. In the **Approval, rejection, and version notes** box, enter any notes related to this version of the object. For example, you can indicate to the approver what has changed. Any notes entered previously appear in the box.
3. If you are not required to submit an object before approving it and you want to send the object directly to the Approved status, select the **Approve immediately** check box.
4. Click **OK**.
5. The object is submitted for approval or the object becomes approved if you selected the **Approve immediately** check box.

Canceling the submission of an object

If you must make changes to a submitted object, you can cancel the submission and return the object to the Work in Progress status. You can cancel the submission of objects individually. You can also cancel the submission of dependent objects, whether or not the parent object has been submitted.

To cancel the submission of an object:

To	Do this
Cancel the submission of a single object	Right-click the object in the Library and select **Cancel Submission**.

To	Do this
Cancel the submission of an object and the objects on which it is dependent	1. In the Library, select the submitted object. 2. From the Menu bar, select **Manage > Cancel with dependencies**. The **Mass Submit** dialog box opens. 3. In the **Types to cancel** area, select the types of dependent objects you want to cancel. Click **Cancel All** to select all of the dependent object types. The **Objects to cancel** area updates to show the objects being canceled. 4. Click **Cancel All**.

Approving an object

If the system administrator has enabled the version control feature in Design Manager, you can review submitted objects and approve them. You can approve objects individually. You can also approve dependent objects, whether or not the parent object has been submitted.

Keep in mind that the system administrator must give you approval permission before you can approve an object.

For more information about approval permissions, see *System Administration* in the Exstream Design and Production documentation.

To approve an object:

1. To select the objects or objects you want to approve, do one of the following:

To	Do this
Approve a single object	Right-click the object and select **Approve**. The **Approve** dialog box opens.
Approve an object and the objects on which it is dependent	a. In the Library, select the object you want to approve. b. From the Menu bar, select **Manage > Approve with dependencies**. The **Mass Approve** dialog box opens. c. In the **Types to approve** box, select the types of dependent objects you want to approve. Click **Select All** to select all of the dependent object types. The **Objects to approve** area updates to show the objects being approved. d. Click **Approve All**. The **Approve** dialog box opens.

2. In the **Approval, rejection, and version notes** box, enter any notes related to this version of the object. For example, you can indicate what components of the object you specifically reviewed. Any notes entered previously appear in the box.
3. Click **OK**.

The object is approved. If you are using basic version control, this step is the last step and the version is approved. If you are using the Advanced Design Workflow module, the object might go through additional approval steps before it is approved.

Unapproving an object

If you want to make changes to an object, you can unapprove the object. When you unapprove an object, it returns to the Work In Progress status, which lets a designer make changes to the object without creating a new version. You can unapprove objects individually. You can also unapprove dependent objects, whether or not the parent object has been approved.

To unapprove an object:

To	Do this
Unapprove a single object	1. In the Library, select the object you want to unapprove. 2. From the Menu bar, select **Manage > Unapprove**.
Unapprove an object and the objects on which it is dependent	1. In the Library, select the object you want to unapprove. 2. From the Menu bar, select **Manage > Unapprove with dependencies**. The **Mass Unapprove** dialog box opens. 3. In the **Types to Unapprove** box, select the types of dependent objects you want to unapprove. Click **Select All** to select all of the dependent object types. The **Objects to unapprove** area updates to show the objects being unapproved. 4. Click **Unapprove All**.

Rejecting an object

If an object does not meet approval standards, you can reject the object. If you reject an object, a designer can resume editing the object and then submit it for approval again. You can reject objects individually. You can also reject dependent objects, whether or not the parent object has been submitted for approval.

To reject an object:

1. To select the objects or objects you want to reject, do one of the following:

To	Do this
Reject a single object	Right-click the object and select **Reject**. The **Reject** dialog box opens.
Reject an object and the objects on which it is dependent	a. In the Library, select the object you want to reject. b. From the Menu bar, select **Manage > Reject with dependencies**. The **Mass Reject** dialog box opens. c. In the **Types to reject** box, select the types of dependent objects you want to reject. Click **Select All** to select all of the dependent object types. The **Objects to reject** area updates to show the objects being approved. d. Click **Reject All**.

2. In the **Approval, rejection, and version notes** text box, enter any notes related to this version of the object. For example, you can indicate the reasons for rejection. Any notes entered previously appear in the box.
3. Click **OK**.

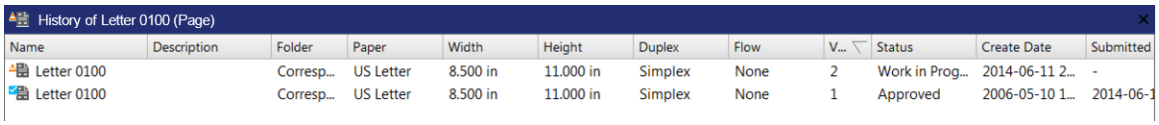
   The object is rejected. A designer can make changes to the object and resubmit it for approval.

Viewing the approval history of an object

1. In the Library, select the object for which you want to view the approval history.
2. Select **Manage > History**.

   The history of the object is displayed in the Edit Panel, with one version on each line. Use the scroll bars to view information about each version, including its location in the Library, the version number, approval history, and object status.

History view of an object



Creating a quick fix version from an approved or archived version

A Quick Fix object is an intermediate version of an existing approved or archived object that can be updated temporarily without affecting the current Work in Progress version or subsequent approved versions. For example, suppose you have an approved version of a page in production and a Work in Progress version of the same page you are preparing for the next production cycle. If you need to make temporary changes to the approved version in production but do not want these changes reflected in the Work in Progress version for the next production cycle, you can create a Quick Fix version.

You can create a Quick Fix version only if there is a version number greater than the version for which you want to create a Quick Fix. For example, version 2 of an object must exist before you can make a Quick Fix version of version 1 of the object. If no version 2 exists, create a Work in Progress version of the object.

To create a Quick Fix version from an approved or archived version:

1. In the Library, select the object from which you want to create a Quick Fix version.
2. Select **Manage > Make Quick Fix**.

The status of the object is changed to Quick Fix and assigned a minor version number in the Library. You can then substitute the Quick Fix version for the approved version during packaging to test the changes. If you want to put the Quick Fix version into a production run, you must submit the object for approval. The approval process for Quick Fix objects is the same as for objects with other statuses; however, if a Quick Fix is created from an archived object, the status is changed to Archived when the object is approved.

For information about packaging Quick Fix versions, see *Preparing Applications for Production* in the Exstream Design and Production documentation.

7.6.9 Deleting an object

In the Library, you can delete objects by dragging it from the Library to the trashcan. You can select multiple objects to delete by holding down the `CTRL` key while clicking each object you want to delete. If you delete multiple objects simultaneously, you receive a prompt as each object is deleted.

If you delete a referenced object, you are deleting only the reference to the object, but not the object itself.

7.7 Searching the design environment

In Design Manager, you can specify search criteria for objects, text, fonts and formats, or variables within the Library; or, you can search for all locations where an object is used in an application. In Designer, you can specify search criteria for text, fonts and formats, styles,

objects, or variables within one or more open documents. To replace text, the object must be in Work In Progress status and you must have edit permissions for that object.

For more information about the Work In Progress status, see "Workflow" on page 88.

To search the design environment for an item, complete the following tasks as required:

- "Finding and replacing text in Design Manager" below
- "Finding and replacing text in Designer" on the next page
- "Finding and replacing variables in Design Manager" on page 100
- "Finding and replacing variables in Designer" on page 101
- "Finding objects in Design Manager" on page 102
- "Finding objects in Designer" on page 103
- "Finding where an object is used in an application" on page 104

7.7.1 Finding and replacing text in Design Manager

1. Select **Tools > Search & Replace**.

   The **Search & Replace** dialog box opens.

2. In the **Search in folder** area, click  to select the folder in which to search. Optionally, you can select the **Search sub-folders** check box to include all sub-folders in the search.

3. Enter your search criteria:

To	Do this
Search for a specific word or phrase and replace it with another specific word or phrase	a. In the **Search for** area, select **Text**. b. In the **Text** box, enter the text you want to search. c. If the capitalization of the word or phrase is specific, select the **Case sensitive** check box. d. If you want to replace the search criteria with a specific word or phrase, enter the replacement criteria in the **Text** box in the **Replace with** area.

To	Do this
Search for specific text formatting and replace it with different text formatting	a. In the **Search for** area, select **Font**. b. Select an option from all of the following drop-down lists to define the search criteria: • From the **Font** drop-down list, select the font name you want to search. • From the **Size** drop-down list, select the font size you want to search. • From the **Format** drop-down list, select the font formatting you want to search. c. If you want to replace the search criteria with specific formatting, select one option from all of the following drop-down lists in the **Replace with** area to define the replacement criteria: • From the **Font** drop-down list, select the font name you want to use for a replacement. • From the **Size** drop-down list, select the font size you want to use for a replacement. • From the **Format** drop-down list, select the font formatting you want to use for a replacement.

4. To limit or expand your search, select the objects you want to search in the **Search object types** area.
5. Initiate a search or a search and replace:

To	Do this
View all occurrences of the search criteria	Click **Search**. An informational message appears, displaying the number of occurrences found and the number of objects in which the occurrences were found. Click **OK**. The search results are displayed in a list in the Edit Panel. You can double-click a list item to view the object that contains the search criteria in the Property Panel.
View each occurrence of the search criteria and manually select when to insert replacement criteria	Click **Replace**. The search results are displayed in the **Replace?** dialog box with the search criteria highlighted. You can choose whether to skip or replace each occurrence. After making selections for each occurrence, an informational message appears, displaying the number of occurrences found, replaced, and skipped. Click **OK**.
Replace all occurrences of the search criteria automatically without reviewing replacements	Click **Replace All**. An informational message appears, displaying the number of occurrences found, replaced, and skipped. Click **OK**.

7.7.2 Finding and replacing text in Designer

1. Select **Edit > Replace**.

   The **Replace** dialog box opens.
2. Click +.

The **Replace** dialog box expands.

3. Enter your search criteria:

To	Do this
Search for a specific word or phrase	In the **Find** area, select the **Text** check box and enter the text you want to search.
Search for specific text formatting	Make one or more selections in the **Find** area: • To search for a specific word or phrase, select **Text** and enter the text you want to search. • To search for a specific font, select the **Font** check box and select the font name you want to search from the drop-down list. • To search for a specific font size, select the **Size** check box and select the font size you want to search from the drop-down list. • To search for a specific font format, select the **Format** check box and select the font format you want to search from the drop-down list. • To search for a specific font color, select the **Color** check box, click the color well to select the color to search, and click **OK**. • To search for a specific style named in a style sheet, select the **Style** check box and select the style name you want to search from the drop-down list. **Note:** The **Style** check box and drop-down list are active only if the current page has a style sheet applied to it.

4. If you want to make replacements, enter your replacement criteria:

To	Do this
Replace the search criteria with a specific word or phrase	In the **Replace with** area, select the **Text** check box and enter the replacement text.

To	Do this
Replace the search criteria with specific formatting	Make one or more selections in the **Replace with** area: • To replace the search criteria with a specific word or phrase, select **Text** and enter the text you want to use for a replacement. • To replace the search criteria with a specific font, select the **Font** check box and select the font name you want to use for a replacement from the drop-down list. • To replace the search criteria with a specific font size, select the **Size** check box and select the font size you want to use for a replacement from the drop-down list. • To replace the search criteria with a specific font format, select the **Format** check box and select the font format you want to use for a replacement from the drop-down list. • To replace the search criteria with a specific font color, select the **Color** check box, click the color well to select the color to use for a replacement, and click **OK**. • To replace the search criteria with a specific style named in a style sheet, select the **Style** check box and select the style name you want to use for a replacement from the drop-down list. **Note:** The database must contain the specific font and format you specify for your replacement criteria, or you cannot make any changes.

5. In the **Search options** area, select your search options:

To	Do this
Consider only whole words that match the search criteria during search and replace	Select the **Match whole word only** check box.
Consider capitalization during search and replace	Select the **Match case** check box.
Search only the current text box	From the **Scope** drop-down list, select **Current Edit Area**. **Note:** By default, Designer searches only from the cursor insertion point to the end of the current text box. To search an entire text box, place the cursor at the beginning of the text box.
Search beyond the current text box to include all text in the current document	From the **Scope** drop-down list, select **Entire Document**.
Search beyond the current text box or document to include all documents currently open in Designer	From the **Scope** drop-down list, select **All Open Documents**.

6. Initiate a search or a search and replace:

To	Do this
View occurrences of the search criteria one at a time	Click **Find**. The first occurrence of the search criteria is highlighted in the design window. Press `F3` to move to the next occurrence. When you have moved through all occurrences, you receive an informational message.
View each occurrence of the search criteria and manually select when to insert replacement criteria	a. Click **Find**. The first occurrence of the search criteria is highlighted in the design window. b. Click **Replace**. The occurrence is replaced with the replacement criteria and highlighted. c. Repeat step a through step b until you have made all replacements. When you have moved through all occurrences, you receive an informational message.
Replace all occurrences of the search criteria automatically without reviewing replacements	Select **Replace All**. You receive an informational message that shows the number of occurrences replaced.

7.7.3 Finding and replacing variables in Design Manager

1. Select **Tools > Search & Replace**.

   The **Search & Replace** dialog box opens.

2. In the **Search in folder** area, click  to select the folder in which to search. Optionally, you can select the **Search sub-folders** check box to include all sub-folders in the search.

3. In the **Search for** area, select **Variable**.

4. Click  .

   The **Select Variable** dialog box opens.

5. Click any button at the top of the **Select Variable** dialog box and make selections from the drop-down lists to expand or narrow the number of variables that appear in the list by variable type or location.

6. Select a variable from the list and click **OK**.

7. If you want to replace the search criteria with a specific variable, select **Variable** in the **Replace with** area.

8. Click  .

   The **Select Variable** dialog box opens.

9. Optionally, you can click any button at the top and make selections from the drop-down lists to filter what appears in the list by variable type or location.
10. Select a variable from the list and click **OK**.
11. If you want to limit or expand your search based on object type, select one or more objects in the **Search object types** area.
12. Initiate a search or a search and replace:

To	Do this
View all occurrences of the search criteria	Click **Search**. An informational message appears, displaying the number of occurrences found and the number of objects in which the occurrences were found. Click **OK**. The search results are displayed in a list in the Edit Panel. You can double-click a list item to view the object that contains the search criteria in the Property Panel.
View each occurrence of the search criteria and manually select when to insert replacement criteria	Click **Replace**. The search results are displayed in the **Replace?** dialog box with the search criteria highlighted. You can choose whether to skip or replace each occurrence. After making selections for each occurrence, an informational message appears, displaying the number of occurrences found, replaced, and skipped. Click **OK**.
Replace all occurrences of the search criteria automatically without reviewing replacements	Click **Replace All**. An informational message appears, displaying the number of occurrences found, replaced, and skipped. Click **OK**.

7.7.4 Finding and replacing variables in Designer

In Designer, you can search for specific variables, but you must make any required replacements manually.

To find a variable:

1. Select **Edit > Search > Variable**.

   The **Select Variable** dialog box opens.
2. Click any button at the top of the dialog box and make selections from the drop-down lists to expand or narrow the number of variables that appear in the list by variable type or location.

   All occurrences of the variable in the current document are highlighted in the design window.
3. Select a variable from the list and click **OK**.
4. To remove the highlighting, select **Edit > Clear search criteria**.

7.7.5 Finding objects in Design Manager

In Design Manager, you can search for objects by defining a set of criteria. Using a filtered search lets you easily track objects used in applications or found in the design database. If you are using DB2 or Oracle, the filtered search is case-sensitive. If you are using Microsoft SQL Server, the filtered search is not case-sensitive.

To use a filtered search to locate objects:

1. In the Library, select the heading for the type of object you want to search for, such as **Documents** or **Rules**. If you want to search all objects in a folder, select the root folder.
2. Select **View > Filtered Search**.

   The **Filtered Search** dialog box opens.
3. In the **Criteria** area, select general criteria to use in the search (for example, the names of the object, folder, or object creator; creation, modification, or expiration dates).
4. In the **Approval criteria** area, select approval criteria to use in the search, such as the stage of the approval process, the approver, approval date, or version notes.

   Note: You can search for approval criteria only on objects that are part of an approval process.
5. In the **Check out and lock criteria** area, select workflow criteria to use in the search, such as object status, the user name of the person who last changed the status of the object, or the date the status changed.
6. Click **OK**.
7. The search results are displayed in a list in the Edit Panel. You can double-click a list item to view the object that contains the search criteria in the Property Panel.

Using Filtered Search to Find Metadata Object Names and Values

In addition to searching for objects based on general criteria, you can expand the search further by basing your search on metadata object names and values. When you create an object in Design Manager, you can apply a metadata object, or tag, to reference the Library object you created.

To search based on metadata object names:

1. In the Library, select the heading for the type of object you want to search for, such as **Documents** or **Rules**. If you want to search all objects in a folder, select the root folder.
2. Select **View > Filtered Search**.

The **Filtered Search** dialog box opens.

3. In the **Criteria** area, select the **Metadata** check box.
4. Click  .

   The **Select Metadata** dialog box opens.
5. In the **Name** box, enter the name of the metadata object, or from the list, select the metadata object for which you want to search.
6. To add a metadata value to the search criteria, select the **Metadata value** check box, enter the value in the **Metadata value** box, and from the drop-down list, select one of the following criteria:
   - **Contains**
   - **Equals**
   - **Begins**
   - **Ends**
7. Click **OK**.

   The **Select Metadata** dialog box closes and the Edit Panel displays the search results.

For more information about applying metadata to objects, see *Designing Customer Communications* in the Exstream Design and Production documentation.

7.7.6 Finding objects in Designer

In Designer, you can perform a general search for objects that meet specific criteria, or you can perform a search for objects that affect or are affected by a specific object.

Searching for objects that meet specific criteria

1. Select the appropriate option based on the search you want to perform:

To	Do this
Search for objects that overlap	Select **Edit > Search > Overlapping objects**.
Search for objects that are positioned relative to other objects	Select **Edit > Search > Objects relative to other objects**.
Search for objects that have rules applied to them	Select **Edit > Search > Objects with rules**.
Search for objects that are configured to grow in height	Select **Edit > Search > Objects with growing height**.

   All occurrences of the variable in the current document are highlighted in the design window.

2. To remove the highlighting, select **Edit > Clear search criteria**.

Searching for objects that affect or are affected by a specific object

1. Select the object in the design window.
2. Select the appropriate option based on the search you want to perform:

To	Do this
Search for objects that can cause the selected object to move	Select **Edit > Search > Cause the selected object to move**.
Search for objects that are positioned relative to the selected object	Select **Edit > Search > Relative to selected object**.

   All occurrences of the variable in the current document are highlighted in the design window.

3. To remove the highlighting, select **Edit > Clear search criteria**.

7.7.7 Finding where an object is used in an application

When changing an object, it is helpful to know all the places where it is used, so you can make sure changes do not adversely affect any other objects. You can only perform this search in Design Manager.

To find where an object is used:

1. In the Library, select an object.
2. Select **Manage > Where Used**.

   The **Where Used** dialog box opens.
3. From the **Show results** drop-down list, select the location for Design Manager to display the results.
4. If you want to limit the search based on the version of the object, select the appropriate version from the **Object versions to search for** drop-down list.
5. If you want to limit or expand your search based on object type, select one or more objects in the **Objects to search for** area.
6. Click **OK**.

   The search results are displayed in the Edit Panel or Property Panel.

7.8 Working in the design window

The design window is the area within Designer where you can put together the overall design and layout for customer communications. What you create is limited only by your imagination. To get started in the design window, you can either create or edit one of the following types of objects:

- Messages
- Message templates
- Multiple-ups
- Pages
- Page templates
- Paragraphs
- Sections

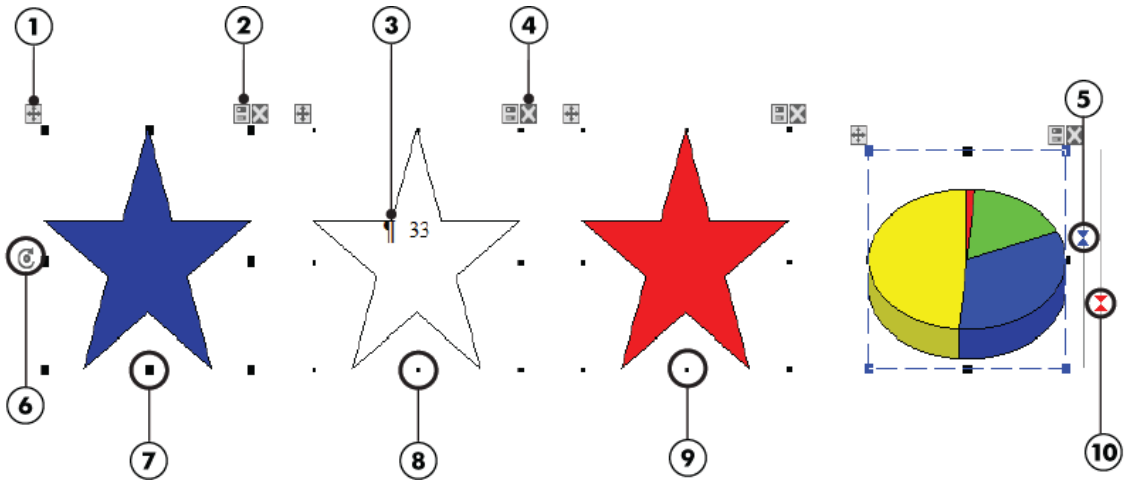
After you have one of those objects open in the design window, you can achieve your intended design by adding drawing objects. Drawing objects include lines, shapes, text boxes, images, forms controls, and more.

To insert a drawing object, click a button on the Drawing Objects toolbar. Some objects open dialog boxes (for example, images and frames), which you must complete to insert the object. Other objects change the cursor (for example, charts, text boxes, and shapes). For those objects, place the cursor where you want to insert the object in the design window, and then

click and drag until the design object is roughly the size you want it to be.

Each of the drawing objects you use to create your design have certain types of indicators, which allow you to view information about objects or edit them.

Drawing object indicators



1	**Move handle**—Click and drag to move the object.
2	**Properties button**—Click to access the object properties.
3	**Paragraph indicator**—View where paragraph breaks occur in an object that contains text.
4	**Delete button**—Click to delete the object.
5	**Angle slider**—Click and drag up or down to increase or decrease the angle of a 3-D chart.
6	**Rotation tool**—Click and drag to rotate the object up to 360 degrees.
7	**Major handles**—Click and drag a handle on any side or corner to resize the object. When major handles are visible, the object is selected.
8	**Minor handles**—Click and drag a handle on any side or corner to resize the object. When minor handles are visible, the object is grouped with other objects or you can edit text inside the object.

9	**Locked handles**—When locked handles are visible, you might not be able to rotate, move, or resize the object, depending on the object settings.
10	**Thickness slider**—Click and drag up or down to increase or decrease the thickness of a 3-D chart.

To place text in the design, you can either use text boxes or convert polygon shapes to allow text. You can control the formatting of text, including the font, size, and alignment, by highlighting the text and using the buttons on the Formatting toolbar. Special text, such as hyperlinks or text with rules, is indicated by wavy lines that appear below the text.

Text indicators

Wavy Line Color	Indicates
Blue	Hyperlink
Brown	Excluded word
Green	Grammar error
Pink	Text rule
Purple	Variable
Red	Misspelled word
Teal	Interactive area

Note: Indicators do not appear if the object is submitted for approval.

Within text, you can insert variables into your design to personalize the communication for your customer. To insert a variable, open the Variable Palette and double-click the variable you want to insert. For example, suppose you have a text box that serves as an address block. You can insert variables that represent the customer's name, mailing address, or account number. When you are working with variables in your design, you can toggle between the variable names and design samples by clicking  on the Properties toolbar.

7.8.1 Saving an object in the design window to the library

If you create a drawing object for your design that you would like to use in other designs, you can save the object as it appears in the design window as a Library component. When you create a Library component, you can set up restrictions on the object to restrict users from changing the

size or placement of the object in the design. These restrictions are useful if you want to ensure consistency for logos or other types of controlled design objects.

To save an object in the design window to the Library:

1. In the design window, select the object you want to save to the Library.
2. Right-click the object and select **Library component > Add to Library** from the shortcut menu.

   The **Folders** dialog box opens.
3. Select the folder in which you want to save the object.
4. Click **OK**.

   The **[Object]** dialog box opens.

   For example, if you are saving a chart to the Library, the **Chart** dialog box opens.
5. In the **Name** box, enter a name. In the **Description** box, enter a description (optional).
6. Click **Next**.
7. If you want to restrict users from resizing the object, select the **Size is locked** check box.
8. If you want to restrict users from rotating the object, select the **Rotation is locked** check box.
9. If you want to restrict users from moving the object to a different position on the page, select the **Position is locked** check box and enter the page coordinates for the object in the **Horizontal position** and **Vertical position** boxes.
10. Click **Finish**.

    The object is added to the Library as a Library component.