

**OpenText Exstream
Communications Processing using
Communications Server 16.6**

OpenText Experience Suite

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Developed by OpenText Learning Content Development and Learning Services

Course Name: OpenText Exstream Communications Processing using Communications Server

Course Number: 3-7630

Part Number: 3-7630-166-00

Welcome

Welcome to this OpenText Exstream Communications Processing using Communications Server course.

In this course participants will learn how to process communications designed with Exstream Design and the new Exstream Communications Designer with OpenText Communications Server.

Participants will go through the process of designing a communication in Exstream Designer and the Exstream Communications Designer and will package the communication into an Exstream Design Manager application that will be processed by Communications Server.

An overview of the Exstream architecture including Design Manager, Designer, Communications Builder and Control Center will be presented to the students.

Participants will also learn to design and create communications using content authoring tools such as Content Author and Empower which can be modified “Ad-Hoc” by business users without needing the participation of IT.

Additionally, student will learn how to use the new Exstream Communications Orchestrator to create flow models for customer communications management processes.

Thank you for participating in this course. Should you require any further information, please contact us at OpenText Learning Services.

Good luck, and enjoy your learning experience.

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Text Conventions

This workbook uses the following conventions:

Convention	What it is Used For
<i>Italic</i>	Italics are used for Workshops and Exercises.
Monospace	Monospaced text is used to represent sample code.
Bold	In instruction steps, indicates the action to be taken. In text it indicates emphasis
<>	Angle brackets (<>) represent an element of syntax you must substitute with a specific value.
	This icon represents a lesson symbol where the student watches the instructor.
	This icon represents a lesson symbol where the student follows along with the instructor.
	This icon represents a lesson symbol where the students perform the exercise on their own.
	This icon represents an optional or advanced lesson symbol where the students perform the exercise on their own.
	This icon represents a note that supplies additional information.
	This icon represents a tip that supplies additional shortcut information.
	This icon represents a collection of Tricks, Tips, and Traps that is used the end of a chapter.
	This icon represents a caution that supplies warning information.

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1. OpenText Exstream overview

Objectives

On completion of this chapter, participants should be able to:

- Identify the functionality scope of OpenText Exstream
- Describe the Exstream platform
- Identify the components that comprise the OpenText Exstream platform

The Exstream platform

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.

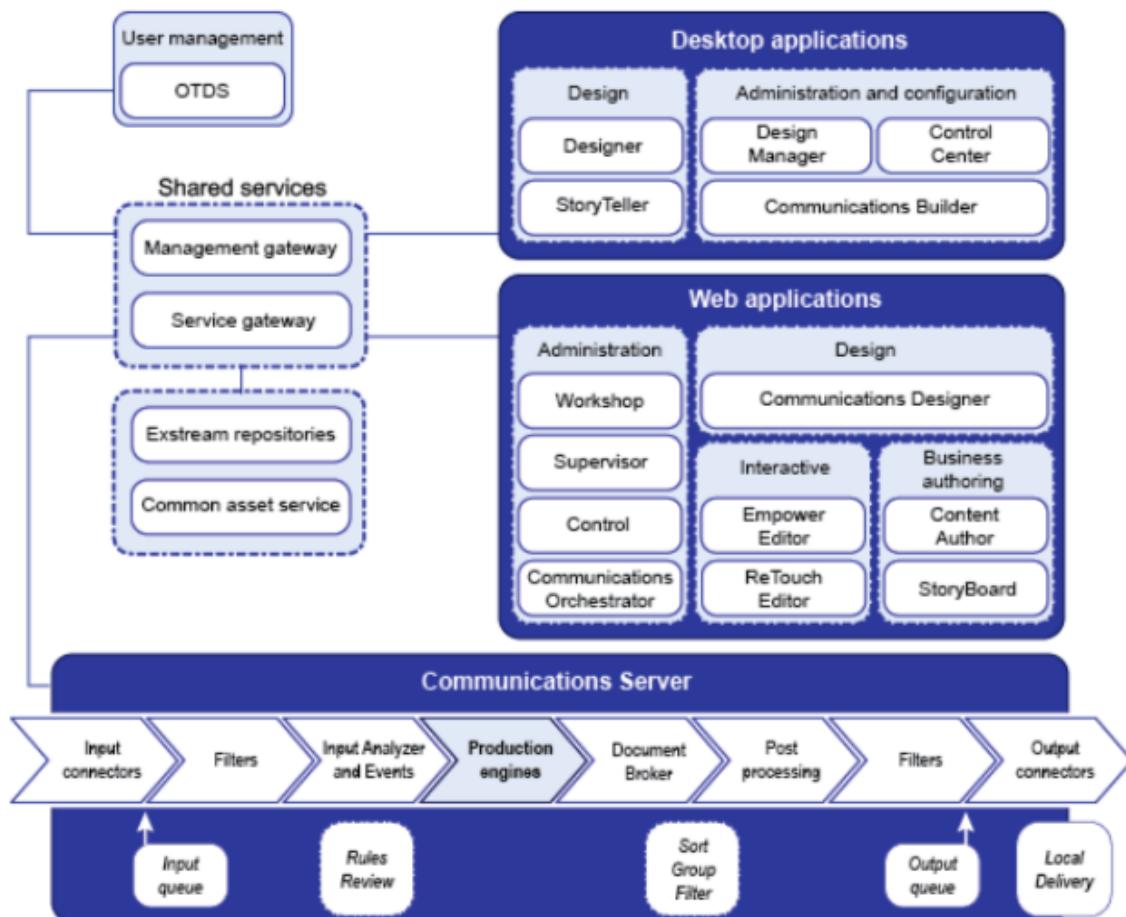


Figure 1-1: Exstream platform

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
- Exstream web applications
- Communications Server layer
- Shared services layer
- External applications

Exstream desktop applications

The desktop 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.
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 managing and interacting with resources that are stored in the common asset service (CAS). The CAS is 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, Communications Builder projects, and PowerDocs templates.
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 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 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 and also halted in reviewer.
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.
Communication Orchestrator	Communications Orchestrator is a web application that lets users create flow models for customer communications management processes.
Communications Server layer	<p>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.</p> <p>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:</p>
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.
Shared services layer	<p>Communications Server applications and other Communications Server applications, such as service gateways, run on the Exstream framework, which contains a management gateway and core platform services.</p> <p>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.</p> <p>The service gateway connects the web applications to the Exstream repositories and to the CAS.</p>

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.

How Design and Production works

Design and Productions is 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:

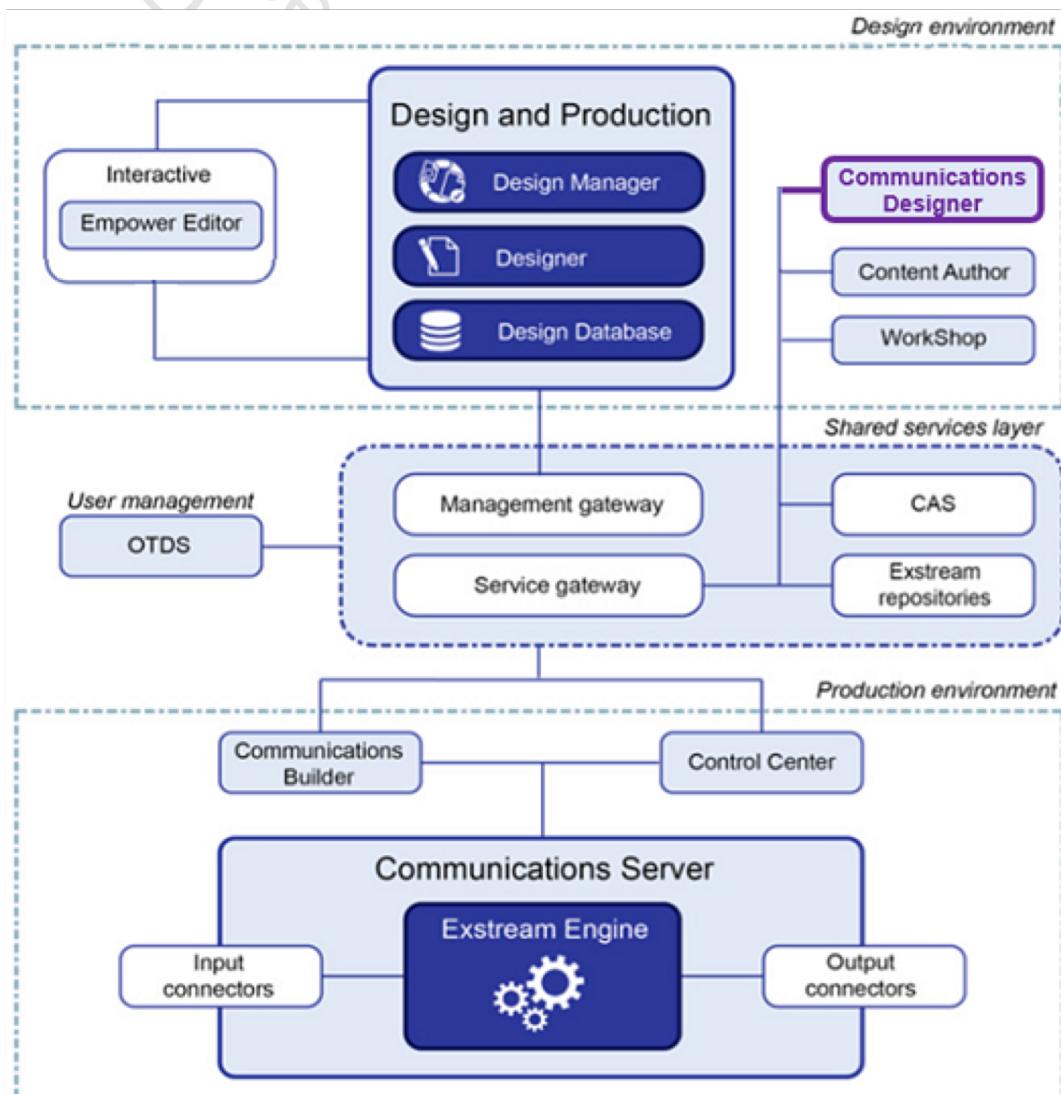


Figure 1-2: Exstream platform components

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.

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.

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.

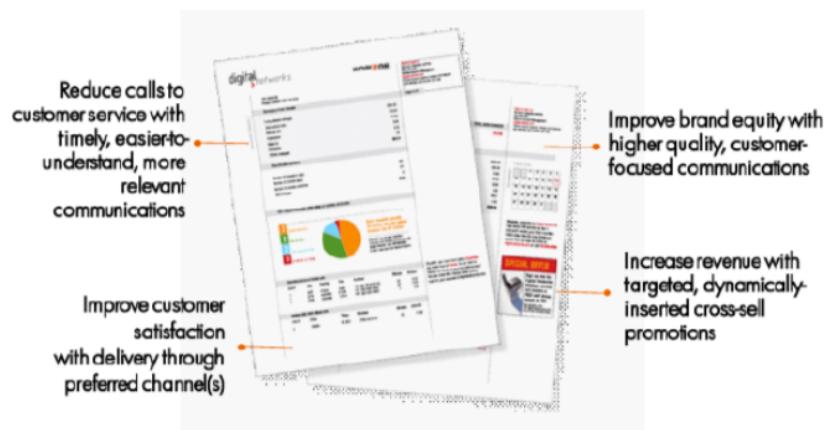
In addition to relevancy, the key to improving customer satisfaction is clarity and the ability to deliver communications through preferred channels. Exstream offers a comprehensive feature set for producing visually appealing documents that simplify complex information, including data-driven charts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

Figure 1-3:

Effectiveness



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.

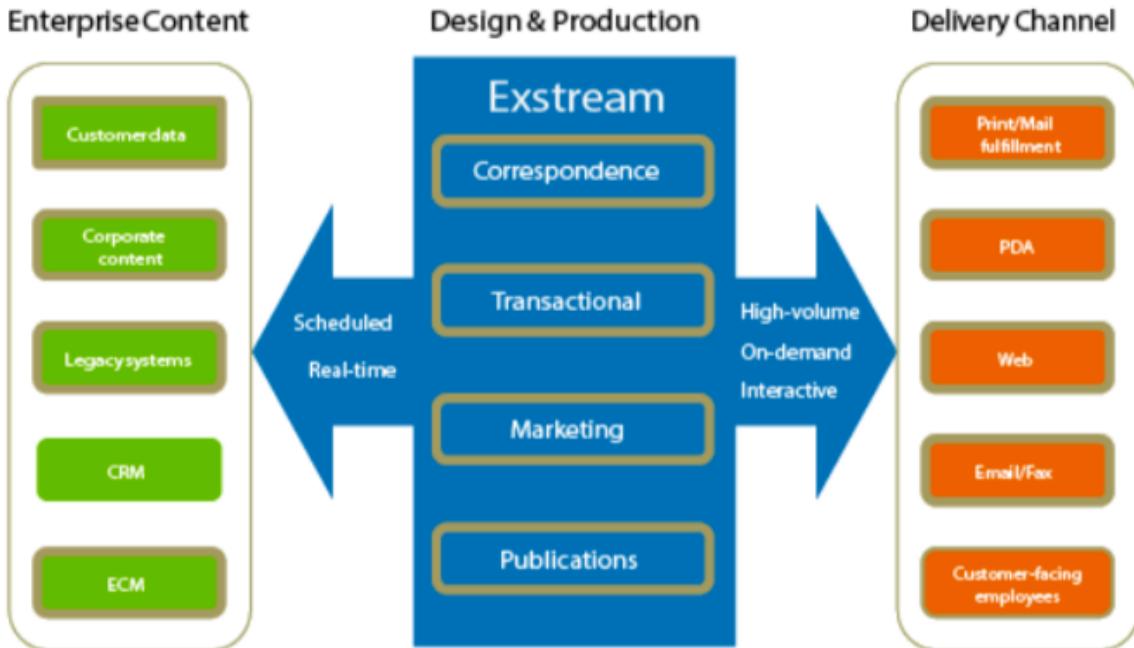


Figure 1-4: Reduce complexity

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.



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.

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.

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

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

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

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 backend 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

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.

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
- Data and content integration
- Interactive editing
- On-demand delivery
- Production output and testing

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 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.

The Design interface modules are:

- **Designer:** 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.

- **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.
- **Advanced Tables:** 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.
- **Dynamic Charting:** 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.

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.

Exstream provides 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.

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.

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

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.

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.

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 module covered in this course is Empower.

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.

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.

2. OpenText Directory Services

On completion of this chapter, participants should be able to:

- Identify the use of OpenText Directory Services (OTDS)
- Describe the role of OTDS in an Exstream installation
- Define some basic access control concepts
- Verify OTDS setup
- Integrate OTDS with Designer Manager
- Manage users and groups in OTDS

OpenText Directory Services (OTDS) overview

OTDS, the OpenText identity management system, provides the access control for Control Center, Describer, Communications Builder, and WorkShop, StoryBoard, ReTouch, and Supervisor web applications. OTDS can synchronize with identity providers like Microsoft Active Directory to retrieve user and group information which is mapped to access roles providing secure access to the Exstream components.

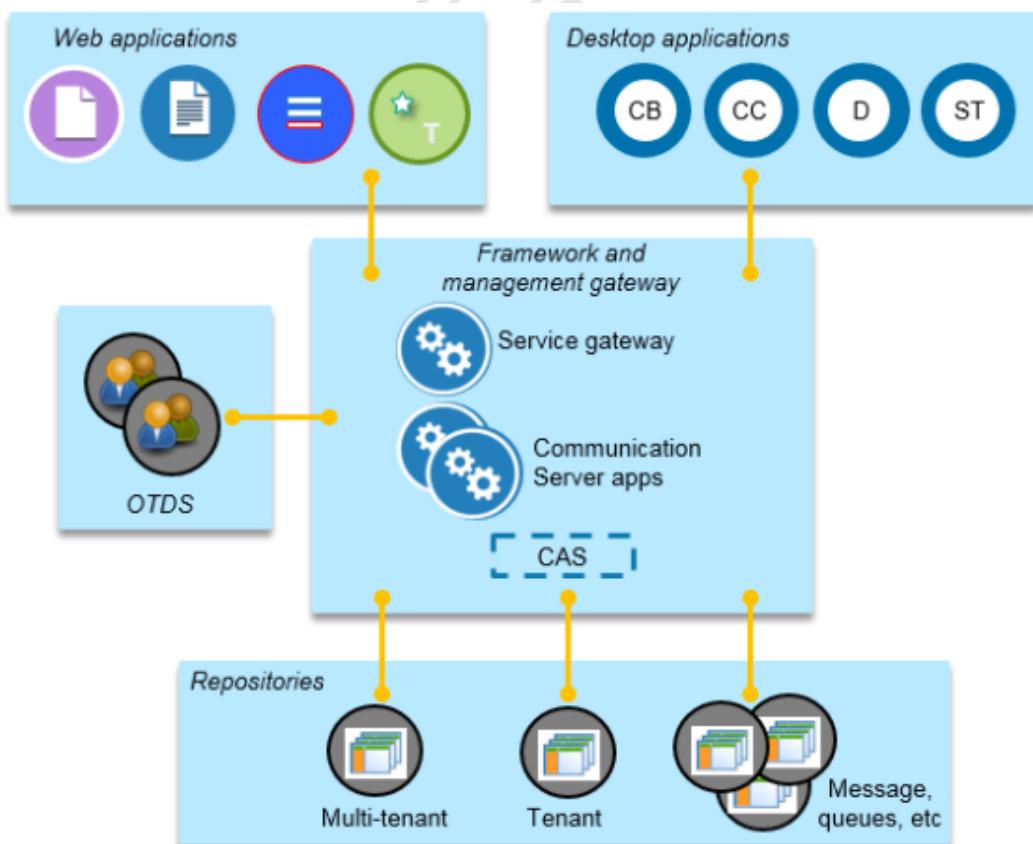


Figure 2-1: Exstream components overview

Tenancy concepts

Exstream supports both single-tenant and multi-tenant environments. In single- tenant environments, a company or organization runs the Exstream components on one or more computers or hosts. The company develops and manages its own Communications Server and repositories.

In multi-tenant environments, several client organizations (or tenants) share one or more instances of the framework and management gateway. Each tenant in the Exstream environment has a unique ID and runs its own Communications Server applications. All the applications and data in the environment are separated by tenant IDs. This allows tenants to share databases or schemas or to use separate databases or schemas.

Each tenant has its own users and groups in OTDS, which controls who can access the tenant's applications and data. When users of these groups log on to WorkShop, StoryBoard, Control Center, Describer, etc. they can only view and access the data and resources that belong to their tenant. For example, if an Exstream environment has two tenants, Tenant 1 and Tenant 2, then when a user from Tenant 1 logs on to Control Center, only the applications and repositories that belong to Tenant 1 are displayed.

User Partitions

A user partition is a logical grouping of users. A synchronized user partition is synchronized with a specific identity provider when it is created. You can create multiple user partitions that point to the same identity provider, choosing different users and groups for each user partition, or you can create one simple partition that encompasses all users and groups in an identity provider. A non-synchronized user partition lets you manually create and maintain users and groups. There is no limit to the number of user partitions you can create.

Resources

Resources represent each application that you want to connect to your Directory Services server for synchronization and authentication. You can create a non-synchronized resource or a synchronized resource.

Access Roles

Access Roles define which resources you want your users and groups to have sign in privileges for. An access role can be assigned to users or groups for any number of resources.

Users and Groups

Users and groups are contained within partitions. You can view details such as the user partition to which the user or group belongs, and the location, in that partition, of the user or group.

Trusted Sites

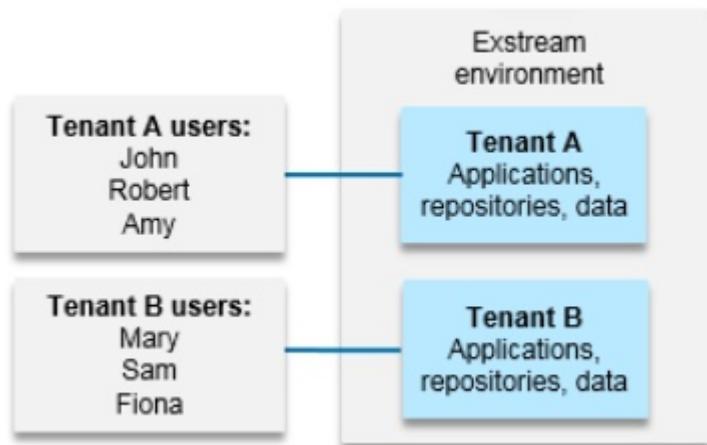
Trusted Sites are trusted addresses that Directory Services will allow to refer to a forwarding address. During authentication, if the referring URL contains a forwarding address, Directory Services will redirect the user's browser to that address. This is necessary so that Directory Services can point the user's browser back to the originating address. For example, the user accesses Content Server and Content Server redirects to Directory Services for authentication. After authenticating, Directory Services will redirect the user's browser back to Content Server if the Content Server URL is a trusted referring address.

Access control concepts

Each Exstream tenant has its own users One Exstream environment can have a single tenant or can have multiple tenants. A tenant can be a customer, company, or organizational unit that has its own set of users. When users log on as a tenant, their view of the system is based on their tenant. Users from one tenant cannot see or access another tenant's applications or data.

In the image below, John, Robert, and Amy from Tenant A have access to the applications, repositories, and data that belong to Tenant A. While Mary, Sam, and Fiona have access to the applications, repositories, and data that belong to Tenant B.

Figure 2-2:
Each Exstream tenant has its own users



Roles control access and permissions The users for each Exstream tenant are assigned to one or more roles. The roles control the following:

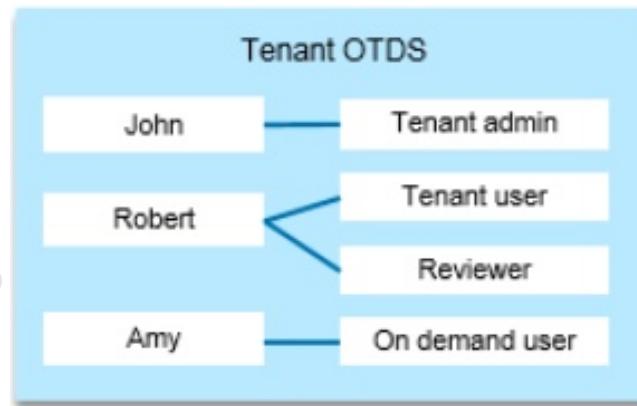
- Which desktop applications and web applications users can access.
- Which permissions users have in each application.

For example, if John is assigned to the tenant administrator role, John can access Control Center, Communications Builder, Describer, and the web applications. Whereas, if Robert is assigned to the Reviewer role, Robert can only access the web applications.

Tenant OTDS

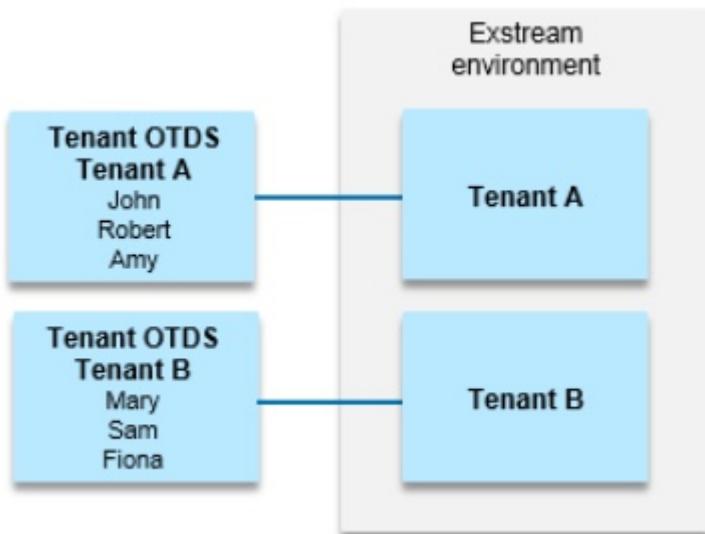
The users for one tenant are created in a component called the tenant OTDS. This component is created in OTDS. The tenant OTDS contains one group for each of the Exstream roles: tenant administrators, tenant users, reviewers, on demand users, and any customized roles specific for the tenant. Users are assigned to these groups in the tenant OTDS.

Figure 2-3:
Tenant OTDS



There is one tenant OTDS for each Exstream tenant. When a tenant is added to the Exstream environment, it is connected to its tenant OTDS. This connection controls who can log on to the tenant's Exstream environment.

Figure 2-4:
Tenants



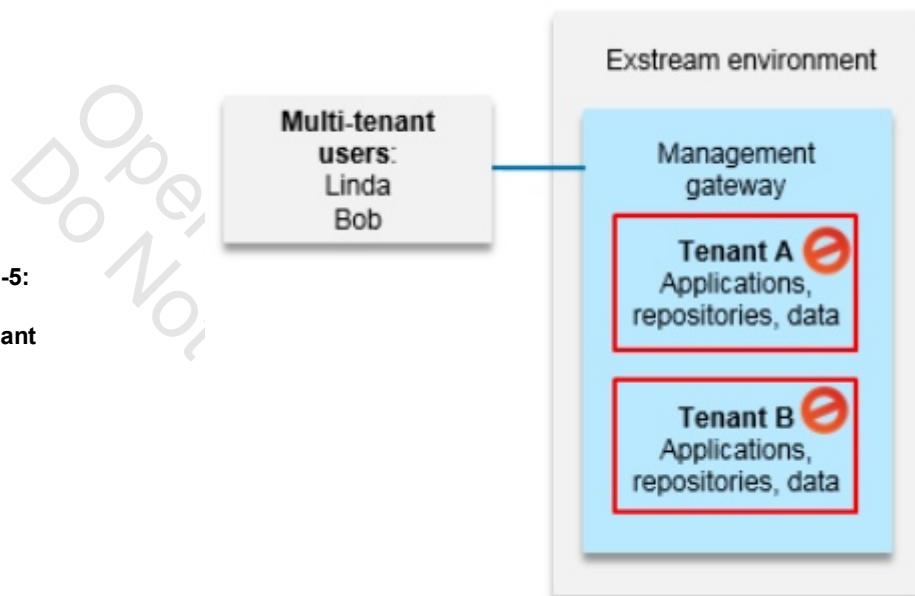
**Multi-tenant users
manage the overall
environment**

In order to manage the overall environment, there is another group of users who can add tenants via the management gateway. These users cannot see or access any of the applications, repositories, or data that belong to the tenants.

The image below shows how Linda and Bob have access to the management gateway, but no access to either tenant's applications or data.

Figure 2-5:

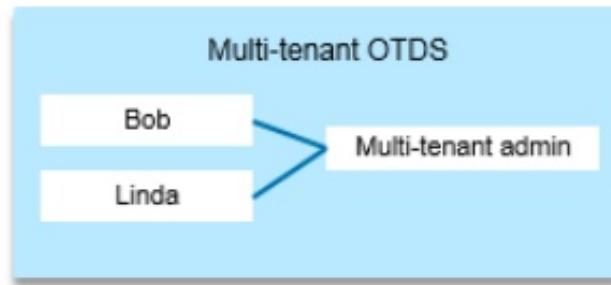
Multi-tenant



The group of users who manage the overall environment are assigned the multi-tenant administrator role. Multi-tenant administrators only have access to the Exstream ss_tenantadmin utility.

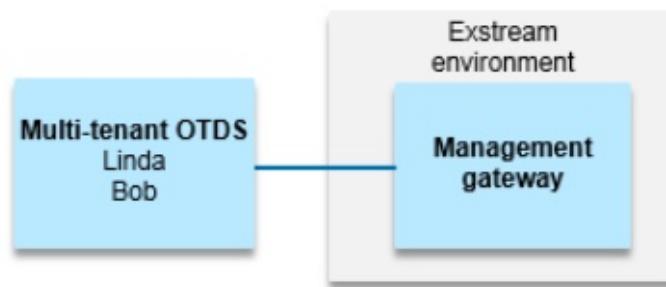
Multi-tenant OTDS	The multi-tenant administrator users are created in a component called the multi-tenant OTDS. This component is created in OTDS and contains the multi-tenant administrators group. The users who will manage the overall environment must be assigned to this group.
--------------------------	---

Figure 2-6:
Multi-tenant OTDS



When the management gateway is configured, it is connected to the multi-tenant OTDS. After this, users assigned to the multi-tenant administrator group can use the ss_tenantadmin utility.

Figure 2-7:
Multi-tenant OTDS



Options and recommendations

To set up OTDS for Exstream you need to configure the following components:

- The multi-tenant OTDS, which contains the group for the multi-tenant administrators who manage the overall environment.
- One tenant OTDS for each Exstream tenant. The tenant OTDS contains the groups for the tenant administrators, tenant users, reviewers, on demand users, and any customized groups. The groups can access the tenant's environment in Exstream via Communications Builder, Control Center, and the web applications.

Understanding the OTDS tenancy concept OTDS supports running multiple tenant backends in a single OTDS server. Each backend has its own set of OTDS data: resources, user partitions, Access roles, authentication handlers, and system attributes. The default installation of OTDS includes a default backend. Tenant backends can be added to OTDS via the command line interface.

Requirements for Exstream tenants

There are many ways you can set up OTDS for Exstream. However, the following requirements always apply:

- Each tenant in the Exstream environment must always have its own tenant OTDS. The tenant OTDS contains the groups of users that can access the tenants environments in Communication Center (i.e. tenant administrators, tenant users, reviewers, on demand users, and any customized groups).
- Each tenant OTDS must always be created in a separate OTDS backend or separate OTDS server. It is not possible for two tenants to share an OTDS server or backend. Having a separate OTDS backend or OTDS server for each Exstream tenant is necessary so that users from one tenant cannot log on to another tenant's Exstream environment.
- Each Exstream tenant can only be connected to one tenant OTDS. The tenant OTDS must be created in a single OTDS backend or OTDS server. It is not possible to connect an Exstream tenant to several different OTDS backends or OTDS servers.

Recommended method of setting up OTDS for Exstream

To set up OTDS for Exstream, OpenText recommends that you use an OTDS installation with multiple backends and that you configure OTDS in the following way:

- Configure the multi-tenant OTDS in the default OTDS backend. This backend has its own Exstream partition, resource and users. It will only contain the group for the multi-tenant administrators (OTDS group name: strsmultitenantadmins).
- Configure the tenant OTDS for each Exstream tenant in a separate OTDS tenant backend. This requires that you add a tenant to OTDS for each tenant in your Exstream environment. Each Exstream tenant then has its own OTDS backend with an Exstream partition, resource, users, and groups (i.e. tenant administrators, tenant users, reviewers, on demand users, and any customized groups with the OTDS group names: strstenantusers, strstenantadmins, strsreviewers, strsondemandusers, and <customized groups>).

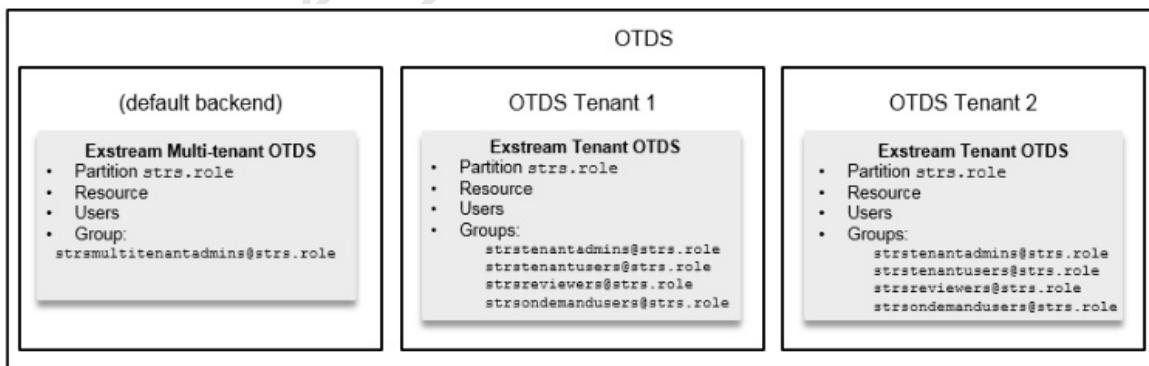


Figure 2-8: Exstream multi-tenant environment

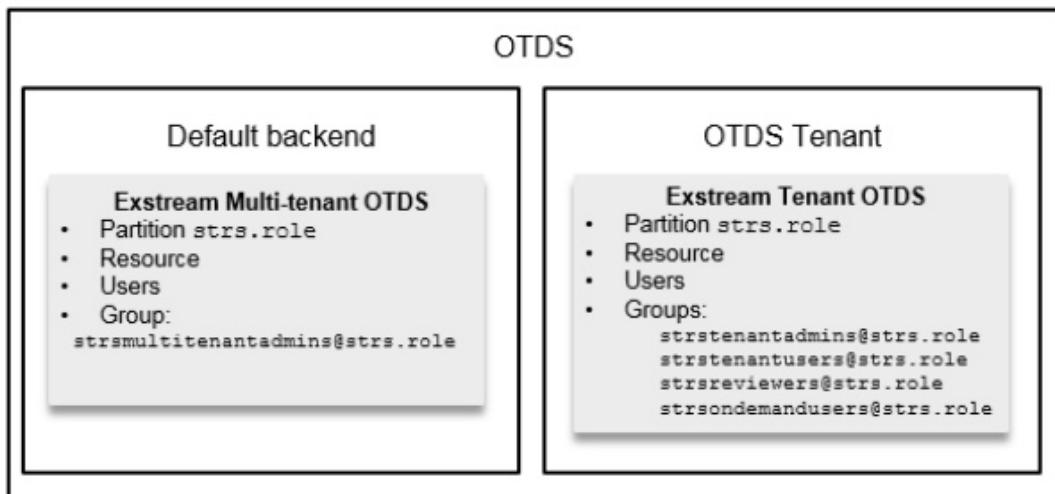
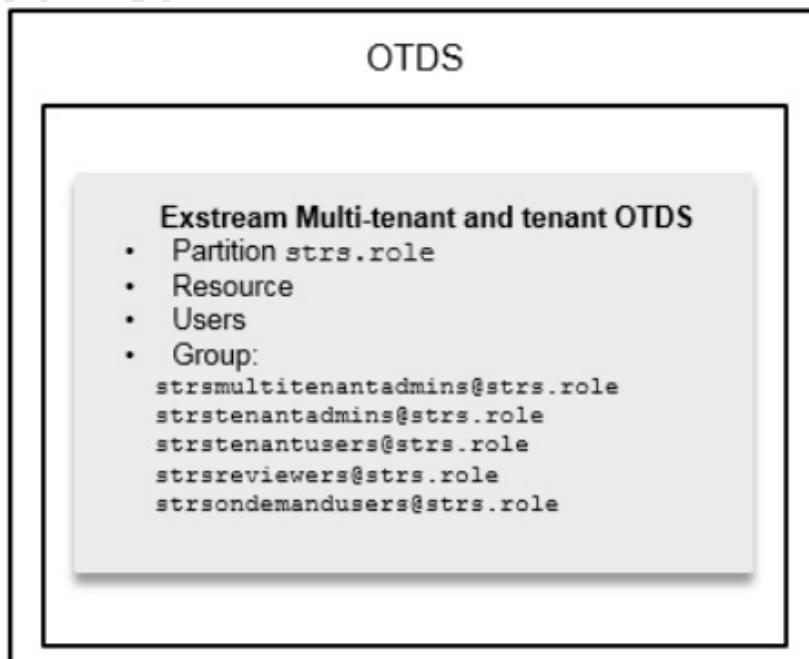


Figure 2-9: Exstream single tenant environment

Alternative options – Exstream environments with multiple tenants	<p>There are other ways you can set up OTDS for Exstream. Some examples of how you can do this in an Exstream environment with multiple tenants include:</p> <ul style="list-style-type: none"> • Using separate OTDS servers for each tenant OTDS. In this scenario, each tenant will still have its own Exstream resource, user partition, groups, etc., but these are created in separate OTDS servers. • Configuring the multi-tenant OTDS in the same backend as a tenant OTDS. In this scenario, you create the multi-tenant administrators in the same backend as the groups for the tenant users, tenant administrators, reviewers, on-demand users, and any customized groups.
Alternative option – Exstream environments with single tenants	<p>In an Exstream environment with a single tenant, you can configure both the multi- tenant OTDS and tenant OTDS in one backend. In this scenario, all the groups are in one OTDS server or backend.</p>

Figure 2-10:
Exstream environments with single tenant



OTDS configuration requirements

This section describes the configurations that are required in an OTDS for Exstream.

Supported OTDS versions	For information about the supported OTDS versions, see OpenText Exstream – Release Notes.
Steps overview	<p>If you use the recommended way of setting up OTDS, you can follow these overall steps:</p> <ol style="list-style-type: none">1. Download OTDS from OpenText My Support and install OTDS. For more information about installing OTDS, see OpenText Directory Services - Installation and Administration Guide (OTDS-IWC).2. In the default OTDS backend, configure the multi-tenant OTDS (for the multi- tenant administrators).3. For each Exstream tenant:<ul style="list-style-type: none">– Add a tenant to OTDS, which adds a tenant backend.– In the tenant backend, configure the tenant OTDS (with the tenant administrators, tenant users, etc.).

Required OTDS backend configurations for Exstream

This section describes the configurations that are required in an OTDS backend for an Exstream multi-tenant OTDS or tenant OTDS.

You need to make these configurations in each OTDS backend or OTDS server separately. You can use the OpenText Administration Client or the OTDS web administration client to make these configurations in the default OTDS backend. You must use the web administration client to make these configurations in an OTDS tenant backend. You activate the resource via the OTDS API.

Required configurations

1. You must create a partition with the name: strs.role.
2. You must create the following groups:
 - In the multi-tenant OTDS, create the group:

Groups name	Description
strsmultitenantadmins	Multi-tenant administrators (MTA)

- In the tenant OTDS, create the groups:

Groups name	Description
strstenantadmins	Tenant administrators
strstenantusers	Tenant users
strsreviewers	Reviewers
strsondemandusers	On-demand users
strsbcausers	Content Author users
strscommdesigners	Communications Designer users
<customized group>	<Customized group>

3. Assign users to groups.

You must assign users or groups to the Exstream groups.

It is recommended that the user or users assigned to the strsmultitenantadmins group have “Never expire” as a password policy in OTDS.

The user name and password for the user assigned to the strsmultitenantadmins group is required to configure the Exstream environment.

4. Create the Exstream resource.

You must create and activate a resource for Exstream. The resource can have any name.

The resource ID and secret key are required to configure the Exstream environment.

5. Assign the strs.role partition to the resource.

You must create and activate a resource for Exstream. The resource can have any name.

6. Create a browser user.

You must create a user with read access to OTDS. This user must be created in the strs.role partition but does not need to be a member of any group. This user must have Never expire as a password policy in OTDS.

Design and Production and CAS Browser requirements	For information about how to add users and groups from OTDS to Design and Production and the CAS Browser, see Adding External Users to a Design Group in OpenText Exstream Design and Production System Administration in the Exstream Design and Production documentation set.
HTTPS and HTTP communication	<p>By default, Exstream uses HTTPS to communicate with OTDS. To use unsecure HTTP communication, you must disable HTTPS in both OTDS and in Exstream.</p> <p>To disable HTTPS communication in Exstream, you use the -unsecure flag when configuring the connection profiles for OTDS.</p> <p>To disable HTTPS in OTDS, you must add the system attribute directory.auth.EnforceSSL and set the value to false on the System Attributes page in the OTDS web client.</p>

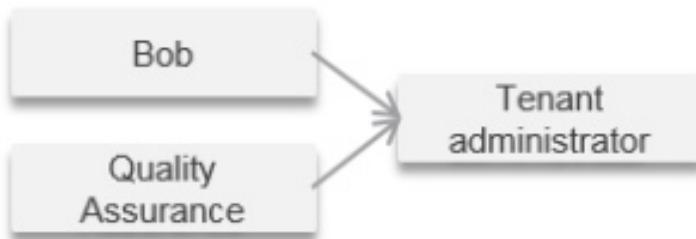
Assigning Access roles

You assign users and groups to the Exstream Access roles in OTDS.

After OTDS is set up for Exstream, tenants can use the OTDS web administration client to manage their users and assign Access roles.

About assigning roles	The Exstream Access roles are represented as groups in OTDS. In OTDS, it is possible to assign one or more users, groups, or organizational units to each Exstream group. For example, you can assign both the user Bob and the organizational unit Quality Assurance to the tenant administrator group.
------------------------------	--

Figure 2-11:
Several members assigned to one role



You can also assign one user, group, or organizational unit to several roles.

Permissions are exclusive for each role	<p>The permissions for the Access roles are exclusive to the roles. Permissions are not inherited by other Access roles. For example, tenant user permissions are only available to users with the tenant user role, and tenant administrator permissions are only available to users with the tenant administrator role.</p> <p>If a user is assigned several roles, the user has permissions according to all the assigned roles.</p> <p>In WorkShop (in the Unversioned resources view), you can control which domains the OTDS group behind a role can access. For example, you can provide a group access to the development domain, but prevent the group from accessing the production domain. When a user logs in to a domain, the user will have the sum of the permissions according to all the assigned roles with access to the current domain.</p>
Role descriptions	<p>This section describes the default Exstream roles and their permissions.</p> <p>If you have added customized groups to the strs.role partition in the tenant OTDS, you must use the Supervisor application to create the corresponding roles and assign the roles the appropriate permissions. In Supervisor, you can also change the permissions for the default Exstream roles for the tenant.</p>
Multi-tenant administrator (MTA)	<p>Full Access to the ss_tenantadmin command line utility for adding tenants and updating tenant information, etc.</p> <p>No Access to Communications Builder, Control Center, Describer, or the web applications.</p>
Tenant administrator	<p>Full Access to Communications Builder, Control Center, Describer, and the ss_territory, ss_scm, ss_deploy, and ss_rcp command line utilities.</p> <p>Access to web applications:</p> <ul style="list-style-type: none">• WorkShop – Access to all views. For example, can publish themes and delete resources in the Resources view.• Supervisor – Access to all views, but cannot edit documents in the Review view.• StoryBoard – For example, can preview themes.• ReTouch – For example, can preview documents.

Communications Designer and Content Author When you set up OpenText Directory Services (OTDS) authentication for Exstream, you must also set up access roles that are used to manage user permissions. You can use Supervisor to manage the default Exstream access roles or to create new access roles. To use Communications Designer or Content Author, users must be assigned to an Exstream access role that provides the required permissions.

For example, if you are a tenant administrator, you can access both Communications Designer and Content Author, and you will be able to see both widgets on the Content Launcher page. However, if you are assigned only the Content Author user role, then you will not be able to access Communications Designer and will see only the Content Author widget on the Content Launcher page.

The following table lists the OTDS groups for each default Exstream access role and the corresponding permissions for Communications Designer and Content Author:

Role	OTDS group	Communications Designer access	Content Author access
Content Author user	strsbcusers	No access	Full access
Communications Designer user	strscommdesigners	Full access	No access
On-demand user	strsondemandusers	No access	No access
Reviewer	strsreviewers	Partial access	No access
Tenant user	strstenantusers	Full access	Full access
Tenant administrator	strstenantadmins	Full access	Full access

Tenant user (Tenant developer in the web applications) Full access to Communications Builder. Some access to the following applications:

- **Control Center** – For example, starting and stopping applications, and viewing properties and logs.
- **Describer** – Viewing models.

Access to web applications:

- **WorkShop** – Access to all views. For example, can edit and check in themes in the Resources view.
- **Supervisor** – Access to all views except the Roles view.
- **StoryBoard** – Full access.
- **ReTouch** – Full access.

Reviewer (Document reviewer in the web applications)	No Access to Communications Builder, Control Center, Describer, or the command line utilities. Access to web applications: <ul style="list-style-type: none">● WorkShop – Some access to the Resources view. For example, can review and approve resources, but cannot edit or delete resources.● Supervisor – Some access to the Review view. For example, can review and approve documents, but cannot edit or delete documents.● StoryBoard – For example, can preview themes.● ReTouch – For example, can preview documents.
Content Author user	This group has the same access permissions in the web applications as the tenant user, however it can only view approved resources in the CAS Browser.
Communication Designers	This group has access to the Communications Designer application.
On-demand user (Document composer in the web applications)	No access to Communications Builder, Control Center, Describer, or the command line utilities. Access to web applications: <ul style="list-style-type: none">● WorkShop – Some access the Resources view. For example, can examine images and texts.● Supervisor – No access.● StoryBoard – No access.● ReTouch – Full access.

Managing permissions with design groups and design users in Design Manager

In most cases, your organization will want to restrict access to specific features to specific job roles. For example, the task of setting up the environment objects in the Library, such as design users, is likely to be restricted to someone in a system administration role, while creating page layouts is likely to be restricted to someone in a document design role. To help manage these permissions, Exstream lets you create design groups and design users.

A design group is a list of one or more design users and/or other design groups. Each design group defines access to Exstream features and functions for the design users assigned to that design group. Design groups also classify similar employees and define the availability of Exstream objects.

A design user can belong to several design groups. Conflicting design group rights do not negate each other. If a design user belongs to two groups and one group restricts a function and the other grants access to the same function, then the design user has access to the function.

When a new OTDS user is created that can be used to log into Communications Builder and Control Center, a design user will also be created in Design Manager when you first login with the new user with limited access. With an admin user, the proper permissions can then be granted to the new design user for additional access and configuration to Design Manager objects.

OTDS integration must be configured within Design Manager.

Lab: Verify the Tenant OTDS configuration

OTDS has already been installed in the training computer using the default configuration and has been deployed to Tomcat (in C:\Tomcats\OTDS).

In the following activities you will verify the Tenant OTDS configuration:

1. Verify the strs.role partition.
2. Verify the Exstream resource.
3. Verify the multi-tenant groups.
4. Verify the multi-tenant administrator and check group memberships.
5. Verify users.
6. Verify the Access roles.
7. Verify the trusted site.



Sign in to the OTDS Tenant

1. In Chrome navigate to <https://thecompany.com:8443/otds-admin>.
(This URL is bookmarked in Chrome under OTDS > Tenant OTDS).
2. Sign in to OTDS using the following credentials:
 - User name: **otadmin@otds.admin**
 - Password: **opentext**

Figure 2-12:

OTDS sign in

The screenshot shows a web browser window with the OpenText Directory Services login interface. The title bar of the browser says "OpenText Directory Services". The main content area has a header "opentext™ | Directory Services". Below the header are two input fields: "User name" containing "otadmin@otds.admin" and "Password" containing masked input. Underneath the password field are two buttons: "Sign in" and "FORGOT PASSWORD". At the bottom of the form, there is a copyright notice: "Copyright © 2018 Open Text. All Rights Reserved."

You are signed in to the OTDS Tenant window.

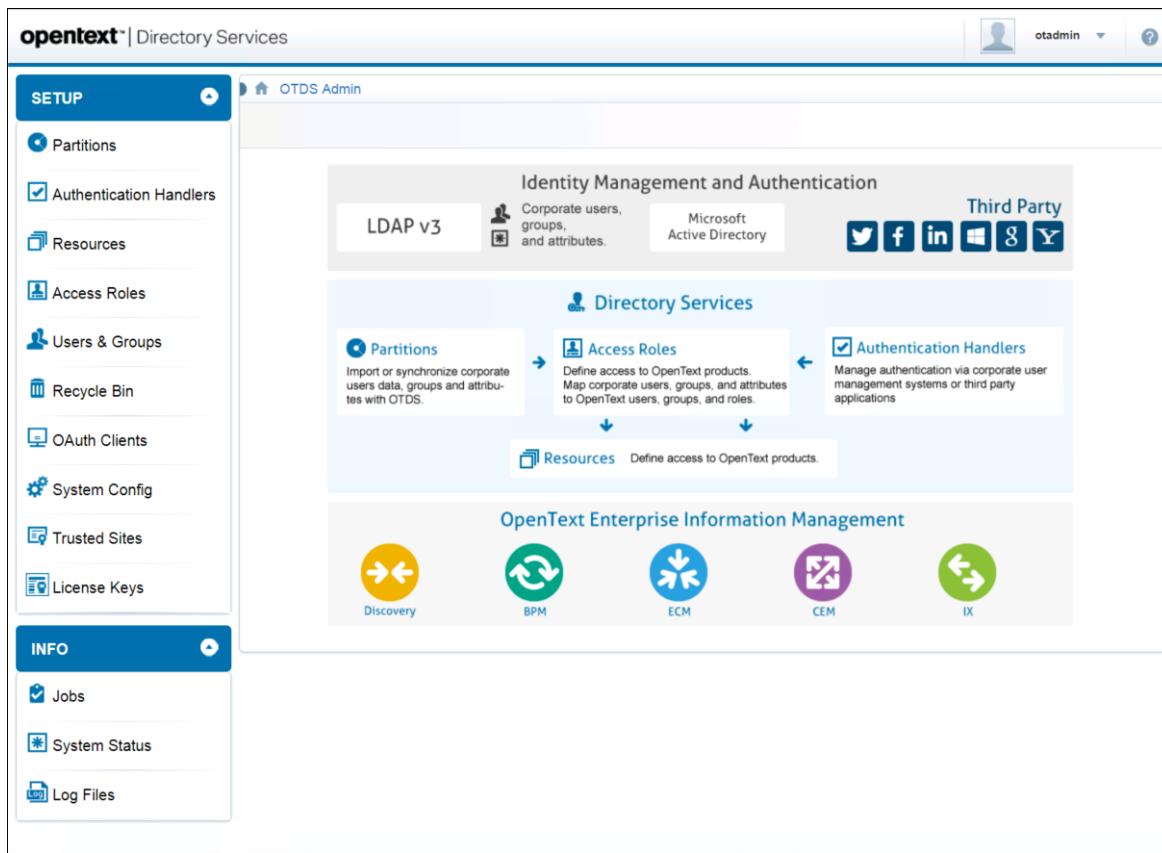


Figure 2-13: Tenant OTDS interface

`otadmin@otds.admin` is a Tenant OTDS admin, note the functionality available to this user, he has full access to the OTDS administrative console and all of the tenant administrative consoles (left panel).



View the Tenant OTDS partitions

1. In the Tenant OTDS window's left panel select **Partitions**.

A list containing all of the existing partitions displays.

`otds.admin` is the default OTDS partition to which the System Administrator are automatically assigned.

`strs.role` is a partition required by Exstream and was created for this training. Users and groups will be created in this partition and thus will have access to the Exstream applications – after additional configurations.

The screenshot shows the OTDS Admin interface with the 'Partitions' tab selected in the left sidebar. The main table displays three partitions: OAuthClients, otds.admin, and strs.role. A callout box labeled 'Existing users and groups per partition' points to the 'Users' and 'Groups' columns for each row. Another callout box labeled 'Existing partitions' points to the 'Name' column.

Name	Users	Groups	Roles	Status	Description
OAuthClients	1	0	0	enabled	Partition reserved for OAuth client
otds.admin	1	7	0	enabled	Reserved for administrative users
strs.role	2	1	0	enabled	

Figure 2-14: Partitions



View existing groups and users

1. In the left Setup panel (left panel) select **Partitions**.
2. Click the **Actions** link corresponding to the **strs.role** partition and then select **View Members**.

strs.role is the OTDS Partitions that will contain the Exstream users and groups.

The screenshot shows the OTDS Admin interface with the 'Partitions' tab selected. The 'strs.role' partition is selected in the main table. A context menu is open over the 'Actions' link, with the 'View Members' option highlighted.

- Edit Administrators
- View Members**
- Password Policy
- Partition Restrictions
- Consolidate

Figure 2-15: View Members

The list of existing users displays.

The screenshot shows the 'OTDS Admin' interface under the 'Partitions' section, specifically for the partition 'strs.role'. On the left, a sidebar titled 'SETUP' lists various administrative options: Partitions, Authentication Handlers (checked), Resources, Access Roles, Users & Groups (selected and highlighted in blue), and Application Roles. The main pane displays a table of users with columns: User Name, Display Name, and User Partition. Two users are listed: 'exadmin' with display name 'exadmin@strs.role' and user partition 'strs.role', and 'exbrowser' with display name 'exbrowser@strs.role' and user partition 'strs.role'. A red box highlights the 'Users' tab at the top of the table, and another red box highlights the list of users in the table. A callout bubble labeled 'Existing users' points to the table area.

Figure 2-16: Members

3. Click the **Groups** tab.

The list of existing groups displays.

The screenshot shows the 'OTDS Admin' interface under the 'Partitions' section, specifically for the partition 'strs.role'. The left sidebar is identical to Figure 2-16, with 'Users & Groups' selected. The main pane displays a table of groups with columns: Group Name, Group ID, and Display Name. One group is listed: 'strsmultitenantadmins' with display name 'strsmultitenantad...' and group ID 'strsmultitenantad...'. A red box highlights the 'Groups' tab at the top of the table, and another red box highlights the list of groups in the table. A callout bubble labeled 'Existing groups' points to the table area.

Figure 2-17: Groups

4. Click the **Actions** link corresponding to the **strsmultitenantadmins** partition and then select **Edit Membership**.

The screenshot shows the OTDS Admin interface with the left panel set to 'SETUP'. Under 'Groups', the 'Groups' tab is selected. The main area displays a list of groups under the 'strs.role' partition. The 'strtenantadmins' group is highlighted with a yellow background. A context menu is open next to it, with 'Edit Membership' highlighted in orange.

Group Name	Display Name	User Partition	Location	Actions
ADMINISTRATOR	ADMINISTRATOR...	strs.role	\	Actions
EDITOR	EDITOR@strs.role	strs.role	\	Actions
INTEGRATOR	INTEGRATOR@strs...	strs.role	\	Actions
strsbcusers	strsbcusers@strs.r...	strs.role	\	Actions
strscommdesigner...	strscommdesigners...	strs.role	\	Actions
strsondemanduser...	strsondemandusers...	strs.role	\	Actions
strsreviewers	strsreviewers@strs.r...	strs.role	\	Actions
strtenantadmins	strtenantadmins@s...	strs.role	\	Actions
strtenantusers	strtenantusers@str...	strs.role	\	Actions

Figure 2-18: View group membership

The list of users that belong to the strsmultitenantadmins group displays. In this case, the exadmin user belongs to the strsmultitenantadmins (tenant OTDS administrators) for the strs.role partition.



View the Resources

1. In the left Setup panel (left panel) select **Resources**.

The list of existing Resources displays. These resources are used for configuration purposes in the system. For training purposes the ExstreamResource resource has been created.

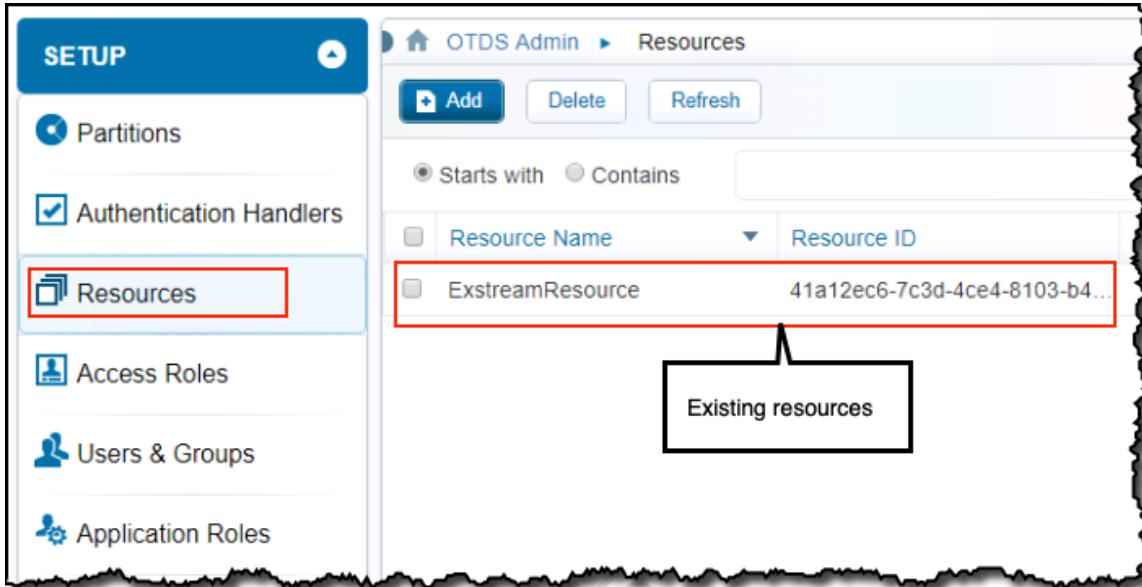


Figure 2-19: Resources



View the Access Roles

1. In the left Setup panel (left panel) select **Access Roles**.

The list of existing Access Roles displays.

2. Click the **Actions** link corresponding to the **Access to ExstreamResource** resource and then select **View Access Roles Details**.

Note that the strs.role user partition has been associated with the ExstreamResource (this in practical terms means that the members of the strs.role user partition will have access to the “Exstream” application. Logically, their access level is controlled by roles and permissions).



View the Trusted Sites

1. In the left Setup panel (left panel) select **Trusted Sites**.

The list of existing trusted sites displays. Trusted Sites are trusted addresses that Directory Services will allow to refer to a forwarding address.

Lab: Verify the OTDS tenant (tenant1) configuration

A tenant called “tenant1” has been added to OTDS for training purposes.

In the following activities you will verify the OTDS tenant1 configuration:

1. Verify the strs.role partition.
2. Verify the Exstream resource.
3. Verify the tenant groups.
4. Verify the tenant administrator and check group memberships.
5. Verify users.
6. Verify the Access roles.
7. Verify the trusted site.



Sign in to the OTDS tenant1

1. In Chrome navigate to <https://thecompany.com:8443/otdstenant/tenant1/otds-admin>. (This URL is bookmarked in Chrome under OTDS > OTDS tenant1).
2. Sign in to OTDS using the following credentials:
 - User name: **otadmin@otds.admin**
 - Password: **opentext**



View the OTDS tenant1 partitions

1. In the OTDS window’s left panel select **Partitions**.

A list containing all of the existing partitions displays.

otds.admin is the default OTDS partition to which the System Administrator are automatically assigned.

strs.role is a partition required by Exstream and was created for this training. Users and groups will be created in this partition and thus will have access to the Exstream applications – after additional configurations.



View existing groups and users

1. In the left Setup panel (left panel) select **Partitions**.
2. Click the **Actions** link corresponding to the **strs.role** partition and then select **View Members**.

strs.role is the OTDS Partitions that will contain the Exstream users and groups.

The list of existing users displays. Note that for training purposes, for each group required by Exstream (see step 2 in “Required configurations” on page 2 - 11) a user has been created and associated with the corresponding group.

3. Click the **Groups** tab.

The list of existing groups displays. (See step 2 in “Required configurations” on page 2 - 11).

4. Click the **Actions** link corresponding to the **strtenantadmins** group and then select **Edit Membership**.

The screenshot shows the OTDS Admin interface with the 'Groups' tab selected. A list of groups is displayed, including 'ADMINISTRATOR', 'EDITOR', 'INTEGRATOR', 'strsbcusers', 'strscommdesigners', 'strsondemandusers', 'strsreviewers', 'strtenantadmins' (which is highlighted), and 'strtenantusers'. The 'strtenantadmins' row has a context menu open with options: Properties, Consolidate, Two Factor Auth Settings, Edit Membership (which is highlighted in yellow), View Recursive Membership, and Edit Application Roles.

Group Name	Group ID	Display Name	User Partition	Location	Actions
ADMINISTRATOR	ADMINISTRATOR...	strs.role	\		Actions
EDITOR	EDITOR@strs.role	strs.role	\		Actions
INTEGRATOR	INTEGRATOR@strs...	strs.role	\		Actions
strsbcusers	strsbcusers@strs.r...	strs.role	\		Actions
strscommdesigners	strscommdesigners...	strs.role	\		Actions
strsondemandusers	strsondemandusers...	strs.role	\		Actions
strsreviewers	strsreviewers@strs.r...	strs.role	\		Actions
strtenantadmins	strtenantadmins@s...	strs.role	\		Actions
strtenantusers	strtenantusers@str...	strs.role	\		Actions

Figure 2-20: View group membership

The list of users that belong to the strtenantadmins group displays. In this case, the exadmin and empadmin users belong to the strtenantadmins (OTDS tenant1 administrators) for the strs.role partition.



Create users

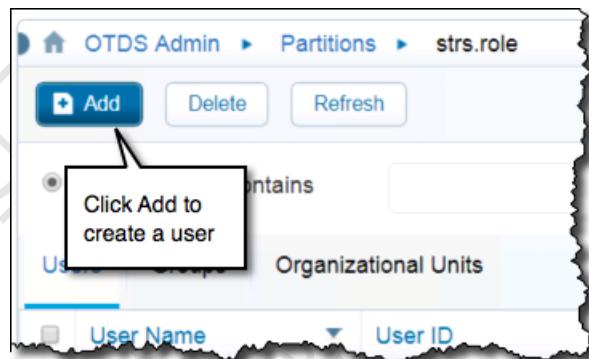
1. In the Setup panel select **Partitions**.
2. In the Partitions page click the **Actions** link (in the str.role line) and select **View Members**.

A list containing all of members that have been assigned to the str.role partition displays. This page displays user, groups, roles and organizational units depending on which tab you select.

Note that by default the Users tab was activated.

3. Click the **Add** button to add a new user and select **New User** from the drop-down menu.

Figure 2-21:
Add button



4. Enter the following information for the new user and click the **Next** button:

- **User Name:** *mdesigner*
- **First Name:** *Mario*
- **Last Name:** *Designer*
- **Display Name:** *MDesigner*
- **Email:** *mdesigner@thecompany.com*

The screenshot shows the 'New User' form in the OTDS Admin interface. The top navigation bar includes 'OTDS Admin', 'Users & Groups', and 'strs.role'. Below the navigation are buttons for 'Save', 'Cancel', 'Previous', and 'Next >'. A callout box points to the 'Next >' button with the text 'Click here when form is completed'. The main form area has tabs on the left: 'General', 'Account', 'Organization', 'User Attributes', and 'Custom Attributes'. The 'General' tab is selected. On the right, fields are listed with their values: User Name (mdesigner), First Name (Mario), Initials (empty), Last Name (Designer), Display Name (MDesigner), Description (empty), Office (empty), Email (mdesigner@thecompany.com), Phone (empty), Fax (empty), and Notes (empty). A callout box points to the 'User form tabs' section on the left.

Figure 2-22: New user form (Account tab)

5. Enter the following information for the new user and click the **Save** button:
- **Password Options:** **Do not require password change on reset**
 - **User cannot change password:** **Selected**
 - **Password never expires:** **Selected**
 - **Password:** **opentext**

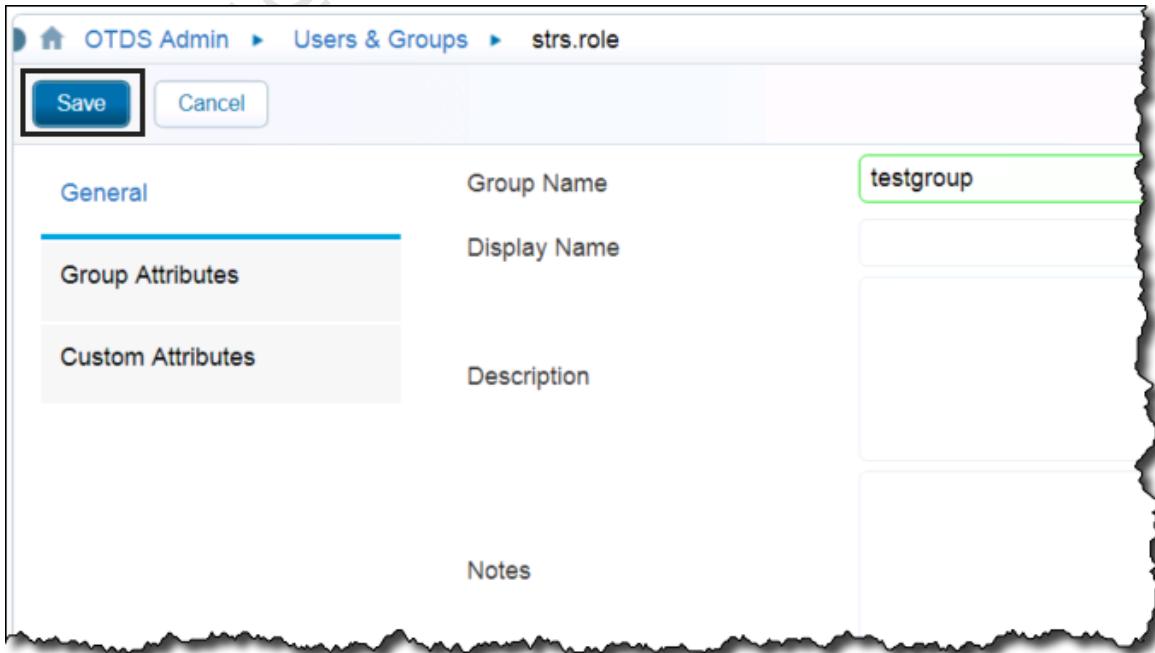
The screenshot shows the 'OTDS Admin' interface with the path 'Users & Groups > str.role'. A 'New User' dialog is open, specifically the 'Account' tab. The 'Save' button is highlighted. The 'Account' tab is selected, showing the following configuration:

- General:** Account is disabled (unchecked).
- Account Options:** Account is disabled (unchecked).
- Organization:** Do not require password change on reset (selected).
- User Attributes:** User cannot change password (checked), Password never expires (checked).
- Custom Attributes:** None.
- Initial Password:** Password and Confirm Password fields both contain '*****' and have checked checkboxes next to them.

Figure 2-23: New user form (Account tab)

The mdesigner user is added to the user list.

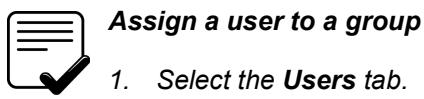
-  **Create groups**
1. In the Setup panel select **Partitions**.
 2. In the Partitions page click the **Actions** link (in the str.role line) and select **View Members**.
 3. Click the **Add** button to add a new user and select **New Group** from the drop-down menu.
 4. Enter the following information for the new group and click the **Save** button:
 - Group Name: **TestGroup**



The screenshot shows a web-based administration interface for OTDS Admin. The URL in the address bar is `OTDS Admin > Users & Groups > str.role`. The main content area is titled "Create group". There are two buttons at the top: "Save" (highlighted with a red box) and "Cancel". On the left, there are two tabs: "General" (selected) and "Group Attributes". The "General" tab contains fields for "Group Name" (set to "testgroup"), "Display Name" (empty), "Description" (empty), and "Notes" (empty). The "Group Attributes" tab is currently inactive.

Figure 2-24: Create group

You are redirected back to the group list.

**Figure 2-25:****Users tab**

Group Name	Group ID	Display
ADMINISTRATOR	ADMINISTRATOR@strs.role	
EDITOR	EDITOR@strs.role	
INTEGRATOR	INTEGRATOR@strs....	

- In the user list select the **mdesigner** user, and select **Edit Membership** from the **Actions** menu.
- Select **Add to Group**.

Figure 2-26:**Add to Group**

Group Name	Display Name

- In the Users and Groups Associations select the **TestGroup@strs.role** and click the **Add Selected** button.
- Click the **Close** button.

You are directed back to the memberships page.

- Click the **Back** button.

The user is added to the group and you are redirected back to the group list.



View the Resources

1. In the left Setup panel (left panel) select **Resources**.

The list of existing Resources displays. These resources are used for configuration purposes in the system. For training purposes the ExstreamResource resource has been created.

2. Take note of the **ExstreamResource ID** or paste it in a text editor for later use:
-



View the Access Roles

1. In the left Setup panel (left panel) select **Access Roles**.

The list of existing Access Roles displays.

2. Click the **Actions** link corresponding to the **Access to ExstreamResource** resource and then select **View Access Roles Details**.

Note that the strs.role user partition has been associated with the ExstreamResource (this in practical terms means that the members of the strs.role user partition will have access to the “Exstream” application. Logically, their access level is controlled by roles and permissions).



View the Trusted Sites

1. In the left Setup panel (left panel) select **Trusted Sites**.

The list of existing trusted sites displays. Trusted Sites are trusted addresses that Directory Services will allow to refer to a forwarding address.

Lab: Configure the Design Manager - OTDS integration

In this lab you will learn how to configure Design Manager to use OTDS for authentication purposes.



Integrate Design Manager with OTDS

1. Launch Design Manager.

You can navigate to **Programs > OpenText Exstream 16.6.0 > Design Manager**.

2. Sign in to Design manager using the following information:

- **User: admin**
- **Password: xxx**



admin is a user automatically created in the Exstream database by the Exstream installer. Since we have not yet integrated OTDS with Design Manager we cannot sign in as any of the users defined in OTDS.

You are signed in to the design database that was used in the last session of Design Manager. In this activity we want to use OTDS authentication for the ProcComm design database.

If requested to enter a “key” follow the Trainer’s indications.

You're signed in to Design Manager:

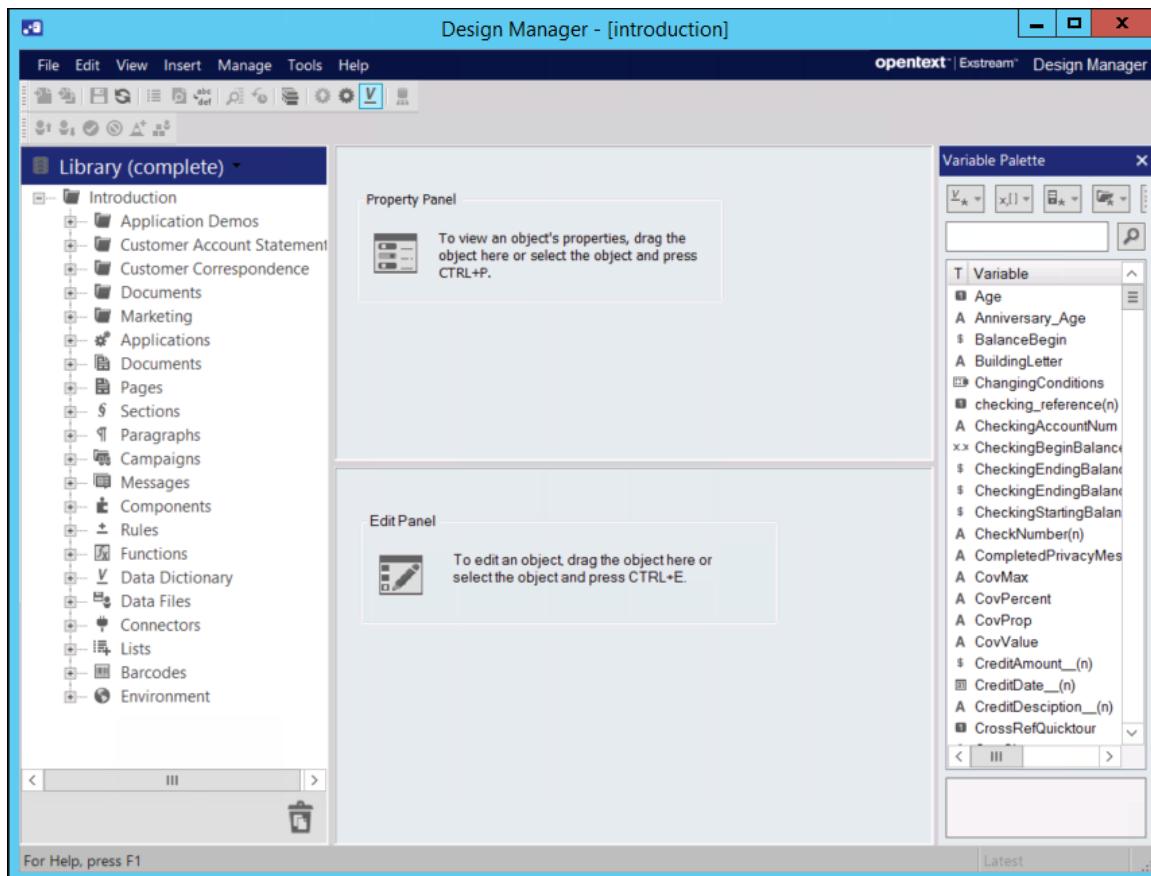


Figure 2-27: Design Manager

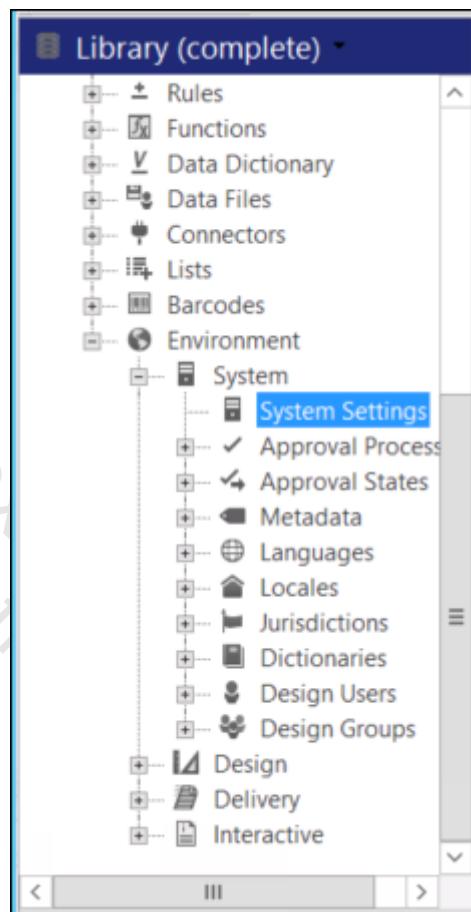
3. In Design Manager menu navigate to **File > Change Database**.
4. In the Select database to open panel (top panel), select **ProcComm** and then set the following values in the lower area of the window and click **OK**:
 - Database authentication method: **Specify user and password**
 - User: **exstraining**
 - Password: **opentext**
5. Sign in to Design Manager as **admin/xxx**.

If requested to enter a “key” follow the Trainer’s indications.

You are signed in to Design Manager using the ProcComm design database.

6. In the Library panel (left panel), expand **Environment > System** and double-click **System Settings**.

Figure 2-28:
System Settings heading



The Basics page of the System Settings opens in the right top panel.

7. Select the **Security** tab.

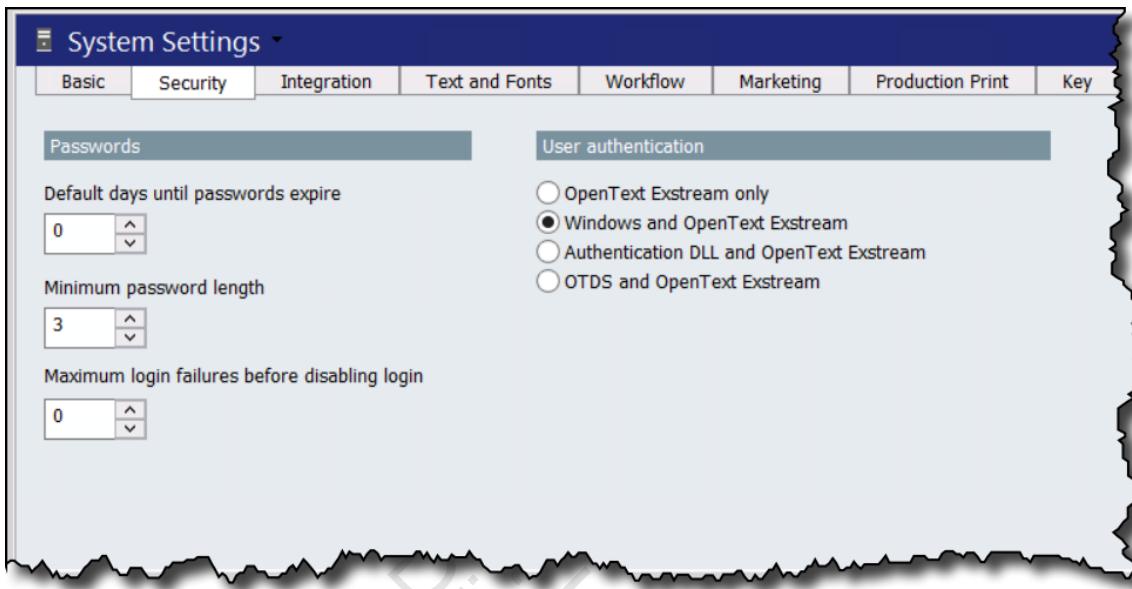
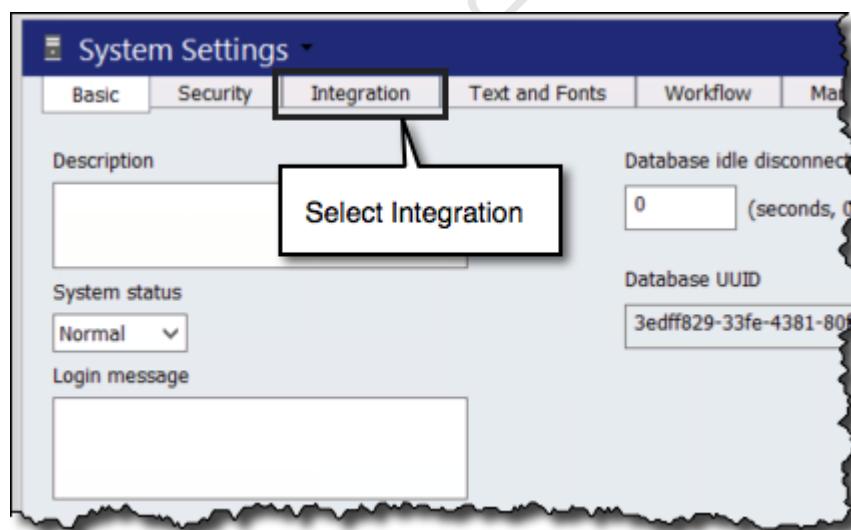


Figure 2-29: Security tab

8. Select the **OTDS and OpenText Exstream** radio button.
9. Select the **Integration** tab.

Figure 2-30:
Integrations tab



10. In the OTDS section of the Integrations page enter the following information:

- OTDS base URL: **https://thecompany.com:8443/otdstenant/tenant1**
- Resource ID: **value_obtained_earlier_in_the_labs**

This is the tenants1 Resource ID that corresponds to the value you took note in “View the Resources” on page 2 - 30.

11. Click the **Test connection** button.

12. In the Enter OTDS Credentials window enter the following values and click the **OK** button:

- User: **exadmin**
- Password: **opentext**

A dialog displaying a successful connection message is displayed.

13. Click **OK**.

14. In the Management Gateway section of the Integrations page enter the following information:

- Management Gateway URL: **https://thecompany.com:28800**
- Tenant name: **tenant1**
- Application domain: **domain1**

This Application domain was created in Control Center for this training.

15. Click the **Test connection** button.

16. If requested enter OTDS Credentials window enter the following values and click the **OK** button:

- User: **exadmin**
- Password: **opentext**

A dialog displaying a successful connection message is displayed.

17. Click **OK**.

18. In the Resource browser section of the Integrations page enter the following information:

- Resource browser URL: **https://thecompany.com:8443/casbrowser**

19. Click the **Test connection** button.

20. If requested enter OTDS Credentials window enter the following values and click the **OK** button:

- User: **exadmin**
- Password: **opentext**

A dialog displaying a successful connection message is displayed.

21. Click **OK**.
22. Click the **Save** button.
23. Click **Yes** to accept the change in the authentication method window.
24. Close the **System Settings** object in the properties panel.

Even though the integration has already been set up, OTDS users will not be listed in Design Manager until they actually sign in to Design Manager first.

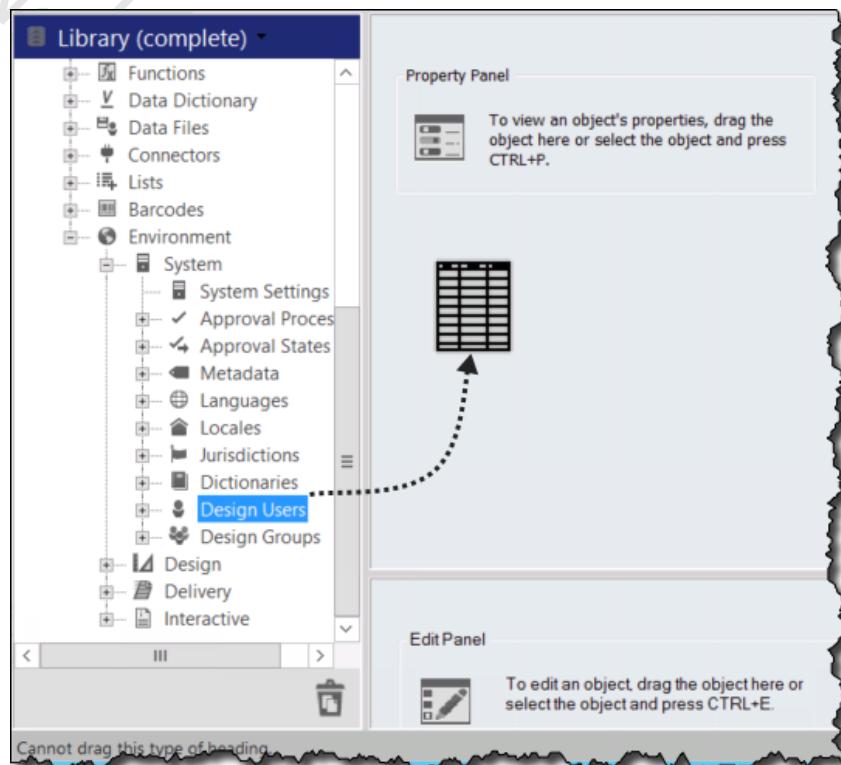


View the OTDS users in Design Manager

1. In the Library panel, expand **ProcComm > Environment > System**.
2. Drag-and-drop the **Design Users** heading on the Property Panel (right top panel).

Figure 2-31:

Viewing users



Note that the OTDS tenant1 users are not listed. (Not even the mdesigner user that you created earlier in the lab.)

3. Close **Design Manager**.



Sign in to Design Manager using OTDS users

1. *Launch Design Manager.*

You can navigate to Programs > OpenText Exstream 16.6.0 > Design Manager.

2. *Sign in to Design Manager using the following information:*

- *User: mdesigner*
- *Password: opentext*

Note that mdesigner has limited access in Design Manager.

3. *Navigate to File > Log In as Different Users.*

4. *Sign back in to Design manager using the following information:*

- *User: exadmin*
- *Password: opentext*

5. *Navigate to File > Log In as Different Users.*

6. *Sign back in to Design manager using the following information:*

- *User: admin*
- *Password: xxx*

7. *In the Library panel, expand ProcComm > Environment > System.*

8. *Drag-and-drop the Design Users heading on the Property Panel (right top panel).*

Note that now both exadmin and mdesigner show in the user list.



Create a group and add users to the group

1. *In the Library panel of Design Manager expand Environment > System, right-click Design Groups and select New Design Group.*

2. *Set the group Name to Design, and the Description to Design Users and then click Finish.*

The group opens in the properties panel.

3. *In the Functional access area, set the following values:*

- *Application design: Create and edit*
- *Campaign design: Create and edit*
- *Edit content: selected*
- *Edit style: selected*

4. *In the Users included in group panel (lower left panel) click the plus "+" sign.*

5. *In the Select a Design User to add to the list window select admin and click OK.*

admin is added to the group.

6. Repeating the previous two steps, add the following users:
- **exadmin@strs.role**
 - **mdesigner@strs.role**
 - **Ima_Designer**

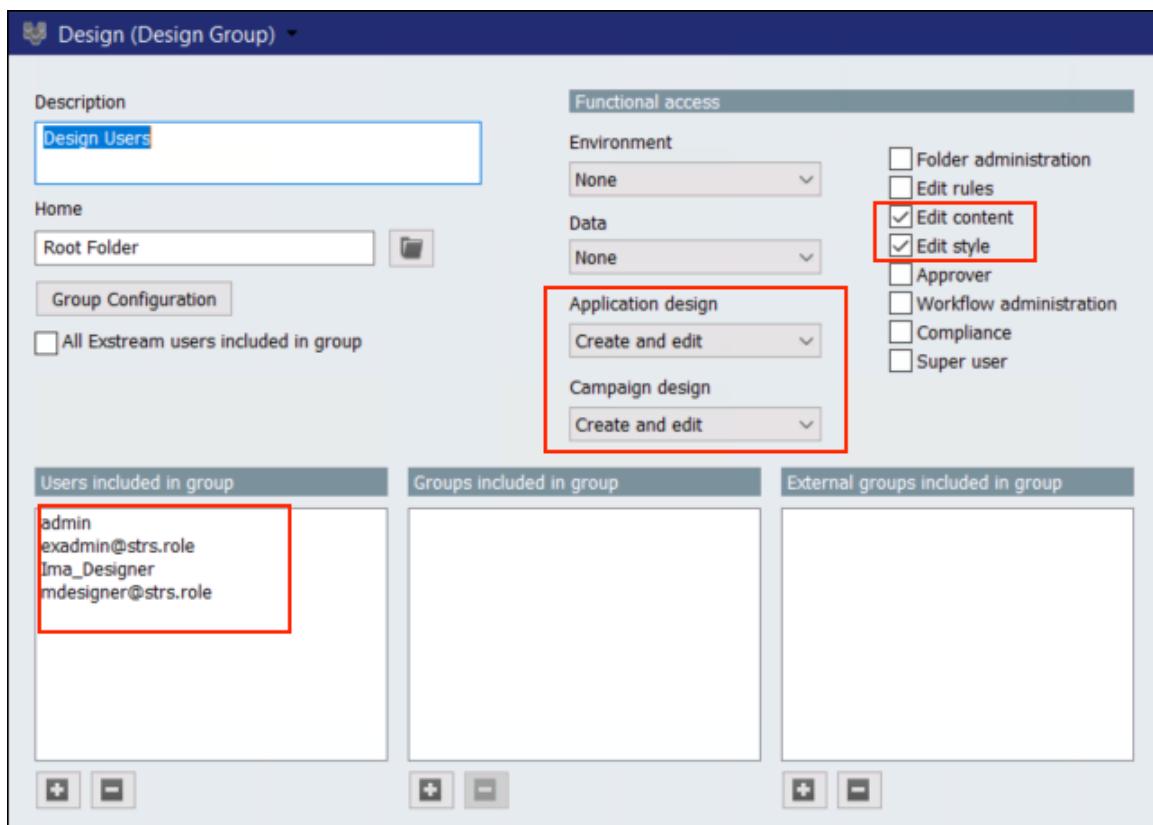
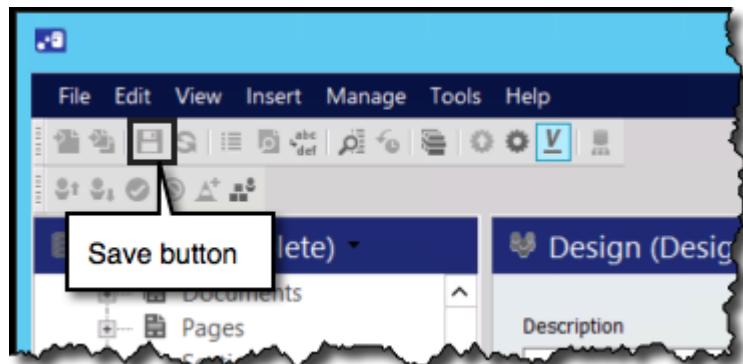


Figure 2-32: Design group

7. Click the **Save** button in the Design Manager toolbar.

Figure 2-33:



Remember that earlier in the lab, exadmin had limited access in Design Manager upon signing in.

In the next activity you will make exadmin a super user in Design Manager.



Create a super user

- In the Library panel of Design Manager expand **Environment > System > Design Users**.*

The list of available users displays.

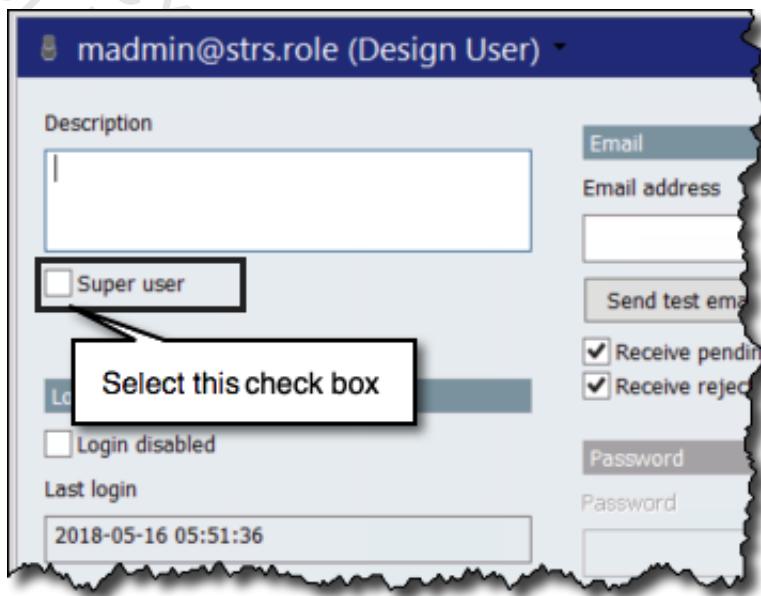
- Drag-and-drop the **exadmin@strs.role** user on the Property Panel (right top panel).*

The properties of the exadmin user displays.

- Select the **Super user** check box.*

Figure 2-34:

Super user



This will make exadmin a super user. A super user essentially is a user that has full access control in Design Manager.

- Click the **Save** button in the Design Manager toolbar.*
- Navigate to **File > Login as Different User**.*
- Sign in to Design Manager using the following information:*
 - User: **exadmin***
 - Password: **opentext***

You are signed in as an OTDS user (exadmin) to Design Manager using the ProcComm database and with full access.

Open Text Internal Use Only
Do Not Distribute

3. Design Manager

Objectives

On completion of this chapter, participants should be able to:

- Identify the use Design Manager and describe the interface components
- Describe a Design Manager application and its components
- Describe the application development process and planning considerations
- Identify the roles in the application development cycle
- Create an application in Design Manager

Important terms

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.

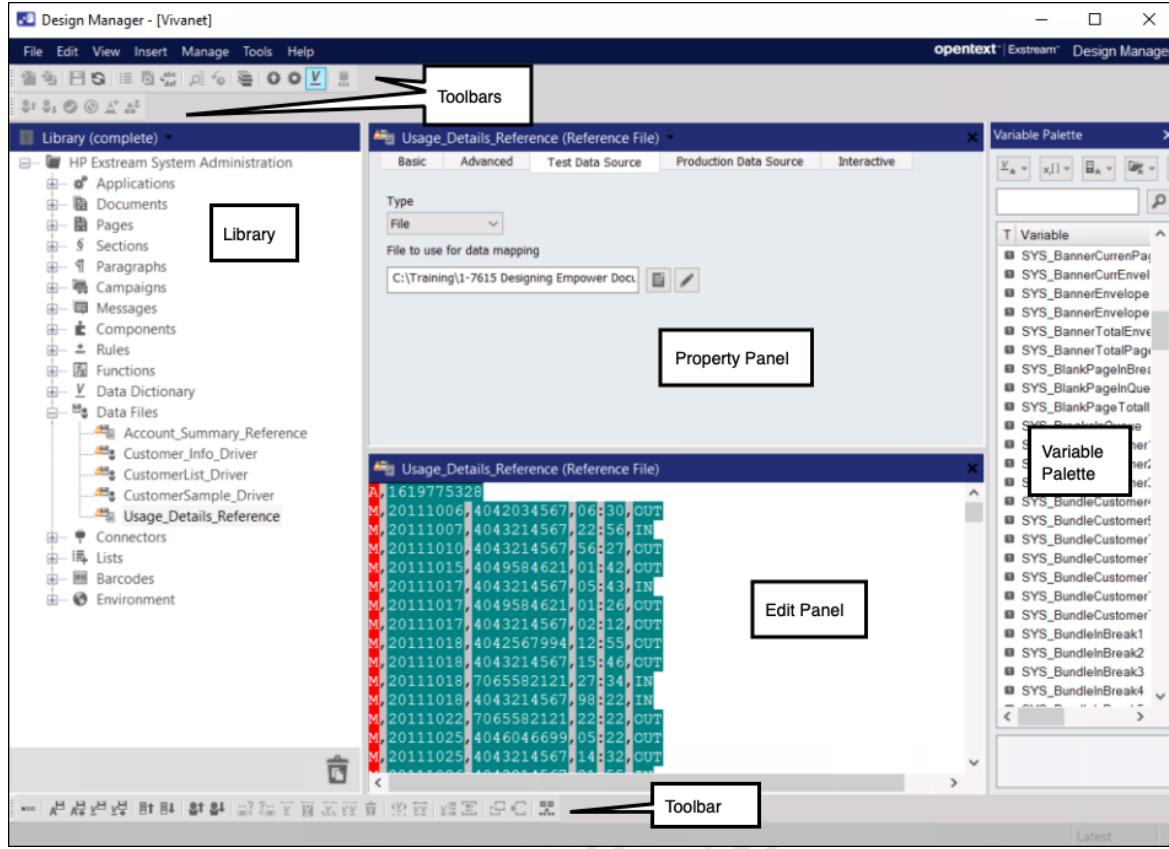


Figure 3-1: Design Manager interface

Library You can use the Library to 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.

Library objects and description:

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
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.
Document		An object that contains pages or messages
Message		An object within a campaign or document that contains text or graphics
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
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
Function		An object that contains custom functions or subroutines used in logic
Data Dictionary		An object that contains a variable list
Output		Outputs represent the supported drivers for the electronic and print channels that are used to produce the customer communication.
Output Queue		Output queues control the devices and processes that are used for final output production. These objects control the properties of both print and electronic output. An output queue must contain an output object.

Property Panel You can use the Property Panel to configure the 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.

Variable Palette You can use the Variable Palette to view a list of the variables that are available in the Library or to select a variable to map to a data area. You can also search for a variable or filter based on type, location, or metadata.

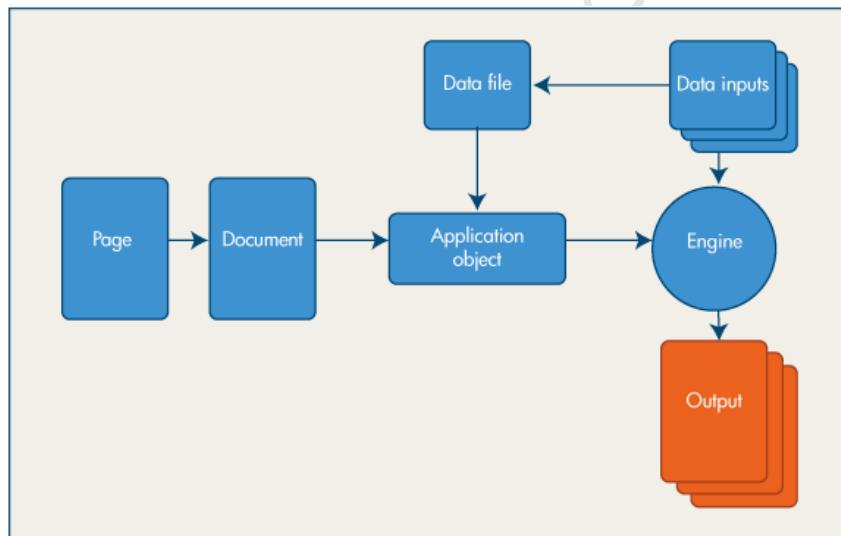
Edit Panel You can use the Edit Panel to view lists, the contents of any folder in the Library, the contents of objects that contain other objects, or an object's version history. You can set special properties for an application, document, or campaign, or edit their contents; or, you can view, map, 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.

- Design Manager toolbars**
- **Data Mapping toolbar:** The Data Mapping toolbar lets you 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.
 - **Management toolbar:** The Management toolbar lets you 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.
 - **Standard toolbar:** The Standard toolbar lets you create, clone, test, or save an object; search the Library; view an object's version history; or package an application and run the engine.

What makes up an application in Design Manager

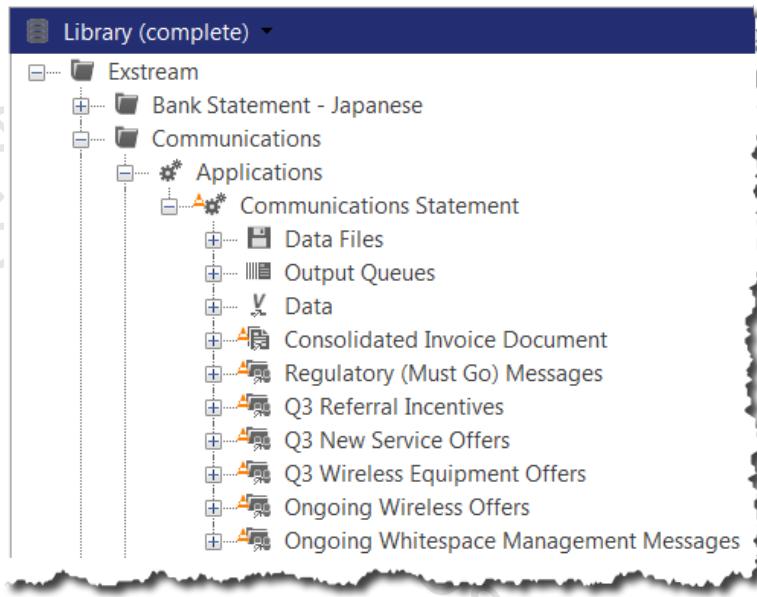
In the Exstream environment, the term "application" refers to all of the design objects and their property settings in Exstream that make up your statement, letter, invoice, bill, or other customer communication. An application is the central hub that connects your content creation processes and your data repository with your delivery systems. For example, in the following simple illustration, notice how the application organizes the data and design elements so they can be processed by the engine.

Figure 3-2:
An application



The more specific use of the term "application" refers to an application object in the Design Manager Library. This object serves as a container for all of the related objects that make up the application. You reference the objects, such as the data files, output queues, and customer documents, to the application object so you can see a visual representation of the objects that make up the application. You also use the application object to specify settings that pertain to all of the objects in the application (for example, how the paper weights and the number of pages will affect the content that is included in the final customers' documents).

Figure 3-3:
An application in the Library



You can use folders to help organize applications in the Library. Multiple applications can reside in one folder, so you can group them by functionality. For example, you might use three different folders to contain applications for correspondence, statements, and prospectuses. Within a single design database, applications in different folders can reference the same design objects, regardless of the folder in which they are located.

An application object can contain five different types of objects, and each of those objects can contain other objects. This hierarchical system of organizing the components in an application allows you to quickly see the objects that will make up a customer's document and to make high-level changes to the application makeup (such as removing documents or adding an additional output queue). While most of the objects an application can contain are optional, each application must have at least one document, containing at least one page, and one customer driver data file. These three objects represent the design and the data portion of the output. You do not have to include output-related objects, such as output objects and output queues, because they are not required when testing an application. However, it is good practice to add output-related objects during the application development cycle to make sure the design will appear correctly when it is put into production.

The following illustration demonstrates the objects that can be referenced in an application and how those objects help organize and control the lower-level components and settings that make up the application.

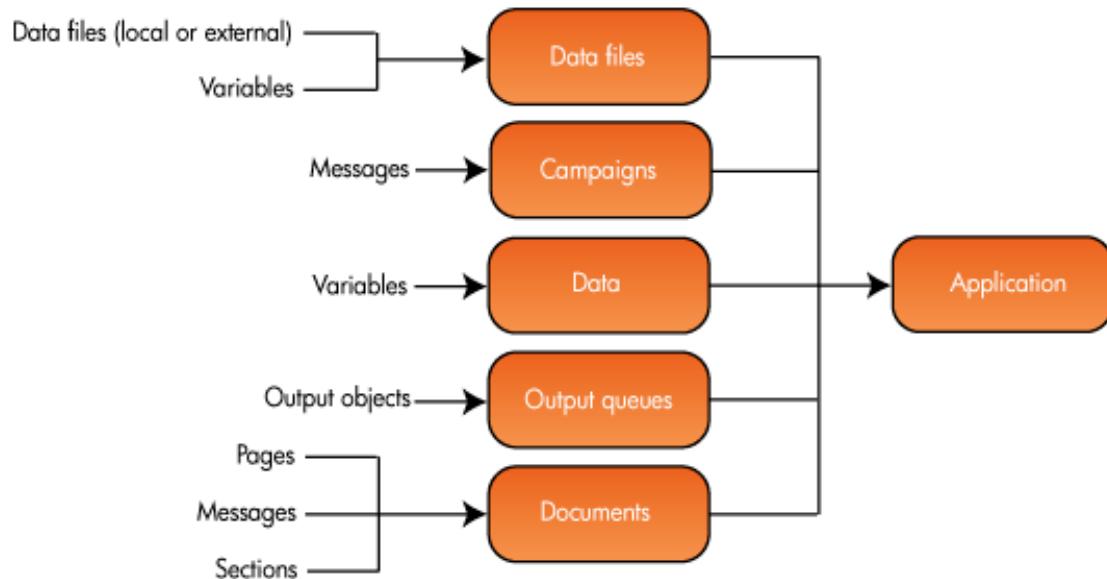


Figure 3-4: Application's objects

Objects that are referenced in an application:

Object	Required	Description
Campaign	No	Campaigns are objects for marketing materials. Campaigns are used to target customers and to track response. These types of objects are available only if you have licensed the Campaign Management module or the Advanced Campaign Management module.
Data File	Yes	Data files contain or report information about a customer and are used to drive the production process. At least one customer driver file (a specific type of data file) is required for each application to provide information about the recipients of the application.
Document	Yes	Documents are parent objects for other objects required for the design of a personalized communication. A document must contain at least one page, but it can also include messages, sections and paragraphs, and campaigns.
Message	No	Messages are marketing materials that are used to fill extra blank space in a communication. They can also represent pre-printed materials inserted at print time.
Page	Yes	Pages usually correspond to a sheet of paper or HTML page and are used to design the content a customer sees. They can contain static content and dynamic content that can change based on customer data. In most applications, pages are the most basic object you will use to contain content.
Section	No	Sections are groups of paragraph objects and, optionally, other section objects. They are used to create a hierarchy of content similar to headings and subheadings in a book. Sections and paragraphs are suited to help you design complex documents. One or more paragraphs must be included in each section object.
Paragraph	No	Text paragraphs are distinct blocks of communication that usually correspond to a single subject or theme. Paragraph objects are not necessarily the same as text paragraphs and they can contain one or more text paragraphs. Paragraph objects exist in the Library as reusable objects.
Output	No	Outputs represent the supported drivers for the electronic and print channels that are used to produce the customer communication.
Output Queue	No	Output queues control the devices and processes that are used for final output production. These objects control the properties of both print and electronic output. An output queue must contain an output object.
Variable	No	Variables represent data that change during production to personalize the communication for each customer.

Overview of the application development process

In general, you will use the following process to design and create an application:

1. Identify the application requirements and develop a plan – Using the specifications for the project, determine how the project requirements or specifications translate into the Exstream environment. For example, suppose one of the project requirements is to be able to follow up with customers and send them updates about areas they might be interested in, based on other campaigns they received previously. To achieve this goal, you can use the tracking abilities available with the Advanced Campaign Management module to monitor customers' responses to campaigns and target them with communications accordingly. This stage of the application development process is important because it helps you identify the features you must use to achieve the desired output. From this information, you can create a detailed development strategy for designing the application. The more detailed, comprehensive information you include in your planning, the fewer issues you are likely to encounter during development. In addition, this stage of the process is also a good time to start planning the templates and components you will use throughout all your applications
2. Create the application – The various tasks related to creating an application are discussed in this guide. As you begin to create the objects that will make up the application, it is important to continually be aware of how the different components of the application will interact with each other. For example, the variables used to map the data affect which variables are used in text boxes, tables, and so on.
3. Test the application – As you develop, it is important that you test the application frequently as you add more components and complexity. By testing as you develop, you will find it easier to identify and correct issues as they are introduced, rather than making far-reaching or costly fixes at the end of the development process. In addition to packaging an application and verifying the output, Exstream provides many testing tools you can use to validate different parts of the application. For example, you can use the Rule Analyzer module to check for flawed logic in the rules you employ in an application.

Roles in the application development cycle

Depending on your organization's structure, many different people might be involved in designing the various components of the application, or you might be the sole developer, responsible for creating the application and putting it into production. Whether you work by yourself or in a large group to design an application, you might find it helpful to think about the tasks associated with the application development in terms of various roles. By associating the tasks required to produce an application with different roles, you can compartmentalize the tasks and responsibilities required to successfully implement an Exstream application and help track their completion.

Although you might find it helpful to organize by different roles for your particular organization or project, the following roles are a good starting point to divide tasks:

Administrator The tasks performed by this user are typically the first tasks carried out in a new Exstream implementation. An administrator sets up the Exstream environment and makes sure that the various settings will support the other users and the application requirements.

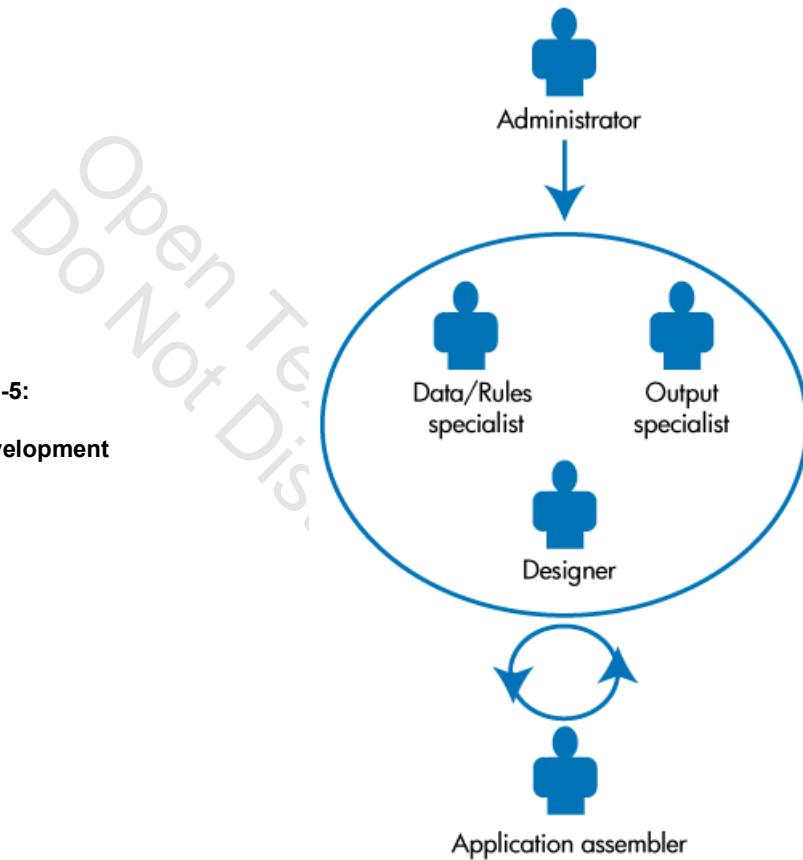
Data/Rules specialist This user is very familiar with the data that will be used in an application, and might be a database administrator or business manager familiar with the variable document requirements. He or she might also have programming experience, particularly if you will be creating logic to help target content to specific customers. A data/rules specialist often carries out the initial work in an application by creating variables, mapping data, and working with the designer to understand the role the data will play in the final output.

Designer Often a user with business analyst or graphic design experience, the designer carries out the tasks involved in recreating mockups using the Exstream design tools. A designer might take on many different responsibilities, from planning page layout, to designing marketing campaigns and messages. A designer might also use external tools to import content, as well as features in Designer to create the visual components of the application. Designers typically work closely with the data/rules specialist to use variables and logic appropriately in the design, and with the output specialist to make sure the design is optimized for the chosen output devices.

Output specialist This user is very familiar with the output devices you will use to publish an application. If you are printing and mailing documents to customers, the output specialist will likely be in charge of planning the required post-production steps and then setting up the necessary objects in Design Manager to support those processes. If you will integrate the application into existing enterprise systems, the output specialist might also lead the integration activities.

Application assembler One user, possibly a project manager, might serve as the liaison between the other contributors. This application assembler works with the various users to gather the finished components and add them to an application object. This process is often iterative, since users will likely test each finished component before moving on to the next component.

Figure 3-5:
Application development roles



As you tweak the application development process and roles to suit your unique organization's needs, you might find it helpful to maintain notes on the processes and divisions of responsibility that work well. Then, you can build on the process and methodology in future projects, making your Exstream design process even more efficient.

Application planning considerations

The topics in the following sections discuss some of the long-term implications of the decisions you make during the design phase of creating an application. They also provide best practice information to consider to help you create the most efficient, versatile design possible. In general, it is recommended that after you set up the development environment, you start the application design by analyzing the data, so the recommendations listed in this section reflect that order.

Consider the Development Environment

If you are working as a system administrator, you might have already established the best practices as they relate to your specific development environment. However, if you are beginning a new project, review the following questions and incorporate the recommendations into your application planning as needed:

Planning question	Recommendation
Will multiple users contribute to the development process?	<p>If so, make sure the database type you use supports enterprise-level interaction.</p> <p>You can also use several Exstream features to help prevent problems from arising when multiple developers are making changes to the design database at the same time. You can use one or more of the following features:</p> <ul style="list-style-type: none"> ● Check in/check out – Prevents different users from making changes to the same object at the same time ● Approval process – Allows specific users to verify the changes other users have made to specific objects ● Version histories – Allows you to track changes made to objects and to restore previous versions of objects ● Design group and folder restrictions – Allows you to restrict the permissions for specific users and the folders to which users have access
How should folders be structured?	Plan the best folder organization and storage system for the database. One storage method is to create a folder for each project and use the root folder to store objects that are used in all projects (such as components or globally used messages).
Which objects and design options should be available to designers?	You can use the System Settings in Design Manager to limit the features available to Exstream users. You can customize the interface of your implementation to make it easier for designers to work and to help limit the types of objects or settings they can use.
Will objects be reused in multiple applications throughout the enterprise?	You can pre-create components that will be reused throughout an application or in multiple applications. Components are Library objects that are managed from a central location but can be added to designs by all users. For example, you can create a component for your corporate logo image so that it can be easily added to all correspondence documents.

Consider the Data

One of the most inflexible components of an application is likely to be the customer data that will drive the output or that must be presented in the final documents. Exstream is designed to accept and access data in almost any format; however, you must consider the format and location of the data and design the application to accommodate your unique requirements.

Review the following questions and incorporate the recommendations into your application planning as needed:

Planning question	Recommendation
Where is the data located?	<p>If the data is located in a system or database that is part of your enterprise infrastructure, you can use Dynamic Data Access module to access the data using one of the existing Exstream connectors or by writing your own routines to act as connectors.</p> <p>If you will produce output in scheduled batch jobs, or if your database data does not change dynamically, consider extracting the required data from the database before the engine run to improve the engine performance. If the data is not stored locally, consider making a copy so you can easily test with the data locally.</p>
How will the data be used in the application?	Identify which parts of the data will appear on the page and which parts of the data will be used to drive conditional processing. Make sure that data used in conditional processing is mapped, as well as the data that appears in the content.
How should the data be presented on the page?	You can control how data will appear in a design using several different formatting methods. For example, you can apply text formatting to a variable placed on a page to make the data appear on the page in the same font and color as the other content on the page. You can also use the data mapping formatting features to control how the data is presented. For example, if the data is a date, you can specify that it appears as 12/31/10, rather than its stored format of 12312010.
Will the data be used to dictate whether specific content should be included or excluded?	If so, use rules on the objects or content to control their inclusion or exclusion.
Will the data be needed in a report?	If so, consider whether the data needs to be formatted in a specific way for archival or review purposes.

Consider the Output Because Exstream supports many different output channels, you can send the same application to multiple delivery channels to accommodate your delivery requirements. For example, the same output can be produced in PDF, HTML, and AFP format, simply by adding multiple output queues to an application.

Each output type supported by Exstream is designed to provide different advantages. For example, PDF allows you to send a document electronically to virtually any customer. On the other hand, an output type such as AFP allows you to easily print and archive customers' documents. After you have identified the required output types for an application, review the following planning questions and make accommodations in your design as needed:

Planning question	Recommendation
What is the intended destination of the output?	Consider the requirements of the audience when deciding which output types you need to set up for a particular application. For example, if you are creating output for internal customers, you might consider setting up a black-and-white output object to reduce printing costs. On the other hand, external customers might require higher quality output, which will require you to set up outputs with limited spot color or full color.
Will the output be sent to a vendor for printing?	Work with the print provider to determine the ideal resolution to use for pages and images. Test the output throughout the development process to make sure the design decisions you are making support the output requirements.
What type of downstream processing will be carried out on the output?	Will you use post-production processes to enhance or modify the customers' documents before they are mailed? If so, determine whether you must set up and use objects such as barcodes and insert messages to accomplish the final document you require.
Will the data be used to dictate whether specific content should be included or excluded?	If so, use rules on the objects or content to control their inclusion or exclusion.
Does the output require encryption or other protection, such as password protection?	Select an output type that provides the level of security you need. PDF output provides many types of security options; however, other Exstream output types offer encryption, as well.

Consider the Document Appearance Before you start the process of creating the design in Exstream, it is recommended that you create a mock-up of the final design and map the areas of the page to the design objects you will use to create them. By developing a design mock-up before starting the design phase, you can identify which parts of the design require other input and how each object should be designed so it interacts correctly with surrounding content.

Review the following planning questions and make accommodations in your design as needed:

Planning question	Recommendation
Do you need to enforce specific font styles, color usage, and so on, in order to comply with corporate standards?	<p>Exstream provides several features you can use to help ensure that a design complies with a set of standards:</p> <ul style="list-style-type: none"> ● Styles and style sheets – Use the style and style sheet tools in Design Manager to control the formatting choices available to designers. ● Templates – You can create templates for pages and messages to enforce the size and other physical properties of areas in the design. ● Font restrictions – You can limit the font types, sizes, and styles that are available in Designer. ● Color families – These objects allow you to create custom color palettes from which designers can quickly select approved colors. ● Spot colors – These color objects allow you to identify pre-mixed marketing or corporate colors that are stored in the printer (usually in the form of an individual ink cartridge) so that designers can utilize these colors throughout their design. <p>In addition to these features, you can also use the approval processes in Design Manager to make sure that designs are manually checked for adherence to standards before production.</p>
Which parts of the design will grow or move during the engine run?	Use the properties of each design object to accommodate its growth and the growth of objects around it. For content that flows to other pages, design flow frames as needed.
Which parts of the design will be imported into the Exstream environment, rather than be recreated using the Designer tools?	<p>Make sure the content or objects that you want to import are in a supported format. If they are not, use an external tool, such as one the Exstream converters, to convert them to one of the many formats Exstream supports. Or you might license the Dynamic Content Import module so you can include images and other content in the design in their original format without converting them.</p> <p>Also, decide whether the content or objects should be imported as static design objects or included dynamically during an engine run. There are advantages and disadvantages to each approach. For example, importing objects as static design objects can provide additional formatting options, while dynamically importing object can decrease the file size of the final output.</p>

Planning question	Recommendation
Which parts of the design must be excluded or included for specific customers?	Plan the logic you must create in order to include or exclude specific objects from the final output.
Consider the Integration	<p>An important aspect of your Exstream solution is the way in which the application will integrate with your existing external systems.</p> <p>Review the following planning questions and make accommodations in your design as needed:</p>
Planning question	Recommendation
Will the application need to communicate with other systems to access data?	If the data is located in a system or database that is part of your enterprise infrastructure, you can use Dynamic Data Access module to access the data either by using one of the existing Exstream connectors or using a routine you write yourself.
Will the output be integrated into archival systems?	Use the properties of each design object to accommodate its growth and the growth of objects around it. For content that flows to other pages, design flow frames as needed.
Do you need to retain output for reporting or auditing purposes?	If you must archive the output of an application, decide whether the resources of the output are embedded in the output stream or are referenced and stored separately from the output stream. Embedding resources might be required for some solutions but can also increase the file size of the output.
Which parts of the design will be imported into the Exstream environment, rather than be recreated using the Designer tools?	<p>If you must archive the application output, you can leverage specific output options to make the content easier to catalog, search, and retrieve in the future. For example, you can customize the TLEs and NOPs added to an AFP print stream to make the integration into an archival system consistent with other archived content.</p> <p>In addition, consider the best way to store resources that are referenced from the design. For example, make sure that the resources can be accessed as needed when the application is updated or re-published.</p>

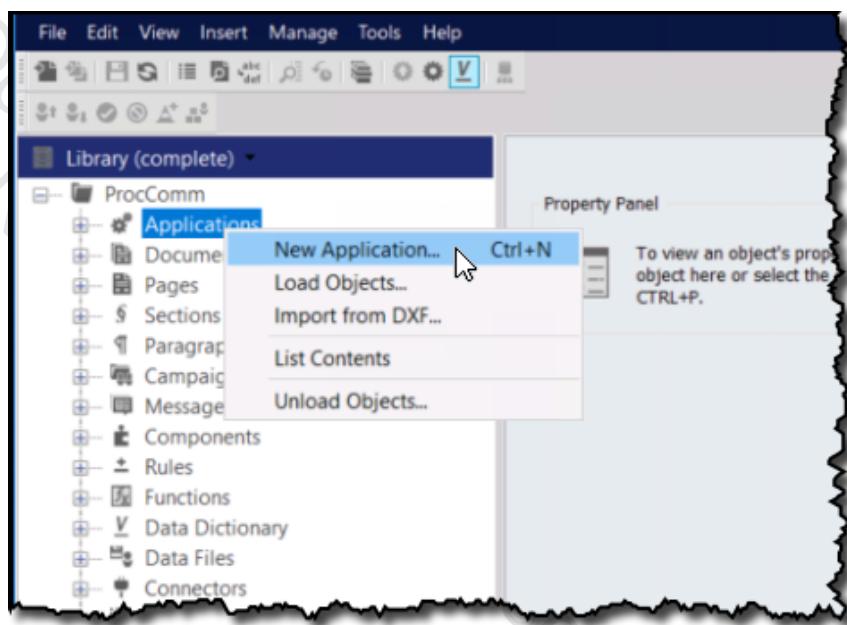
Lab: Create the communication application



Create the application

1. Making sure that you're signed in to **Design Manager** as **exadmin/opentext** and that the **ProcComm** designer database is in use.
2. In the Library panel right-click **Applications** and select **New Application**.

Figure 3-6:
New application



3. In the New Application window set the Name to **Customer Letter** and click **Finish**.

The new application opens in the properties panel.

4. Close the application object (click the "X" in the upper right corner of the application panel).



Create the document

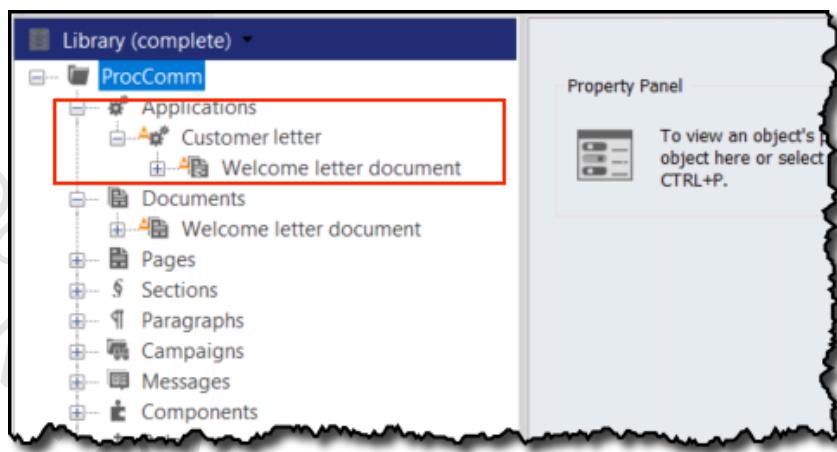
1. In the Library right-click **Documents** and select **New Document**.
2. In the New Document window set the Name to **Welcome letter document** and click **Finish**.

The new document opens in the properties panel.

3. Close the document object (click the "X" in the upper right corner of the document panel).

4. In the Library expand the **Documents** heading and drag-and-drop the **Welcome letter document** on the **Customer Letter** application.
5. Expand the **Customer Letter** application to make sure that the document was added.

Figure 3-7:
Document added



Create the page

1. In the Library right-click **Pages** and select **New Page**.
2. In the New Page window set the following values and click **Next**:
 - Name to **Welcome letter page**
 - Description: **Updated Mobi Welcome Letter, effective January 1, 2019**
3. Set the Paper type to **US Letter 8.5 x 11** and click **OK**.
4. Click **Finish**.

The new page opens in the properties panel.

5. Close the page object (click the "X" in the upper right corner of the page panel).

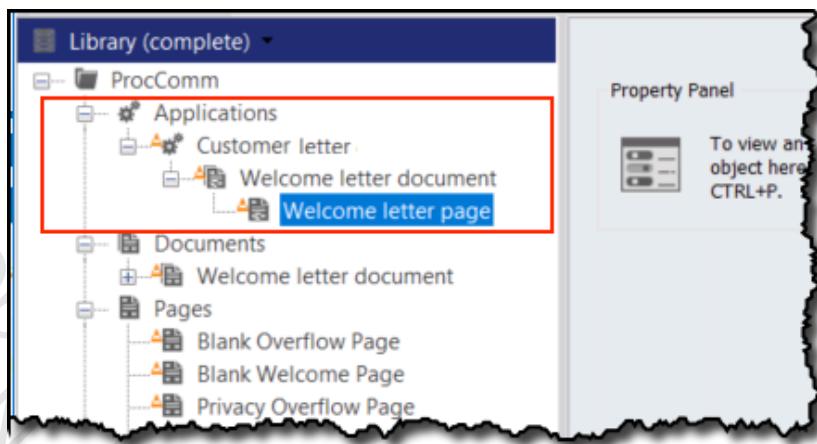
This page will contain the customer communication that you will design in the next chapter.

6. In the Library expand the **Pages** heading and drag-and-drop the **Welcome letter page** on the **Welcome letter document** document in the **Documents** node.

7. Expand the **Welcome letter document** in the **Customer Letter** application to make sure that the page was added to the document.

Figure 3-8:

Page added



Add the data file

1. In the Library expand the **Data Files** heading.
2. Drag-and-drop the **CustomerList_Driver** data file on the **Customer Letter** application.

This file contains the data that will be used when running the application.



Add the output queue

1. In the Library expand the **Environment > Delivery > Output Queues** heading.
2. Drag-and-drop the **PDF Queue** output queue on the **Customer Letter** application.

This object contains the information to generate the PDF of the communication and place it in C:\Training\Introduction\Output Files\WelcomeLetter.pdf. (Drop the PDF Queue to the Property Panel and review the Basics tab to view the location and name of generated pdf.)

The communication application is now ready. In the next chapter you will design the communication page.

4. Designing communications with Designer

Objectives

On completion of this chapter, participants should be able to:

- Identify the use of Designer and describe its interface components
- Describe the Design environment
- Use Designer to create a simple customer communication

Overview

The following terms are used in this chapter:

- **Design environment** – The programs that you use to design and test applications.
- **Production environment** – The programs, scripts, and files that you use to produce customer-ready, personalized documents from finalized applications.
- **Designer** – Application (thick client) that you use in the design environment to create the visual layout of customer communications. You use Designer to insert design objects such as charts and tables, text, and variables, which create personalized content for each customer at engine run time.
- **Design Manager** – The program that you use in the design environment to create and manage the objects that are used to build applications. You use Design Manager to set object properties, map data, organize application objects, configure printers and production equipment, and run the test engine to produce output.
- **Communications Designer** – Communications Designer provides an intuitive web-based design environment for rapid customer communication development. The web environment is used to create print and email communications that can leverage resources that are set up in Design Manager – such as fonts, styles, variables, and output queues. It also includes a data source editing tool for mapping variables to a data file, which can then be associated with a communication. The resulting personalized customer communications are then fulfilled using the engine orchestration features in the Exstream platform.

Exploring Designer

Designer is the graphic design interface for Exstream. You use Designer to create and format content for pages and messages, insert graphics, insert variables to personalized documents, and put together the overall design and layout for customer communications.

To gain hands-on experience in Designer, you will complete exercises related to the following topics:

- Logging in to Designer
- Opening a design page
- Exploring the design window
- Customizing the Designer interface

Logging into Designer There are several ways to log into Designer:

- If you already have Design Manager open, you can skip logging in and just open Designer by selecting **Tools > Run Designer** from the Menu bar.
- Use the shortcut on the **Start** menu.
- Double-click the **Designer.exe** file.

Opening a design page You can open an existing design page in the following ways:

- In Design Manager, drag a page object from the Library to the Edit Panel to open the page in Designer.
- In Design Manager, right-click a page object in the Library and select **Edit**.

In Designer, from the Menu bar, select **File > Open** and then select the page you want to open.

Exploring the design window

The design window is the area within Designer where you can create the overall design and layout for customer communications. The design window includes horizontal and vertical rulers, a design area, and a pasteboard (the area outside of the design area).

In the design area, you can create or change one of the following types of Library objects:

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

After you have one of these objects open in the design window, you can achieve your intended design by inserting design objects.

Inserting a design object

Design objects include lines, shapes, text boxes, images, forms controls, and so on, that you can use to enhance your design. To insert a design object in Designer, click a button on the Drawing Objects toolbar.



Figure 4-1: Drawing Objects toolbar

You can also use the Insert menu or create a keyboard shortcut to insert design objects.

Some objects (for example, images and frames) open additional dialog boxes, for which you must configure additional settings. Other objects change the cursor (for example, charts, text boxes, and shapes). For those objects, position the pointer where you want to insert the object in the design window, and then click and drag until the design object is roughly the size that you want it to be.

Designing the Mobi Privacy Policy Update letter

Mobi Communications currently uses a collection of Microsoft Word templates to manage customer communication. Unique customer data is entered manually or by using Word's mail merge feature, which is prone to error. Mobi regularly sends welcome notices to new customers.

As a designer for Mobi Communications, you have been tasked with creating the visual design for the welcome notice in Exstream. The customer communication application must meet the following requirements:

- It must use variable data to personalize the communication for each customer, so that their names and addresses appear correctly in the address block.
- It must be designed to match Mobi Communications letterhead, which fits on 8.5" x 11" paper.
- It must meet corporate branding standards for logos, fonts, and wording.
- It must include content the legal department has approved.

Because the Mobi Welcome Letter is the first major design project you have been assigned, you have also been tasked with looking for opportunities for speeding up future design projects.

To design the Mobi Welcome Letter, you must complete the following exercises:

- Creating the communication design in Designer
- Assembling the communication application
- Packaging the application and running the engine

Creating the communication design in Designer

To create the communication design in Designer, you must complete the following exercises:

- Design the page
- Insert a component from the library
- Create a text box
- Import and format text with a style sheet
- Insert and format text manually
- Insert an image
- Insert variables
- Create a component
- Run word checks

Lab: Designing the communication

Part I: Design the page



Open the communication page

1. *Launch Design Manager (you can navigate to Programs > OpenText Exstream 16.6.0 > Design Manager).*
2. *Sign in to using the following information:*
 - User: **exadmin**
 - Password: **opentext**
3. *In the Library expand ProcComm > Pages and drag the Welcome letter page on the Edit Panel (lower panel in the Design Manager interface) to open it in Designer.*

The Welcome letter page was created in the previous chapter when assembling the application.

The Welcome letter page opens in Designer. (Designer may open in the background, behind the Design Manager window.)



Insert a component from the library

1. *In Designer, on the Drawing Objects toolbar, click .*



If the Drawing Objects toolbar is not visible, navigate to View > Toolbars and select Drawing Objects.

The Select Component dialog box opens.

2. From the Folders list, make sure that **All folders** is selected.
3. In the Components area, select **Mobi Logo** and click **OK**.

The Select Component dialog box closes and the logo is placed on the design page.

4. Click .

Figure 4-2:
Image Properties



The Image Properties dialog box opens.

5. Click the **Placement** tab.
6. Set the position of the logo as follows:

Box	Enter
Horizontal position	0.500
Vertical position	0.250

7. Click **OK**.

The Image Properties dialog box closes.

8. Save the page object.

The logo is placed in the top left corner of the page.

Part II: Insert and format text

To insert and format the text needed in the Mobi Welcome Letter, you must complete the following exercises:

- Create a text box
- Import text and format with a style sheet
- Manually insert and format text

**Create a text box**

1. On the Drawing Objects toolbar, click .

The cursor changes to  when the pointer is positioned over the design window.

2. Click anywhere in the blank area of the design window.

3. Click .

The Text Properties dialog box opens.

4. Click the **Placement** tab.

5. Set the position and size of the text box as follows:

Box	Enter
Horizontal position	0.750
Vertical position	2.625
Width	6.500
Height	6.125

6. Click the **Dynamic Size and Placement** tab and complete the following:

- a. In the **Reference name** box, enter **Welcome letter body**.



It is a best practice to name all of the design objects on the page.

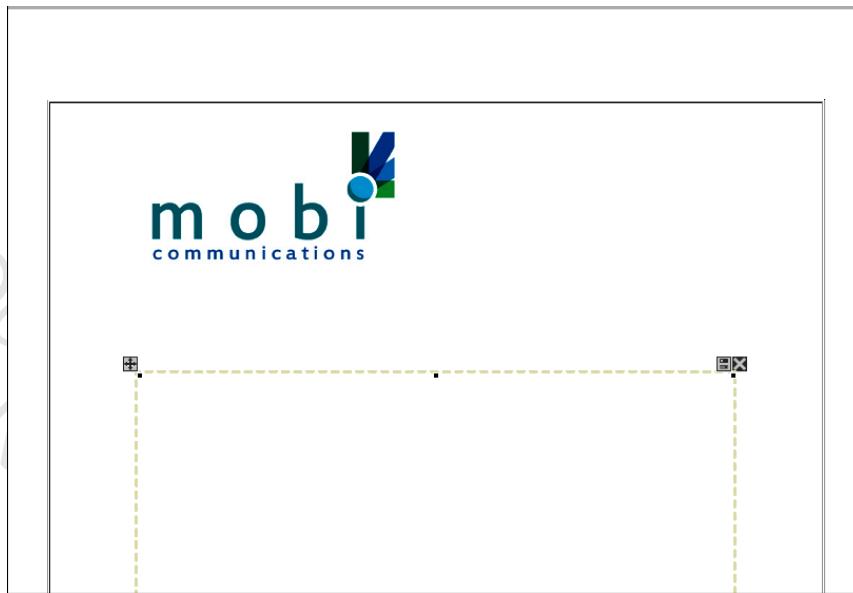
The name you enter in the Reference name box identifies the object during design in the Outline Viewer, in reports created during testing, or in messages encountered during troubleshooting.

- b. Make sure that the **Autosize width** and **Autosize height** check boxes are clear.

7. Click **OK**.

The Text Properties dialog box closes. The text box resizes and repositions, and the name appears in the Outline Viewer.

Figure 4-3:
Text box and logo in position



8. Save the page object.

In Designer, you will insert the text of the letter and apply the specified formatting. In this exercise, you will import the text from an external text file. You will also format the text using a pre-existing style sheet.



Import text and format with a style sheet

1. Place the cursor in the text box.
2. Import the text provided by the Legal department by completing the following steps:
 - a. Right-click inside of the text box and select **Insert > Import Text File**.

The Open dialog box opens.

- b. From the list next to the **File name** box, select **Text Files (*.txt)**.
- c. Go to the following directory: **C:\Training\Introduction\Text Files**.
- d. Select **Mobi_Welcome_Letter_010112.txt** and click **Open**.

The Open dialog box closes and the text is imported into the text box.

3. Select the style sheet by completing the following steps:
 - a. From the Menu bar, select **Format > Style > Select Style Sheet**.

The Select Style Sheet dialog box opens.

b. Select **Mobi Style** and click **OK**.

The Select Style Sheet dialog box closes.

4. Apply the required paragraph and text styles to the body of the letter by completing the following tasks (you may need to activate the Formatting toolbar by selecting **View > Toolbars**):

To	Do this
Set a baseline style for the text	<ul style="list-style-type: none">Place the cursor in the text box and press CTRL + A to select all the text.From the Formatting toolbar, select the Body paragraph style. (If the Formatting toolbar is not visible, navigate to View > Toolbars and select Formatting.)
Apply a paragraph style to the major heading in the text	<ul style="list-style-type: none">Place the cursor in the Welcome to Mobi Communications! line.From the Formatting toolbar, select the Major Heading paragraph style.
Apply a paragraph style to the bulleted list items in the text	<ul style="list-style-type: none">Select the following lines:<ul style="list-style-type: none">Visit http://www.mobi-communications.com and click 'Contact Us'Contact us via email at privacy@mobi-communications.com.Call us at (888) 555-1234.From the Formatting toolbar, select the Bulleted List paragraph style.

To	Do this
Add static text hyperlinks	<ul style="list-style-type: none"> ● Select the following text strings, one at a time, right-click, and select Add text hyperlink: <ul style="list-style-type: none"> – http://www.mobi-communications.com (2 instances) – privacy@mobi-communications.com ● In the Hyperlink Properties dialog box, do one of the following: <ul style="list-style-type: none"> – For the other hyperlinks, select http:// from the list and enter the applicable URL in the box. – For the email hyperlink, select mailto: from the list and enter privacy@mobi-communications.com in the box. – Select the Open in new window check box and click OK.
Apply a text style to text that must be emphasized or distinguished from other text	<ul style="list-style-type: none"> ● Select the following text strings, one at a time, and from the Formatting toolbar, select the Emphasis text style: <ul style="list-style-type: none"> – Dear CustomerName_First – John Thompson ● Highlight the following text strings, one at a time, and from the Formatting toolbar, select the Hyperlink text style: <ul style="list-style-type: none"> – http://www.mobi-communications.com (2 instances) – privacy@mobi-communications.com

Welcome to Mobi Communications!

Dear Jane,

You've made a great choice by joining the fastest-growing telecommunications company in the nation, servicing metropolitan and rural areas in 48 states, with plans to expand to major cities in Alaska and Hawaii by 2012. Our network equipment is top-of-the line and built for speed and capacity, so your phone calls will be clear and your mobile data access will be fast.

We strive to provide you with the best service and support you'll ever experience. Our customer service and technical support representatives are available for your convenience 24 x 7 x 365, so you can get assistance whenever and wherever you need it.

We value the feedback and suggestions of our customers, so if there's anything you think we can improve, please visit our Web site at <http://www.mobi-communications.com> and click "Contact Us."

If you have any questions or comments regarding the Privacy Policy, please:

- Visit <http://www.mobi-communications.com> and click "Contact Us."
- Contact us via email at privacy@mobi-communications.com.
- Call us at (888) 555-1234.

Sincerely,

John Thompson
Vice President
Mobi Communications

Figure 4-4: Formatted text using style sheet

5. Save the page object.

In Designer, you will insert a text box and the text of the return address and apply specified formatting. In this exercise, the text will be manually entered and formatted.



Insert and format text manually

1. *In the design window, click a blank area of the letter to ensure that no design objects are selected.*

2. Create a text box with the following specifications applied in the Text Properties dialog box:

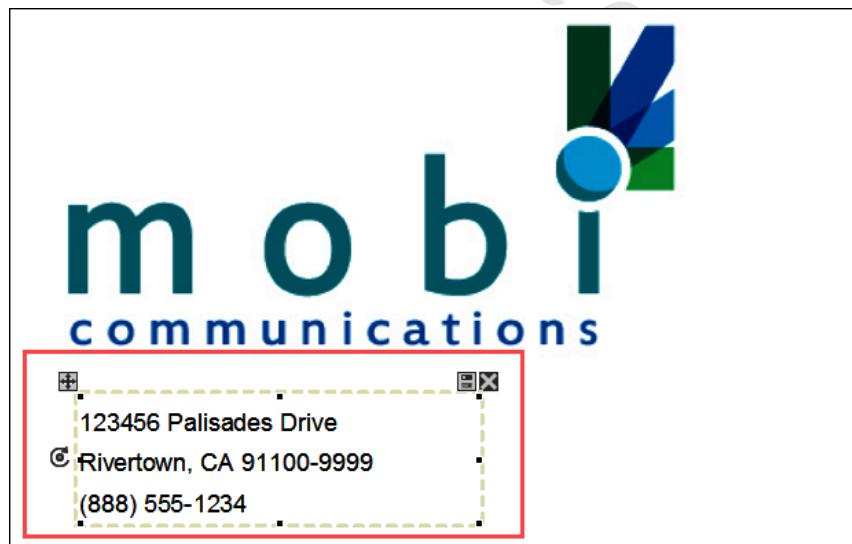
To	Do this
Set the position and size of the text box	<ul style="list-style-type: none"> Click the Placement tab. In the Horizontal position box, enter 0.75. In the Vertical position box, enter 1.875. In the Width box, enter 1.75. In the Height box, enter 0.625.
Specify a reference name for the text box	<ul style="list-style-type: none"> Click the Dynamic Size and Placement tab. In the Reference name box, enter Mobi Return Address. Clear the Autosize width and Autosize height check boxes. Click OK to close the Text Properties dialog box.

3. Place the cursor in the text box and enter the following text:

**123456 Palisades Drive
Rivertown, CA 91100-9999
(888) 555-1234**

4. Select all the text in the text box and, using the Formatting toolbar, apply **Arial, size 8 font**.

Figure 4-5:
Text box with return address



5. Save the page object.



Insert an image

1. In the body of the letter, place the cursor in the blank line above John Thompson.

2. On the Drawing Objects toolbar, click

The Import an Image dialog box opens.

3. In the Insert an Image window select the left button to select an image from the local file system.

4. Go to C:\Training\Introduction\Image Files.

5. Select **signature.jpg** and click **Open**.

The Import an Image dialog box opens.

6. From the Change list, select **Convert to design resolution**.

7. Click **OK**.

An informational message appears.

8. Click **OK**.

The Embed Properties dialog box opens.

9. Verify that, from the Embed method list, **Inline (within text)** is selected.

10. Click **OK**.

The Embed Properties dialog box closes and the signature is embedded in the text box.

11. Select the image and click

The Image Properties dialog box opens.

12. Select the **Dynamic Size and Placement** tab.

13. In the Reference name box, enter **VP Signature**.

14. Click **OK**.

The Image Properties dialog box closes.

Figure 4-6:

Signature image inserted



15. Save the page object.

Part III: Insert variables

To complete the personalization needed for the Mobi Welcome Letter, you must complete the following exercises:

- Insert a system variable
- Insert a user variable

In Designer, you will insert the system variable to place the current date on the communication. To place the date on the communication, you must first create a text box to contain the variable.



Insert a system variable

1. In the design window, click a blank area of the letter to make sure that no design objects are selected.
2. Create a text box with the following specifications applied in the Text Properties dialog box:

To	Do this
Set the position and size of the text box	<ul style="list-style-type: none"> • Click the Placement tab. • In the Horizontal position box, enter 4.750. • In the Vertical position box, enter 0.375. • In the Width box, enter 2.500. • In the Height box, enter 0.25.

To	Do this
Specify a reference name for the text box	<ul style="list-style-type: none"> Click the Dynamic Size and Placement tab. In the Reference name box, enter Current Date. Clear the Autosize width and Autosize height check boxes. Click OK to close the Text Properties dialog box.

3. If the Variable Palette is not visible, select **View > Variable Palette** from the Menu bar.

4. On the Variable Palette, apply the following filters:

a. Click and make sure that **All Types** is selected.

The button changes to .

b. Click and select **All Folders**.

Designer filters the variable list to display variables in all database folders.

c. On the Variable Palette, click and select **Only System Variables**.

The button changes to and Designer filters the variable list to display only system variables.

5. From the Variable Palette, double-click **<SYS_DateCurrent>**.

The variable appears in the text box.

6. Save the page object.

In Designer, you will insert a series of user variables to create the customer's address block. To place the address block on the communication, you must first create a text box to contain the variable.



Insert user variables

1. In the design window, click a blank area of the letter to ensure that no design objects are selected.

2. Create a text box with the following specifications applied in the **Text Properties** dialog box:

To	Do this
Set the position and size of the text box	<ul style="list-style-type: none"> Click the Placement tab. In the Horizontal position box, enter 4.750. In the Vertical position box, enter 0.750. In the Width box, enter 2.250. In the Height box, enter 1.125.
Specify a reference name for the text box	<ul style="list-style-type: none"> Click the Dynamic Size and Placement tab. In the Reference name box, enter Customer Address Block. Clear the Autosize width and Autosize height check boxes.
Set up the text box to remove blank lines for variables that do not contain values For example, if the customer does not have a second address line, such as an apartment number, then the output will not have a blank line in the text box for 'CustomerAddress2'	<ul style="list-style-type: none"> Click the Text tab. Select the Remove empty variable lines check box.

3. On the Variable Palette, click  and select **No System Variables**.

Filtering the variable list in the Variable Palette can save you time and increase your accuracy when inserting variables. You can also enter the name (or partial name) of the variable that you want to find and click to filter the variable list.

The button changes to  and the variable list displays only user variables.

4. Double-click the variable names in the Variable Palette to create the following text block:
- <Customer_Name_First> <Customer_Name_Last>
 - <Customer_Address1>
 - <Customer_Address2>
 - <Customer_City>, <Customer_State> <Customer_ZIP>
 - <Customer_AccountNumber>

5. Place the cursor before the <Customer_AccountNumber> variable and enter **Account Number:** followed by a space.

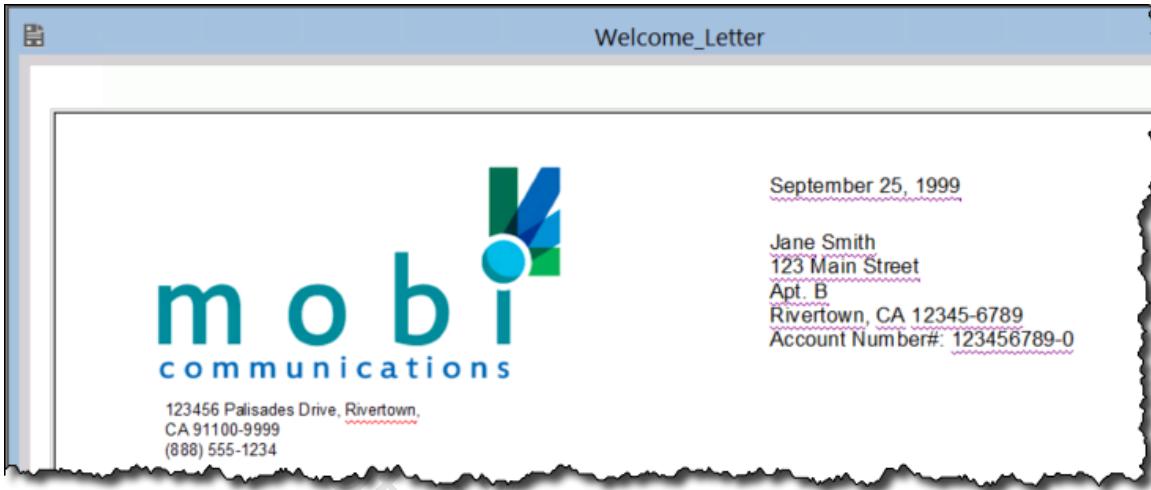


Figure 4-7: Inserting customer address variables

6. Save the page object.
7. Close **Designer**.

Part IV: Configure the communication application



Configure the communication application

1. In the Design Manager Library, expand the **ProcComm > Applications**.
2. Drag the **Customer Letter** application on the Property Panel.
3. Specify the default locale for the application by completing the following steps:
 - a. On the **Basic** tab, next to the **Default locale** box, click
4. Specify a variable that identifies customers in the system report by completing the following steps:
 - a. On the **Basic** tab, in the **Customer identification variables** area, next to the **Customer ID for reporting** box, click

The Select Locale dialog box opens.

- b. Select **English**.
- c. Click **OK**.

4. Specify a variable that identifies customers in the system report by completing the following steps:
 - a. On the **Basic** tab, in the **Customer identification variables** area, next to the **Customer ID for reporting** box, click

The Select Variable dialog box opens.

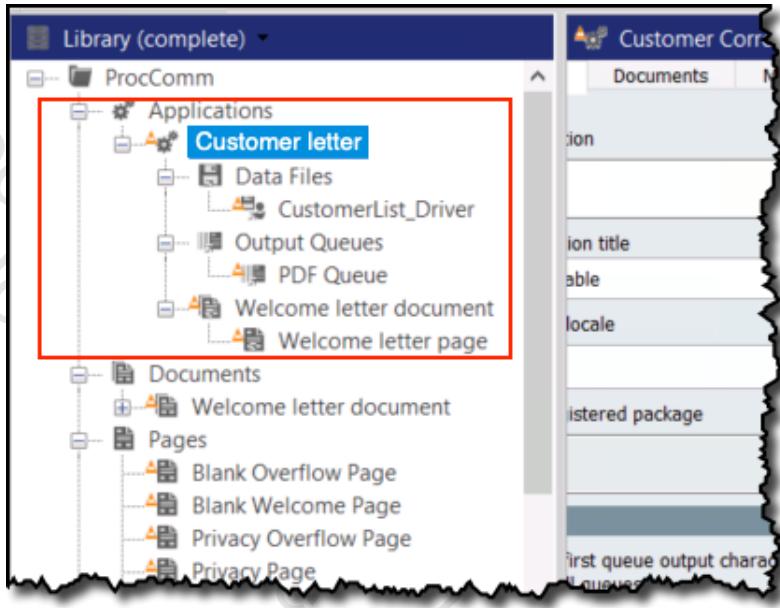
- b. From the list of variables, select <Customer_AccountNumber> and click **OK**.

The Select Variable dialog box closes.

- c. Save and close the application object.

At this point the application is ready to be packaged.

Figure 4-8:
Application



Part V: Package the application and run the engine

In Design Manager, you will create the package file and run the engine to produce output. You will then view the output in the Exstream Viewer.



Package the application and run the engine

1. Right-click the **Customer Letter** application object and select **Package**.

The Build Package dialog box opens.

2. To specify the output, complete the following steps:

- a. In the **Package file** text box, enter **C:\Training\Introduction\Pub Files\CustomerLetter.pub**.
- b. In the **Package file** area, select the **Specify output** radio button.
- c. Click .

The Select Output dialog box opens.

- d. Select **Exstream Viewer**.
- e. Click **OK**.

The Select Output dialog box closes.

3. Select the **Run Engine when complete** check box.

4. Click .

The Run the Engine dialog box opens.

5. Make sure that the **Package file** check box is selected.

The box adjacent to the Package file check box should automatically display the path that you entered in step 2.

6. Make sure that the **Customers** check box is cleared (so that all of the records in the driver file are processed).

7. Click **OK**.

The Run the Engine dialog box closes.

8. Click **OK**.

The Build Production Package File dialog box opens and shows a packaging progress bar.

When the engine run is complete, you receive an informational message asking if you want to view the engine message file.

9. Click **Yes**.

The System Report dialog box opens. Scroll through the messages to review a summary of the engine run.

10. Click **OK**.

The System Report dialog box closes. After the engine has completed the run, the Exstream Viewer opens to show a preview of the output.

11. Close the **Build Production Package File** window.

Designer (Viewer) opens in the background.

12. In the **Composed Customer List** area, use the navigational tools to scroll through the customers to see how the customer communication was personalized for each customer. (If the Composed Customer List is not visible, navigate to the View menu and select Composed Customer List.)

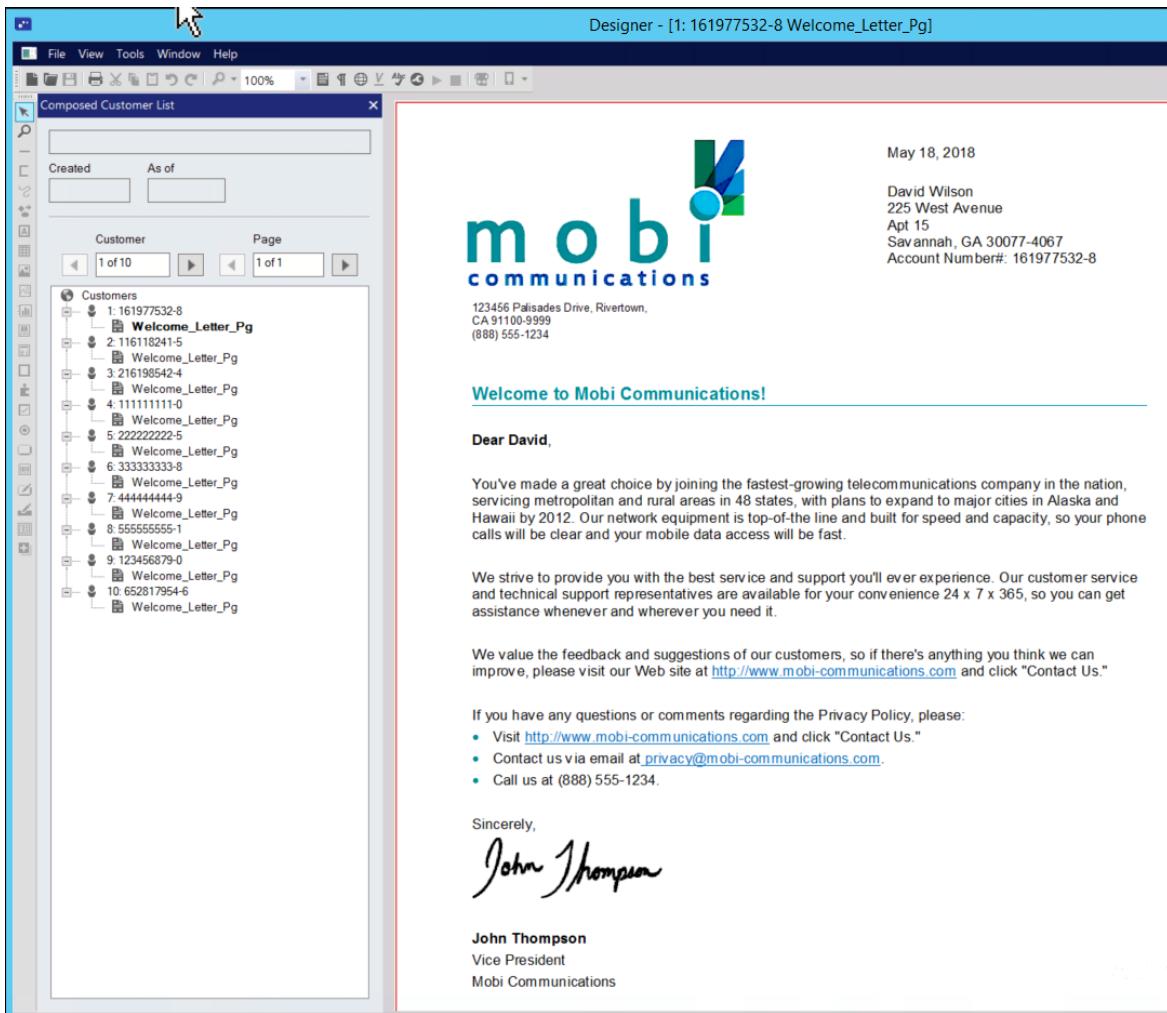


Figure 4-9: Welcome Letters in Exstream Viewer

13. Close the Exstream Viewer.

Part VI: Check in the application pub file to CAS Once satisfied with the results in your preview you can check in the pub files to CAS so that it can be used in Communications Builder.



Package the application and upload it to CAS

1. Right-click the **Customer Letter** application object and select **Package**.

The Build Package dialog box opens.

2. Select **Create for output queue device(s)**.
3. Clear the **Run Engine when complete**.
4. Select **Upload package file to CAS when complete** and click the pencil next to it.

The CAS package Details window opens.

5. Make sure the Name is set to **Customer Letter**.
6. Select **Create a new package**.
7. Click **OK**.
8. Make sure the following settings are used:
 - a. In the **Package file** text box, enter **C:\Training\Introduction\Pub Files\CustomerLetter.pub**.
 - b. Click **OK**.
9. Close the **Build Production Package file** window.

5. Managing Projects

On completion of this chapter, participants should be able to:

- Define what a Communications Server Project is
- Define what Communications Builder is used for
- Identify built-in tools in Communications Builder
- Identify the four Communications Builder main components:
 - Resource set
 - Platform
 - Processing engines
 - Runtime

Overview

This chapter describes the work environment and the interface elements of 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.

The Communications Builder graphical user interface (GUI) consists of four windows, and one view per Project component (Platform, Message, Runtime configuration, and resource set). The component views are displayed in the main window.

Communications Builder interface

The next figure describes the different areas of the Communications Builder interface:

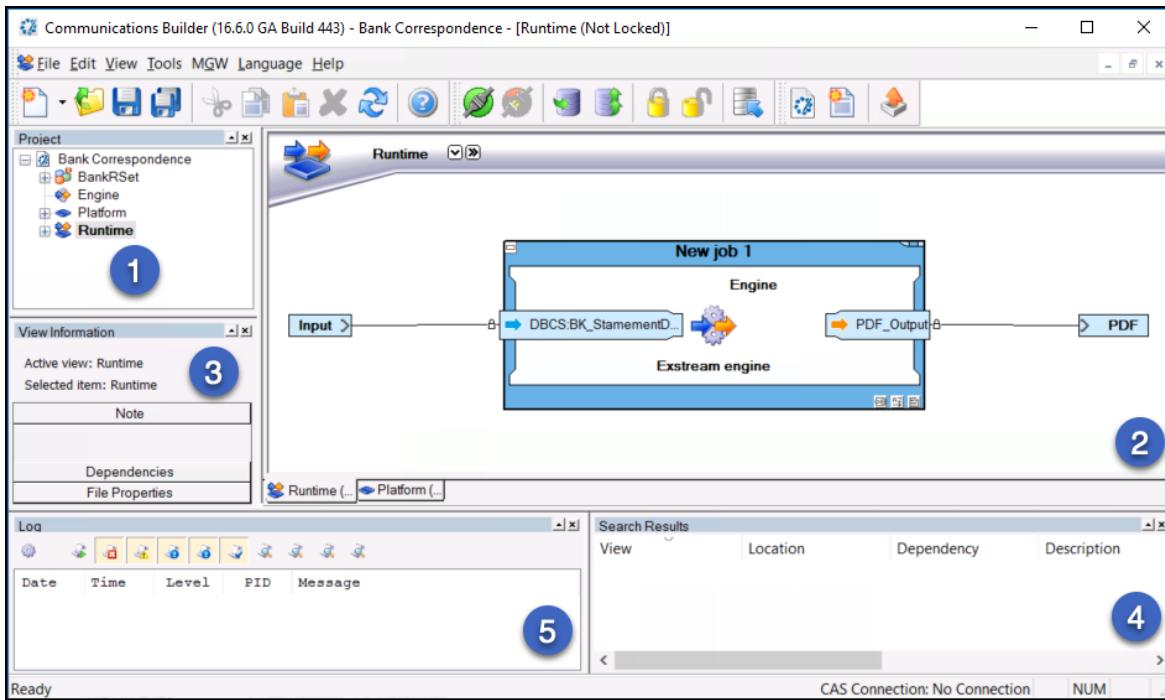


Figure 5-1: Communications Builder interface areas

1. **Project browser** – The “Project browser” is where you create and structure your Project.
2. **Main window** – The “Main window” is where you configure the Project components.
3. **Property window** – The “Property window” displays properties for the active view in the Main window.
4. **Search results window** – The “Search results window” displays the search results after submitting Edit> Find.
5. **Log window** – The “Log window” displays the Communications Builder log.

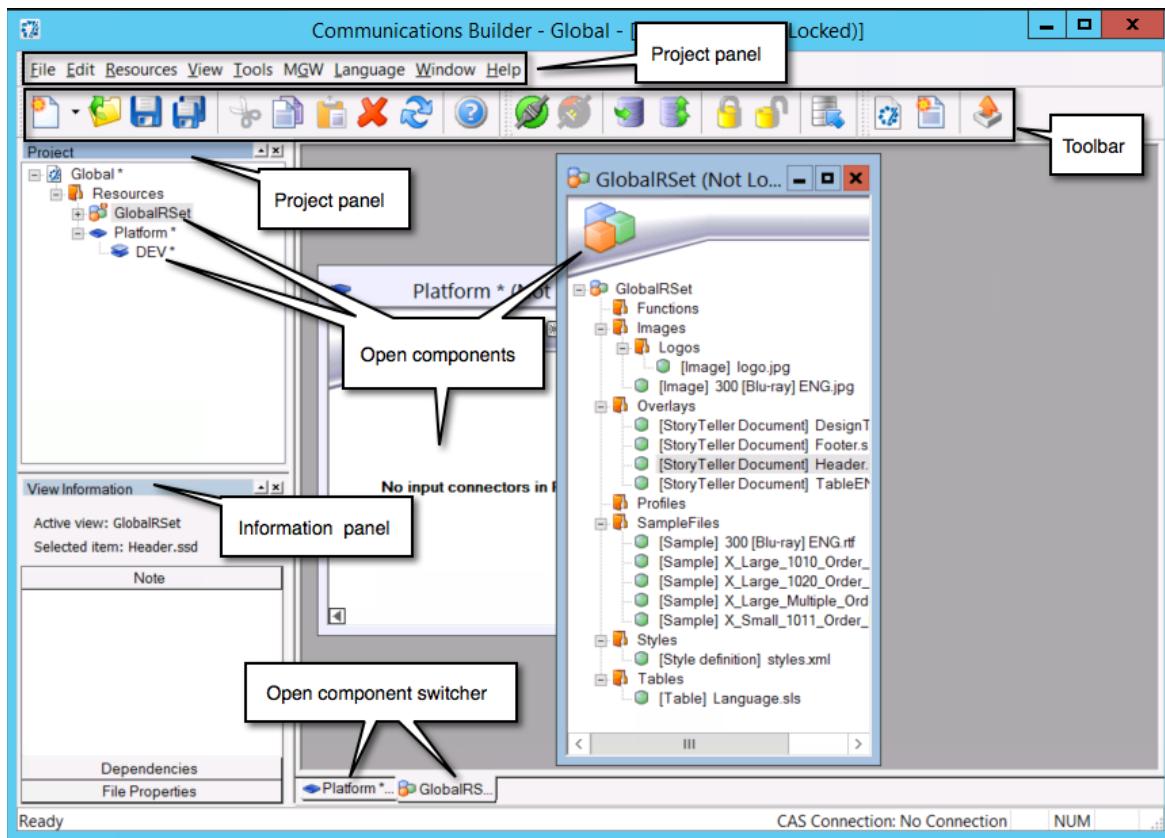


Figure 5-2: Communications Builder interface

Communications Builder toolbar

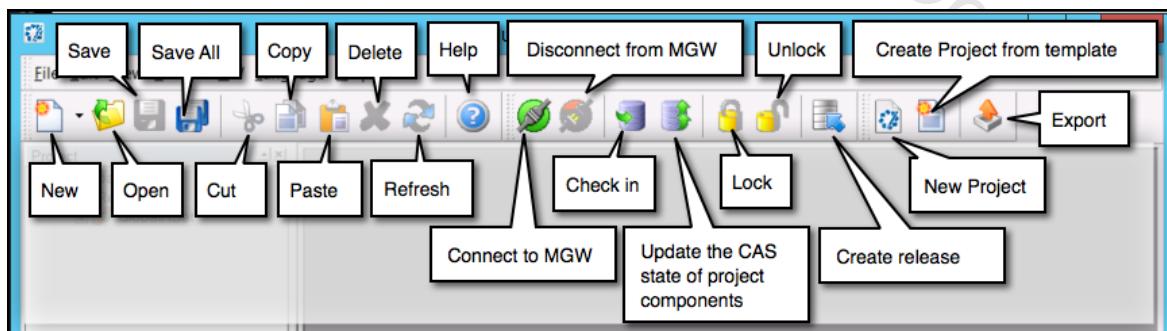


Figure 5-3: Communications Builder interface toolbar

Project browser	The Project browser is where you create and structure the Project. The Project is displayed as a tree, and all Project components are added as nodes to the Project tree.
Folders	You can use folders to structure the Project nodes.
Project nodes	You add the Project nodes either at root level, or to the appropriate folders.
Moving nodes	You can drag-and-drop Project nodes between the folders.
Activating Project component views	You can double-click a Project node to activate the corresponding view in the Main window. This applies to the following types of Project nodes:
	<ul style="list-style-type: none">● Platform node – Activate the generic layer in the Platform view.● Physical Platform layer node – Activate the corresponding physical layer in the Platform view.● Message/Engine node – Activate the corresponding Message or Engine configuration in the Message/Engine view.● Runtime configuration node – Activate the generic layer in the Runtime configuration view.● Physical Runtime configuration layer node – Activate the corresponding physical layer in the Runtime configuration view.● Resource set node – Activate the corresponding resource set in the resource set view.
Main window	The Main window is where the component views are displayed. You can open the following component views in the Main window (we will cover each one of these components in the following chapter of the course): <ul style="list-style-type: none">● Platform view● Message view● Engine view● Runtime configuration view● Resource set view
Property window	When you activate a view in the Main window, the view's properties are displayed in the Property window.
Active view and selected item	The Active view is the active view in the Main window, and the Selected item is the item selected in the active view. If no item is selected in the active view, the Selected item refers to the active view, i.e. the corresponding node in the Project browser.
Note tab	On the Notes tab, you can add notes to the Selected item.
Dependencies tab	There are dependencies between the nodes in the Project browser. For example, a Runtime configuration is related to settings in the Platform, resource sets, Messages, and physical layers. On the Dependencies tab, you can see the dependencies for the Active view, i.e. the corresponding node in the Project browser.

File properties tab Each node in the Project browser is stored as a Communications Builder file in a Project directory. When you activate a node, its file properties are displayed on the File properties tab. These properties include the absolute path to the file, and version control status if the Project is connected to the CAS via Communications Builder.

Search results window The Search Results window displays the search results after selecting Edit > Find.

The search results are displayed in a list. You can double-click a line to activate the corresponding view.

Log window If Communications Builder logging is enabled you can see the Communications Builder log in this window. You can use the filter buttons (toggle on/off) to specify which level of information to display.

You can enable logging to record the events which happen while you work with your Communications Builder Projects. To enable logging you must specify the appropriate log level and the path to the log file.

Using the Common Asset Service (CAS) to manage Communications Builder files

The CAS is the central repository in the Communications Server environment. You can use the CAS to manage Communications Builder Project files and release packages (export files). Each Communications Builder file is one resource in the CAS.

Communications Builder files and release packages are not added to the CAS automatically. To use this functionality, you must connect Communications Builder to the management gateway and manually check in your Project or create a release. After this, all Communications Builder users who have access to the same “tenant” can access the files.



The term “multitenancy” refers to the architecture in which a single instance of Communications Server runs on a server and serves multiple tenants.

A tenant is a group of users who share a common access with specific privileges to the Communications Server instance.

With a multitenant architecture, Communications Server is designed to provide every tenant a dedicated share of the instance - including its data, configuration, user management, tenant individual functionality and non-functional properties.

Communications Builder files and release packages in the CAS are versioned. This means that each time a Project is checked in, a new version of the Project is added to the CAS.

And each time a release is created, a new version of both the Project and the export file are added to the CAS.

The version of the Project file in CAS does not correspond to the Project version. For example, you can check in several versions of a Project file without changing the Project version.

File status indicators

Projects stored in the CAS have indicators that show the status of each Communications Builder file in the CAS compared with the status of the file in your local directory. A tick next to a node indicates that the file is stored in the CAS.

Each file can have the following status:

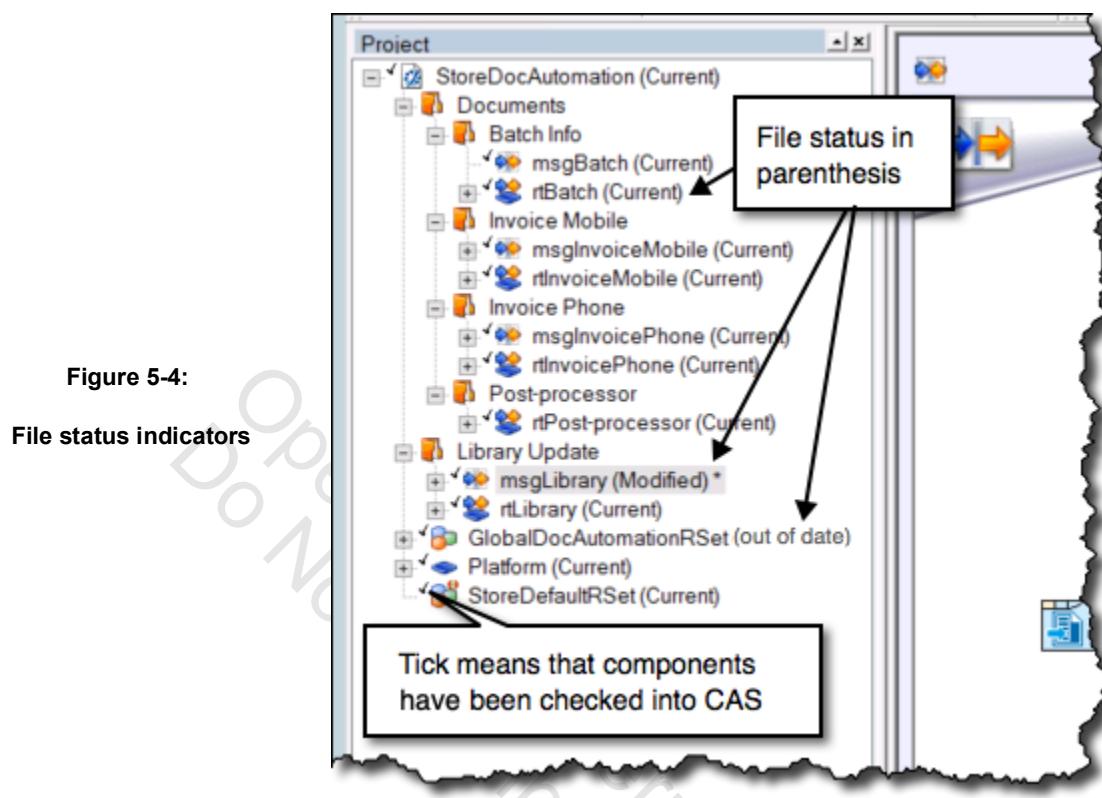
Current The status of the file in the CAS is the same as the status of the file in your Project directory.

Modified You have modified the file in your Project directory, but you have not checked in the Project. To update the version in the CAS, you must check in the Project.

Not in view The file exists in your local Project directory, but is not in the CAS. You must check in the Project to add the file to the CAS.

Out of Date Another user has modified a file and checked in the Project. This means you must update the Project component in order to get the latest version.

Conflict Both you and another user have modified the same file. The other user has checked in the Project. You have two options, 1) you can promote your version of the file to the latest. This overwrites the other person's changes, or 2) you can download the version of the file from the CAS. This overwrites your changes.



- Lock status indicators** Projects and Project files stored in the CAS can be locked to prevent several users from making changes to the same file. Each file can have the following lock status:
- Green lock icon indicates that you have locked the file.
 - Red lock icon indicates that another user has locked the file. You cannot edit the file.
 - No lock icon indicates that the file is not locked.

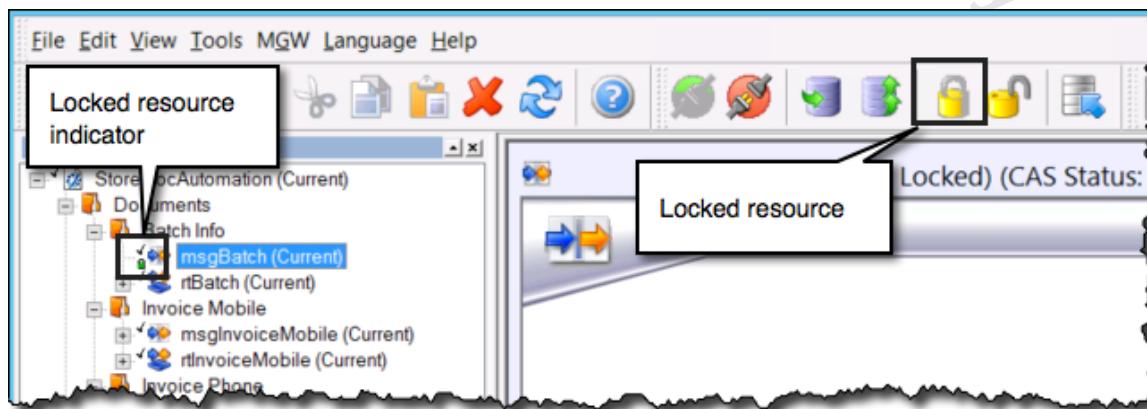


Figure 5-5: Lock status

Checking in a Project to CAS The Project is connected to the CAS via the management gateway connection in Communications Builder. Before you can check in a Project, you must connect to the management gateway.

You use check in to both these things:

- Add a Project to the CAS for the first time.
- Add an updated version of a Project to the CAS.

Sometimes you and another user may have modified the same file in a Project. When you make a check in, you have the option to make a force check in of these files. This will overwrite the files in the CAS with your versions.

If you do not want to overwrite one or more of the files in the CAS, you must download the latest version of each file before you check in the Project.

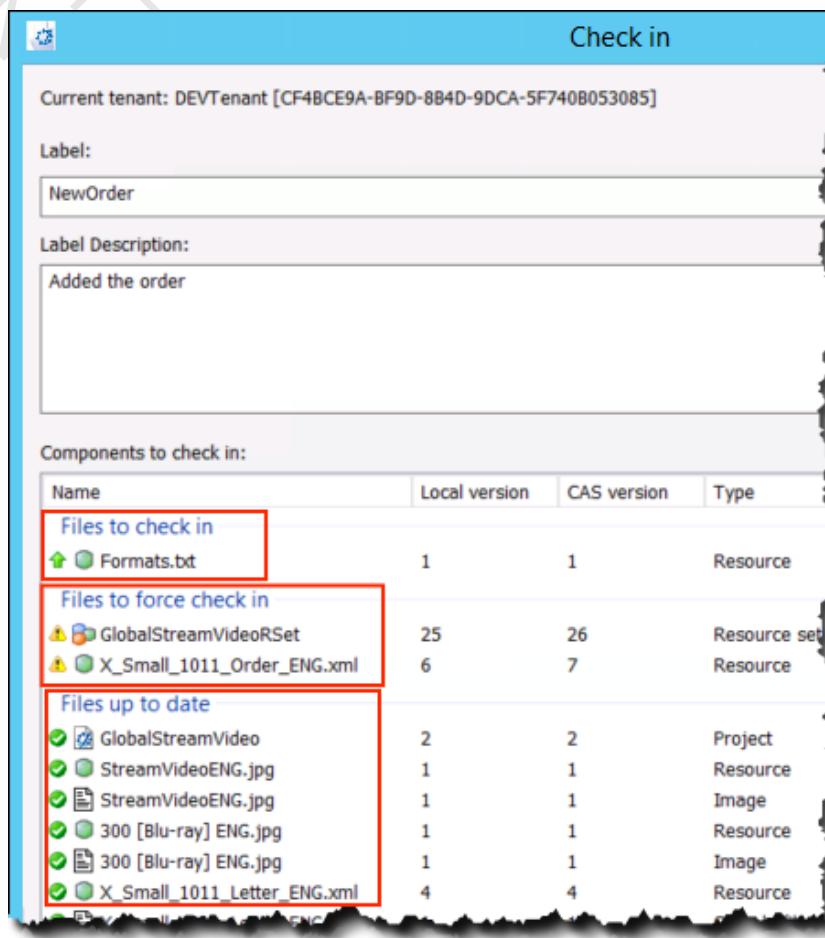


Figure 5-6:
Checking in files

Comparing, downloading, and promoting individual files

You can compare your local version of each Project file with the version of the Project file in the CAS.

This is useful if you are working on the same Project as others, and someone else checks in a newer version of the Project than you are currently working on.

If differences exist between your local version of a file and the version in the CAS, you can choose what course of action to take for each file. The following options are available:

- Download latest version – Retrieves the version of the file from the CAS. This will overwrite your local version with the version from the CAS. Any changes you made to the file are lost.
- Promote this version to the current – This will make your version of the file the most recent version in the CAS. This will overwrite the version of the file in the CAS with your version. This change is applied in the CAS after you check in the Project.
- Leave as-is – No action is taken. The next time you check in the Project, you will have the option to make a force check in, which will overwrite the version of the file in the CAS with your version.

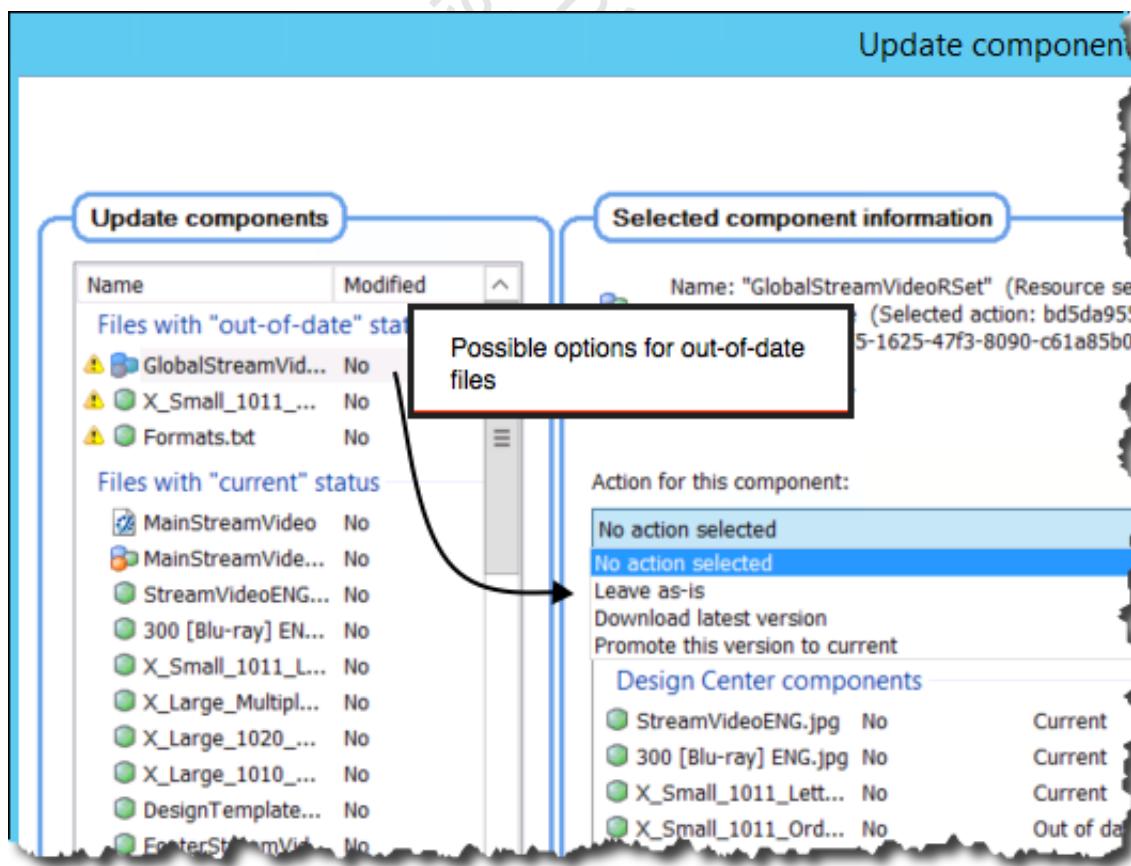


Figure 5-7: Checking out files

Creating a release	When you create a release, the Project is exported, all Project files are checked in to the CAS, and the export file is added to the CAS. The export generates a file (*.export) that contains all the Platform layers in the Project. Each time you create a release, a new version of the export file is stored in the CAS.
	Release packages you create in Communications Builder can be deployed to Communications Server applications from Control Center. When you deploy the Project in Control Center, you must connect to the CAS, select the Project, select the appropriate release package based on the label, and then specify which physical layer to deploy.
Project version	When you export a Project, the Project is assigned a version number. Unless you update the number manually, this is always version number 1.
Service version equals Project version	If a Project includes Service Request input connectors or service-enabled Messages and you deploy the Project to a Communications Server application, the Communications Server application automatically exposes services. The services are used for creating, previewing, and releasing documents and are assigned the same version number as the deployed Project.
Several service versions in parallel	Several services of different versions can run in parallel in the same domain. By increasing the Project version number and deploying the new version to a separate Communications Server application, you can run an updated Project version in parallel with a previous Project version.

Project overview

An OpenText Exstream Communications Server project is the design of how to:

- Connect to the backend system
- Extract data from incoming documents or data files
- Enrich output documents with graphical features, additional data, etc.
- Present documents in various formats such as AFP, PDF, PCL, etc.
- Distribute documents to various channels, such as File, Print, SMTP, etc.

In a project, you configure all the settings needed by the Communications Server application to operate according to the specifications. Projects are designed in Communications Builder. Then you export the project, and deploy it to the appropriate Communications Server application in Control Center.

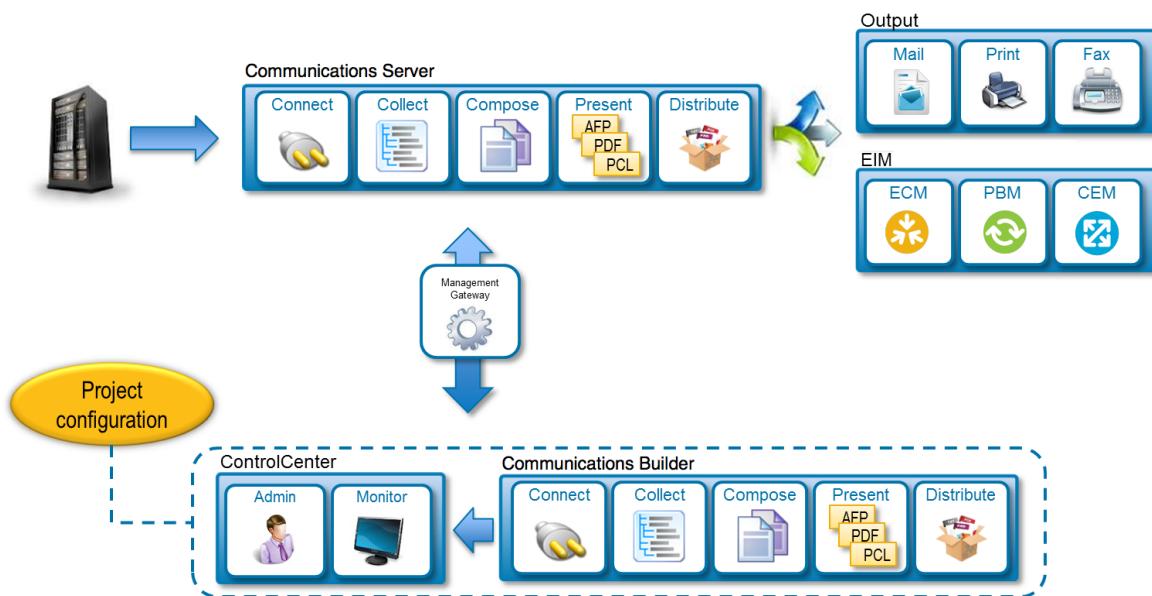


Figure 5-1: Projects

Project structure

Resource set	All external files that you refer to when you configure a project must be converted to resources. Resources must be available to the project components via resource sets. A resource set is a set of links to the physical resource files stored on disk.
Examples	The following are examples of resources: <ul style="list-style-type: none">● Samples - Examples of input data from backend system● Images - Picture files to use for logos, etc.● Overlays - Layout to use for document design● Tables - To use for conditional selection
Platform	The Platform is where you configure the environment settings for the project. You specify how to connect to and receive input from backend systems. You also specify how to connect to and deliver output to the output devices, such as printers.
Processing Engine	The processing engine is a plug-in container to call external processes from within the Communications Server and have the external process generate the output with the input data sent. Using the Communications Builder tools, an Exstream processing engine can be added to a project. The Exstream Engine plugin can then be selected and configured with a Package file (Pub) exported to CAS from Design Manager. In the Exstream Engine plugin properties, the uploaded package file and manifest file are configured as part of the Processing Engine component.
Runtime	A Runtime configuration is where you connect the Processing Engine to the Platform. A project can contain several Runtime configurations.

Structuring a project using Global, Sub, and Main projects

This section describes how to divide a project into several projects.

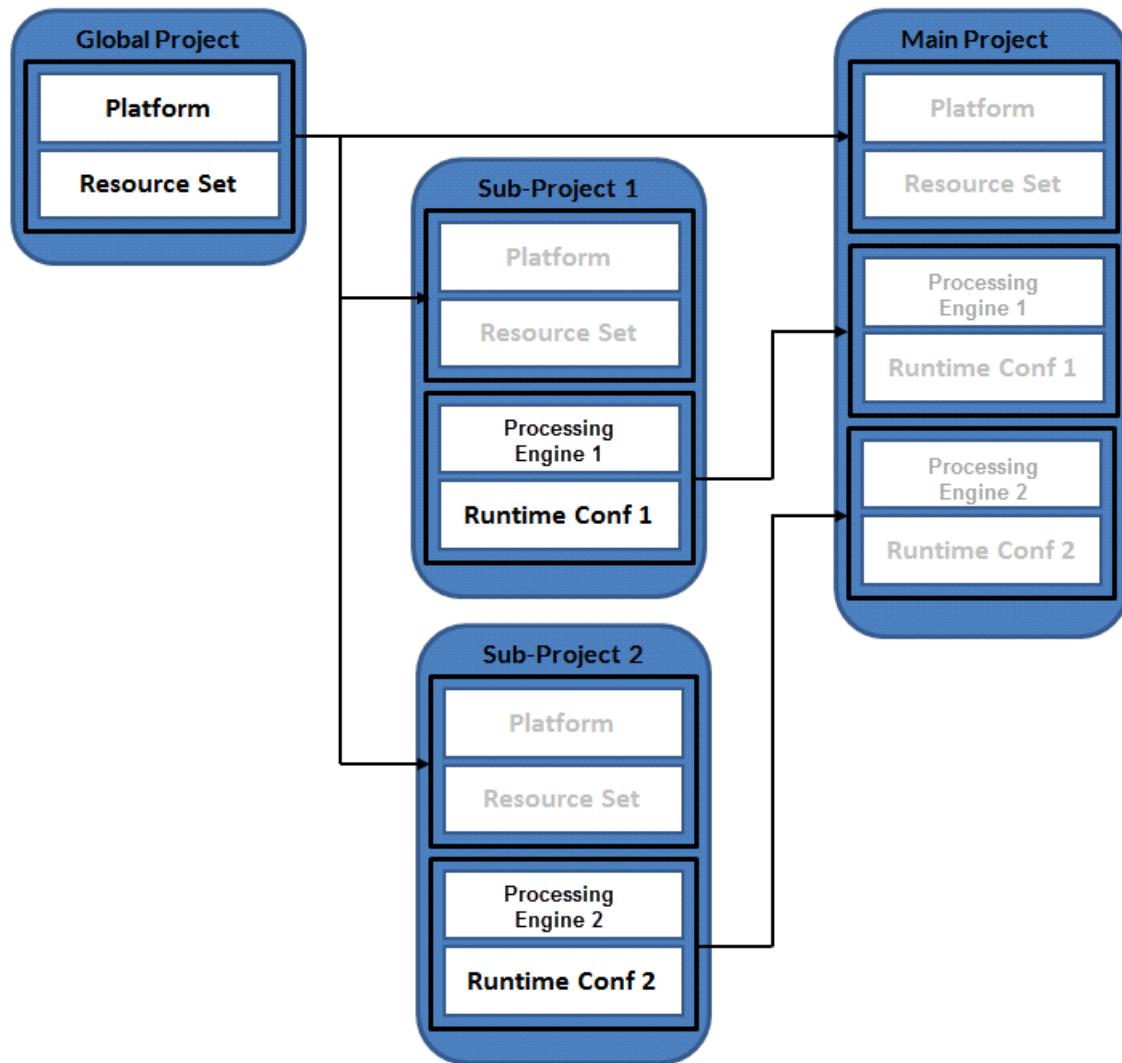


Figure 5-2: Project structure

When you create a project, you may come to a point where the project is too large to handle: too many components are displayed in the same Communications Builder view, it is difficult for several developers to work with the same project, etc.

The best way to solve this problem is to divide the project into several Sub Projects, and then link the Sub Projects to a common Main project.

All Projects that are to be run by the same Communications Server application must be based on the same Platform.

You should create a separate Global project that only contains the Platform and corresponding resource set.

Then you link this Platform to the other project modules. This ensures that all project modules are based on the same Platform.

Dividing a large project into Sub projects enables several developers to work with one sub project at a time, and use a Main project to merge the configuration.

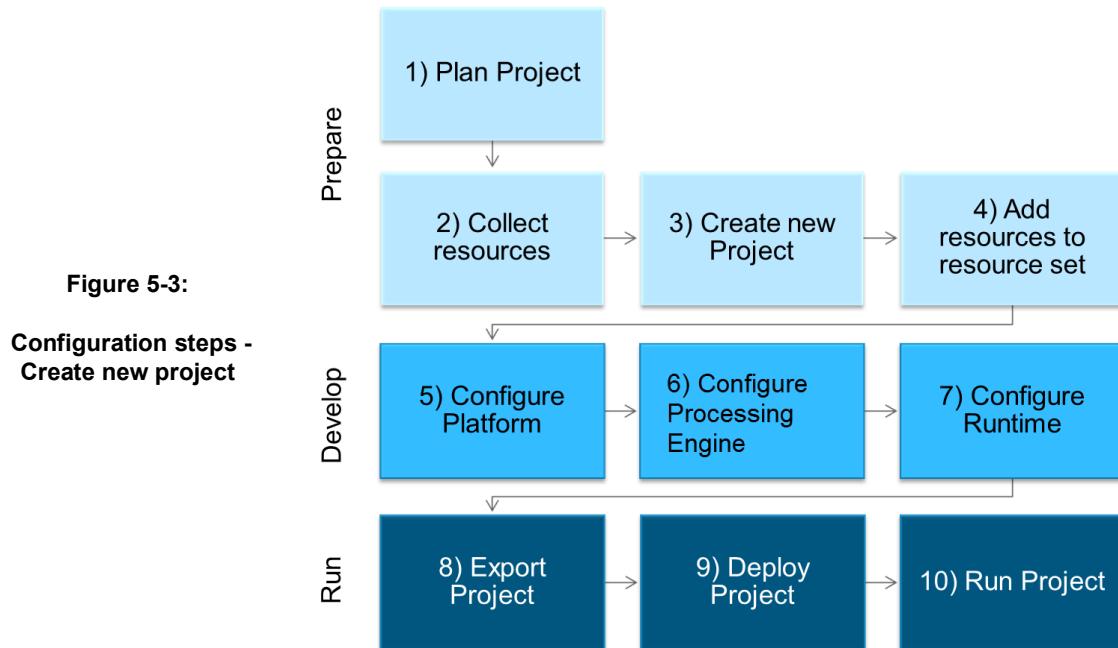


As just explained, it is a best practice to divide a large project in sub projects so that different developers can work independently on these sub projects. E.g.: create different Sub Projects for the different document types (messages). However to facilitate the work on the training labs, and only for training purposes, you will be working with a couple of projects. This later one will contain the two different document types or messages used throughout the course.

The instructor will illustrate during the labs how these best practice should be implemented.

Configuration steps

This section describes the configuration steps for a project:



Step	Activity	Description
1	Plan project	Plan how to implement the project and gather all requirements.
2	Collect resources	Collect all available resource files that you need.
3	Create new project	Create a new project in Communications Builder - Global and Main.
4	Add resources to resource set	Add all collected resources to the Global resource set.
5	Configure Platform	Add the Platform to the Global project, and configure input and output connectors. Then link the Platform to the Main project.
6	Configure Processing Engine	Add the Processing Engine to the project, and configure Event and Process.
7	Configure Runtime	Add and configure the runtime configurations. That is, the relationship between the Platform(s) and Processing Engine(s).
8	Export project	Export the Communications Builder configuration to an export file or create a release and store it in CAS.
9	Deploy project	In Control Center, deploy the export file to a Communications Server application.
10	Run project	In Control Center, run the Communications Server application and send data to the input connector.

Lab: Creating the project



Create the project

1. *Launch Programs > OpenText Exstream 16.6.0 > Communications Builder.*
2. *In the menu navigate to File > New > Project.*
3. *In the Project Settings window enter the following information and click the OK button:*
 - *Project name: CustomerLetter*
 - *Default Resource set: CustomerLetterRSet*

The Project Settings window displays.

The project is added to the Projects panel.

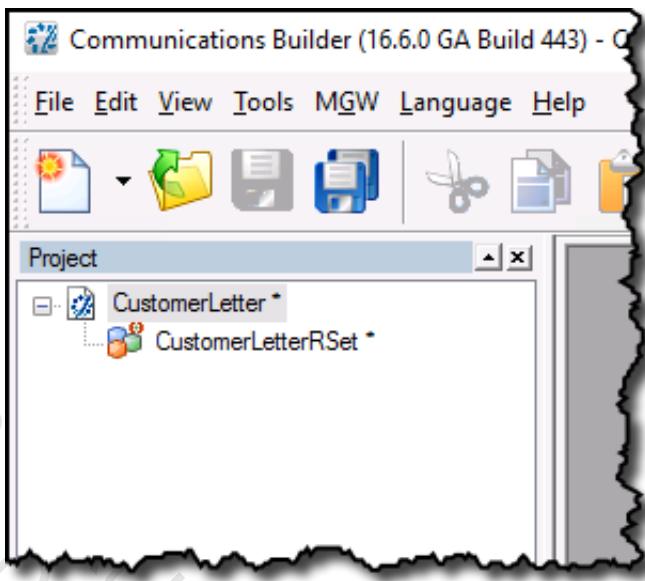


Figure 5-4:

Project added to the Project panel



Add resources to the resource set

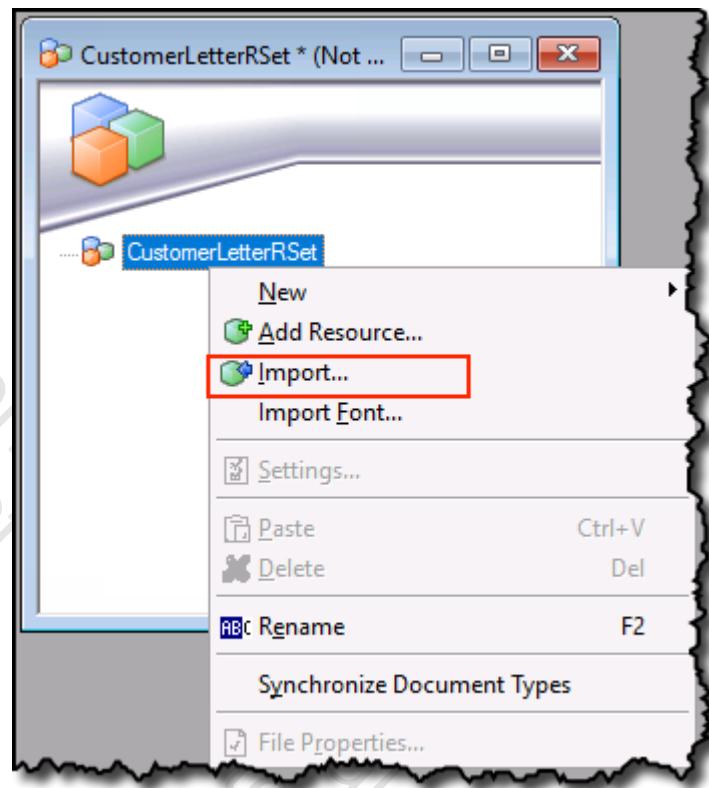
1. In the Project panel double-click **CustomerLetterRSet**.

The CustomerLetterRSet opens in the Main View panel.

2. Right-click **CustomerLetterRSet** and select **Import**.

Figure 5-5:

Import



3. Navigate to **C:\Training\Introduction\Data Files** and select **CustomerList-Delimited.csv**.
4. In the Resource Type Settings window accept the defaults, since it is a sample file of type text/csv.

The file is added to the resource set.

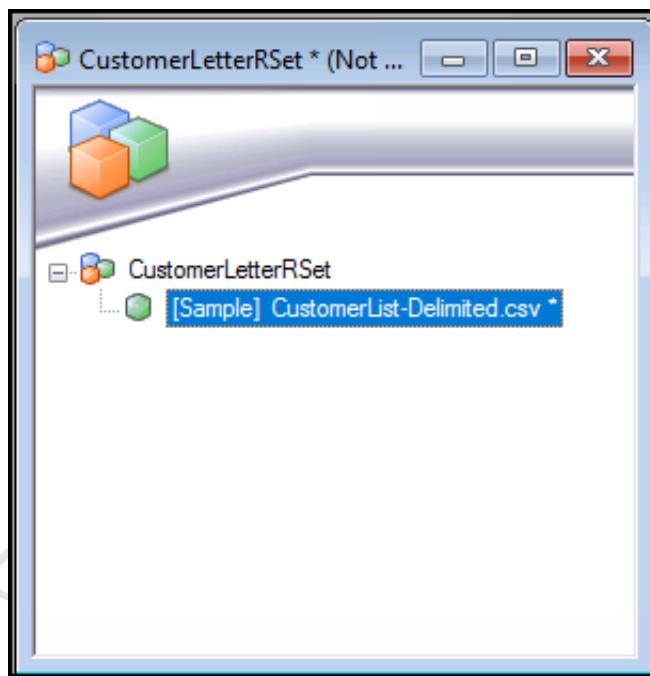


Figure 5-6:

Sample file added

Note the asterisks, meaning the different components have not been saved.

5. *In the menu navigate to **File > Save Project**.*

In the next chapter you will create the Platform and added to the project.

6. Managing Platforms

Objectives

On completion of this chapter, participants should be able to:

- Define the project Platform
- Define the concept of the Platform physical layer
- Identify the main Platform components:
 - Input connector
 - Output connector
- Describe what queues are used for in a Platform configuration

Communications Builder Platform definition

This section provides an introduction to Communications Builder Platform. The illustration below shows which components are part of a Communications Builder Platform.

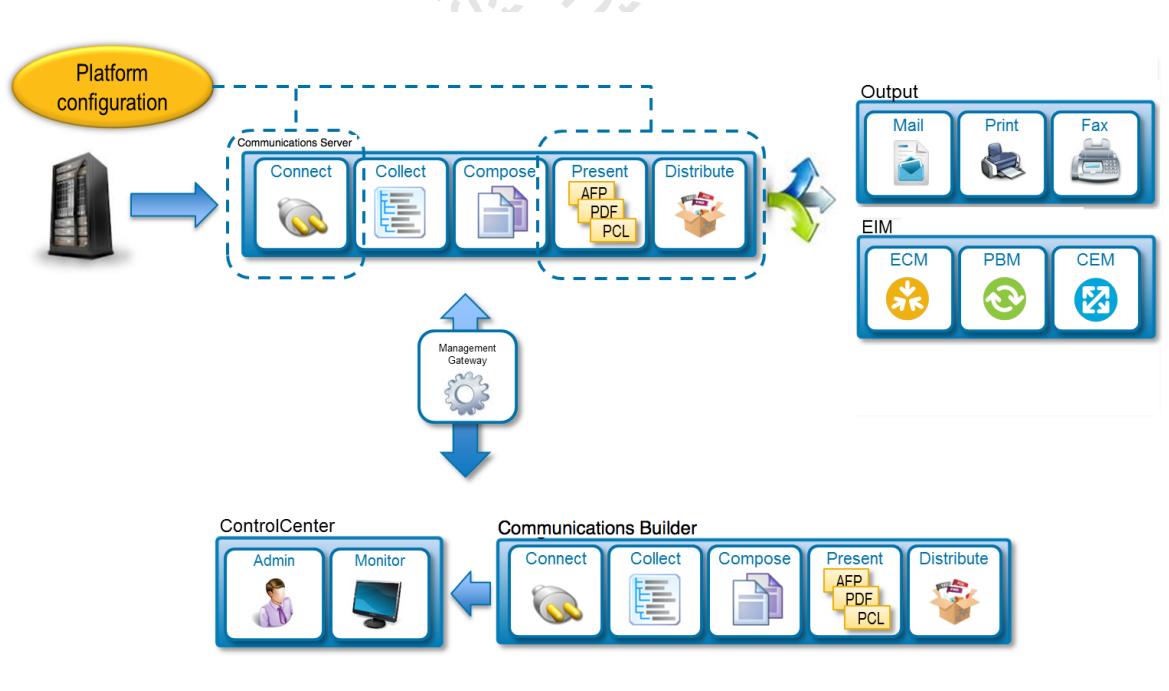


Figure 6-1: Definition of a Platform

Project environment The Platform is where you configure the environment settings for the **settings** Project.

Receive input For example, in the Platform you specify how to connect to and receive input from the backend system.

Deliver output Also, you specify how to connect to and deliver output to the output devices.

Platform layers

This section describes Platform layers.

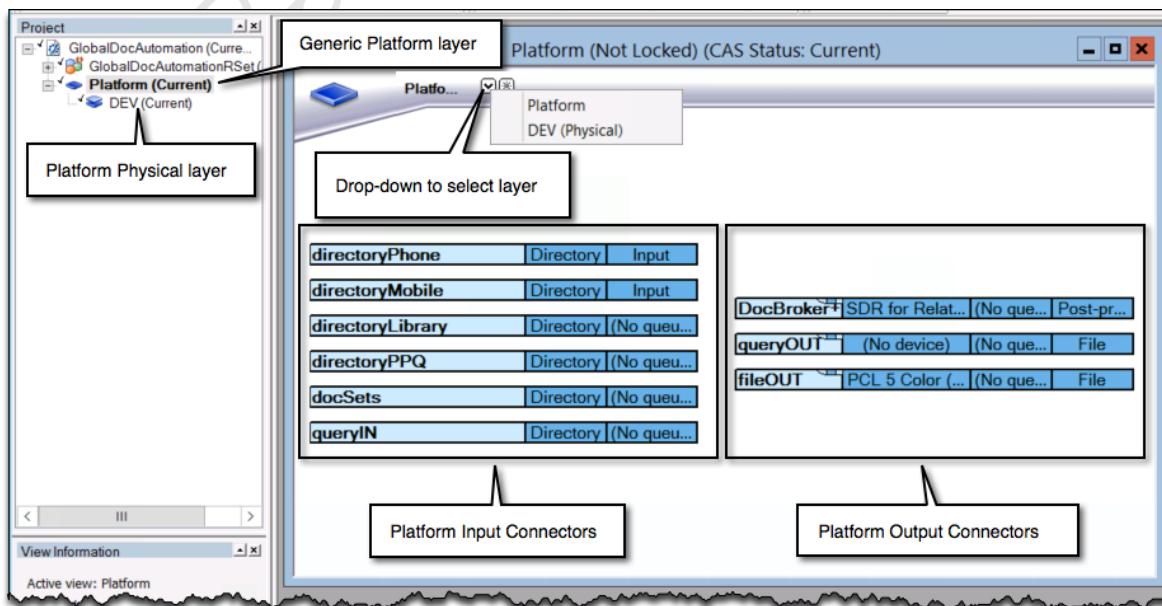


Figure 6-2: Platform

One generic layer - one or more physical The platform is separated into a generic layer and at least one physical layer.

One project - various phases Physical layers enable you to use the same Communications Builder Project for various phases of a Communications Builder Project, such as:

- Development
- Test
- Production

Generic settings In the generic layer you specify the settings that must be the same for all environments.

Physical layer settings For each physical layer you specify environment specific settings, such as:

- The connector type
- The settings for the selected connector type

Platform components

Input connector

This section describes the input connector.

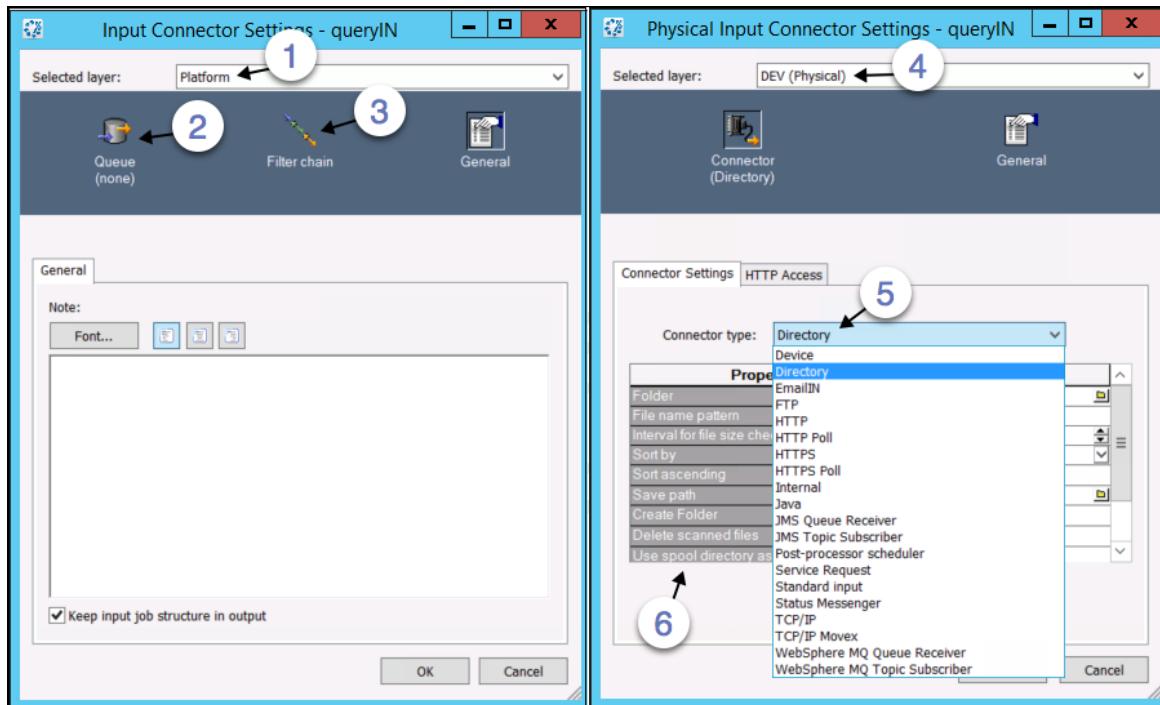


Figure 6-3: Input Connectors

Input channels for Communications Server A Platform contains input connectors. Input connectors are the channels through which the Communications Server receives the input.

Input connector types There are a large number of input connectors supported by Communications Builder used depending on the data received, for example:

- Directory which retrieves files from a named directory. The source application sends files to this directory, and the Communications Server retrieves the files.
- FTP which retrieves files from an FTP server. TCP/IP profile and Authentication profile resources are used to specify the connection settings and logon credentials. In the TCP/IP profile resource you can also select to use a secure channel between the connector and FTP server.



Chapter 10 of the OpenText Exstream Communications Builder Configuration Guide contains a full list describing each input connector, its configuration and use.

Input connector parts The table below describes the input connector parts.

Number	Part	Description
1	Generic layer	The settings that must be the same for all environments.
2	Queue	Specify which queue to connect to the output connector. Queues store input jobs before they are processed by Communications Server.
3	Filter chain	Connect filter chains to the input connector. For example, decompression filter, code pages filter, etc.
4	Physical layer	You need to create a physical layer for each target environment, such as: Development, Test, Production.
5	Connector type	The channel in which the backend system sends files to Communications Server, here a directory.
6	Connector properties	The properties for the selected connector type. For the directory connector, the properties are: which directory to scan, which files to scan in the directory, scanning interval, etc.

Output connector

This section describes the output connector.

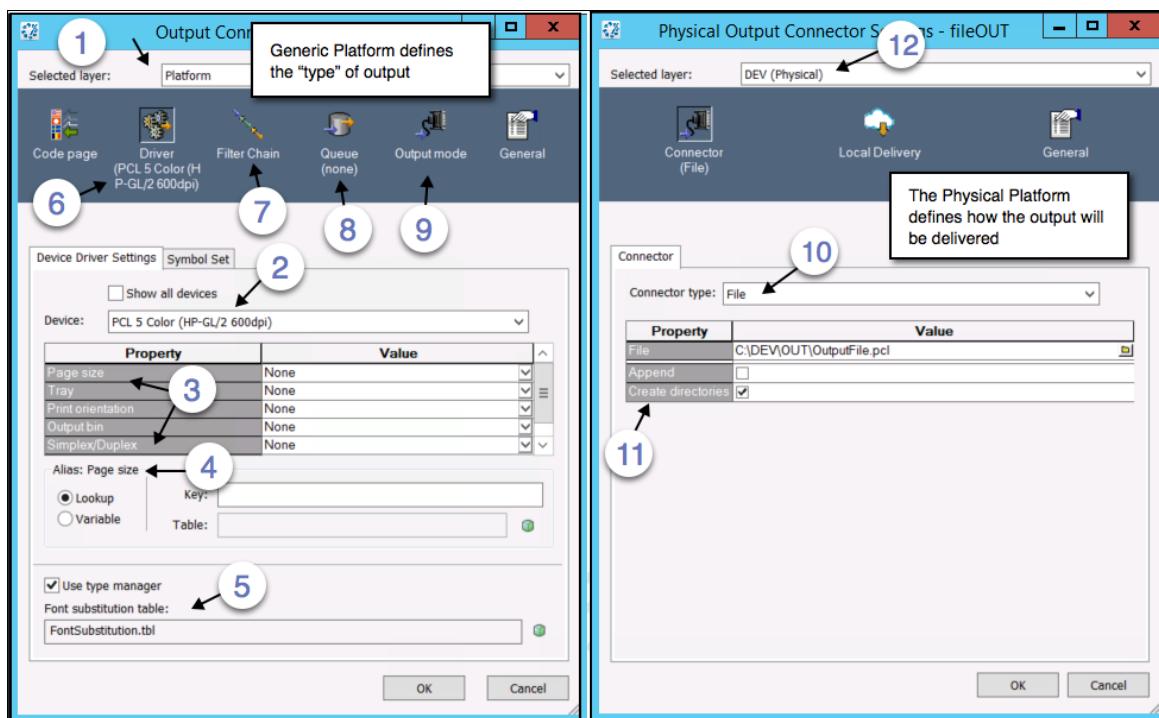


Figure 6-4: Output connector

Output connector There are various types of output, in this lab you will use PDF devices

Output connector type There are various types of output connectors, for example:

- File which writes output to files on the file system.

Output connector parts The table below describes the output connector parts.

Number	Part	Description
1	Code page	Specify which code page to apply to the output data.
2	Device	Select which device drivers to add to the output connector.
3	Device properties	The properties related to the device.
4	Alias	Dynamic settings of device properties, using one of two methods: Lookup or Variable.
5	Font substitution table	If you want to add new fonts or override font definitions in the selected device.
6	Generic layer	The settings that must be the same for all environments.
7	Filter chain	Connect filter chains to the output connector.
8	Queue	Specify which queue to connect to the output connector.
9	Output mode	Specifies how to group documents before they are delivered via the output connector to the target application - in three ways: Process, Document, Job.
10	Connector type	Specify a connector type for each connector, and configure the settings for the selected connector type.
11	Connector properties	The settings relevant for this connector type.
12	Physical layer	You need to create a physical layer for each target environment, such as: Development, Test, Production.

Queues

This section describes more about the Platform configuration (Queues).

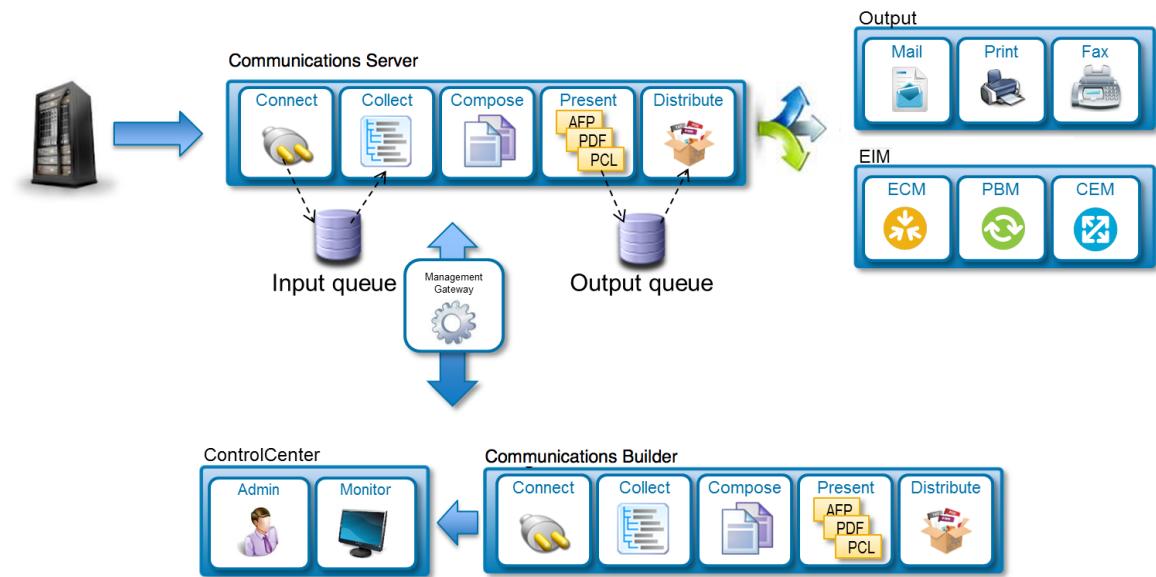


Figure 6-5: Queues

Queue input with input connector To be able to queue an input job, you must connect a queue to the input connector that retrieves the input job.

Queue output with output connector To be able to queue an output job, you must connect a queue to the input connector that retrieves the corresponding input job, and to the output connector that delivers the output job.

Two preconfigured queues By default, the Platform includes two preconfigured input and output queues. You can connect any of these queues to your input and output connectors. You can use the preconfigured queue settings, and you can also edit the queue settings if you need to.

Generic platform layer The queue settings must be the same for all physical layers. This means you must configure queues in the generic Platform layer.

Input queues	This section describes input queues. (See “Input connector” on page 6 - 3.)
Store input before processing	An input queue stores input jobs before they are processed by Communications Server.
Queues input when needed	The queue queues input jobs if more jobs are sent to the Communications Server than it can process.
Reprocess input	In case of unexpected Communications Server shutdown, the queue also provides robustness since it enables the Communications Server to reprocess the input jobs when it is restarted.
Shared input queues	Several Communications Server applications can share the same input queue. This provides possibilities for scaling over multiple Communications Server applications.
Output queues	This section describes output queues. (See “Output connector” on page 6 - 5.)
Store output before delivery	An output queue stores the output jobs before they are delivered to the target applications (printers, faxes, etc.).
Queues output when needed	The queue queues output jobs if the Communications Server creates more output jobs than it can deliver.
Reprocess	In case of an unexpected Communications Server shutdown, it also provides robustness since it enables the Communications Server to reprocess the output jobs when it is restarted.
Shared output queues	Several Communications Server applications can share the same output queue. This provides possibilities for scaling over multiple Communications Server applications.

Lab: Create and configure a Platform



Create a Platform

1. Make sure that the **CustomerLetter** project is open in Communications Builder.
2. In the Project panel, right-click the **CustomerLetter** node and select **New > Platform**.

A new generic Platform is added.

3. Name the new platform **Platform**.

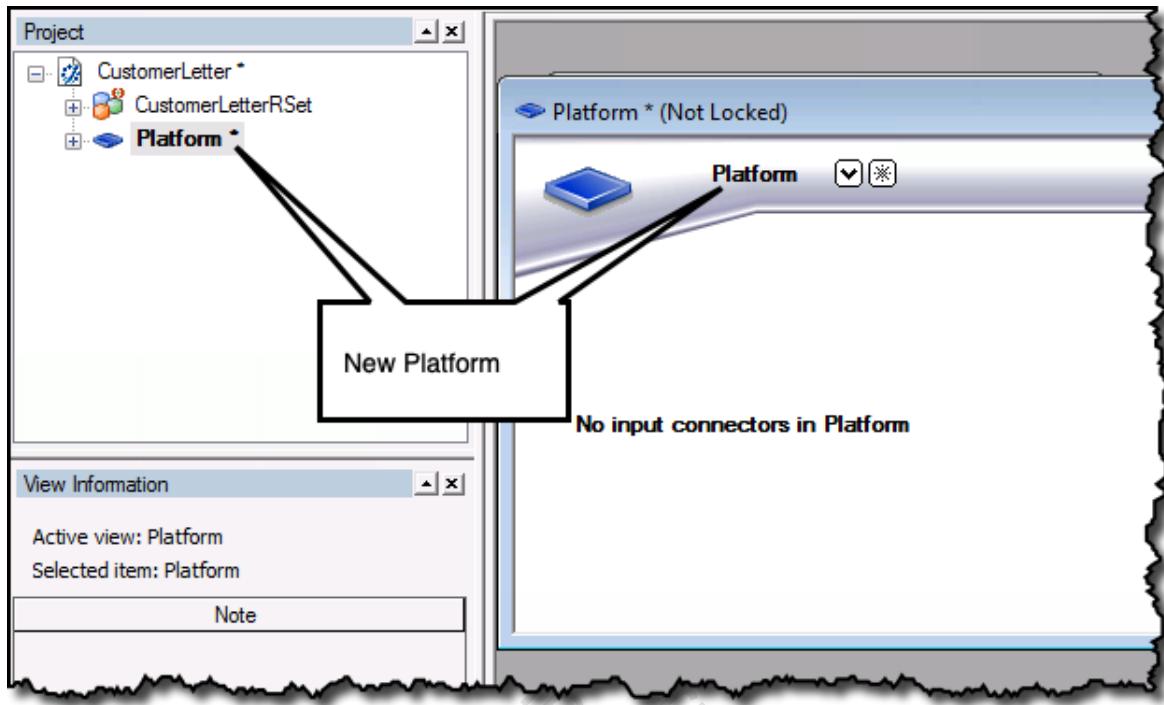
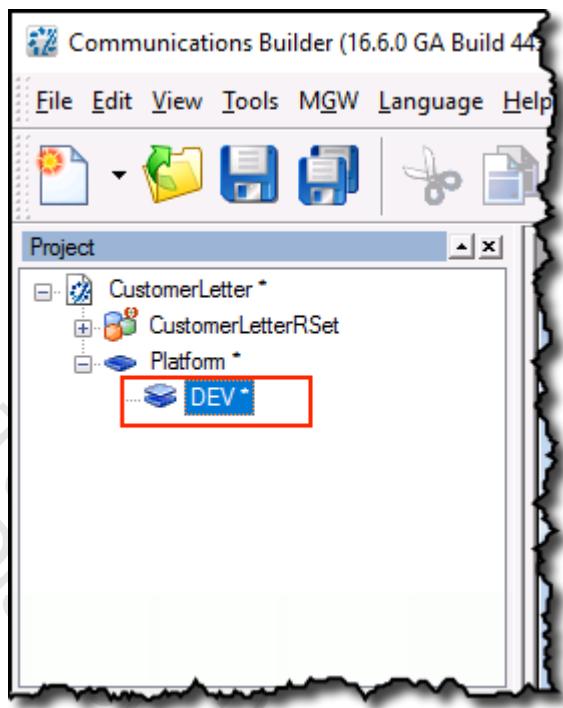


Figure 6-6: Platform

4. Expand the generic **Platform** layer to view the **New Physical Layer** object.

5. Rename the physical layer to a name that reflects the development environment you are currently using, for example **DEV**.

Figure 6-7:
**Physical Platform layer
DEV**



**Create an input connector**

1. Double-click **DEV** in the Project panel to open it in the Main View window.

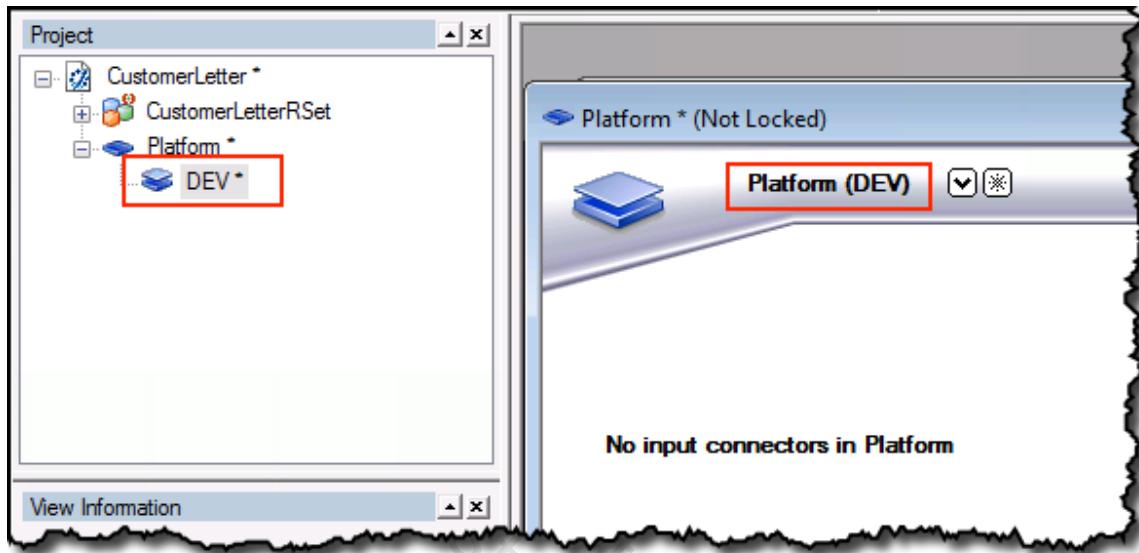


Figure 6-8: Physical Platform layer DEV open

2. Right-click an empty space of the **DEV** platform (in the Main View window) and select **New input Connector**.

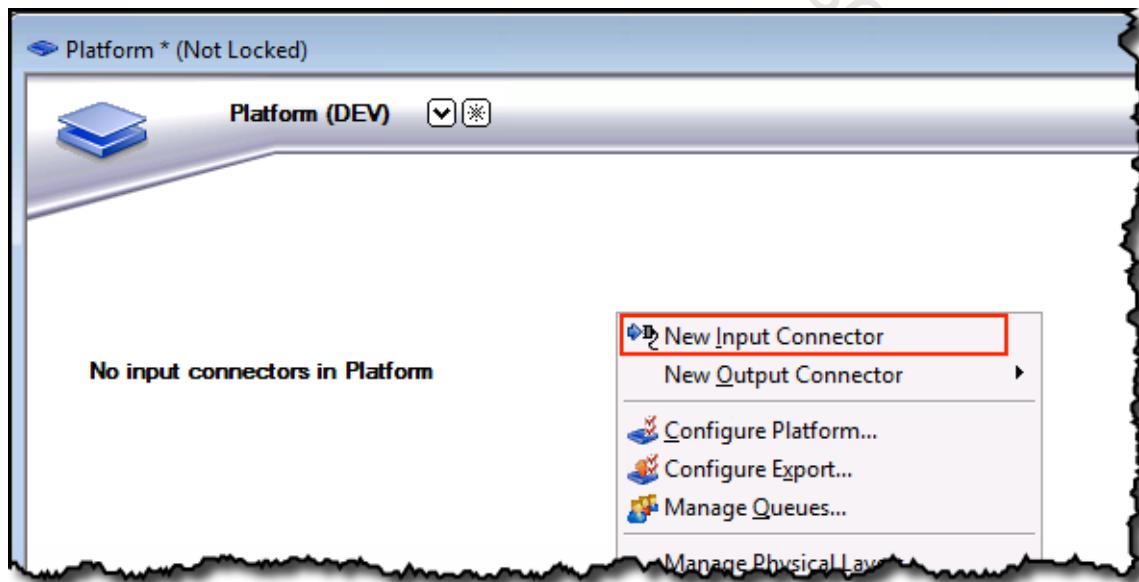


Figure 6-9: New connector

A new input connector is added to the Platform view.

3. *Name the new input connector **InputFolder**.*
4. *Double-click **InputFolder** to open its settings.*

The Input Connector Settings dialog box opens. Since you are in the DEV physical Platform layer, you will see settings for the DEV layer.

5. *From the **Connector type** drop-down list, select **Directory**.*
6. *In the **Folder** text box, enter **C:\DEV\IN**.*
7. *In the **File name pattern** text box, enter ***.csv**.*
8. *Select the **Create Folder** check box.*
9. *Leave the remaining settings as they are.*

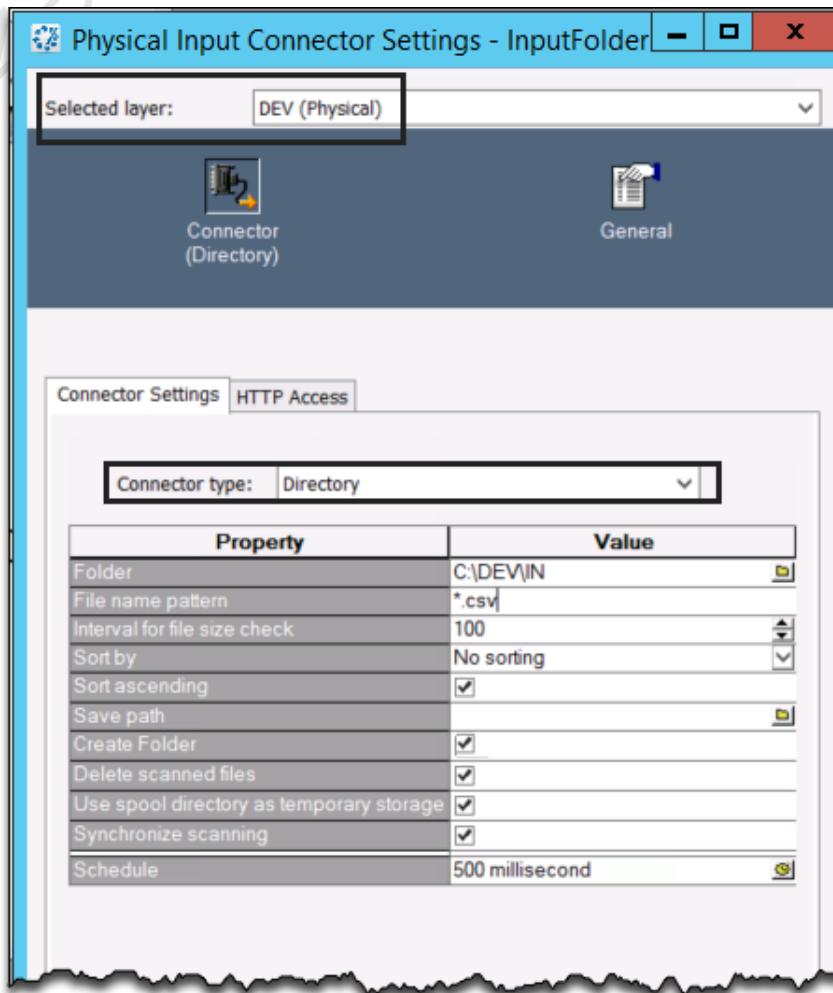
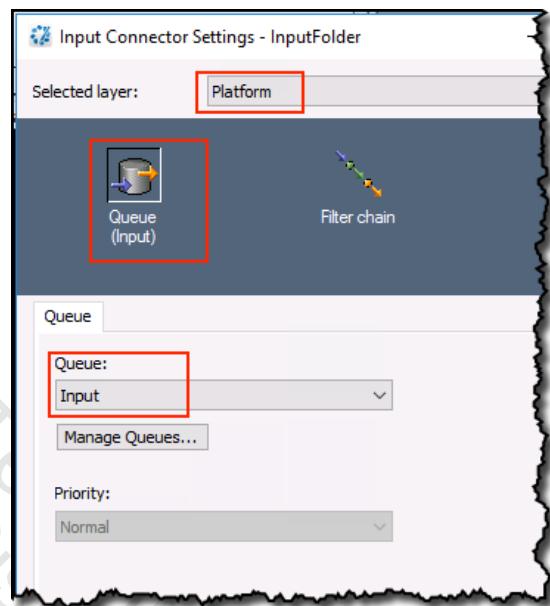


Figure 6-10:
Physical Input Connector Settings dialog box

10. *In the Selected layer drop-down (top the window) switch to the **Platform** (generic layer), making sure that you save the changes.*

11. Click the **Queue (none)** button and make sure that the Queue is set to **Input**.

Figure 6-11:
Setting the Input queue



12. Click **OK**.

You are taken back to the generic platform view in the Main View window.



Create an output connector

1. In the Platform view, right-click an empty space and select **New Output Connector > Generic**.

A new output connector is added to the Platform view.

2. Name the new output connector to **OutputFolder**.
3. Right-click **OutputFolder** and select **Settings**.
4. Make sure **Platform** is selected in the Selected layer drop-down.
5. Click the **Driver** button.

The Device Driver Settings tab is displayed.

6. Click the **Show all devices** check box.
7. From the **Device** drop-down list, select **PDF**.
8. Leave the remaining settings as they are.
9. Click the **Queue (none)** button and make sure that the Queue is set to **Output**.

10. From the **Selected layer** drop-down list (upper area of the window), select **DEV (Physical)**. This switches the setting from the generic layer to the physical layer.
11. Select **Yes** in the dialog box that opens.
12. From the **Connector type** drop-down list, select **File**.

The Connector tab displays the following:

13. In the **File** property text box, enter **C:\Training\Introduction\Output Files\CustomerLetter.pdf**.
14. In the **Create directories** property, select **Yes**.
15. Click **OK**.
16. Save the project.

In the next chapter you will create the Processing Engine.

7. Managing Processing Engines

On completion of this chapter, participants should be able to:

- Define Processing Engine
- Identify the functionality and use of the Processing Engine

Communications Builder Processing Engine definition

The processing engine is a plug-in container to call external processes from within the Communications Server and have the external process generate the output with the input data sent.

Using the Communications Builder tools, an Exstream processing engine can be added to a project. The Exstream Engine plugin can then be selected and configured with a Package file (Pub) exported to CAS from Design Manager.

In the Exstream Engine plugin properties, the uploaded package file and manifest file are configured as part of the Processing Engine component.

Lab: Creating the Processing Engine



Create the processing engine

1. *Make sure that the **CustomerLetter** project is open in Communications Builder.*
2. *In the Project panel, right-click **CustomerLetter** and select **New > Processing Engine**.*

A New Processing engine 1 object is added to the Project panel.

3. *Rename **New Processing engine 1** to **Engine**.*

The Engine view is displayed.

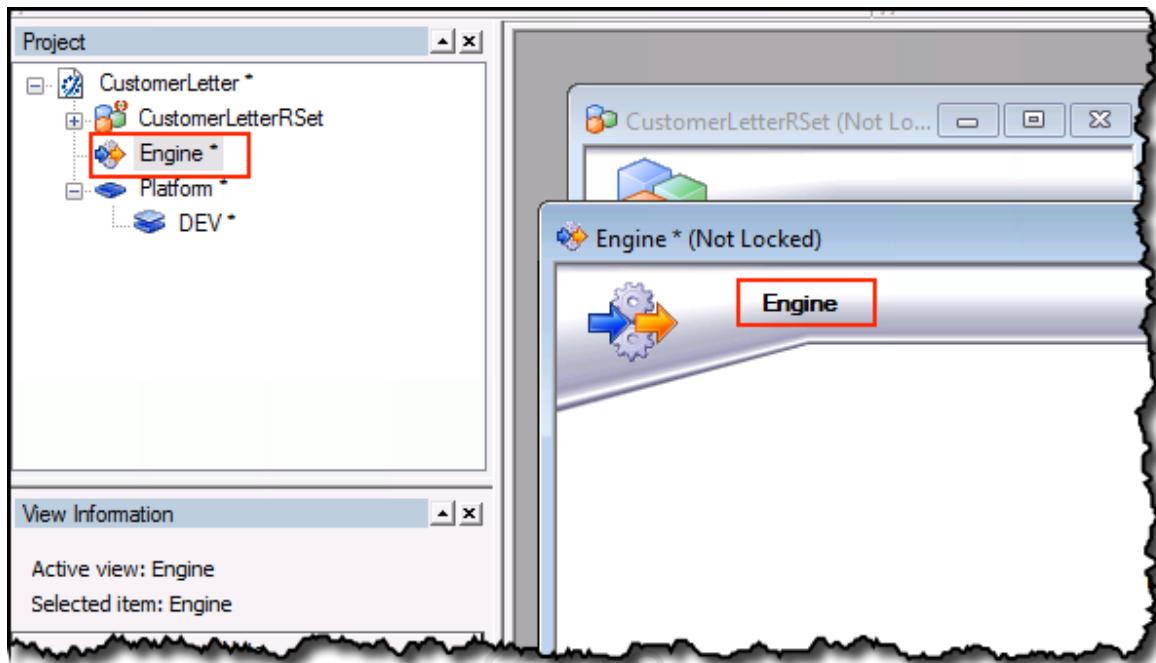


Figure 7-1: Processing engine

**Add the Engine Plugin**

1. In the Processing Engine view, right-click on the empty space and select **Add Engine plugin > Exstream**.

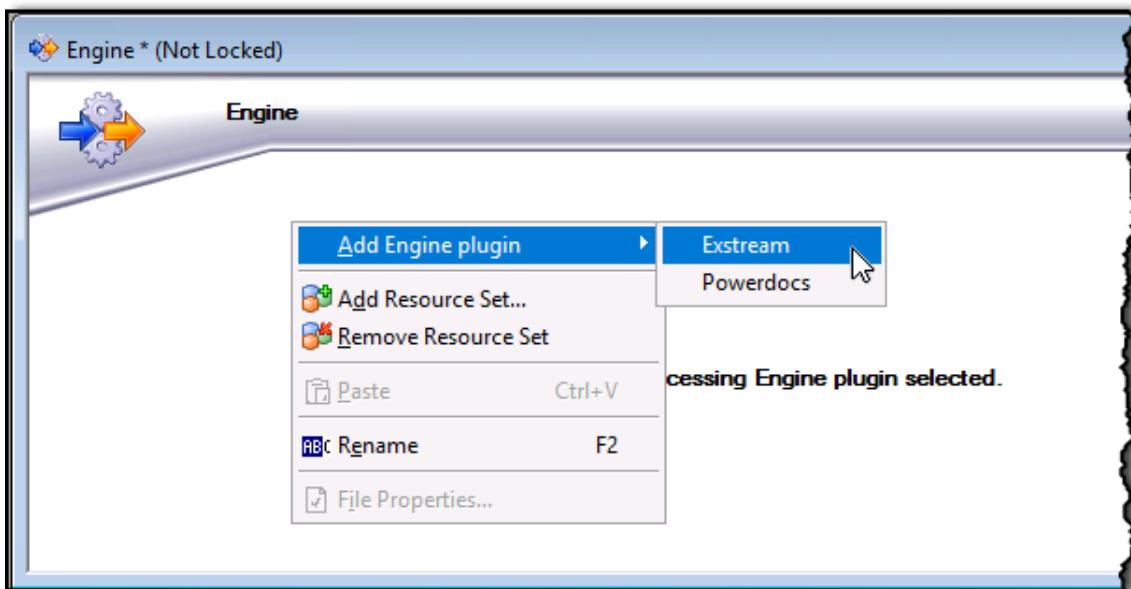


Figure 7-2: Add plugin

An Exstream engine is added.

2. Right-click **Exstream engine** and select **Open**.

3. In the Exstream configuration window click the Add Exstream package file button (green plus button).

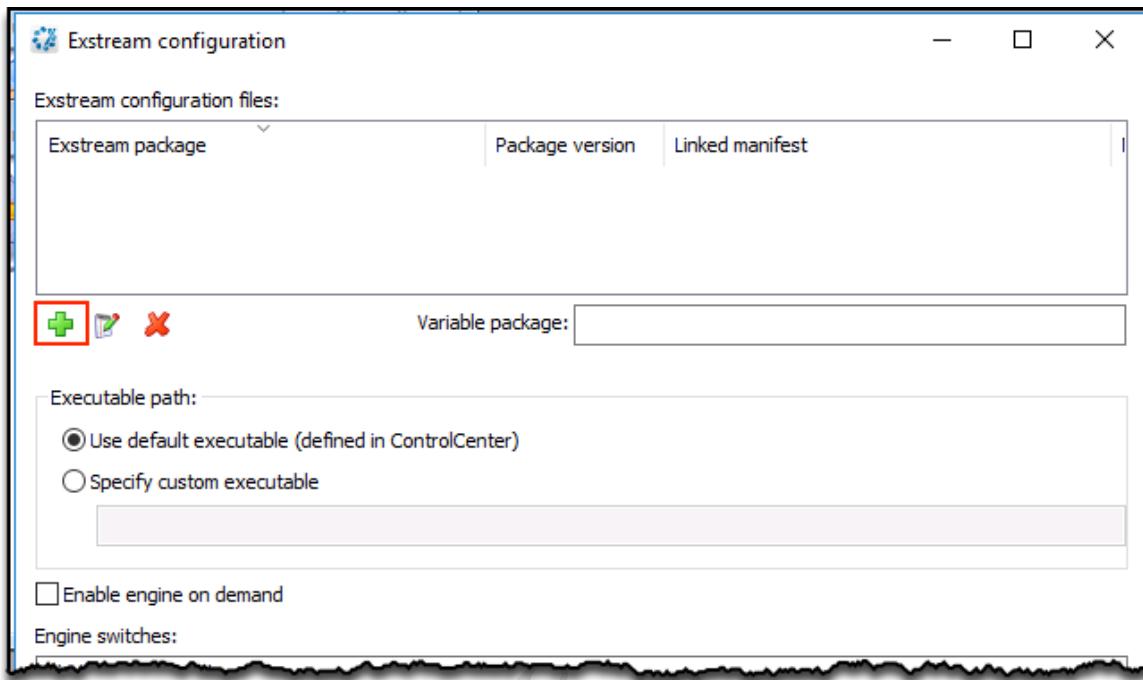


Figure 7-3: Add package

4. In the Select Management Gateway window click **OK**.
5. In the Login to Management Gateway window leave the default values and click **OK**.
6. In the Select CAS resources window click the **Find** button.

In the results panel the Customer Letter pub file should display. This is the pub file that was uploaded to CAS in the labs.

7. Double-click **Customer Letter**.

Note that the right panel displays the list of the releases of the packages that have been uploaded to CAS. In our case only one release has been uploaded.

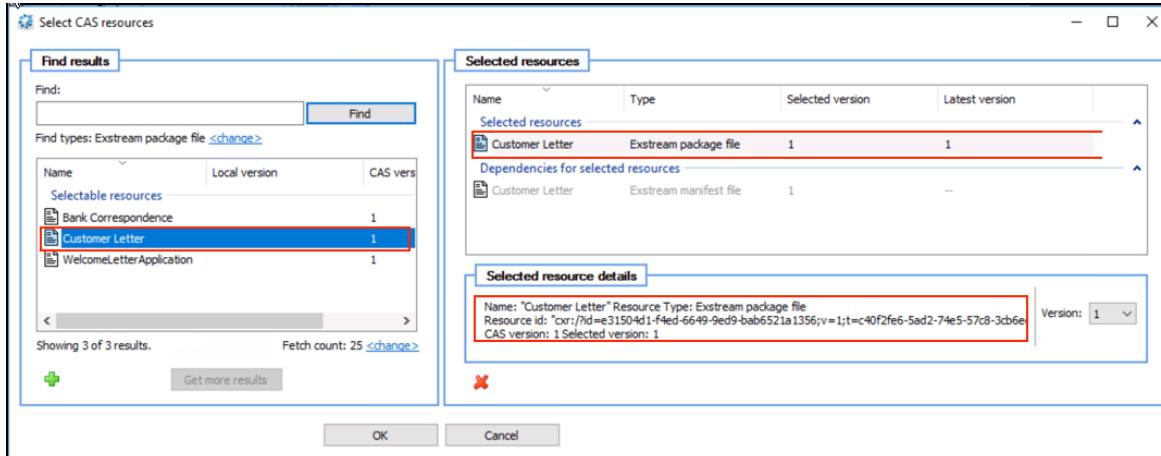


Figure 7-4: Released packages

8. Select the **Customer Letter** in the Selected resources panel and click **OK**.

The pub file is added to the Exstream configurations window.

9. Select **Use default executable (defined in Control Center)**.

10. Click **OK**.

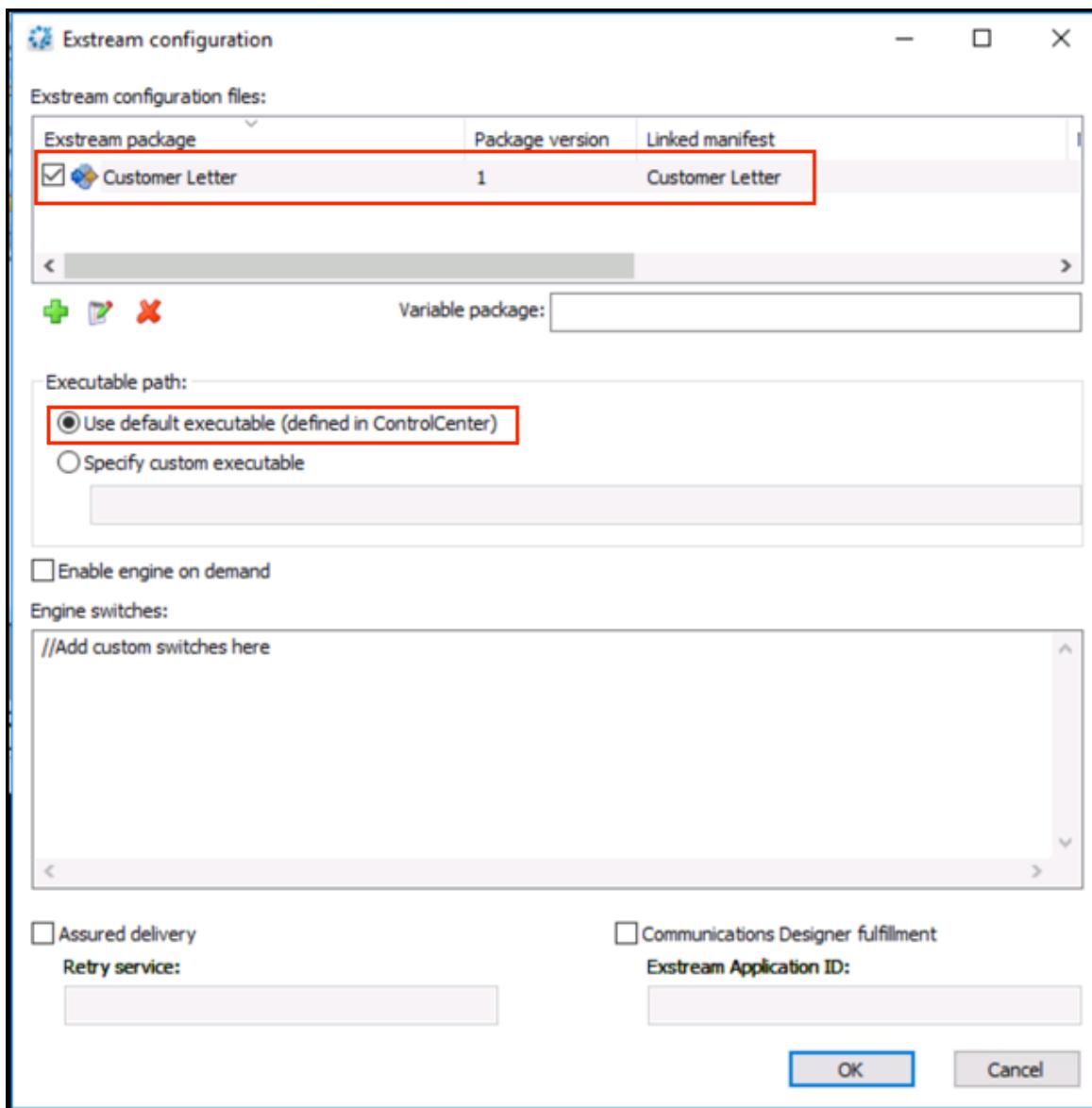


Figure 7-5: Selected package

The engine is added to the project. Note the input and output channels corresponding to the platform input and output connectors.

11. In the menu navigate to **File > Save Project**.

In the next chapter you will create the runtime.

8. Managing Runtimes

On completion of this chapter, participants should be able to:

- Define what a Communications Builder Runtime is
- Identify main Communications Builder Runtime components
- Describe the Runtime Output Connector Settings dialog box

Runtime configuration

This section is an introduction to Communications Builder Runtime configuration. The illustration below shows which components are parts of a Communications Builder Runtime configuration.

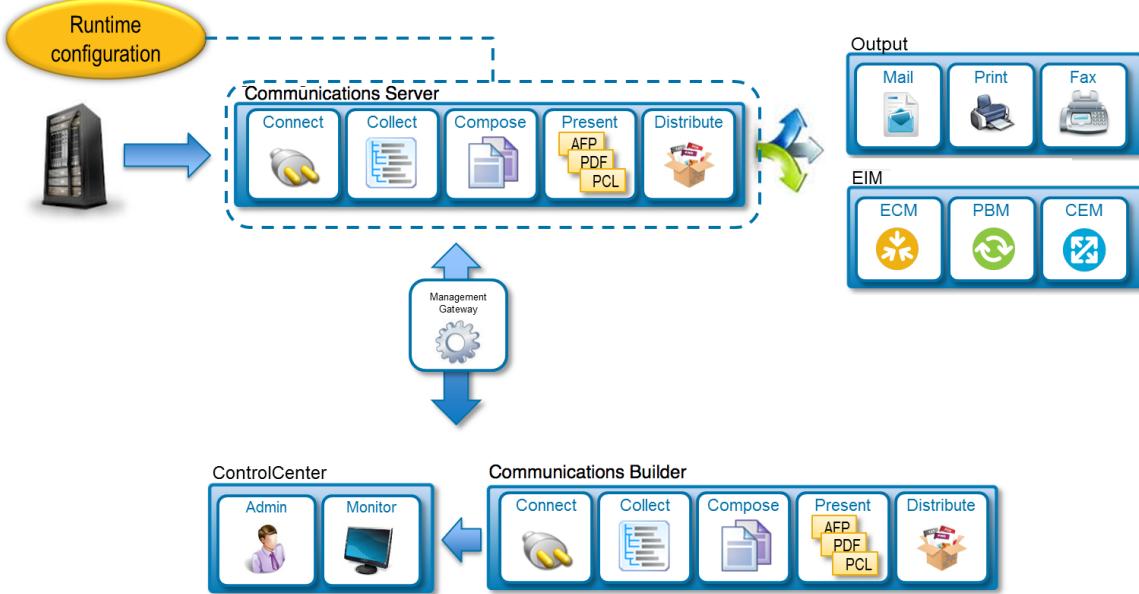


Figure 8-1: Runtime configuration

Runtime main function A Runtime configuration is where you connect Processing Engine to the Platform.

Runtime in Communications Builder

This section describes the Communications Builder Runtime.

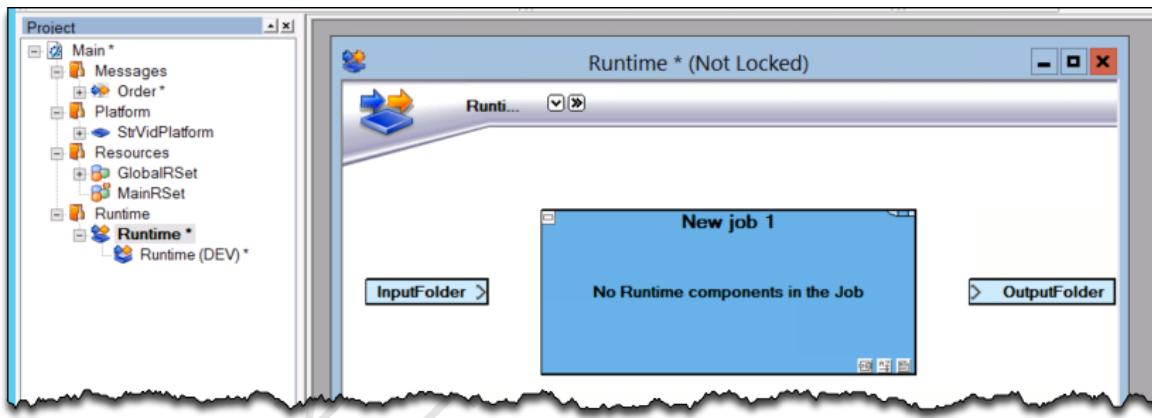


Figure 8-2: Runtime parts

Runtime parts The table below describes the Communications Builder Runtime.

Part	Description
Runtime	The name you have given to the Runtime.
Physical layer	The name of the physical layer, such as DEV, TEST, PROD, etc.
Input connector(s)	The input connector(s) you created and configured in the Platform configuration.
Runtime job	The runtime job you have added to the Runtime configuration, where you can set job related settings.
Processing Engine	The processing engine you created and configured in the Processing Engine configuration.
Output connector(s)	The Output connector(s) you created and configured in the Platform configuration.

Multiple runtimes per project A Project typically contains several Runtime configurations, for example one Runtime configuration per Message.

Selection of input and output connectors You add a Processing Engine to the Runtime configuration, and link input connectors to Processing Engine Input Channels and Processing Engine Output Channels to output connectors.

Runtime jobs You must add a Processing Engine to a Runtime job. The Runtime job enables you to specify settings that apply to all components in the job. For example:

- Sorting
- Scripting
- Output connector settings

Runtime configuration layers A Runtime configuration is based on the Platform, and inherits the generic and physical layers from the Platform. For example, if the Platform contains a DEV, TEST, and PROD layer, the Runtime configuration will also contain the same layers.

Lab: Create and configure the Runtime



Configure Runtime in the Main project

1. Ensure that the **Customer Letter** project is open in Communications Builder.
2. Right-click the **Customer Letter** folder in the Projects panel and select **New > Runtime**.

The Select Platform dialog box opens.

3. Select **Platform** and click **OK**.

A new Runtime is added.

4. Rename the new Runtime to **Runtime**.

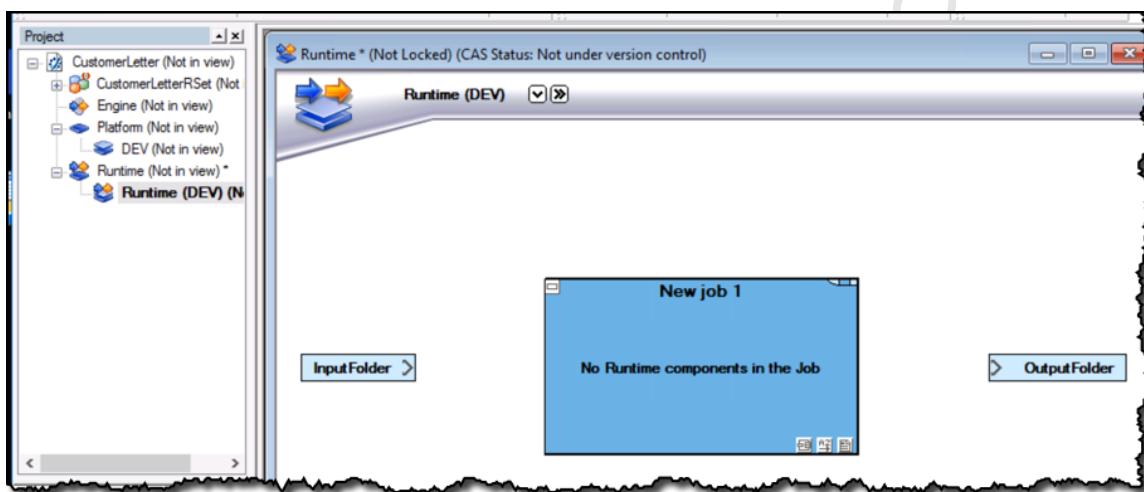


Figure 8-3: Runtime in Communications Builder



Add the Engine to the job

1. In the Runtime view, name **New job 1 to Job** (click **New job 1**, or right-click **New job 1** to rename).
2. Right-click **Job** and select **Add Runtime component**.

The Select Message dialog box opens.

3. Select **Engine** and click **OK**.

The Engine processing engine with its input and output connectors is displayed inside the Job.

4. Connect the input connector (**InputFolder**) to the processing engine's input channel (**CustomerList_Driver**) and the processing engine's output channel (**PDF Queue**) to the output connector (**OutputFolder**).

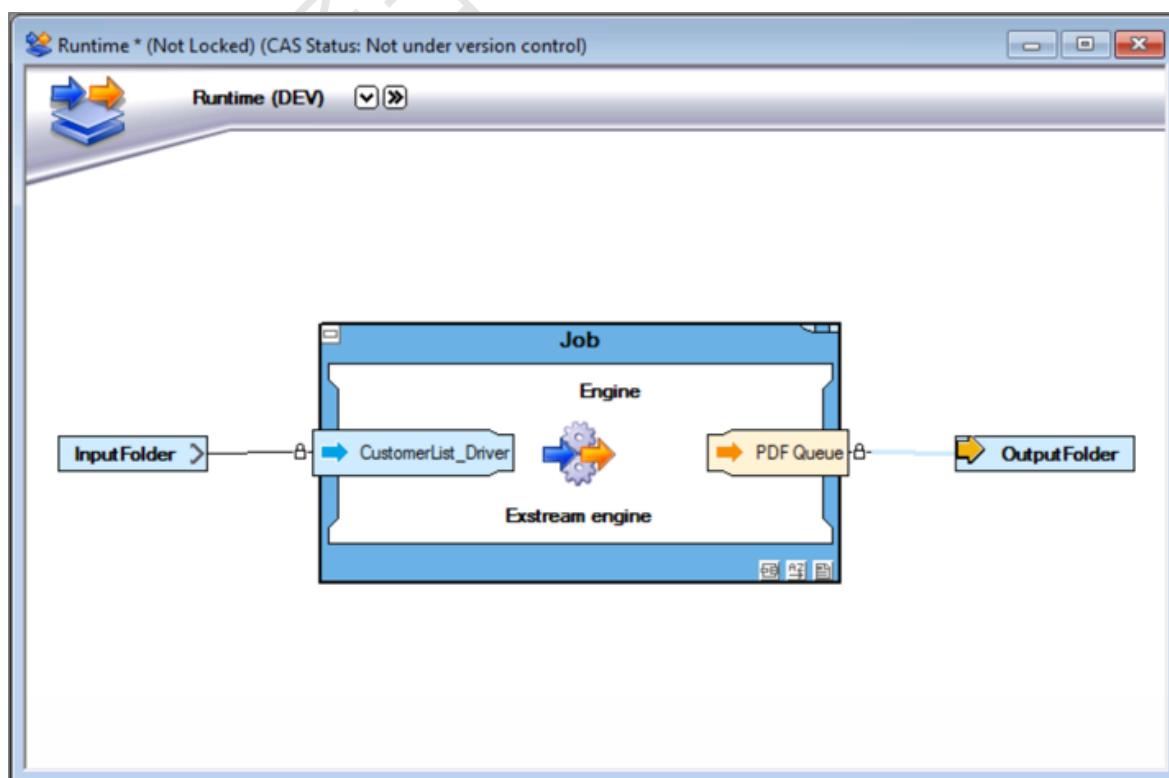


Figure 8-4: Runtime configuration completed

5. Save the project.

9. Export, deploy and run Communications Server applications

Objectives

On completion of this chapter, participants should be able to:

- Describe the process of exporting, creating a release and running and deploying a Project
- Carry out the configuration steps required to export, run and deploy a Project
- Select arguments read by Communications Server at server startup
- Describe the functionality of Control Center
- Define a Communications Server application
- Identify Communications Server application types
- Identify the use and create a Service Gateway

Exporting, running and deploying

This section is an introduction to exporting, deploying and running a Project. The illustration below shows which components are parts of exporting, deploying and running a Project.

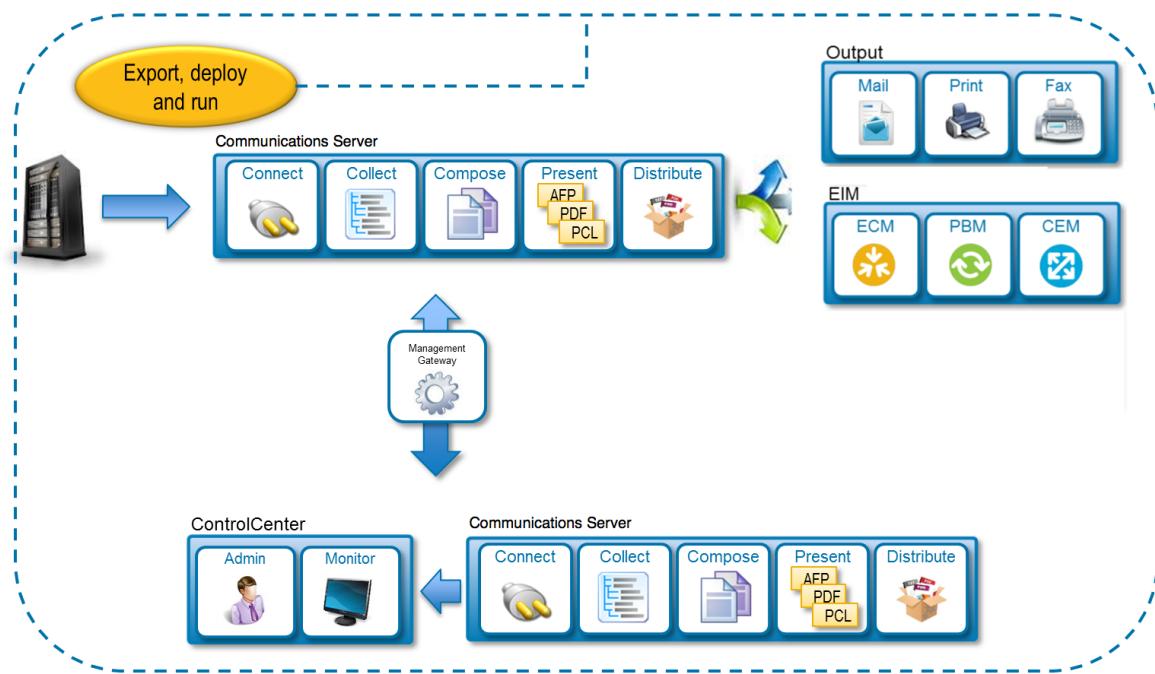


Figure 9-1: Exporting, deploying and running a Project

- Export** To export a Project means to generate export files needed by Communications Server.
- Deploy** Deploying means adding the exported Project files to a Communications Server application.
- Run** Running a Project means starting a Communications Server application with a deployed Project - and sending data to the Communications Server application.

Export a project You can export the Project to disk. The export generates a file (*.export) that contains all the Platform layers in the Project. When you deploy the Project in Control Center, you must specify which physical layer to deploy. Because not all functionality is available when you export a Project to disk, OpenText recommends you check in your Project to the CAS and create a release rather than exporting to disk.

Export dialog box This sections describes the Export dialog box.

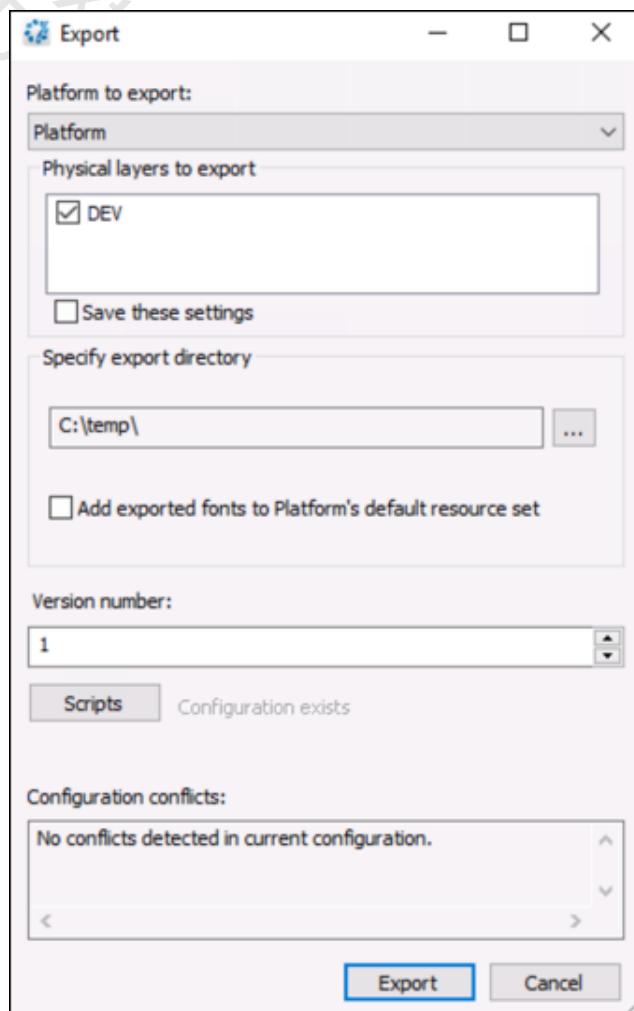


Figure 9-2:
Export dialog box

The Export dialog box The table below describes the Export dialog box.

Part	Description
Platform to export	Normally, the Project contains only one Platform. If there are Several Platforms in the Project, you use this drop-down list to select the Platform to export.
Physical layers to export	This list displays all physical layers in the selected Platform. The check boxes are used to specify which layers to include in the export. By default, all physical layers will be included in the export. You can clear the check box for one or more physical layers to exclude them from the current export.
Save these settings	Select this option if you want to save the modifications done in Physical layers to export. If you do not select this options, all physical layers will be selected the next time you open the Export dialog box.
Specify export directory	The path to the export directory. The export file will be stored in this directory.
Add exported fonts to Platform's default resource set	Select to add all used fonts to a resource set connected to the Platform. This ensures that all fonts are available if you move the Project to a new machine.
Include DCPackage file in export	Select to pack the Project, and include the package file (*.dcpackage) in the export file. When the export file is deployed to a Communications Server application, the package file is stored in: <i><ManagementGateway>\<Version>\root\applications\<streamServerApplication>\data\package</i>
Version number	Select the version number of the export file. For example, if you want to keep the existing configuration for a Communications Server application, and run another application with a modified export configuration.
Scripts	Opens the Scripts dialog box where you can specify scripts to be executed before or after the Project is exported.
Configuration conflicts	If there are any conflicts in the export configuration, these will be displayed here.

Create a release package

When you create a release package, the Project is exported, all Project files are checked in to the CAS, and the export file is added to the CAS. The export generates a file (*.export) that contains all the Platform layers in the Project.

The export file is based on the current versions of the Project components that you have open in Communications Builder. If the CAS contains a more recent version of a Project component that you want to include in the export, you must download it before creating the release package.

Each time you create a release package, a new version of the export file is stored in the CAS. Release packages you create in Communications Builder can be deployed to Communications Server applications from Control Center. When you deploy the Project in Control Center, you must connect to the CAS, select the Project, select the appropriate release package based on the label, and then specify which physical layer to deploy.

Control Center

Control Center is an administration tool used to deploy, run, and administer Exstream applications on both Windows and UNIX hosts. From Control Center you can manage Exstream applications, which include Communications Server applications, service gateways, and Task Scheduler applications. You can also use Control Center to create the Exstream repositories.

Control Center interface

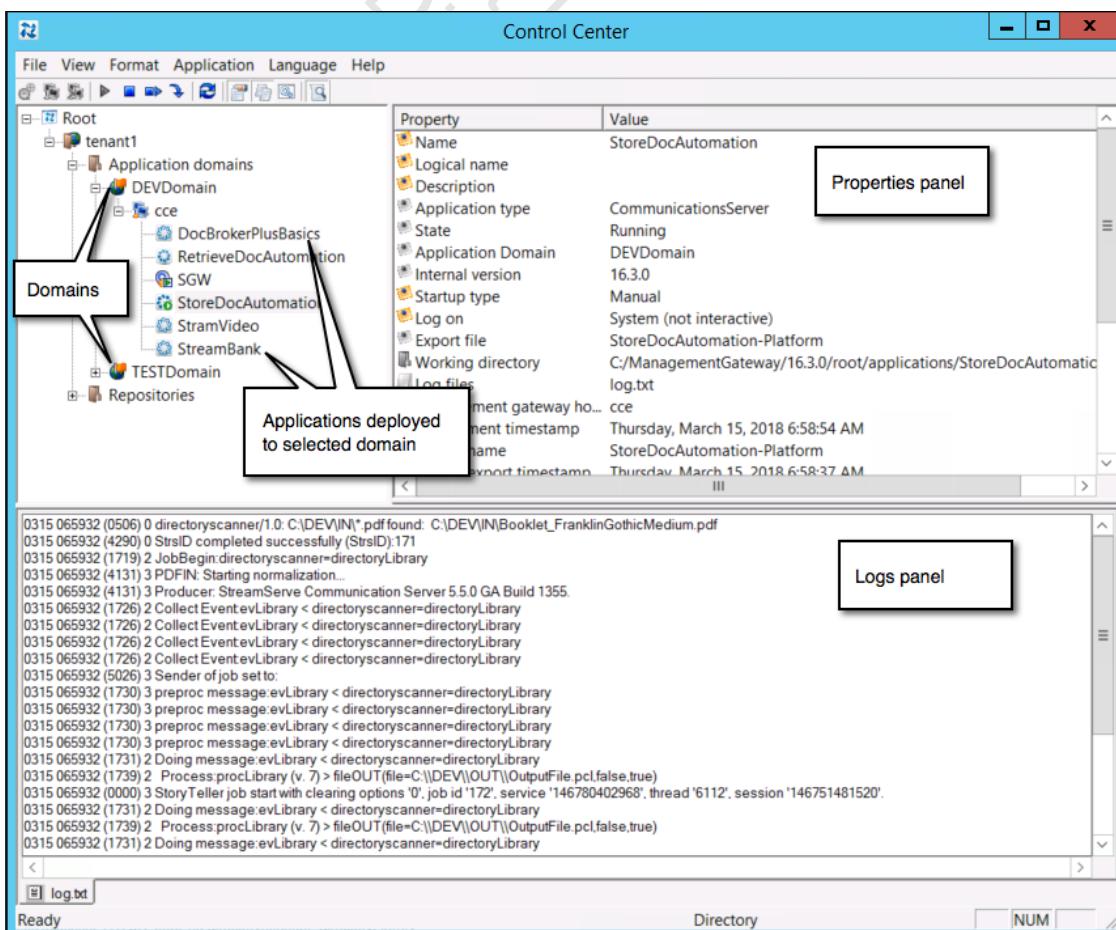
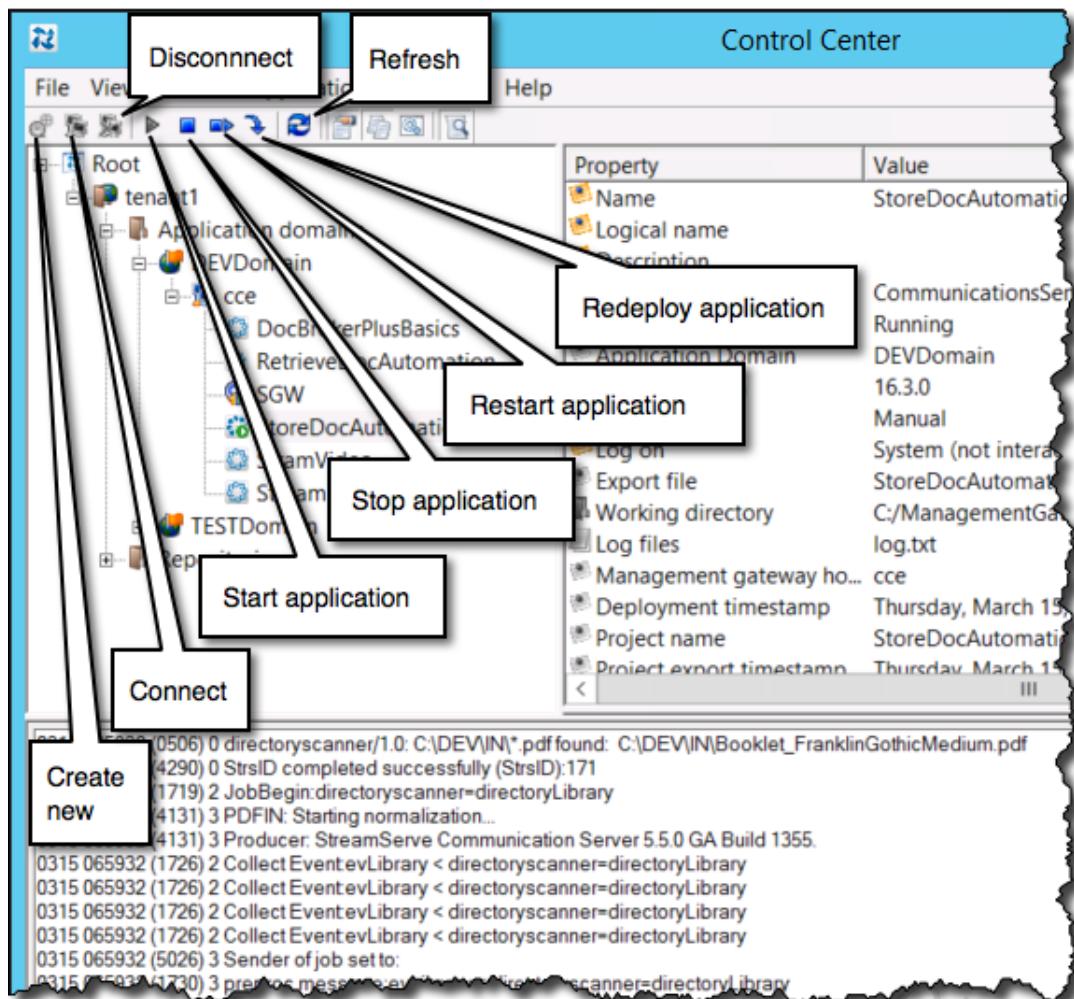


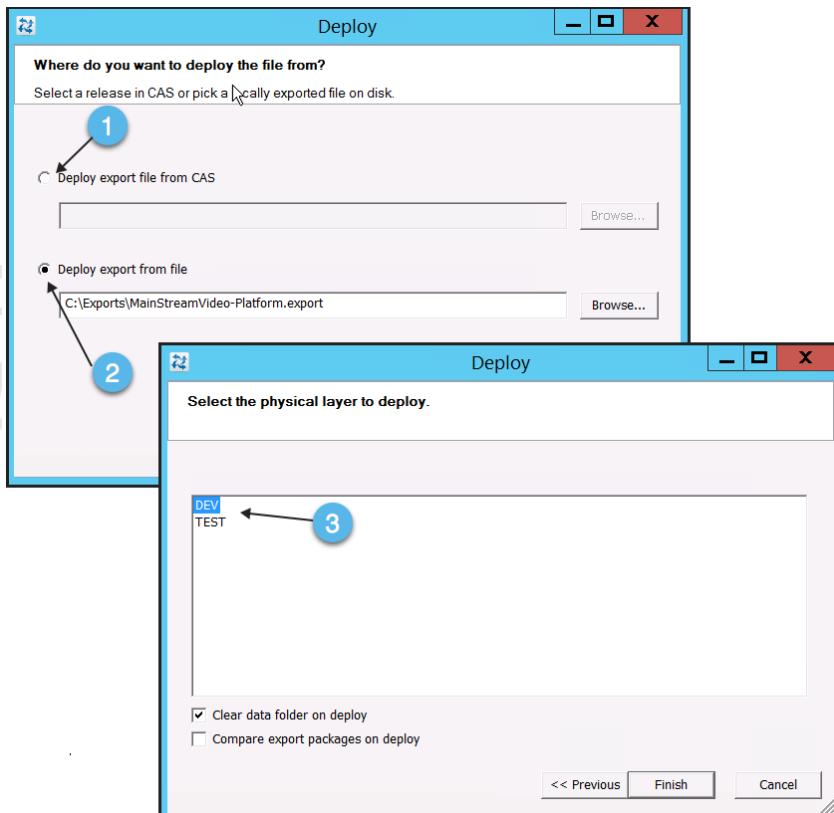
Figure 9-3: Control Center

Control Center toolbar**Figure 9-4: Control Center toolbar**

Deploying a Communications Server application

This section describes how to deploy a Project to Communications Server.

Figure 9-5:
Deploy dialog box



From file system or VCS You can deploy the Project from either the file system or from a version control system.

Specify platform layer When you deploy a Project to a Communications Server application, you must specify which Platform layer to deploy.

Deploy wizard The table below describes the Deploy wizard.

Number	Description
1	Deploy export file from CAS.
2	Deploy export from file.
3	Select the Platform layer to deploy.

Running a Communications Server application

The application is started which is indicated by the green icon placed on top of the application icon or as indicated by the State property in the right panel or the message in the logs panel.

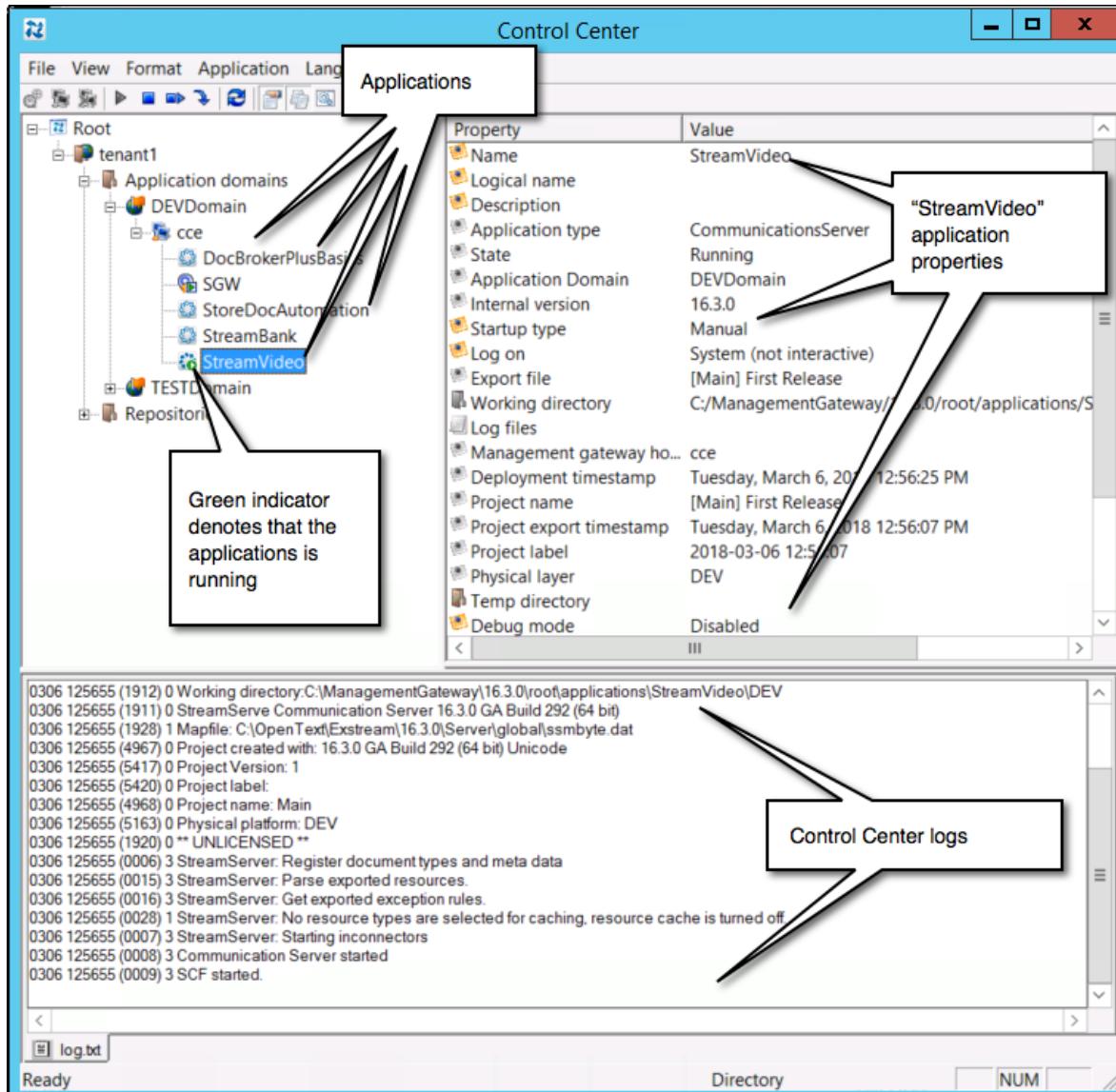


Figure 9-6: Control Center

Lab: Export, deploy and run Communications Server applications



Create a project release

1. Ensure that the **CustomerLetter** project is open in Communications Builder.

2. Click the **Create Release** button in the toolbar .

The Export for release dialog box opens. Note the different settings available in the Export for release window.

3. Make sure that **Add exported fonts to platform's default resource set** is selected.
4. Leave the remaining options as they are.



When exporting a Project, the Project is always assigned version number 1 unless manually updated.

-
5. Click the **Export** button.
 6. Ignore the warning in the Export Report dialog that opens by clicking **Close**.
 7. If requested, save any unsaved objects.
 8. In the Create release window set the Label to **Release1** and click the **OK** button.



Deploy a project release

1. Navigate to **Programs > OpenText Exstream 16.6.0 > Control Center**.

Control Center opens.

2. Expand the **Root node**.

3. Select **tenant1 (Disconnected)** and click the **Connect** button.

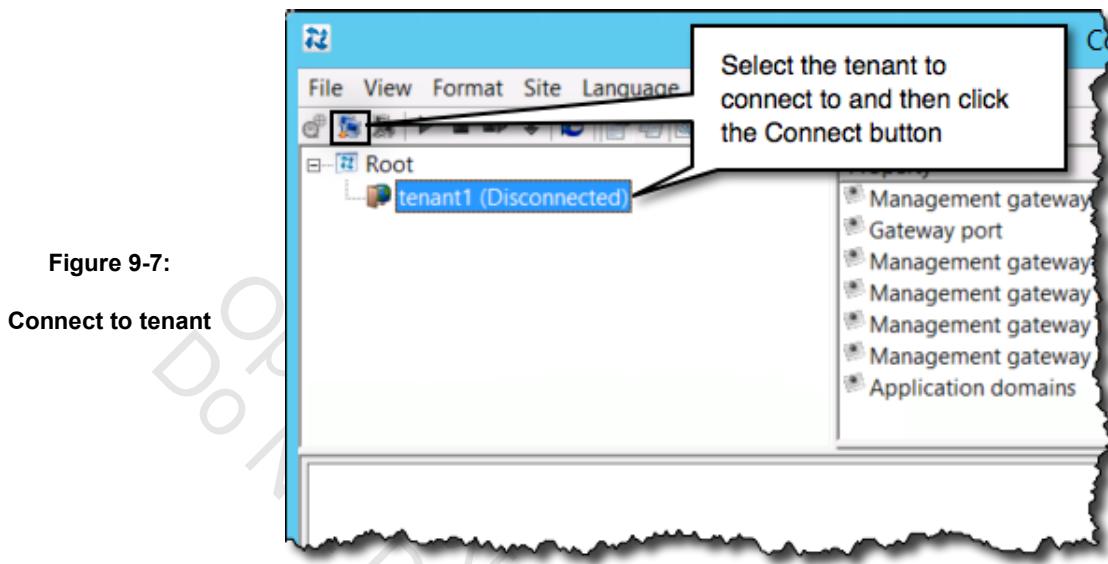


Figure 9-7:

Connect to tenant

4. In the Login to Management Gateway click **OK**.
5. Expand the **tenant1 > Application domains > domain1 > thecompany.com** node.
6. Right-click **thecompany.com** and select **New Application**.
7. Enter the following information in the New Application window and click **OK**:
 - Application type: **Communications Server**
 - Application name: **CustomerLetter**.
8. Right-click **CustomerLetter** and select **Deploy Export File**.



Note that there are two available options to deploy projects:
Deploy export file from CAS and Deploy export from file.

In this activity you will be using the project release that was uploaded to CAS earlier in the labs.

-
9. Select **Deploy export file from CAS** and click the its corresponding **Browse** button.
 10. In the Select release window select **CustomerLetter**.

The right panel displays the releases that have been uploaded to CAS for the CustomerLetter project.

11. In the right panel select the **Release1** and click the **OK** button.

You are redirected back to the Deploy window.

*12. In the Deploy window click the **Next** button.*

The Deploy window displays the physical layers that have been created for this project.



Remember that a project can contain multiple psychical layers, such as Development, Test, Production, etc.

*13. Making sure that the **DEV** layer is selected, click the **Finish** button.*

*14. Click **OK** in the window that indicates that the project was successfully deployed.*

In the right panel you can view a set of properties related to the application and what project has been deployed to the application.

Also note that the application is currently stopped. It needs to be started so that you can test it.

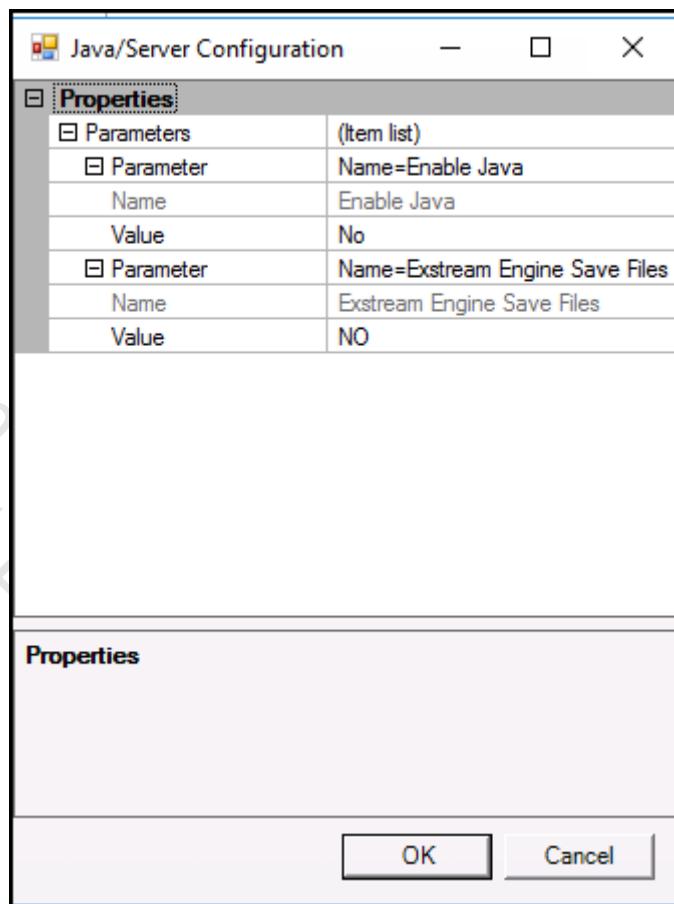


Define the application start parameters

1. Right-click the **CustomerLetter** application and select **Java/Server Configuration**.

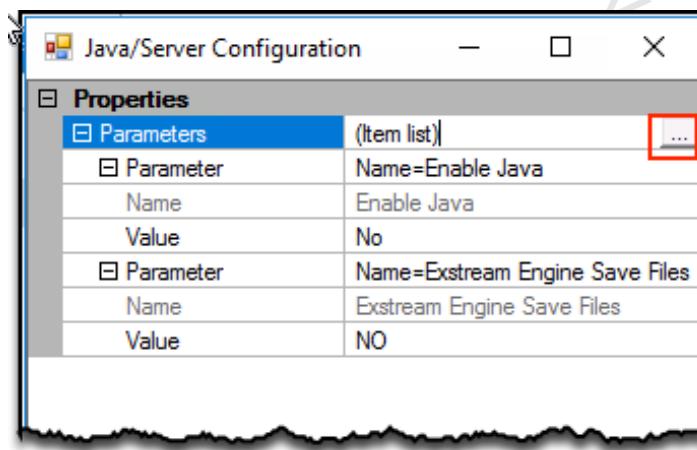
The Java/Server Configuration window opens.

Figure 9-8:
Java/Server
Configuration



2. Click the “...” button in the Parameters line.

Figure 9-9:
Add parameters



The Export Parameters window opens.

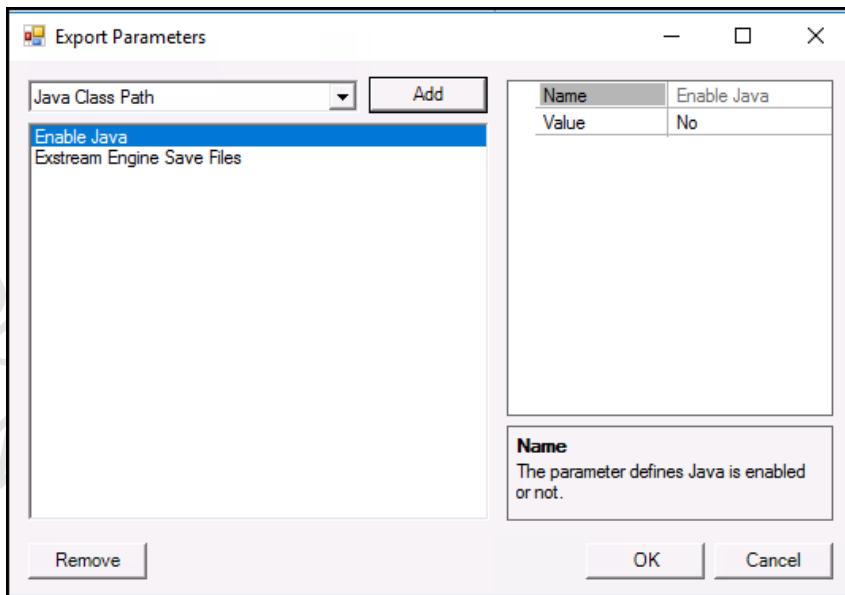


Figure 9-10:
Adding parameters

3. From the drop-down select **Exstream Engine License File** and click the **Add** button.

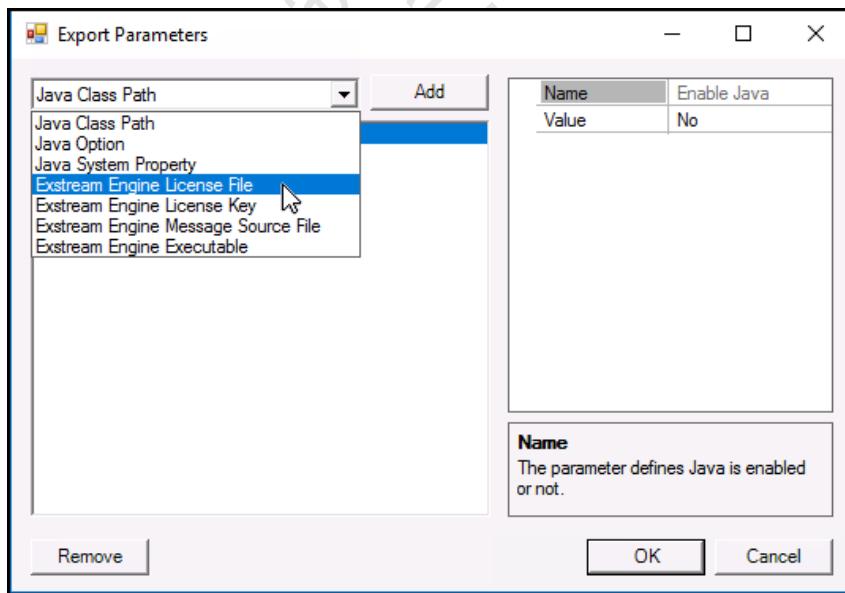


Figure 9-11:
Adding Exstream Engine
License File parameter

The Exstream Engine License File parameter is added.

4. Click the **value** box for the Exstream Engine License File parameter.

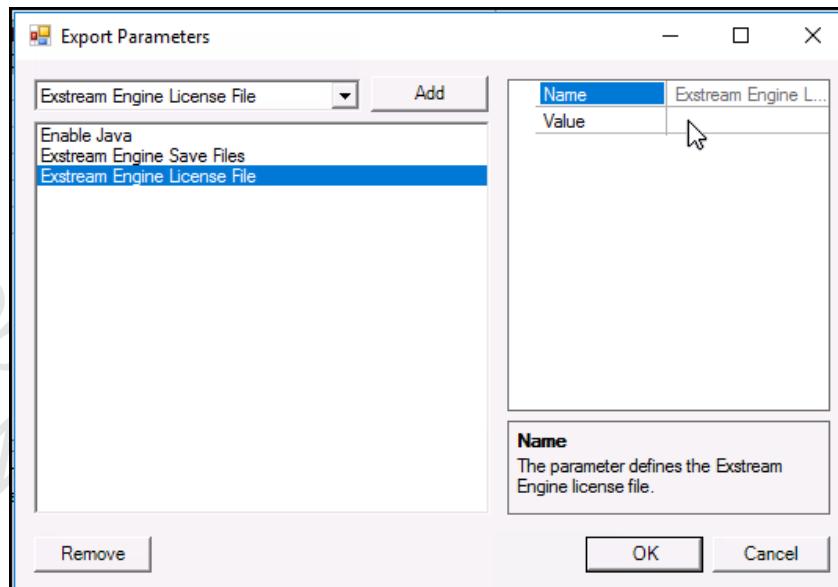


Figure 9-12:

Enter value

5. In the value field enter the value indicated by the trainer and click **OK**.

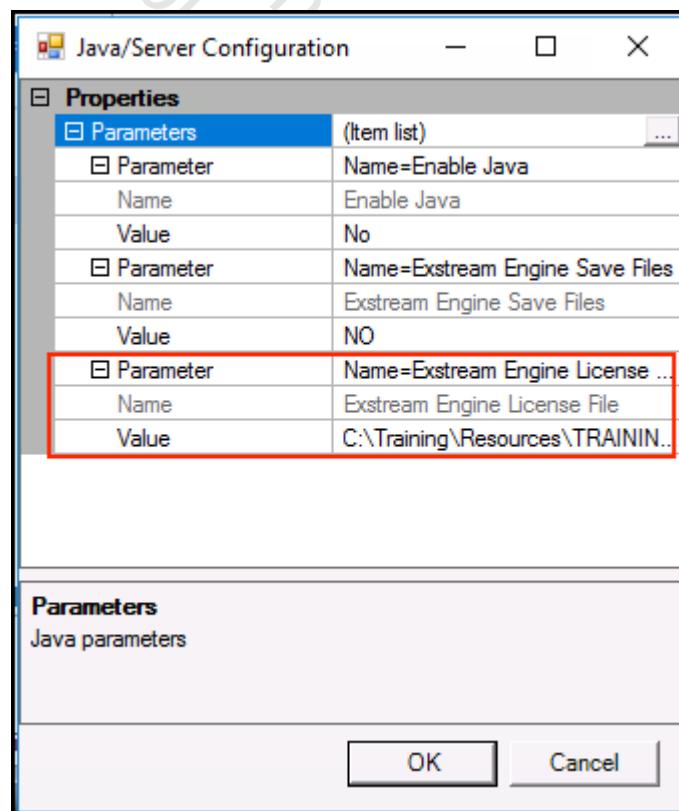


Figure 9-13:

Parameter added

Repeating the previous steps add the following parameters indicated below:

Parameter 1:

- *Parameter: Exstream Engine Message Source File*
- *Value: C:\OpenText\Exstream166\engine_16_6_0_sb\MsgResource_en-us.dat*

Parameter 2:

- *Parameter: Exstream Engine Executable*
- *Value: C:\OpenText\Exstream166\engine_16_6_0_sb\ProdEngine.exe*

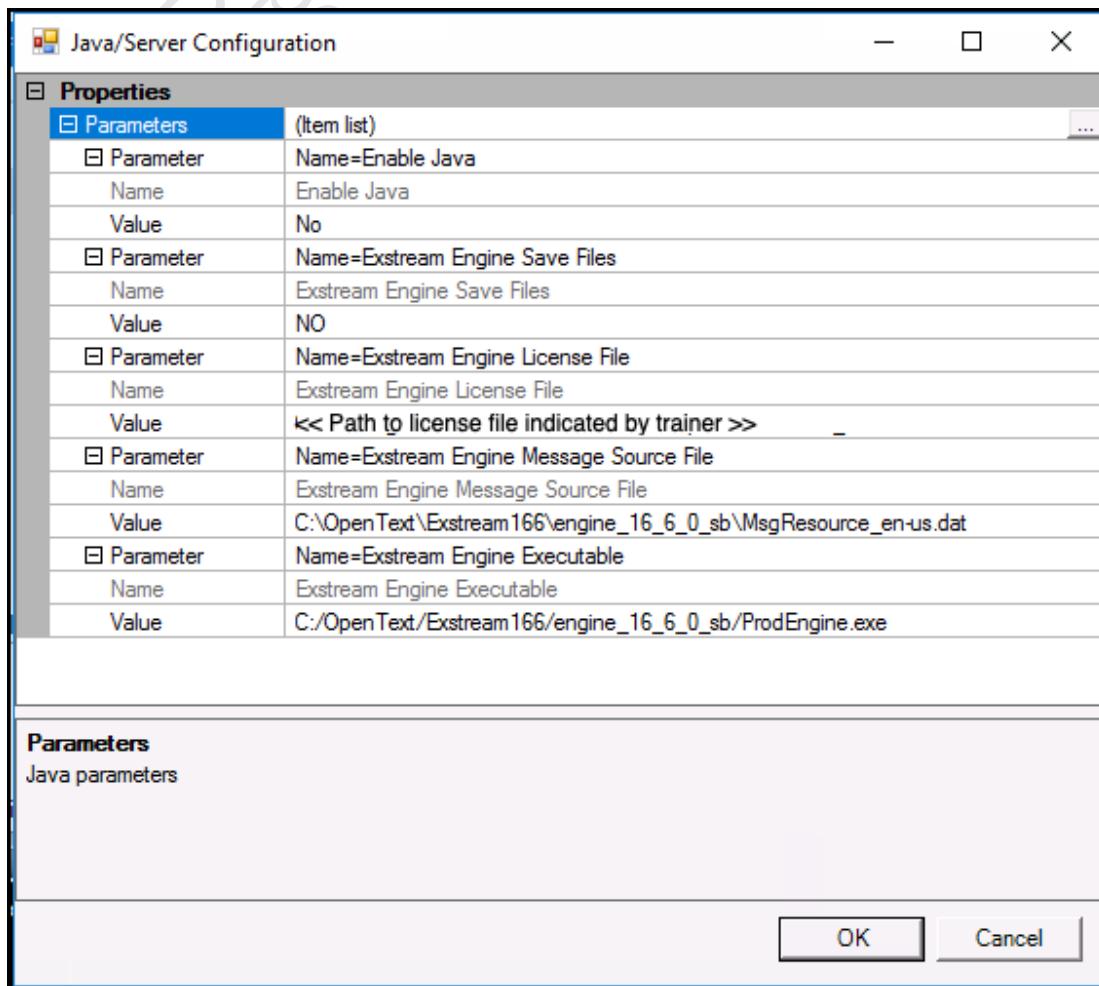


Figure 9-14: Parameters

6. Change the value of the *Enable Java* parameter to **Yes**.
7. Click **OK**.
8. Click **OK**.



Start an application

1. Right-click the **CustomerLetter** application and select **Start**.
2. Select **Start**.



Applications can also be started, stopped and restarted by using the corresponding buttons in the toolbar.

Make sure there's no error in the logs.

Property	Value
Name	CustomerLetter
Logical name	
Description	
Application type	CommunicationsServer
State	Running
Application Domain	domain1
Internal version	16.6.0
Startup type	Manual
Log on	System (not interactive)

```

0830 111721 (0432) 3 Repository manager: Heartbeat task started.
0830 111721 (1820) 3 Distributed notifications: Client was registered at proxy.
0830 111721 (0021) 0 Log Manager: Cannot open
0830 111721 (0260) 3 ResourceManager: Successfully enabled resource authorization.
0830 111721 (0001) 3 StreamServer: Communication Servers Xml
0830 111721 (0003) 3 StreamServer: Creating inconnectors
0830 111721 (1912) 0 Working directory: C:\ManagementGateway166\16.6\root\applications\CustomerLetter\DEV
0830 111721 (1911) 0 StreamServe Communication Server 16.6.0 GA Build 443 (64 bit)
0830 111721 (1928) 1 Mapfile: C:\OpenText\Exstream166\16.6\Server\global\ssmbyte.dat
0830 111721 (4968) 0 Project name: CustomerLetter
0830 111721 (5417) 0 Project Version: 1
0830 111721 (1920) 0 ** UNLICENSED **
0830 111721 (5163) 0 Physical platform: DEV
0830 111721 (4967) 0 Project created with: 16.6.0 GA Build 443 (64 bit) Unicode
0830 111721 (5420) 0 Project label:
0830 111721 (0006) 3 StreamServer: Register document types and meta data
0830 111721 (0015) 3 StreamServer: Parse exported resources.
0830 111721 (0016) 3 StreamServer: Get exported exception rules.
0830 111721 (0007) 3 StreamServer: Starting inconnectors
0830 111721 (0008) 3 Communication Server started
0830 111721 (0009) 3 SCF started.

```

Figure 9-15: Logs

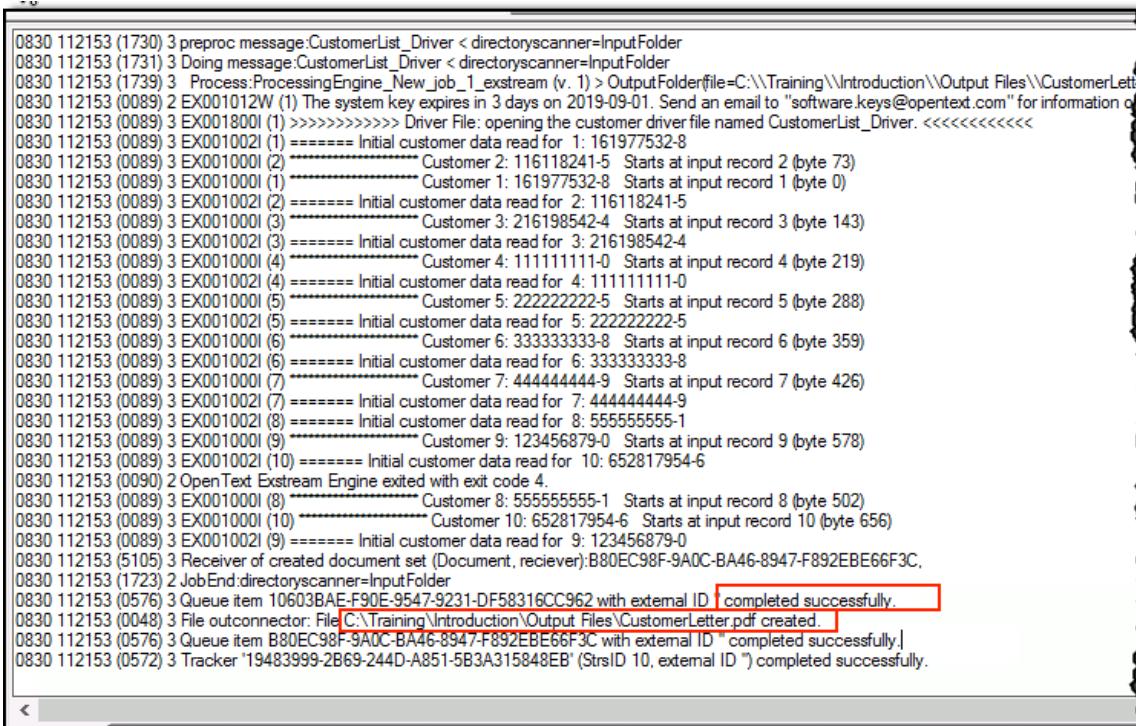


Test the project

1. In Communications Builder double-click the **CustomerLetterRSet** node.
2. In the **CustomerLetterRSet** window right-click **CustomerList-Delimited.csv** and select **Extract to File**.

3. In the Save As window navigate to **C:\DEVIN** and click the **Save** button.

Back in Control Center you can verify that the application was actually run.



The screenshot shows a terminal window with a large amount of log output from the application. The log entries are timestamped and show various messages related to file processing and customer data. Some parts of the log, particularly the file paths, are highlighted with red boxes. Key highlights include:

- Customer data being read from files like EX001001 and EX001002.
- Customer data being written to files like EX001000 and EX001001.
- File creation messages for files like CustomerLetter.pdf.
- Completion messages for queue items, such as "completed successfully".

```
0830 112153 (1730) 3 preproc message:CustomerList_Driver < directoryscanner=InputFolder
0830 112153 (1731) 3 Doing message:CustomerList_Driver < directoryscanner=InputFolder
0830 112153 (1739) 3 Process:ProcessingEngine_New_job_1_extstream(v. 1) > OutputFolderfile=C:\\Training\\Introduction\\Output Files\\CustomerLetter
0830 112153 (0089) 2 EX001012W (1) The system key expires in 3 days on 2019-09-01. Send an email to "software.keys@opentext.com" for information on how to renew it.
0830 112153 (0089) 3 EX001800 (1) >>>>>>> Driver File: opening the customer driver file named CustomerList_Driver. <<<<<<<<
0830 112153 (0089) 3 EX001002 (1) ===== Initial customer data read for 1: 161977532-8
0830 112153 (0089) 3 EX001000 (2) ----- Customer 2: 116118241-5 Starts at input record 2 (byte 73)
0830 112153 (0089) 3 EX001000 (1) ----- Customer 1: 161977532-8 Starts at input record 1 (byte 0)
0830 112153 (0089) 3 EX001002 (2) ===== Initial customer data read for 2: 116118241-5
0830 112153 (0089) 3 EX001000 (3) ----- Customer 3: 216198542-4 Starts at input record 3 (byte 143)
0830 112153 (0089) 3 EX001002 (3) ===== Initial customer data read for 3: 216198542-4
0830 112153 (0089) 3 EX001000 (4) ----- Customer 4: 111111111-0 Starts at input record 4 (byte 219)
0830 112153 (0089) 3 EX001002 (4) ===== Initial customer data read for 4: 111111111-0
0830 112153 (0089) 3 EX001000 (5) ----- Customer 5: 222222222-5 Starts at input record 5 (byte 288)
0830 112153 (0089) 3 EX001002 (5) ===== Initial customer data read for 5: 222222222-5
0830 112153 (0089) 3 EX001000 (6) ----- Customer 6: 333333333-8 Starts at input record 6 (byte 359)
0830 112153 (0089) 3 EX001002 (6) ===== Initial customer data read for 6: 333333333-8
0830 112153 (0089) 3 EX001000 (7) ----- Customer 7: 444444444-9 Starts at input record 7 (byte 426)
0830 112153 (0089) 3 EX001002 (7) ===== Initial customer data read for 7: 444444444-9
0830 112153 (0089) 3 EX001002 (8) ===== Initial customer data read for 8: 555555555-1
0830 112153 (0089) 3 EX001000 (9) ----- Customer 9: 123456879-0 Starts at input record 9 (byte 578)
0830 112153 (0089) 3 EX001002 (10) ===== Initial customer data read for 10: 652817954-6
0830 112153 (0090) 2 OpenText Extream Engine exited with exit code 4.
0830 112153 (0089) 3 EX001000 (8) ----- Customer 8: 555555555-1 Starts at input record 8 (byte 502)
0830 112153 (0089) 3 EX001000 (10) ----- Customer 10: 652817954-6 Starts at input record 10 (byte 656)
0830 112153 (0089) 3 EX001002 (9) ===== Initial customer data read for 9: 123456879-0
0830 112153 (5105) 3 Receiver of created document set (Document, receiver):B80EC98F-9A0C-BA46-8947-F892EBE66F3C,
0830 112153 (1723) 2 JobEnd:directoryscanner=InputFolder
0830 112153 (0576) 3 Queue item 10603BAE-F90E-9231-DF58316CC962 with external ID [redacted] completed successfully.
0830 112153 (0048) 3 File outconnector: File C:\\Training\\Introduction\\Output Files\\CustomerLetter.pdf created.
0830 112153 (0576) 3 Queue item B80EC98F-9A0C-BA46-8947-F892EBE66F3C with external ID " [redacted] completed successfully.
0830 112153 (0572) 3 Tracker '19483999-2B69-244D-A851-5B3A315848EB' (StrsID 10, external ID ") completed successfully.
```

Figure 9-16: Application ran successfully

4. In Windows Explorer navigate to **C:\Training\Introduction\Output Files** and open the generated **CustomerLetter.pdf**.

The document is generated as a PFD and placed in the C:\Training\Introduction\Output Files folder. Notice that it has multiple pages, 1 document for each customer.



Figure 9-17:

Result

5. *Close Acrobat.*

Open Text Internal Use Only
Do Not Distribute

10. Communications Designer

Objectives

On completion of this chapter, participants should be able to:

- Identify the use of Communications Designer and describe the interface components
- Describe the Structure and Design views
- Describe and identify the components of the Asset Management interface
- Create and configure Data Sources
- Describe the process of setting up a communication in Design Manager
- Create a Page design layout
- Create an Email design layout
- Describe and implement email containers
- Optimize design layouts
- Create flow page designs
- Implement accessibility features
- Describe and implement the approval process
- Identify the process to prepare for production

Overview

Communications Designer provides an intuitive web-based design environment for rapid customer communication development. The web environment is used to create print and email communications that can leverage resources that are set up in Design Manager – such as fonts, styles, variables, and output queues. It also includes a data source editing tool for mapping variables to a data file, which can then be associated with a communication. The resulting personalized customer communications are then fulfilled using the engine orchestration features in the Exstream platform.

This chapter provides information about using the Communications Designer environment to create, configure and design effective communications.

Communications Designer environment

The Communications Designer environment comprises two different interfaces that you use in conjunction to create, configure, and design your communications – the design interface and the asset management interface.

Design interface

You use the design environment to set up the structure of your communication and to create and modify your communication design. The design environment comprises two different views – Structure View and Design View.

Structure View

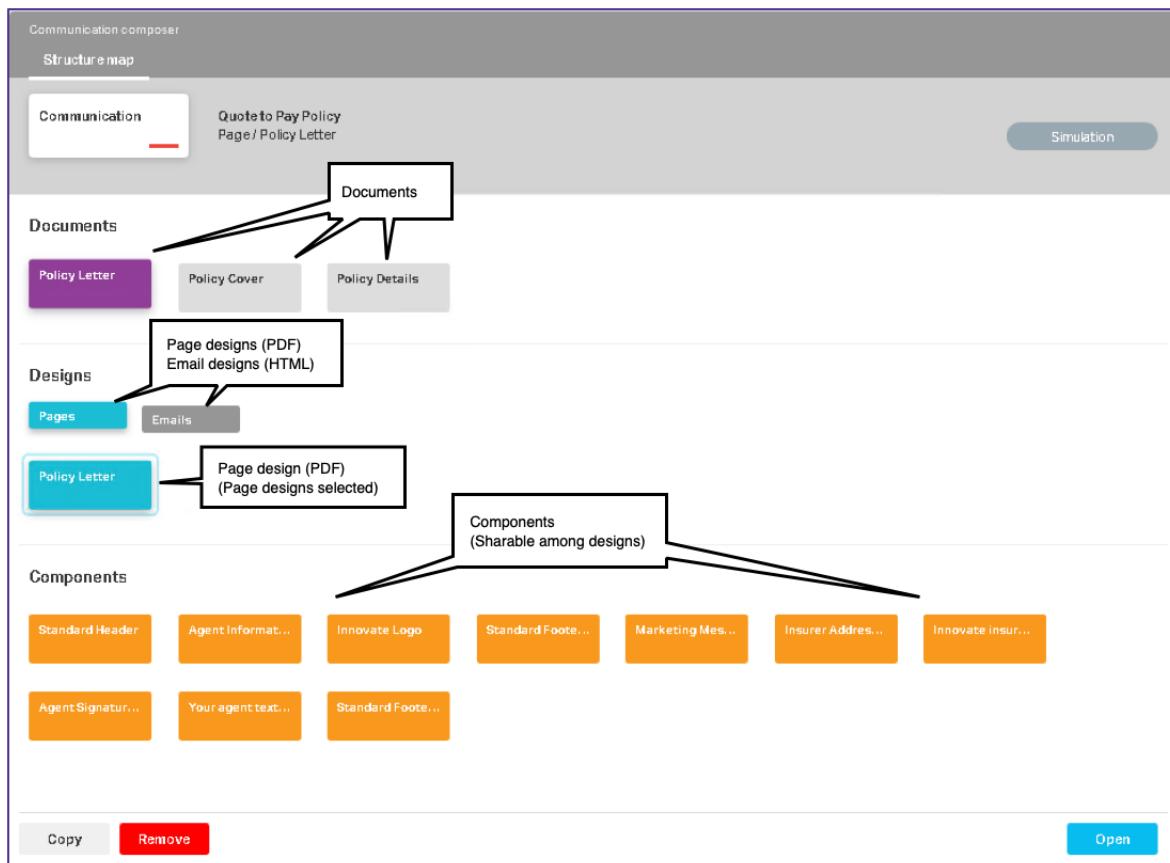


Figure 10-1: Structure view

Structure View is the interface that you use to create the communication objects that make up the basic structure of a communication. In Structure View, you use the Structure map to create communication objects, and use the Properties panel to modify communication properties.

The structure of your communication is displayed in the Structure map, and can contain the following objects:

Documents are containers for all of the designs that are required to create a personalized communication. You use documents to logically group together individual designs in a communication, and to specify the output order for those designs. When the Exstream engine processes a communication, the generated output contains documents in the order that you see in the Structure map. You can click and drag a document to place it in the correct output order, and also set timing rules and document rules for the engine in the document properties. To produce valid output, your communication must contain at least one document that contains at least one design.

Designs contain the content that a customer sees. Designs contain both static content as well as the content that can change based on customer data. When the Exstream engine processes a communication, the generated output contains designs in the order that you see in the Structure map. You can click and drag a design to place it in the correct output order, and also add targeting rules to include or exclude the design in the output. To produce valid output, your communication must contain at least one design. The type of design that you choose to create depends on your output needs:

- **Page designs** are fixed-dimension layouts that you use to create communications for all supported print output queues. You can add multiple pages to multiple documents to make up a single print communication.
- **Email designs** are relative-dimension layouts that you use to create communications for HTML (email) output, and include responsive features that make your communications easily readable on any device. Each email design corresponds to a single email communication.

In Structure View, you can also see any existing reusable design objects – called components – that are used in each design. Components are an easy way to reuse design objects across multiple designs. In Structure View, you can use the Properties panel to rename a component, add or modify a description for it, and see where each component is used. To edit a component, you can either open it directly from Structure View, or you can open a design that contains that component. You must use Design View to create a new component and to add a component to a design.

Design View

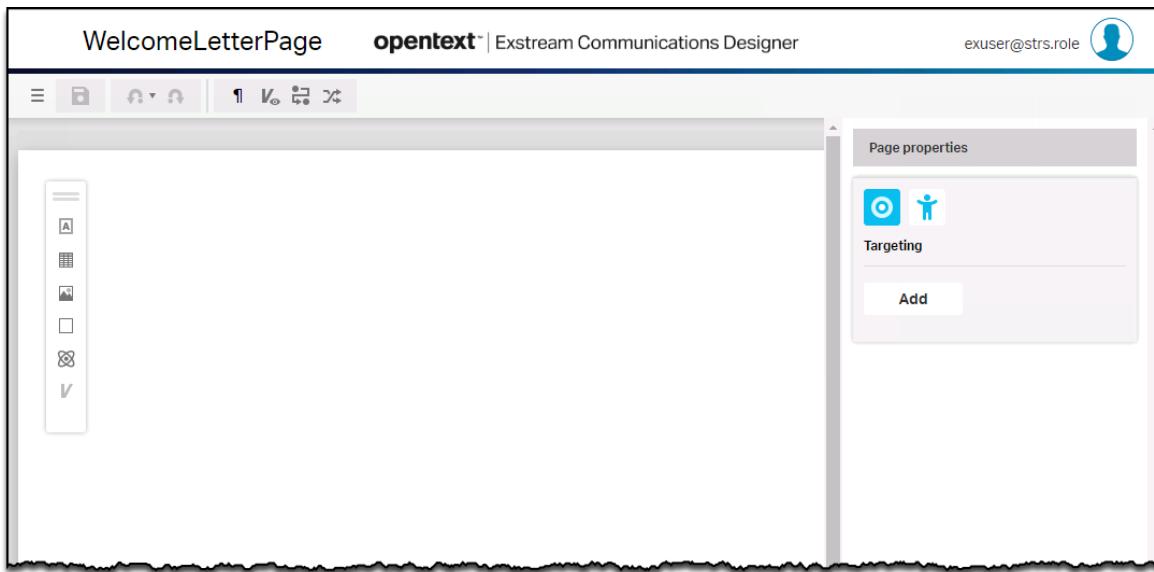


Figure 10-2: Design view

Design View is the interface that you use to design the layouts for both page-based and email communications. In Design View, you can add design objects and insert variables to create personalized communications. Design View contains the following interface elements:

- **Design toolbar** lets you edit and configure design objects, apply formatting to text, undo or redo actions, save your design, and so on. You use the hamburger menu (Hamburger menu icon) to access the help, display version information, or return to the Content Launcher. Depending on the type of design object you are editing, and depending on the fonts and stylesheets available in your communication, the toolbar displays different user options.
- **Object palette** is a floating toolbar that lets you select objects to add to a design. By default, the object palette appears on the left edge of Design View. To change the position of the object palette on your screen, position your mouse cursor on the top edge of the toolbar to change the cursor into a move handle, and then click and drag the toolbar to the desired location.
- **Properties panel** is a dynamic panel that displays different property cards based on the type of object that is selected. You can use the properties panel to view and modify the properties for a selected object, add variables to your design, and even specify some properties for the design itself, such as targeting rules for that design. The properties panel is always located on the right edge of Design View.

- **Design area** contains the layout of your page or email design. The size of the design area varies depending on the type and properties of the design that you are creating. You use the design toolbar, object palette, and properties panel to add and format design elements in this area.

Asset management interface

The asset management interface is used to create, configure, and manage communication assets. From this interface, you can access the Communications Designer data source editor, where you can create and edit data sources, and access Mapping View to map data sources for use with your communications. Only certain Communications Designer roles allow access to the asset management interface. If you have questions about your access privileges, talk to your system administrator.

Mapping View

You use Mapping View to map variables to specific data areas of a sample file. You can create variables, update variable properties, and change data area properties for mapped variables.

Mapping View is unique in that you cannot access it within the design interface. Mapping View contains the following interface elements:

- **Toolbar** lets you perform the following functions:
 - Hamburger menu icon – Access the help, sign out, display version information, or return to the Content Launcher
 - Save the data map
 - Close the data map
 - Undo or redo an action
 - Assign a customer start section
 - Create a new variable
- **Variables panel** displays the list of variables that are available to you. Use this panel to select the variable you want to map or edit. If you have a long list of variables, you can also use it to help categorize, narrow down, or search the variables list to find the variable you need.
- **Data Source Editor** area gives you a visual representation of the sample file assigned to the data source. This is the panel where you will map variables to the data areas in the file.
- **The Data Source Editor** area also includes the Find element search bar, which is used to locate a specific data element within the sample file. Simply beginning typing any part of the element name you want to find, and any matching results are highlighted.
- **Data area properties panel** displays the properties for a selected data area. Use this panel to make any necessary changes to how a variable is read for a specific data area. If the variable is assigned to multiple data areas, or is used in other data maps, changes to these properties will not affect how the variable is read in the other assigned data areas.

Data Sources

A data source is what Communications Designer uses to identify which sample file to use for a particular data map. The same sample file can be used in multiple data sources, and be mapped differently for each data source it is associated with.

The data source defines several aspects of the file to be mapped. For example:

- The name of the data source as it should appear in Workshop
- The sample data file to be used for the data map
- An associated design pack
- The type of data file it represents
- The file format
- The production data source file

Variable Sources

The data source editor can map variables from two different sources:

- **Communications Designer variables** – You can create new variables using the Communications Designer data source editor. These variables then become available to all Communications Designer data sources and communications.
- **Design pack variables** – If you have a Design Manager application that includes a design pack object, you can include variables in the design pack. You can then select the design pack when you set up a data source in Communications Designer, and the variables in that design pack are then available for use in that data source.

Configuring data sources

In order for the engine to connect your data to your communications, you must complete a process called data mapping. When you map a data source, you associate a variable with a data area, which creates data maps that the engine uses to find data. The engine then uses the data to populate variables and customize your communications.

Communications Designer includes a data source editor that lets you create and edit data sources for use in your communications. Using the editor, you associate a sample file and design pack with a data source, create variables, map variables, and edit variable and data area properties. The dynamic variables created in the data source editor can then be used.

The process for successfully creating a data map consists of just two main steps: setting up a data source, and mapping variables to the data areas within the data source.

Setting up data sources

A data source is what Communications Designer uses to identify which sample file to use for a particular data map. The same sample file can be used in multiple data sources, and be mapped differently for each data source it is associated with.

The Communication asset management widget in the Content Launcher is used to create and modify the data sources that can be used when fulfilling your communications.

Only Communications Designer user roles that have the proper workflow control permissions allow access to the Communication asset management widget. If you have questions about your access privileges, talk to your system administrator.

Creating variables

If you are mapping a data source without the use of pre-existing variables from a design pack, or if the design pack does not have the variable you need, you can create a variable directly in the Mapping View of the data source editor.

Variables that are created in the data source editor appear in italic in the Variables panel. This distinguishes them from variables that have been imported from a design pack (which are displayed as non-italic text).

When you create a variable in the data source editor, it then becomes available to all data sources within Communications Designer. If you change the variable properties, the changes carry over to all instances of the variable. You cannot change the type of a variable after it is created.

Mapping data sources

When mapping data sources, there are several methods you can use to map a variable to a data area within the sample data file. When a variable has been mapped, it appears as a variable chip in the row for that data area, and is propagated to the equivalent data areas within the data file.

Setting up communications

Communications that you create in Communications Designer are stored as Exstream Application objects in the common asset service (CAS). Each Exstream application contains the communication-level settings for that communication, and the list of documents that make up the communications that will be generated and sent to customers.

After you create a new communication in Content Launcher, you use Structure View to create the structure of that communication. The communication structure is made up of two types of communication objects – documents and designs. To create valid output, a communication must contain at least one document, and that document must contain at least one design.

Understanding the structure of the communication is critical for implementing an effective design strategy. Before you start creating your designs in Communications Designer, you can use the information in this section as a reference resource to set up your communication structure and plan your design strategy.

Starting a new communication

To open Structure View in Communications Designer and start designing your communications, you must use the Communications Designer widget in Content Launcher to create a new communication or select an existing communication for editing.

Before you can create a new communication in Communications Designer, you must have first created and uploaded an appropriate design pack from Design Manager. Design packs are Design Manager objects that include resources such as fonts, style sheets, colors, rules, and variables. Design packs are required to create communications, and the design pack that you use determines the resources that are available to customize that communication in the design interface.

If the design pack that you select is associated with one or more Communications Designer data files, created in Design Manager, you must also select a data source when creating a new communication. Data sources are created using the data source editor, and must be created prior to creating a communication that will use the same design pack as the data source.

After you create a communication, you cannot associate it with a different design pack or data source. Make sure that your design pack contains all the resources that you will need before you create a new communication. If you plan to use a data source, you must also make sure that you have created and associated a data source with that design pack. You can update your data source after the communication has been created.

In addition to the design pack, the package file that you upload must also contain at least one appropriate output queue that you can use to produce output from your design. If you want to create HTML (email) output, you must also make sure to specify the correct container-based design in the application that you package.

Creating the communication structure

Structure View is used to create the communication objects that make up the structure of your communication. At a minimum, the communication structure must contain two communication objects – at least one document, and each document must contain at least one design.

Documents and designs that are created in Communications Designer are stored in CAS, and are not available in the Design and Production design database.

Before you start, make sure that you have selected the correct communication. If you want to switch to a different communication, click the hamburger menu icon, and select Return to Content Launcher, and then select and open the communication that you want to use.

Modifying communication properties

When you are creating your communication structure, you use Structure View to define additional properties for the communication objects that make up your communication.

In addition to the common properties described in this section, you can also use Structure View to specify flow and accessibility settings for page designs. For more information about these settings, see [Creating flowing page designs](#) and [Creating accessible communications](#)

Creating design layouts

Communications Designer provides you with the flexibility to create designs that are customized for each customer, with that person's data. The way you design your layouts reflects this flexibility.

To open a design in Design View, double-click the design in the Structure map area. Alternatively, you can select the design and then click Open.

Inserting design objects

In Design View, you use the object palette to add different design objects to your design. Design objects are not stored as individual objects in CAS; the objects exist only in the design. However, if you select a design object and add it to the component library, the component is stored in CAS and can be reused in other designs. You can use Structure View to see the components that are associated with each design.

To add an object to your design, click a button on the object palette.

The following table lists the object palette buttons and the corresponding design objects, including a brief description of placement considerations for each design object:

Object palette button	Design object and placement considerations
	<p>Text box</p> <p>You can place a text box directly in a design, or you can embed it in another design object, such as a table cell or another text box:</p> <ul style="list-style-type: none"> • In page designs, when you add a text box, the cursor changes to a drawing cursor, and you can click and drag in the design area to customize the size and placement of the text box on the page. Use the text box properties to make adjustments to the text box size and placement later, if needed. • In email designs, text boxes are automatically placed in the selected container. You cannot specify the dimensions of a text box that is placed directly in a container. The width of the text box corresponds to the width of the selected container. Because email designs are responsive by default, the height of the text box depends on the content that is placed within it. • When you embed a text box in another object (such as in a table cell or another text box), then the text box is automatically placed inline at the cursor position in that object. The default height and width of the embedded text box is 96 pixels. You cannot change the position of the embedded text box from the text box properties; it is always inserted inline at the cursor position. However, you can use the margin settings of the parent object to change the position of the embedded object. • When you add a text box, on the General card in the object properties panel, you can also specify a name to easily identify that object. <p>Adding text boxes is one of the primary ways to add text to your design.</p>
	<p>Table</p> <p>You can place a table directly in a design, or you can embed it in another design object, such as a table cell or a text box:</p> <ul style="list-style-type: none"> • In both page and email designs, tables are automatically placed in the center of the page or selected email container. You can choose to specify the number of rows and columns before you place the table, or use the table options in the design toolbar to modify the number of rows and columns. Use the cards in the Table properties panel to make changes to the format and placement of the table. • When you embed a table in another object (such as in a table cell or a text box), then the table is automatically inserted inline at the cursor position in that object. • When you add a table, on the General card in the object properties panel, you can also specify a name to easily identify that object.

Object palette button	Design object and placement considerations
	<p>Image</p> <p>You can place an image directly in a design, or you can embed it in another design object, such as a table cell or a text box:</p> <ul style="list-style-type: none"> When you add an image, it is automatically placed in the center of the page or selected email container. When you embed an image in another object (such as a in a table cell or another text box), then the image is automatically inserted inline at the cursor position in that object. When you add an image, on the General card in the object properties panel, you can also specify a name to easily identify that object.
	<p>Frame</p> <p>Frames are used to designate content flow areas, or to indicate space reserved for use in Content Author. You cannot embed frames in other design objects, or embed other objects in frames; you must place a frame directly in a design:</p> <ul style="list-style-type: none"> In page designs, when you add a content frame, the cursor changes to a drawing cursor, and you can click and drag in the Designer view to customize the size and placement of the frame on the page. When you add a message frame, the frame is automatically placed in the center of the page, and the dimensions of the frame correspond to the dimensions of the default graphic message template. You can modify frame dimensions on the General card in the properties panel. In email designs, frames are automatically placed in the selected container. The width of a frame always corresponds to the width of the selected container. For content frames, the default height is 96 pixels. For message frames, the default height corresponds to the height of the default graphic message template. You can modify the height of the frame on the General card in the properties panel. When you add a frame, on the General card in the object properties panel, you can also specify a name to easily identify that object.
	<p>Components</p> <p>Components are design objects that are stored and managed from the central CAS repository, but can be added to designs by all users. Components can be created from text boxes, tables, or images. You cannot embed components within other design objects; you must place a component directly in a design:</p> <ul style="list-style-type: none"> When you click the Add component button, the Component browser opens. To add a component to your design, select the component that you want to add from the component library, and click Insert. When you add a component to a page, it is automatically placed where it was originally placed on the page when it was first created. When you add a component to an email, it is automatically placed in the center of the selected email container.

Object palette button	Design object and placement considerations
V	<p>Variable</p> <p>To enable the option to add variables, you must place your cursor in an editable text area, such as a text box or a table cell:</p> <ul style="list-style-type: none"> When you click the Show variables button, the Variables property panel scrolls into view and displays a list of available variables. To add a variable to your design, click the variable name in the list. If your cursor is in an editable text area and the option to show variables is not available, then there are no variables available in this communication. To modify the set of available variables, you must update the design pack that is associated with the communication. Variables let you use customer data to add unique text to your design so that you can create a single communication that can be customized for different customers. You can also use variables to display other information such as page count.

Adding text to a design Text is the primary way that you create compelling, targeted communications for customers. After you add text, you can adjust the formatting of the text so it has the appearance you want. Many of the formatting functions offered by traditional word processors are available in Communications Designer, such as style sheets, to help ensure consistency in your design.

Setting text box properties The most basic way to add text is to create a text box and enter text into it. You can use text boxes to place text directly on a page or email. Text boxes let you set formatting options that affect all of the text in the text box. For example, in page designs, text boxes let you specify whether the text has a background color. You can place a text box directly in a design, or you can embed text boxes in table cells, and then use additional settings in the text box properties – such as borders, margins, and background color – to customize the appearance of the text box. To modify paragraph properties such as paragraph spacing, margins, and tab stops, double-click in the text box to enable the paragraph properties panel. With your cursor in the text box, you can also use the design toolbar to format the appearance of the text.

Customizing text using variables The primary way to customize text in your communications is to use variables to add different text based on customer data. For example, a common use of variables is to add customers' names to their documents. Using a variable to add unique text lets you create one design that provides customized documents for multiple customers. You can insert variables into almost any area in which you can insert text, such as text boxes or table cells.

When you use the object palette to insert a variable in your design, the list of variables that are available for use in your design scrolls into view.

If your cursor is in an editable text area and the Show variables button on the object palette is not available, then there are no variables included in the design pack that is associated with your communication. If

you have questions about the variables that are available in a communication, talk to the person who created the design pack.

In addition to using variables, you can also use rules on design objects in your designs. Rules let you include or exclude pieces of content, and can be a powerful way to ensure that relevant, targeted information is included for each customer.

Organizing content with tables

As with other objects in a design, tables can grow and change, based on the customer data that is included and the way that other objects on the page are placed. Tables that change during the engine run are called automated tables. Static tables that do not change are called simple tables.

Tables are also completely customizable. For example, you can hide rows based on customer data or rules. You can also set up headers and footers so that they repeat or appear only in certain situations. You can even use targeting rules to completely remove certain tables for some customers.

Card	Design object and placement considerations
 Column	<p>Change the absolute position of the table By default, when you create a new table in a page design, it is placed in the center of the page. To change the placement of the table to a specific position on the page, enter the distance from the left and top edges of the page in the Horizontal position box and the Vertical position box, respectively.</p> <p>You can specify the absolute position of a table in page designs only. Also, you cannot change the position of an embedded table in page or email designs.</p> <p>By default, the value in the properties panel is always displayed in inches. However, if you enter the distance in metric units instead of inches, Communications Designer honors the entered value to reposition the table. To change the default unit of measurement, click Settings in the hamburger menu.</p> <p>Change the absolute position of the table By default, when you create a new table, a black border is added to your table object. Use the available border settings to modify this border, or clear the Border check box to remove the existing border.</p>
 General	<p>Specify the column width Enter the desired value in the Column width box</p> <p>Set the border style By default, border styles are not applied to individual columns. When you select the Borders check box to enable border styling, the style setting you choose is applied to both the left and right borders for the selected column. You must clear the Share border styling check box to enable selecting individual borders. You can then use the border selection box to select the border to which you want to apply specific style settings.</p>

Card	Design object and placement considerations
 Row	<p>Specify the row height By default, the height of the table row changes based on the content that it contains. If you want to specify a fixed row height, select the Specify row height check box, and then enter the desired value in the Height box.</p> <p>Set the border style By default, border styles are not applied to individual rows. When you select the Borders check box to enable border styling, the style setting you choose is applied to both the top and bottom borders for the selected column. You must clear the Share border styling check box to enable selecting individual borders. You can then use the border selection box to select the border to which you want to apply specific style settings.</p> <p>Specify a row targeting rule Table row rules let you include or exclude a selected row from customer output based on specific conditions:</p> <ul style="list-style-type: none"> • In the Table row rule area, click Add. • Use the Rule Composer to create the targeting rule, and then click Insert. <p>Select a row type In the Row type list, select the type or row based on its purpose:</p> <ul style="list-style-type: none"> • Standard – Appears exactly as it appears in the design and does not repeat. This is the default option. • Automated – Repeats based on specified criteria. If you select this option, the Variable list is displayed in the properties panel. Use this list to select the variable that is used to repeat the automated row. • Header – Appears at the top of the table and only on the first page on which the table appears • Footer – Appears at the bottom of the table and only on the last page on which the table appears • Repeating header – Appears at the top of the table on each page on which the table appears • Repeating footer – Appears at the bottom of the table on each page on which the table appears • Repeating header except first – Appears at the top of the table on each page on which the table appears, except on the first page • Repeating footer except last – Appears at the bottom of the table on each page on which the table appears, except on the last page

Card	Design object and placement considerations
 Cell	<p>Set border style By default, border styles are not applied to individual cells. When you select the Borders check box to enable border styling, the style setting you choose is applied to all of the borders for the selected cell. You must clear the Share border styling check box to enable selecting individual borders. You can then use the border selection box to select the border to which you want to apply specific style settings.</p> <p>Set margin The spacing of any content in the table cell from the cell border is controlled by the margin settings. You can set separate values for the top, right, left, and right margins. The value that you enter into each Margin box specifies the distance between the object and the cell border.</p> <p>Set background color Use this setting to specify a background color for the table cell. Select the check box to enable the color well, and then use the color well to select the background color.</p> <p>Set text properties By default, text content in a table cell is set to wrap. If you do not want the text to automatically wrap to the next line when it reaches the right margin, clear the Line wrap check box. Additionally, if you do not want your output to contain empty lines that are populated only by variables that do not have any values, select the Remove empty variable lines check box.</p>
Design considerations for adding content to tables	<p>You can add content to tables in the same manner that you can add content to text boxes. For example, you can enter static text, variables, or graphics in table cells. You can also embed tables within text boxes and other table cells to help align content or to create a complex design. You can format the content you add to tables just as you can format text in other areas of the design. Tables with a large number of cells require longer processing times. If processing time is a concern, where possible, join cells or use other formatting techniques to maintain the appearance you want without adding more cells.</p> <p>You can use different types of rows to include content in a table. The type of row that you use is determined by the purpose of the row. For example, one type of row, called a repeating header row, allows you to design a row that appears on the top of each page on which the table appears. You will often use automated rows in your table design, since they can be used to customize your table using customer data.</p>

As you design a table, you can choose to first specify the type of row and then add content to it, or you can add content to the table and then define the rows so that their functionality accommodates the content in them. The order in which you choose to design a table is up to you. However, before designing a table, it is important to plan how you want the content to appear in the final output, and understand the types of table properties you need to set in order to achieve that appearance. For example, if you are not designing a flowing document and you use any type of repeating row, make sure that all table contents can fit on a single design page. Otherwise, the table contents can be truncated and repeating rows might not appear as intended in the output.

Using email containers

Email designs in Communications Designer use containers to define the layout of an email. Containers enable you to define the layout of your email in an easy-to-create grid layout. When you create a new email design, Communications Designer adds the following sample containers to your design:

- The top container includes a text box with sample header text.
- The middle container includes a text box that contains some placeholder text for the email body.
- The bottom container includes a text box with sample footer text.

Email designs are responsive by default. You can add new containers, modify existing containers, or remove containers in your email design, and add design objects (such as text boxes, tables, images, and so on) to each container to customize the layout and design based on your requirements.

Creating a container

To create a new container, you must select an existing container, and then click the appropriate action arrow. Action arrows are clickable icons that appear on a container edge, and the direction of the action arrow that you click determines the position of the new container that is created. When you create a new container, it is always created relative to an existing container in your design.

Optimizing design layouts

As you create your design layouts in Communications Designer, use this section to help you optimize the flow and accessibility settings for your communications.

Reusing design objects

To save time and ensure a consistent appearance across multiple projects, you can create and use components in a design. Components are named design objects that are stored in CAS, and can be reused in any design. Changing a component in any design will modify every instance of that component wherever it is used in other designs.

You can save text boxes, tables, and image objects as components. For example, when you import your corporate logo as an image, you can save it as a component so it can easily be updated in all of your communications with a single change. You can include variables in design objects that you want to save as components.

While you can specify names for design objects that you insert in a design, these objects are not stored as named objects in CAS and exist only in the design layout. However, if you select a design object and add it to the component library, the component is stored as a named object in CAS. You can use Structure View to see the components that are used in each design.

Creating flowing page designs

Because Exstream lets you create a single design that is then customized for each customer with that person's data, the way that you design a page reflects this flexibility. For example, if you want to include a table that lists each of the customer's calls during the month, you add one table to your design. Then, when the engine runs and populates the table with the customer's unique data, the table can grow and change to reflect the data. Therefore, when you create a design, it is important to keep in mind that the page will change during engine processing, based on the inclusion or exclusion of design objects on the page and the data available for the customer.

To accommodate changes in a design that cause design objects to grow, you can use flow settings for both your designs and the design objects contained within those designs.

Specifying flow options for page designs

When you create a page design, you can specify whether that page will be used as a flow page, or if how any overflow content on that page should behave. In Structure View, you use the Properties panel to update the flow settings for a page design.

- To specify that a page will be used as a flow page, on the General tab, select the Flow page only check box. Flow pages are included in the Structure map of a communication, but do not appear in the output unless they are used.
- To specify how the overflow content on a page should behave, on the Flow tab, in the Flow type list, select one of the following options:
 - **Ignore overflow** – Select this option to specify that overflow content should be ignored. When you produce output, if the engine encounters overflow content, it will issue an error and ignore that content, and continue processing the design. The overflow content will not appear in the output.
 - **Copy this page** – Select this option to specify that the current page should be duplicated to contain overflow content. You should select this option only if the page will contain a flow frame. This option lets you create a standard flow page that will contain all of the overflow content. For example, if the original content is a transactional table that can span many pages, then this specifies that the page will be duplicated as many times as necessary to display all of the transactional data.
 - **Flow to another page** – Select this option to specify the flow page that is set up to contain the overflow content. When you select this option, the Flow page list is enabled. This list contains all of the page designs that are available in your communication. In the Flow page list, select the destination flow page for overflow content.

Creating accessible communications

You can use the accessibility features in Communications Designer to control and optimize the way that customer output is read by assistive technology tools such as screen readers and text-to-speech converters. You can add compliant accessibility features to individual design objects (such as text boxes, tables, and images), as well as to inline text such as hyperlinks.

Previewing communications

Before you generate production output, you can use Simulation View to preview the communication in the browser as it would appear in the final output. If your communication includes both HTML and PDF output queues, you can use Simulation View to preview both output types.

Prerequisites for using Simulation View	<p>Make sure you meet the following prerequisites for previewing a communication:</p> <ol style="list-style-type: none">1. The package file that was initially uploaded to CAS from Design Manager contains the appropriate output queues. For email designs, the preview device that is associated with the package application must also match the container design label in the HTML (email) output object.2. The Exstream engine is configured in a Communications Builder project, and references the package file that was uploaded along with the design pack that is associated with your communication.3. The export file created from the Communications Builder project is deployed to a running Communications Server application.4. A default simulation containing sample data exists and is associated with the Exstream application template that corresponds to the package file that you initially uploaded to CAS.
Previewing a communication in Simulation View	<p>If you are not sure that these requirements have been met, you might need to talk to the person who created the design pack, or a system administrator.</p> <p>To preview a communication, in Structure View, click Simulation. Simulation View opens, and the engine runs in preview mode to generate a preview of your communication. To see the engine messages that were generated during the preview engine run, click the  Messages button.</p> <p>Depending on the output queues associated with your communication, you can click PDF or HTML to switch between the PDF and HTML previews. The variable values that are displayed in the preview are based on the sample data in the default simulation that is associated with your communication. You can use the Data panel in Simulation View to specify variable values and change the values that appear in the preview.</p> <p>To change variable values, in the Data panel, change the sample variable values as needed, and then click Run. The variable values are updated in the communication in Simulation View, and updated variable values are shaded green in the Data panel.</p> <p>To reset the variables to their original sample values, click Reset. When you are finished with the simulation, click Close, just above the Data panel. Simulation View closes and you are returned to Structure View.</p>

Using the approval workflow

Approval workflow refers to the progression of content or of a communication from initial version to final approval. Using an approval workflow helps to ensure that new and updated content is properly reviewed for accuracy and conforms to company standards.

Before fulfilling Communications Designer communications, the entire communication must be approved by a reviewer. This includes the communication and all of its associated resources. Your ability to move content or communications through an approval workflow is determined by access privileges within your organization's Exstream environment. If you have questions about your access privileges, talk to your system administrator.

Understanding the approval process

When approving communication resources, all child resources must be approved before a parent resource; that is, the reviewer must approve components before pages, pages before documents, and documents before the communication.

At a high level, the approval process is as follows:

1. A designer creates or makes updates to a communication object, such as a page or email.
2. When the designer is finished editing, he or she submits the communication, or individual communication objects, for approval.
3. A reviewer either approves or rejects the updates. If the reviewer accepts the updates, the communication is approved and ready to be fulfilled. If the reviewer rejects the updates, then the designer must return the content to draft status make additional changes, and submit those changes for approval.

Determining current workflow states

You can quickly determine the current workflow status of a communication object or of the entire communication using the corresponding workflow symbol:

- In Structure View, the workflow state for the communication and for each communication object appears on the corresponding object in the Structure map area.
- In Design View, the Change content state button in the design area displays the current workflow state of the communication object that you are editing. For components, the workflow state is also displayed in the properties panel on the General card.
- If your communication includes a data source, the current workflow state of the data source is displayed in the Communication asset management widget.

The following table lists the workflow symbols and describes the meaning of each symbol:

Indicator	State	Description
	Draft	The communication, or communication object, is available for editing.
	Submitted for approval	The communication, or communication object, has been submitted for approval and cannot be edited. To make changes, you must return the communication, or communication object, to a draft state.
	Approved	The communication, or communication object, is approved and is ready to be used in customer output. To make changes, you must create a new draft.
	Rejected	The communication, or communication object, has been rejected and cannot be edited. To make changes, you must return the communication, or communication object, to a draft state.

Moving through the approval process

When communications or communication objects move through the approval workflow, they are assigned incremental whole numbers for versioning. Each time a new draft is created from an approved object, the version number for that object is incremented. For example, when a designer creates a new communication object, this is version 1 of the object, and this version is in draft state. When a reviewer approves this object, version 1 of the object is in the approved state. If a designer then creates a new draft of the approved object, then that draft is version 2 of the object. However, if a reviewer rejects version 1 of the object, and a designer then returns it to a draft state, the version number of the object is not incremented.

As you move through the approval process, keep in mind that only communications and communication objects that are in draft state can be edited. After an object has been either submitted for approval or rejected, you must return that object to a draft state in order to update it. Similarly, if an object has already been approved, you must create a new draft of the object in order to add to or update it.

If you try to approve a communication or a parent communication object that contains unapproved child objects (or objects that do not have a previously approved version), you will receive a message indicating that you must first approve all of the child objects before you can approve the parent object. However, you can submit a communication or a parent communication object for approval even if some of the child objects are in a draft state. The workflow state of the parent communication object does not affect the workflow state of the objects that it contains. For example, if you approve a communication that contains objects that are currently in a draft state but have previously approved versions, the approved communication will use the previously approved versions of the communication objects, not the draft versions.

Your ability to move content or communications through an approval workflow is determined by access privileges within your organization's Exstream environment. If you have questions about your access privileges, speak to your system administrator.

To move a communication object or a communication through the approval process:

1. When you have finished creating your design, do one of the following:
 - In Structure View, click the workflow status icon on the object in the Structure map area.
 - In Design View, click the Change content state button in the design area. If you accessed a component from within a design, you can change the workflow state of that component by clicking the Change content state button next to the component name on the General card in the properties panel.
 - You can use Design View to change the workflow state of designs and components only.
 - In the Communication asset management widget, click the Change content state button for the appropriate data source.
2. Depending on the current workflow state of the communication or the communication object, select one of the following actions to move it through the approval process:

Current state	State	Description
Draft	In Structure View or for data sources: Submit for approval	<p>Submit the draft version for approval.</p> <p>After you submit a version for approval, you can no longer make changes to it. In order to make changes, you must return the content to a draft state, and then submit the updated draft for approval when ready.</p>
	In Design View: Submit	
Submitted for approval	Approve	<p>Approve the submitted object.</p> <p>Select this option only for objects that are ready to be used in customer output. Only approved objects will be included in customer output.</p> <p>You can approve an object only if all of the child objects that are associated with that object have also been approved. For example, to approve a document, you must first approve all of the pages contained within that object and any components used in those pages.</p>
Submitted for approval	Reject	<p>Reject the submitted object.</p> <p>Select this option if the object must be changed before it can be used in customer output. When you reject an object, designers must then return the rejected object to a draft state and submit the updated draft for approval after making any required changes.</p>

Current state	State	Description
Submitted for approval or Rejected	In Structure View or for data sources: Return to draft	Return the submitted or rejected object to a draft state. Select this option to make updates to content that has already been submitted for approval or that has been rejected. Communications Designer does not treat an object that has been returned to a draft state as a new version; it simply resets the approval workflow process.
	In Design View: Draft	
Approved	In Structure View or for data sources: Make new draft	Create a new draft version of a previously approved object. When you create a draft, Communications Designer creates a new version of the content that must go through the approval process in order to be used in customer output.
	In Design View: Draft	If your communication is in the approved state, creating a new draft of a communication object does not change the workflow status of the communication. If you fulfill an approved communication that contains communication objects in a draft state, the latest approved version of those objects will be included in the output.
Draft	In Structure View or for data sources: Discard draft	Discard a draft version without moving it through the approval process. You can delete a draft version of an object at any point before it has been submitted for approval. When you discard a draft version, you lose your edits, and the object is replaced by the latest approved version.
	In Design View: Discard draft (components only)	This option is available only if a previously approved version of the object exists.

3. *In the Workflow state change dialog box that opens, enter an optional workflow comment to help other users understand any changes or decisions that you made, and then click Change.*

To see the workflow comments:

- In Design View, click View comment in the design area.
- In Structure View, in the Properties panel, click the History tab.

To see the workflow history, audit logging must be enabled for your Exstream environment, and must allow the service gateway audit logs to be stored in the database. For more information about enabling audit logging, see the OpenText Exstream Communications Server Online Help or speak to a system administrator.

Preparing for production

After you have created and customized your design layouts to meet your business requirements, you are ready to produce output from your communication designs. Only communications that are in an approved state are available to the Exstream production engine. When you have finished creating the communication, the Exstream application and all of its associated resources are available in Workshop in the Draft state. Before fulfilling Communications Designer communications, the entire communication must be approved by a reviewer.

When approving resources, all child resources must be approved before a parent resource; that is, the reviewer must approve components before pages, pages before documents, and documents before the communication.

After the communication has been approved, select the Exstream application object, and click Publish/Unpublish to publish the communication to the selected domain.

After you publish the application in Workshop, the approved content is then available to the Exstream engine in that domain. Keep in mind that the latest approved version of each resource is always available to the engine. If you make additional changes to a communication, and then approve those changes, you do not have to publish it again for those changes to be visible in the output. However, if you add or remove a document, or if you make any changes to the communication properties, the communication reverts to a Draft state, and must be approved before it can be republished.

When you run the production job using the orchestration features in the Exstream platform environment, the Exstream engine runs and creates the specified output.

Steps to build a Communications Designer application

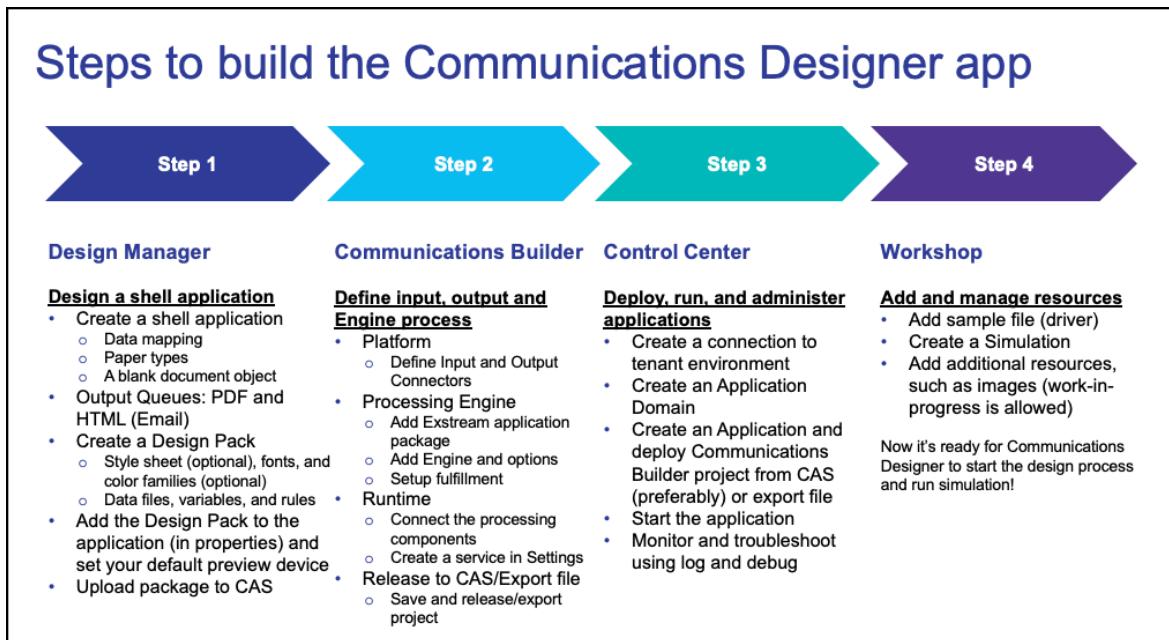


Figure 10-3: Steps

Lab: Create a Communications Designer application

Step 1: Design Manager

In this step we will add the following components to the Customer Letter application:

- An HTML-email Output Queue
- Create a Design Pack
- Add the new Design Pack to the application

The application already contains the other required components in Design Manager.

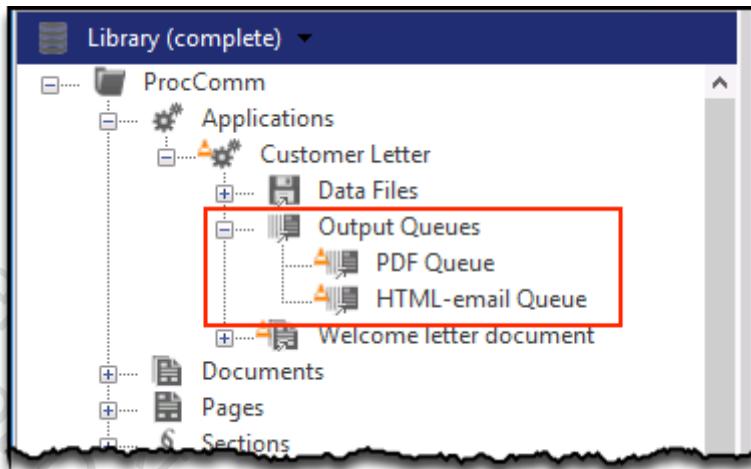


Add the HTML-email Output Queue to the application

1. Ensure that you are connected to the **ProcComm** design database in Design Manager as **exadmin/opentext**.

2. In the Library expand **ProcComm > Environment > Delivery > Output Queues** and drag-and-drop the **HTML-email Queue** on the Customer Letter application (make sure the HTML-email Queue remains after the PDF Queue in the Customer Letter Output Queues).

Figure 10-4:
Output Queues



Create the Design Pack

1. In the Library expand **ProcComm > Environment > Design**, right-click **Design Packs** and select **New Design Pack**.
2. In the New Design Pack window enter the following information and click **Finish**:
 - Name: **CustomerLetterDP**
 - Description: **Design Pack for the Customer Letter application.**

The Design Pack opens in the Properties Panel.

3. Select the **Design** tab.
4. Click the icon in the Style Sheet section.
5. In the Select Style Sheet window select **Mobi Style** and click **OK**.
6. Under Color families click the button to add a color family.
7. In the Select Color Family window select **Mobi Branded Colors** and click **OK**.
8. Select the **Data and Logic** tab.
9. In the Communications Designer area, making sure that the **Data files** tab is selected, click the button.
10. In the Select Data File window select **CustomerList_Driver** and click **OK**.

11. In the Communications Designer area, select the **Variables** tab and click the button.
12. Add the following variables:
- Variable: **SYS_DateCurrent** Friendly name: **Date**
 - Variable: **Customer_Name_First** Friendly name: **Name**
 - Variable: **Customer_Name_Last** Friendly name: **Last Name**
 - Variable: **Customer_Address1** Friendly name: **Address1**
 - Variable: **Customer_Address2** Friendly name: **Address2**
 - Variable: **Customer_City** Friendly name: **City**
 - Variable: **Customer_State** Friendly name: **State**
 - Variable: **Customer_Zip** Friendly name: **Zip**
 - Variable: **Customer_AccountNumber**
Friendly name: **AccountNum**

Figure 10-5:
Variables

Variable name	User-friendly name
Customer_AccountNumber	AccountNum
Customer_Address1	Address1
Customer_Address2	Address2
Customer_City	City
Customer_Name_First	Name
Customer_Name_Last	Last Name
Customer_State	State
Customer_ZIP	Zip
SYS_DateCurrent	Date

13. Save and close the Design Pack.



Add the Design Pack to the application

1. In the Library expand **ProcComm > Applications**, and drag the **Customer Letter** application to the Property Panel.
2. In the Property Panel select the **Author and Design** tab.
3. Under Design Pack select the icon.
4. In the Select Design Pack window, select the **CustomerLetterDP** design pack. and click **OK**.
5. Do not close the application object.



Set the design views

1. In the Author and Design tab, under Content Author design views select **Standard**.

2. Click the (printer icon).

3. In the Select Output window, select **PDF** and click **OK**.

The Standard preview device will use the PDF output.

4. Click the (plus icon).

5. In the Select Preview Device window, select **HTML** and click **OK**.

Note that Output for HTML is not defined.

6. Select **HTML** and click the (printer icon).

7. In the Select Output window, select **HTML-email** and click **OK**.

The HTML preview device will use the HTML-email output.

Figure 10-6:

Devices

Name	Default	Output
HTML		HTML-email
Standard	Default	PDF

8. Save and close the application object.

In this chapter you will design a PDF and HTML versions of the Welcome Letter in Communications Designer, so, we will remove the page (created earlier in Designer) from the application.



Remove the page design

1. In the Library expand **ProcComm > Applications > Customer Letter > Welcome Letter document**.
2. Right-click **Welcome letter page** and select **remove reference**.



Package the application and upload it to CAS

1. Right-click the **Customer Letter** application object and select **Package**.

The Build Package dialog box opens.

2. To specify the output, complete the following steps:
 - a. In the **Package file** text box, enter **C:\Training\Introduction\Pub Files\CustomerLetter.pub**.
 - b. In the **Package file** area, select the **Create for output queue device(s)** radio button.
3. Make sure that the **Run Engine when complete** check box is not selected.
4. Select the **Upload package file to CAS when complete** check box and click .
5. Make sure that:
 - The Name is set to **Customer Letter**.
 - Upload a new version of an existing package check box is selected and that the Customer Letter package is selected in the table below.

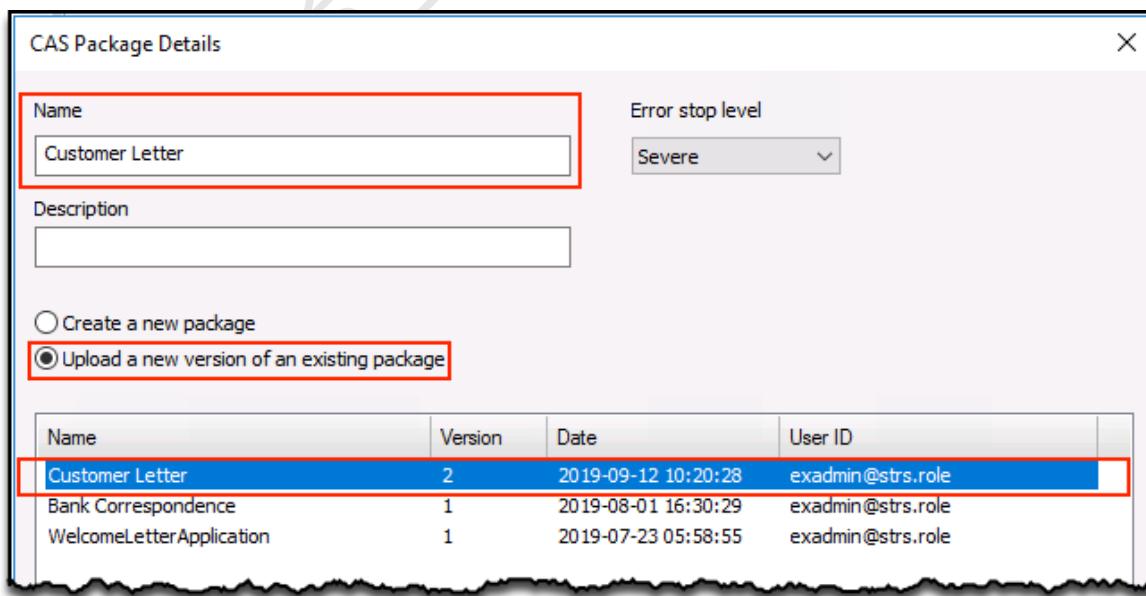


Figure 10-7: Upload to CAS

6. Click **OK**.
7. Click **OK**.

The Build Production Package File dialog box opens and shows a packaging progress bar.

8. Click **Close**.

**Step 2:
Communications
Builder**

In this step we will add the following components to the CustomerLetter project:

- Add an HTML output connector
- Update the engine to use the new packaged file uploaded to CAS in Design Manager earlier in the lab
- Update the runtime to connect the new HTML connector
- Release project to CAS

***Update the connectors***

1. *Make sure that the **CustomerLetter** project is open in Communications Builder.*
2. *In the Project panel double-click the **Platform**.*

The Platform opens in the Main View.

3. *In the Platform view, right-click an empty space and select **New Output Connector > Generic**.*

A new output connector is added to the Platform view.

4. *Name the new output connector to **HTMLOutput**.*
5. *Right-click **HTMLOutput** and select **Settings**.*
6. *Make sure **Platform** is selected in the Selected layer drop-down.*
7. *Click the **Driver** button.*

The Device Driver Settings tab is displayed.

8. *Click the **Show all devices** check box.*
9. *From the **Device** drop-down list, select **HTML unpaginated**.*
10. *Leave the remaining settings as they are.*
11. *Click the **Queue (none)** button and make sure that the Queue is set to **Output**.*
12. *From the Selected layer drop-down list (upper area of the window), select **DEV (Physical)**. This switches the setting from the generic layer to the physical layer.*
13. *Select **Yes** in the dialog box that opens.*
14. *From the **Connector type** drop-down list, select **File**.*

The Connector tab displays the following:

15. *In the **File** property text box, enter **C:\Training\Introduction\Output Files\CustomerLetter.html**.*
16. *In the **Create directories** property, select **Yes**.*
17. *Click **OK**.*
18. *Right-click the **OutputFolder** output connector and rename it to **PDFOutput**.*

Renaming the output connector is totally optional, we are doing it only to use a consistent naming convention.

19. Save the project.



Update the Engine's package

1. In the Project panel, double-click the **Engine** node to open it in the Main View window.
2. Double-click the **Exstream engine**.

The Exstream configuration window opens.

3. Click the **Edit selected Exstream package file** button.

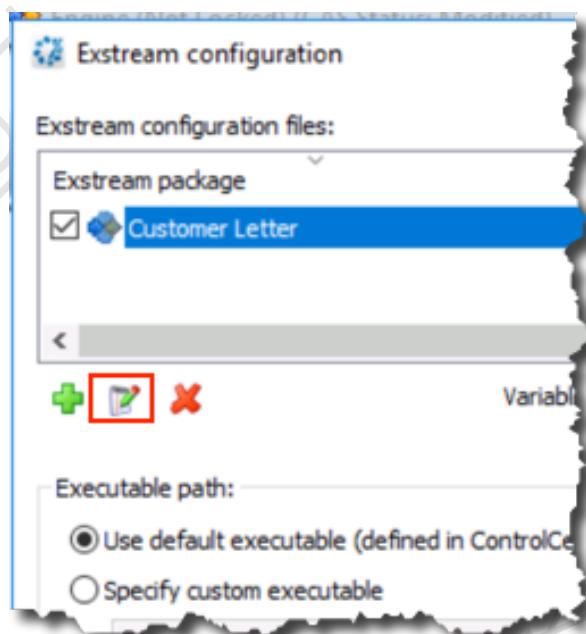


Figure 10-8:

Edit package

4. In the Select CAS window click the **Find** button, select **Customer Letter** in the right panel, then select version 2 in the Version drop-down.

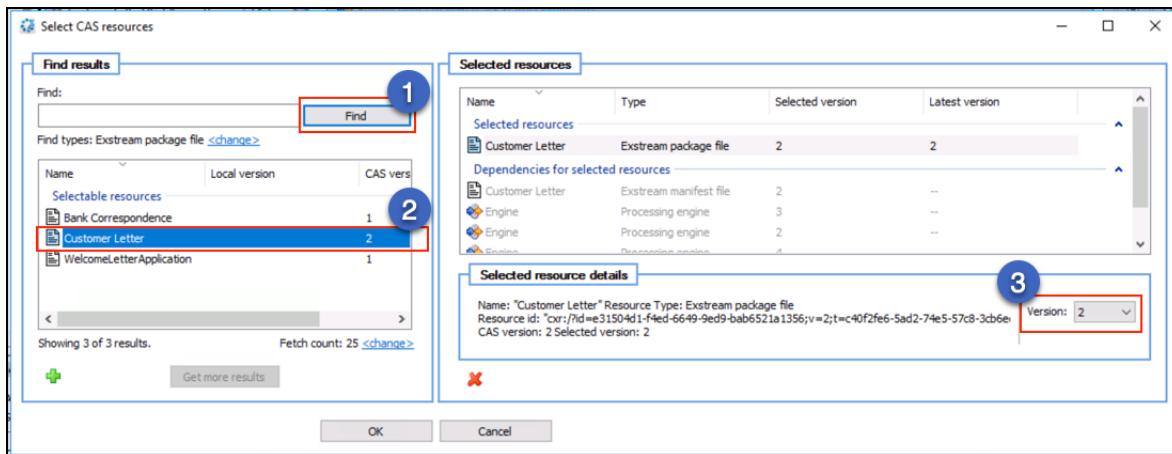


Figure 10-9: Select version

5. Click **OK**.
6. Click **OK** to close the Exstream configuration window.



Update the Runtime

1. In the Project panel, double-click the **Runtime** node to open it in the Main View window.
2. Connect the **HTML Queue** to **HTMLOutput**.

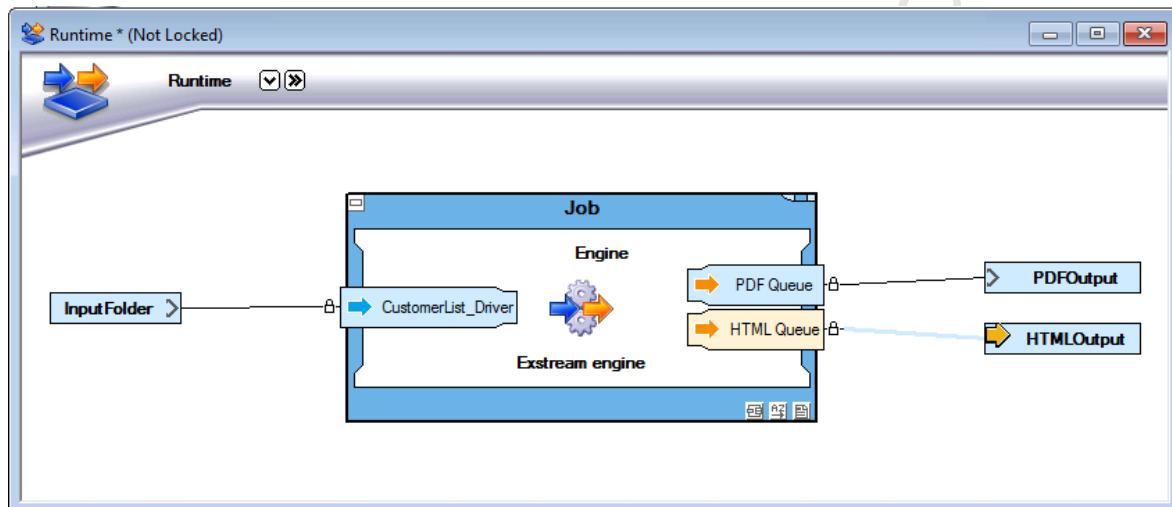


Figure 10-10: Runtime

3. Right-click the **Engine** and select **Settings**.
4. In the **Settings** window select the **Service** check box and set the Service name to **WelcomeLetterService**.
5. Click **OK**.
6. Save the project



Create a new project release

1. In the Communications Builder toolbar click the **Create release** button.
2. In the Export for release window click **Export**.
3. Save all the unsaved components if requested.
4. Name the new release **Release2**.
5. Click **OK** to close the Operation was successful window.

Step 3: Control Center

In this step we will deploy the new Communications Builder project release to the CustomerLetter application in Control Center.



Deploy the new project release to the CustomerLetter application

1. Navigate to **Programs > OpenText Exstream 16.6.0 > Control Center**.
 2. Expand the **Root** node.
 3. Select **tenant1 (Disconnected)** and click the **Connect** button.
- Control Center opens.
2. *Expand the Root node.*
 3. *Select tenant1 (Disconnected) and click the Connect button.*

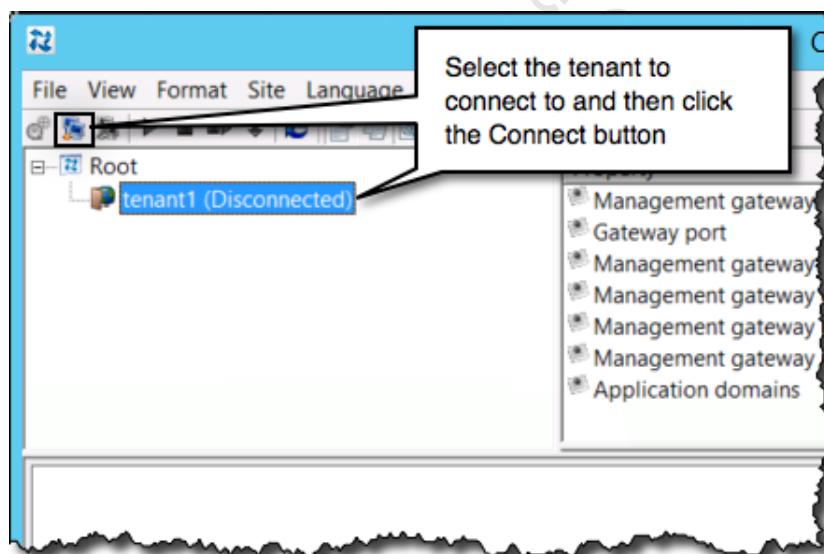


Figure 10-11:

Connect to tenant1

4. In the Login to Management Gateway click **OK**.
5. Expand the **tenant1 > Application domains > domain1 > thecompany.com** node.
6. Right-click **CustomerLetter** and select **Deploy Export File**.
7. Select **Deploy export file from CAS** and click the its corresponding **Browse** button.
8. In the Select release window select **CustomerLetter**.

The right panel displays the releases that have been uploaded to CAS for the CustomerLetter project.

9. In the right panel select the **latest release (Release2)** of the project and click the **OK** button.

You are redirected back to the Deploy window.

10. In the Deploy window click the **Next** button.

The Deploy window displays the physical layers that have been created for this project.

11. Making sure that the **DEV** layer is selected, click the **Finish** button.
12. Click **OK** in the window that indicates that the project was successfully deployed.
13. Make sure the **CustomerLetter** application is started.

Step 4: WorkShop

In this step you will:

- Create a simulation.
- Add additional resources.

***Review the resources uploaded to CAS***

1. In Chrome navigate to **Workshop > Resources** (the URL is bookmarked in Chrome as **Exstream Web Applications > WorkShop**) and sign in as **exuser/opentext**.

Type & Name	Categories	Description	State
CustomerLetter	None	Communications Builder Project	Locked, Checked, Open
CustomerLetterDP	None	Design Pack (created in Design Manager, included in the package or pub file)	Open, Edit, Open
Customer Letter	None	Package file (pub file) uploaded from Design Manager	Open, Edit, Open
Manifest file	None	Manifest file	Open, Edit, Open
CustomerList-Delimited.csv	None	Driver file	Open, Checked, Open
Mobi_Logo.jpg	None	Images used in the communication	Open, Checked, Open
signature.jpg	None		Open, Checked, Open
BankStmt	None		Open, Edit, Open
Bank Correspondence	None		Open, Edit, Open
Bank Correspondence	None		Open, Edit, Open
WelcomeLetterApplication	None		Open, Edit, Open
WelcomeLetterApplication	None		Open, Edit, Open

12 items

You logged in to: Tenant: tenant1 | Domain: domain1 | Role: Tenant user

Figure 10-12: Resources

Note the different resources that have been uploaded to CAS from Design Manager and Communications Builder.

You can filter what resources are displayed by selecting the button in the Type & Name column.

2. Select the **Templates** tab.

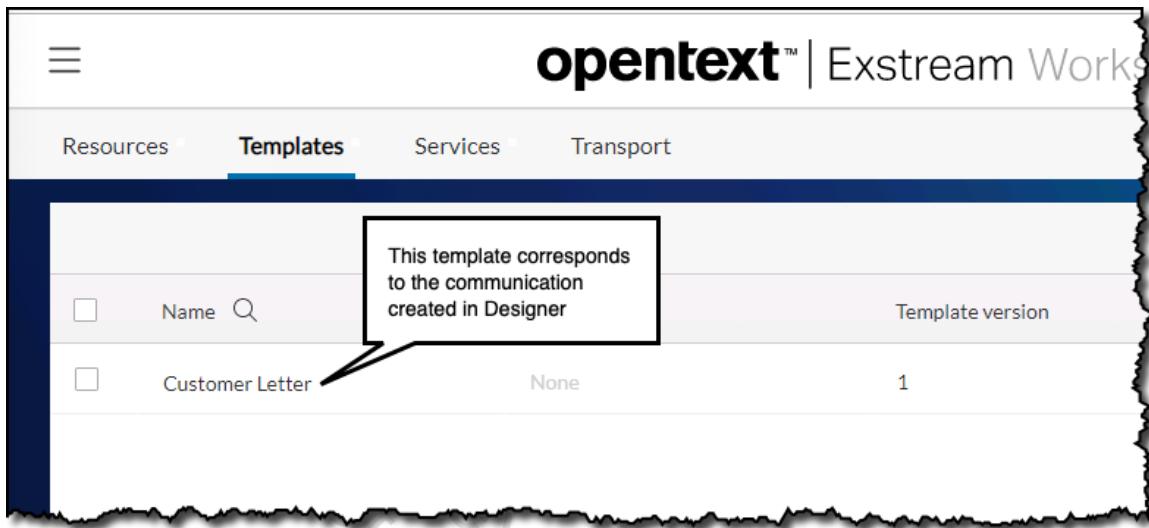


Figure 10-13: Templates

3. Select the **Services** tab.

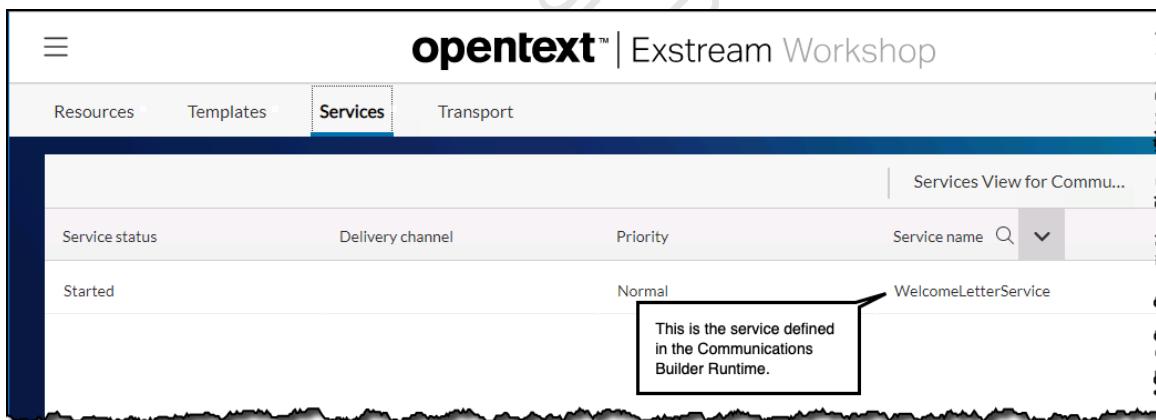


Figure 10-14: Services



Create a simulation

1. In **WorkShop** Resources tab click the Add resources button (+ sign) and select **Simulation**.
2. In the Create simulation window select the **CustomerList-Delimited.csv** driver and click **Next**.
3. Set the Name to **CustomerLetterSimulation-1** and click **Create**.

The CustomerLetterSimulation-1 simulation is added to the list of resources.

4. Select the **CustomerLetterSimulation-1** check box and select **Properties** in the tool bar.
5. In the CustomerLetterSimulation-1 window select the **References** tab.
6. Select the **Add templates** tab.
7. In the Select template window, select the **Customer Letter** check box and click the **Add** button.

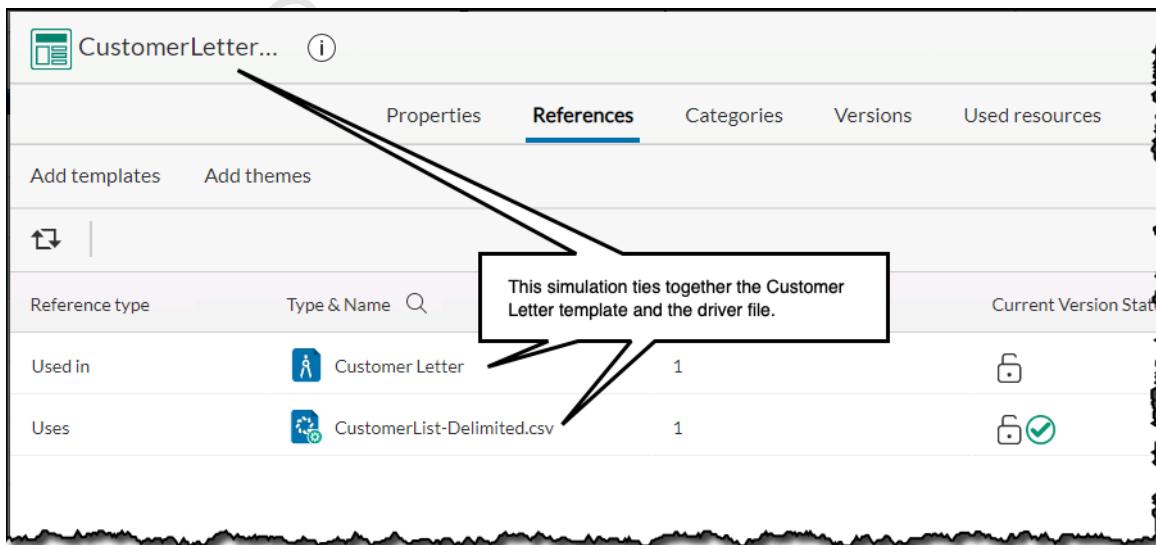


Figure 10-15: Simulation

8. Click **Close**.
9. Do not close Chrome, you will use Workshop in the next activity.

Step 5-1: Communications Designer - Page

In this step you will create a page that will be used for print channels.



Create the communication structure

1. In a **NEW TAB** in Chrome (do not close the tab where Workshop is open) navigate to Communications Designer (the URL is bookmarked in Chrome as **Exstream Web Applications > Content Author/Communications Designer**) and sign in as exuser/opentext if needed.

You are logged in to the Exstream launcher. The “exuser” has full access to both Content Author and Communications Designer, that’s why you will see both sections.

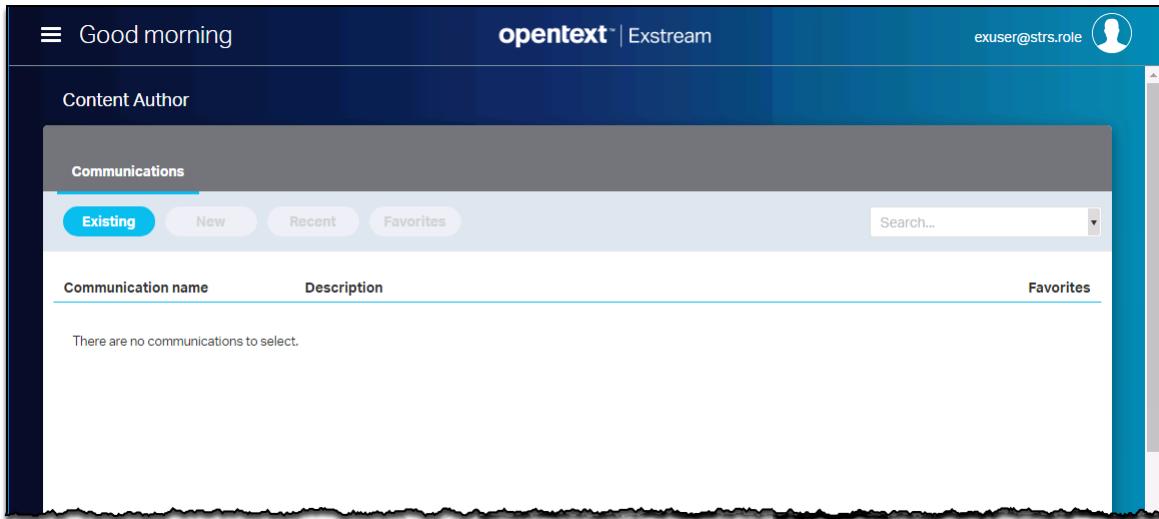


Figure 10-16: Exstream launcher

2. *Scroll down to the **Communications Designer** section.*

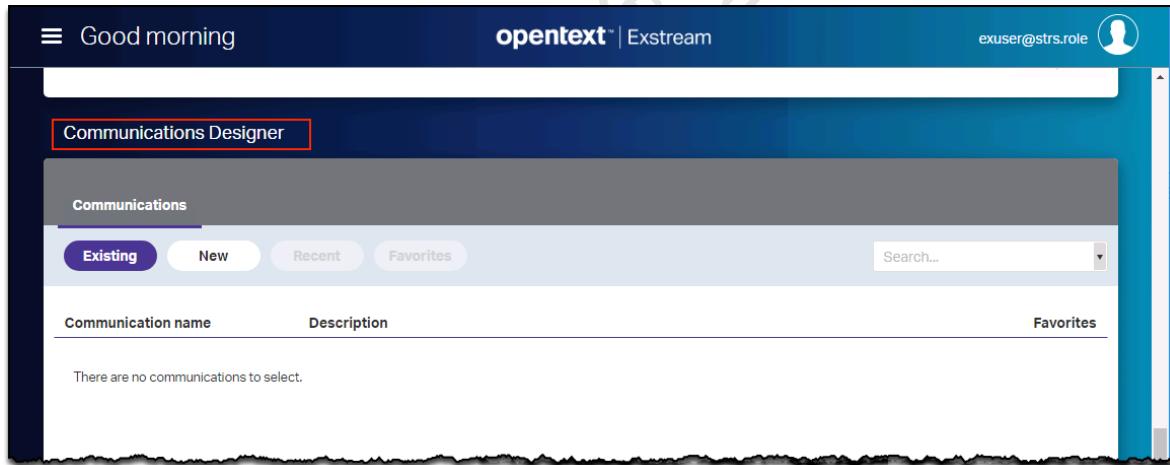


Figure 10-17: Communications Designer

3. *Click the **New** button.*

A list with the available Design Packs displays.

4. *Select the **CustomerLetterDP** design pack and click **Next**.*

5. Set the communication name to **WelcomeLetterDM** and enter **Communication including a PDF and HTML of the Welcome Letter** in the Description.
6. Click **Create**.

You are directed to the Communication composer.

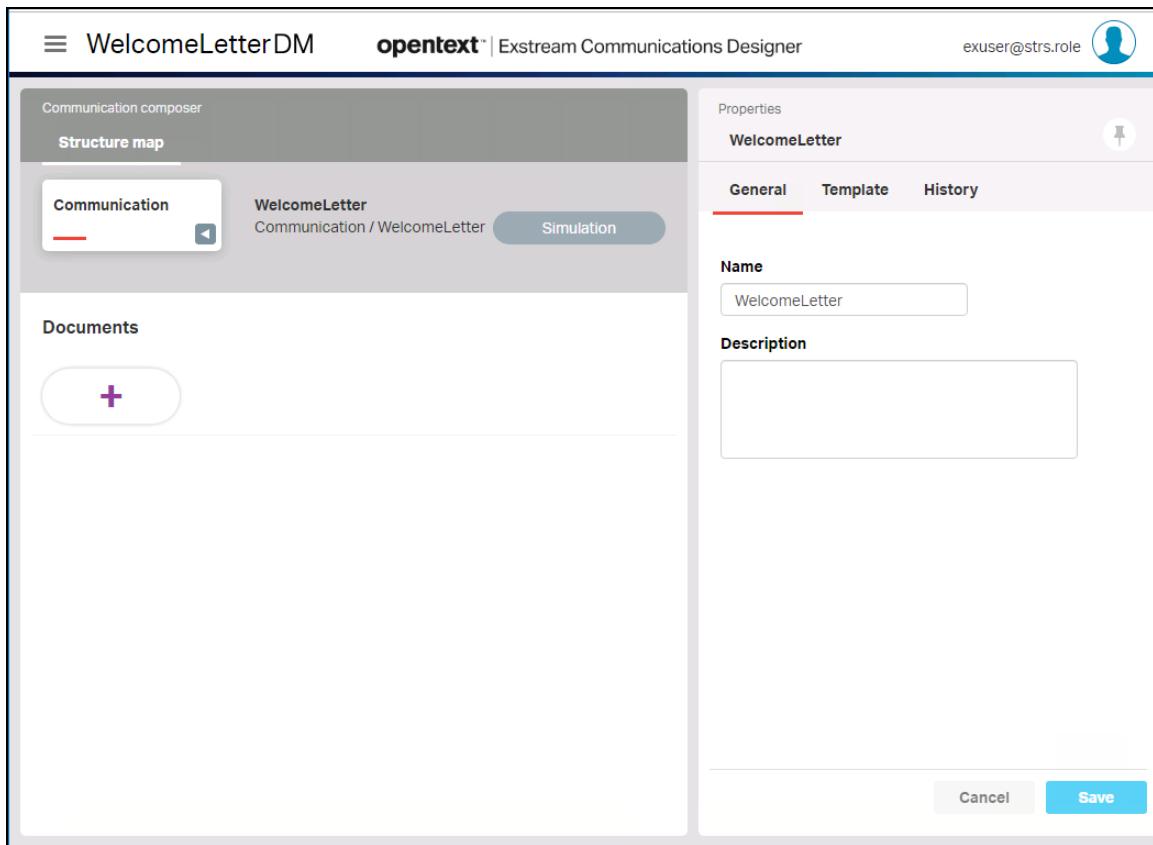
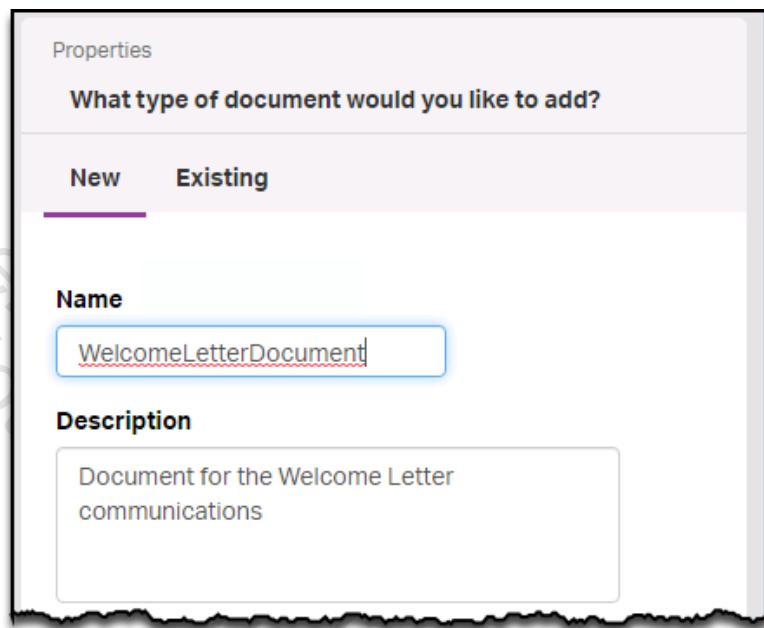


Figure 10-18: Communication composer

7. Click the "+" button.

8. In the Properties panel set the following information for the new Document:
 - Name: **WelcomeLetterDocument**
 - Description: **Document for the Welcome Letter communications**

Figure 10-19:
Document properties



9. Click **Create**.

The document is added to the composer.

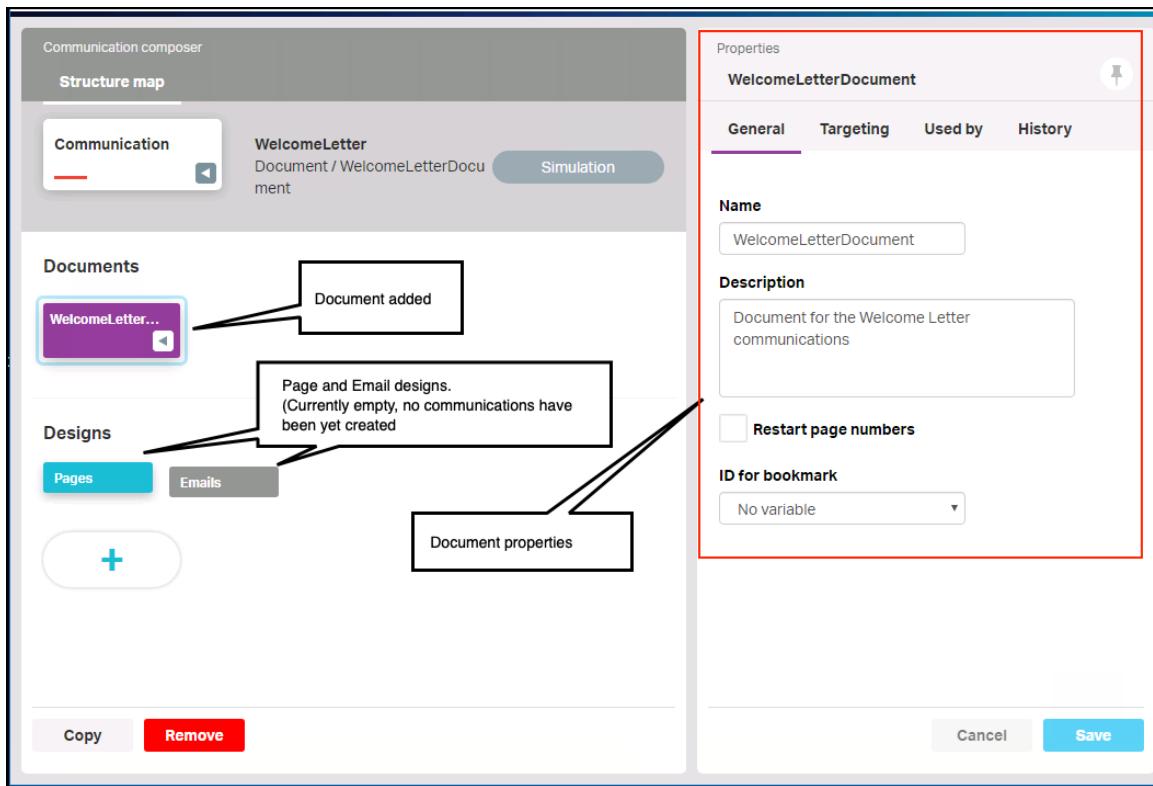


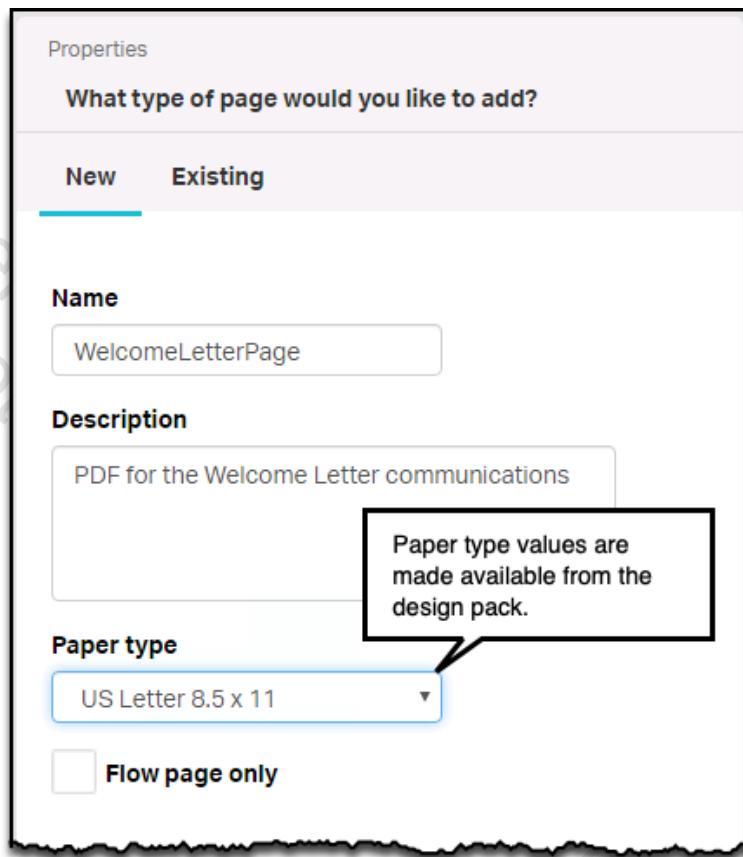
Figure 10-20: Document added

10. Making sure that Pages is selected, click the "+" button.

11. In the Properties panel set the following information for the new page:

- Name: **WelcomeLetterPage**
- Description: **PDF for the Welcome Letter communications**
- Paper type: **US Letter 8.5 x 11**

Figure 10-21:
New page properties



12. Click **Create**.

The page is added to the composer.

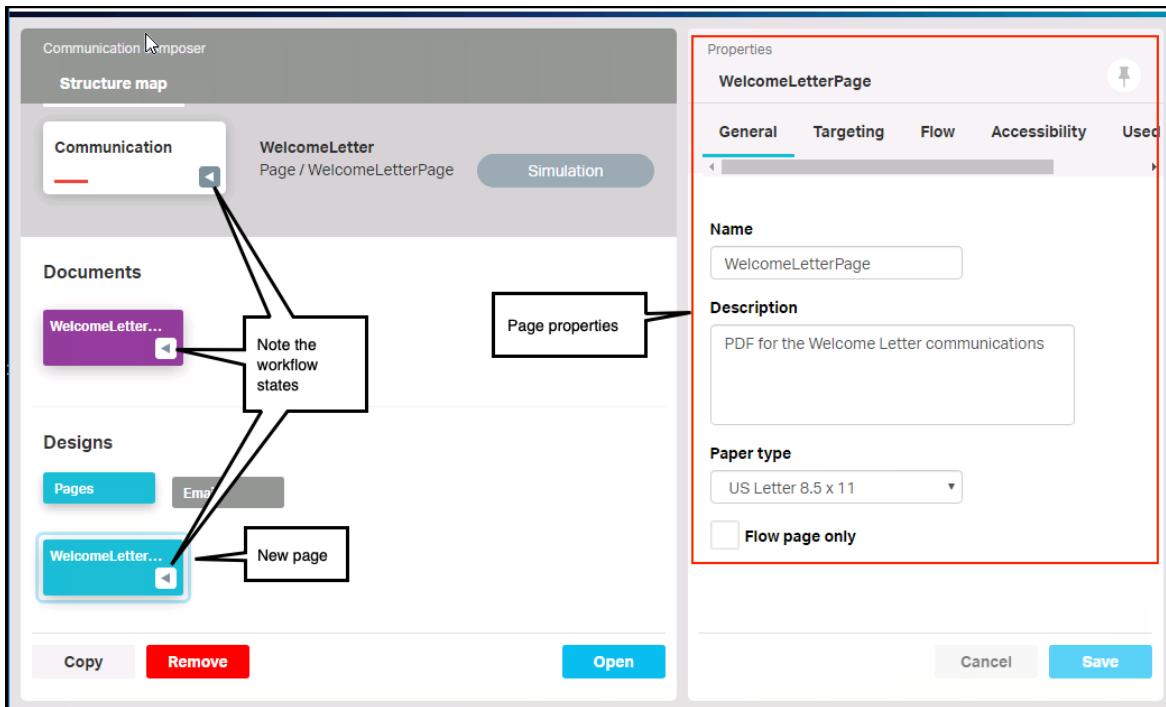


Figure 10-22: New page added

13. Making sure that **WelcomeLetterPage** is selected, click the **Open** button.

The WelcomeLetterPage opens in the Communication Designer.

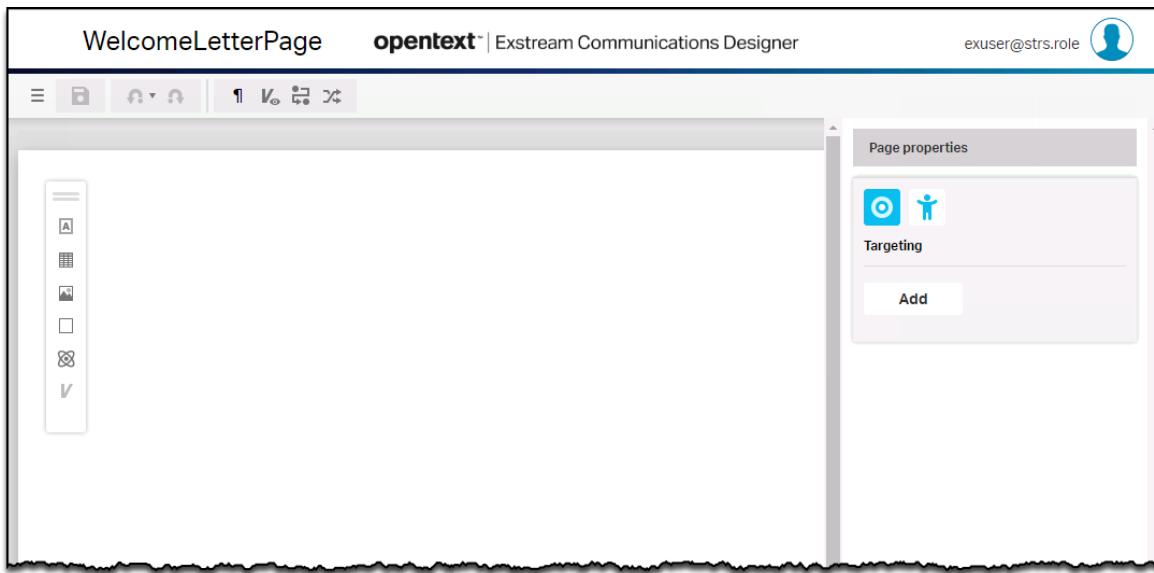


Figure 10-23: Communications Designer

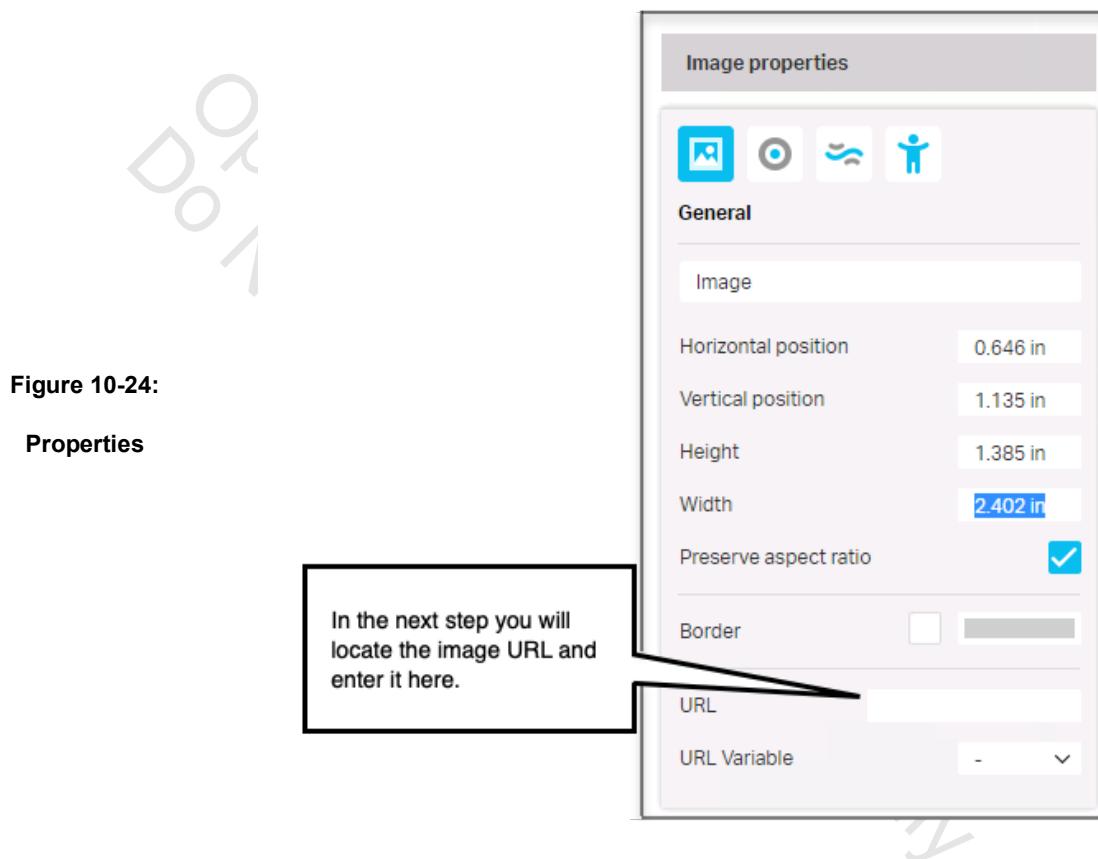


Design the communication - Place an image

1. In toolbar select the (insert image) button.
2. Select **Insert from library**.
3. In the list of available images select **Mobi_logo.jpg** and click **Select**.

The image is placed on the page.

4. Making sure that the image is selected, in the Properties panel enter the following information:
 - Horizontal position: **0.646 in**
 - Vertical position: **1.135 in**
 - Height: **1.385 in**
 - Width: **2.402 in**



5. Switch (without closing the Communications Designer tab) to the Chrome tab where WorkShop is open.

6. In WorkShop locate and select the check box for the **Mobi_Logo.jpg** resource, then click the **View Image**.

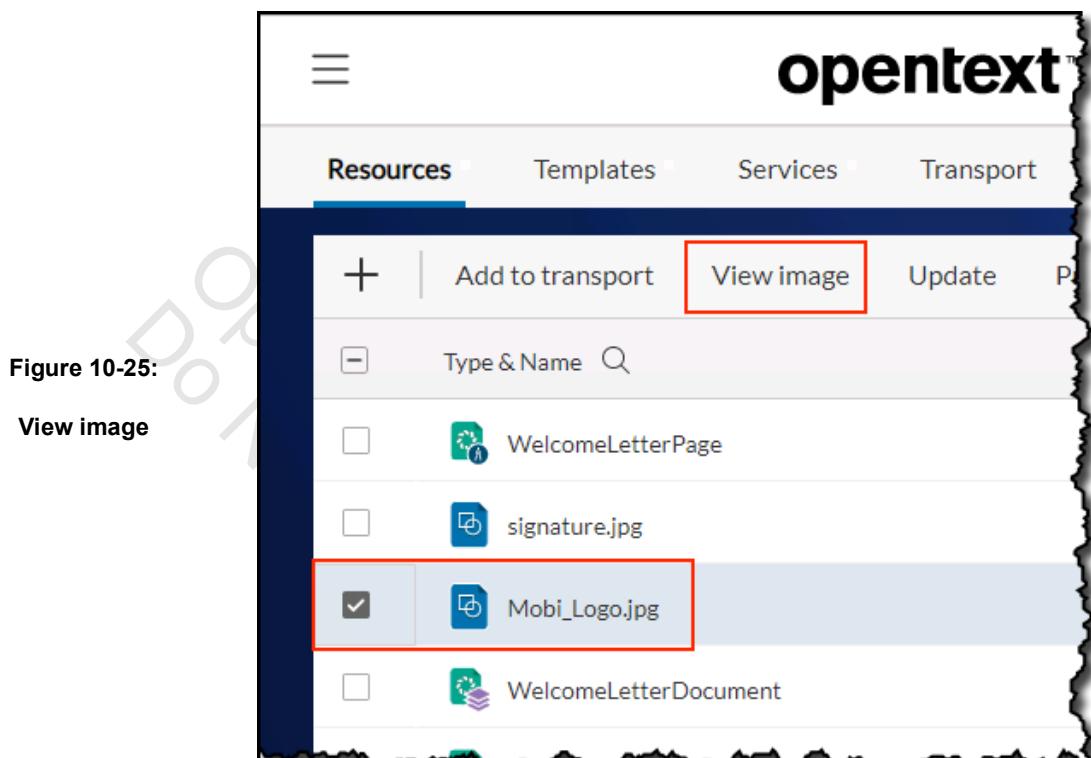


Figure 10-25:

View image

The image opens.

7. Right-click the image and select **Copy image address**.



Figure 10-26: Copy image address

8. Close the image and return to the Chrome tab where Communications Designer is open.
9. Switch back to the tab where Communications Designer is open and in the image properties panel paste the image address from the clipboard into the URL field.
10. Click the (Save) button in the toolbar.



Design the communication - Place text

1. Making sure that no object is selected, in the toolbar select the (insert text box) button.
2. Click anywhere in the blank area of the communication.

A text box is placed in the canvas.

3. Select the text box and in the properties panel set the following information:

- Horizontal position: **0.771 in**
- Vertical position: **2.448 in**
- Width: **2.031 in**
- Height: **0.7 in**

4. Click inside the text box and type the following information:

**123456 Palisades Drive
Rivertown, CA 91100-9999
(888) 555-1234**

5. Click anywhere in the blank area so that no object is selected.

6. In toolbar select the  (insert text box) button.

7. Click anywhere in the blank area of the communication.

A text box is placed in the canvas.

8. Select the text box and in the properties panel set the following information:

- Horizontal position: **4.74 in**
- Vertical position: **1.063 in**
- Width: **1.7 in**
- Height: **0.479 in**

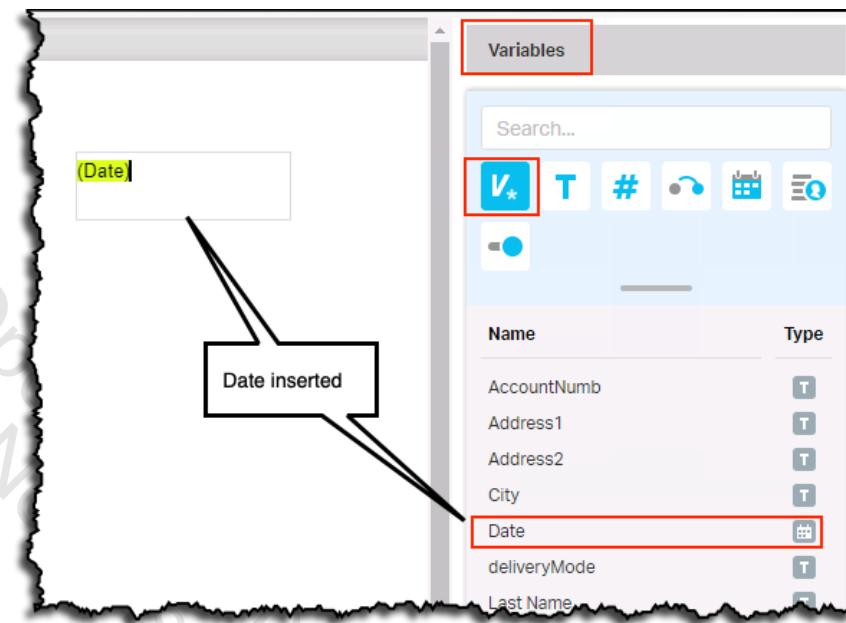
9. Click inside the text box and in the Properties area, scroll down to the Variables section.

10. Select **Date**.

The date is inserted in the text box.

Figure 10-27:

Date variable



11. Click anywhere in the blank area of the communication.
 12. In toolbar select the (insert text box) button.
 13. Click anywhere in the blank area of the communication.
- A text box is placed in the canvas.
14. Select the text box and in the properties panel set the following information:
 - Horizontal position: **4.719 in**
 - Vertical position: **1.625 in**
 - Width: **2.771 in**
 - Height: **1.365 in**
 - Border: Selected Color: **Mobi Dark Blue**
 - Margins: **0.1 in** (on 4 sides)
 - Background color: Selected Color: **Mobi Blue 50%**
 15. Click inside the text box and in the Properties area, scroll down to the Variables section.

16. Compose the content of the text box inserting the following variables:

(Name) (Last Name)
(Address1)
(Address2)
(City), (State) (Zip)
Account Number: (AccountNumb)

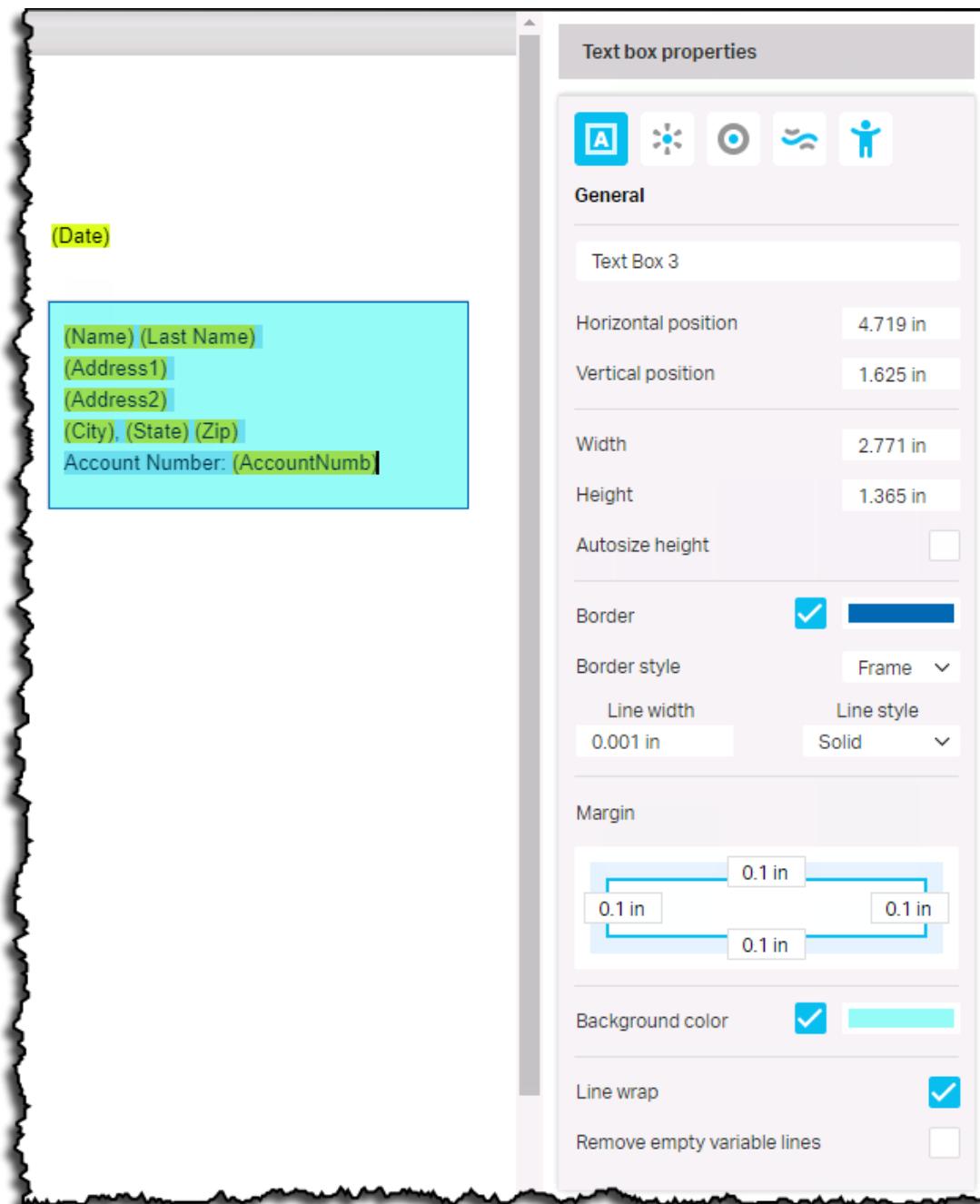


Figure 10-28: Variables

17. Click anywhere in the blank area of the communication.

18. In toolbar select the  (insert text box) button.

19. Click anywhere in the blank area of the communication.

A text box is placed in the canvas.

20. Select the text box and in the properties panel set the following information:

- Horizontal position: **0.958 in**
- Vertical position: **3.594 in**
- Width: **6.531 in**
- Height: **5.74 in**

21. Click inside the text box and paste the content of
**C:\Training\Introduction\Text
Files\Mobi_Welcome_Letter_010112.txt.**

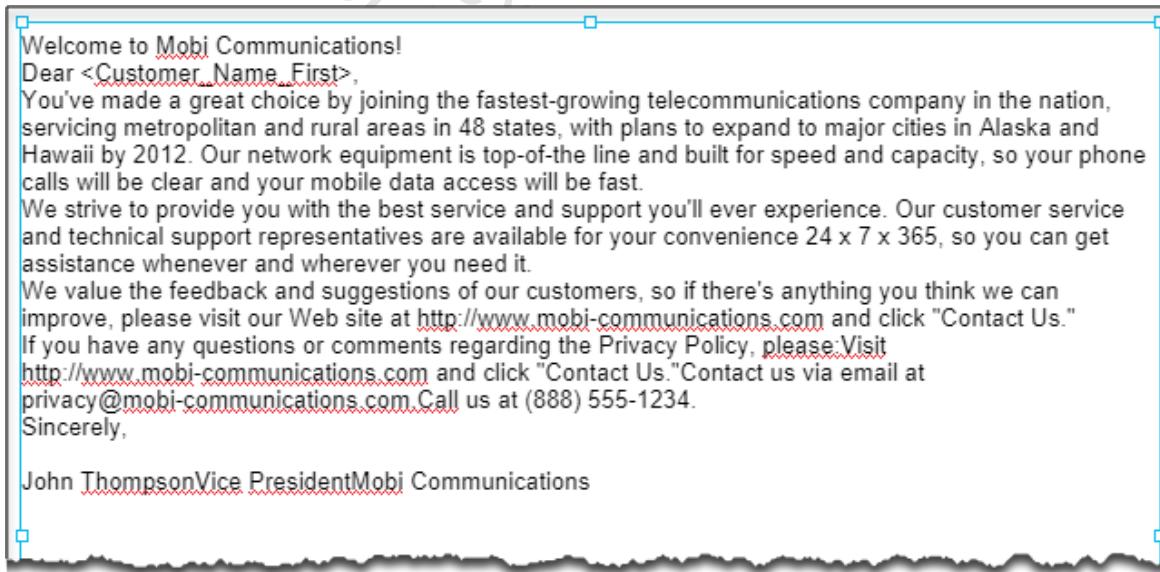


Figure 10-29: Body text

22. Enter <RETURN> so that document looks like the following:

Welcome to Mobi Communications!

Dear <Customer_Name_First>,

You've made a great choice by joining the fastest-growing telecommunications company in the nation, servicing metropolitan and rural areas in 48 states, with plans to expand to major cities in Alaska and Hawaii by 2012. Our network equipment is top-of-the line and built for speed and capacity, so your phone calls will be clear and your mobile data access will be fast.

We strive to provide you with the best service and support you'll ever experience. Our customer service and technical support representatives are available for your convenience 24 x 7 x 365, so you can get assistance whenever and wherever you need it.

We value the feedback and suggestions of our customers, so if there's anything you think we can improve, please visit our Web site at <http://www.mobi-communications.com> and click "Contact Us."

If you have any questions or comments regarding the Privacy Policy, please:

Visit <http://www.mobi-communications.com> and click "Contact Us."

Contact us via email at privacy@mobi-communications.com.

Call us at (888) 555-1234.

Sincerely,

John Thompson

Vice President

Mobi Communications

Figure 10-30: Formatted text



Format the body text

1. Click the line containing **Welcome to Mobi Communications!** and select **Major Heading** from the Style drop-down.

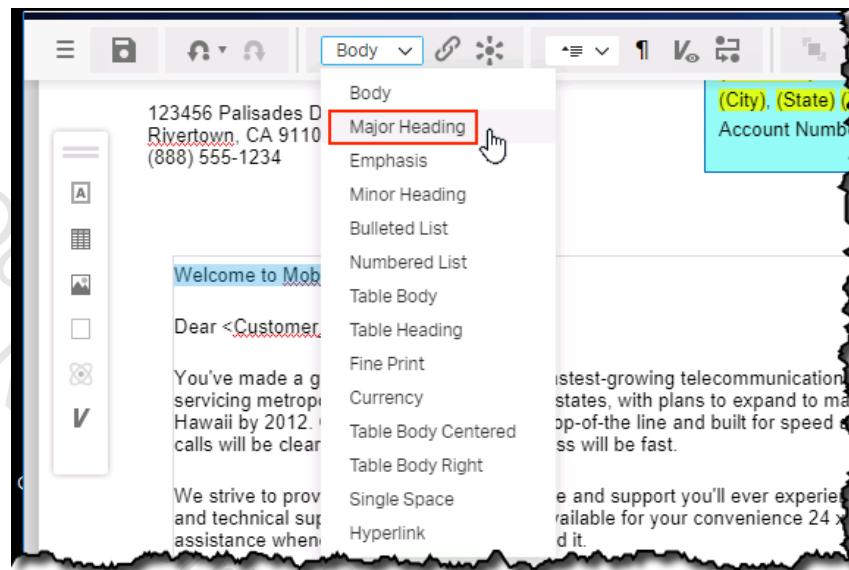


Figure 10-31:

Major Heading

2. Select **<Customer_Name_First>** and in the Variables properties select **Name**.

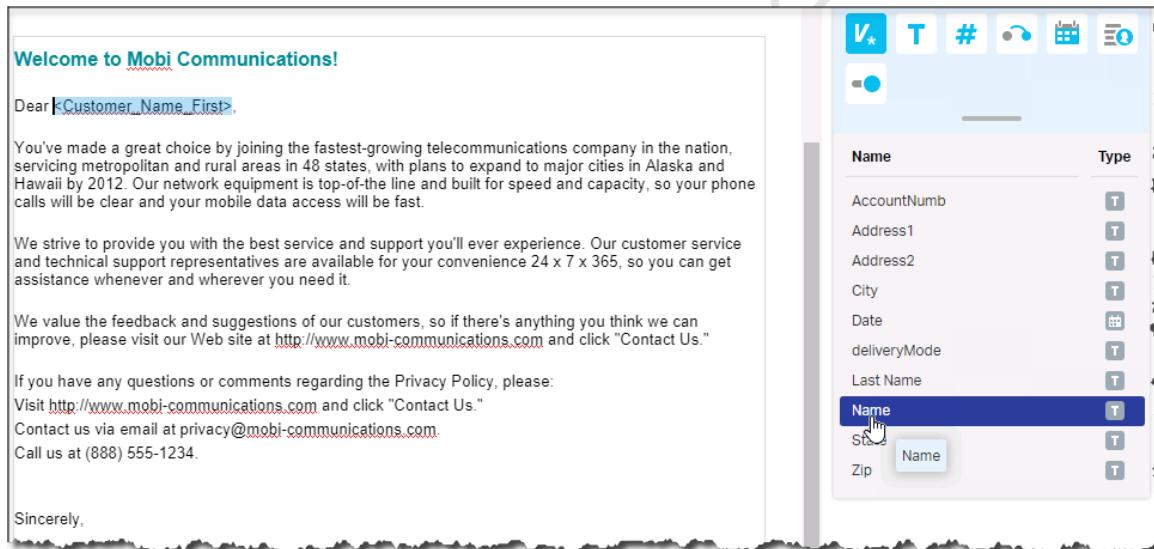


Figure 10-32: Name variable

3. Select the three lines below the line **If you have any questions**.

4. With the three lines selected select **Bulleted list** from the style drop-down.
5. Select **http://www.mobi-communications.com** and click the  (Hyperlink) button in the toolbar.
6. Enter **http://www.mobi-communications.com** in the Hyperlink text box and click **Insert**.

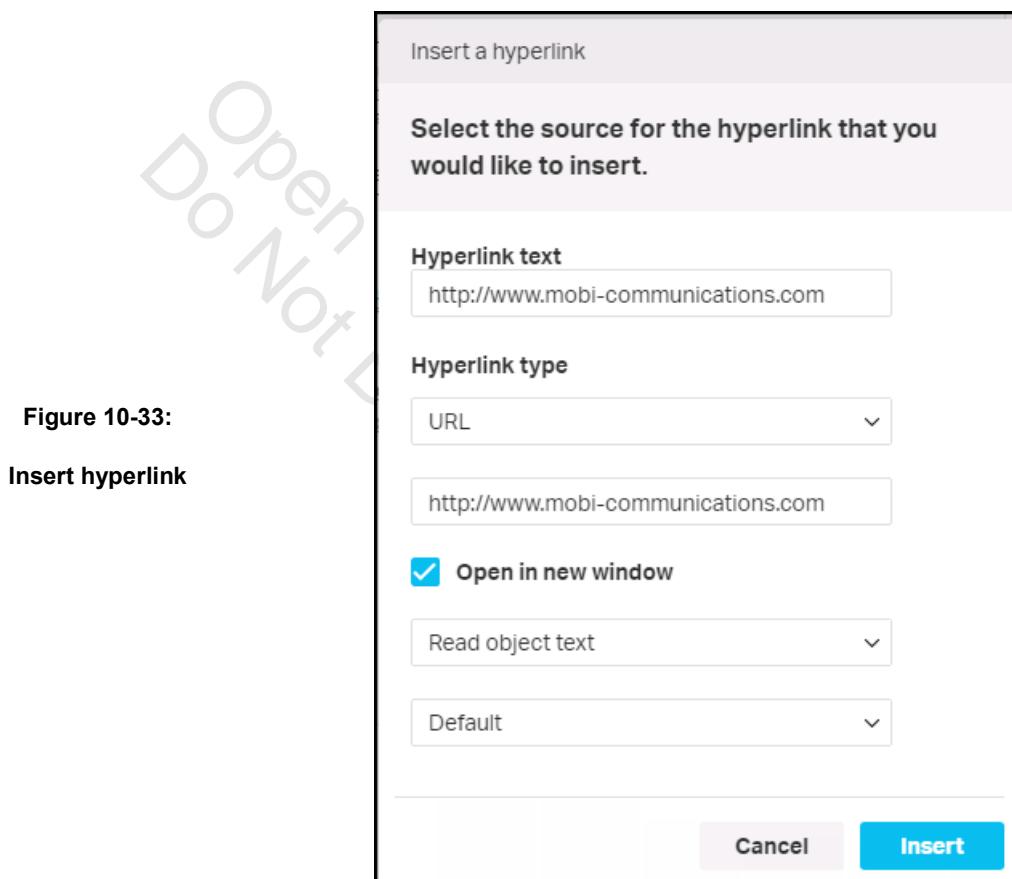


Figure 10-33:

Insert hyperlink

7. Making sure that **http://www.mobi-communications.com** is selected then select **Hyperlink** from the Style drop-down.
8. Repeat the previous three steps to format the other instance of the **http://www.mobi-communications.com** in the Visit **http://w....** line.
9. Place the cursor in the line before John Thompson and click the  (insert image) button.
10. In the Insert an image window select **Insert from library**, select the **signature.jpg** and then click the **Select** button.

The image is inserted in the text.

11. Select the signature image and in the Properties set the width to 1.5 in.
12. Save the communication.

If you get a Content Overflow symbol, simply enlarge the height of the text box that contains the overflowing text.

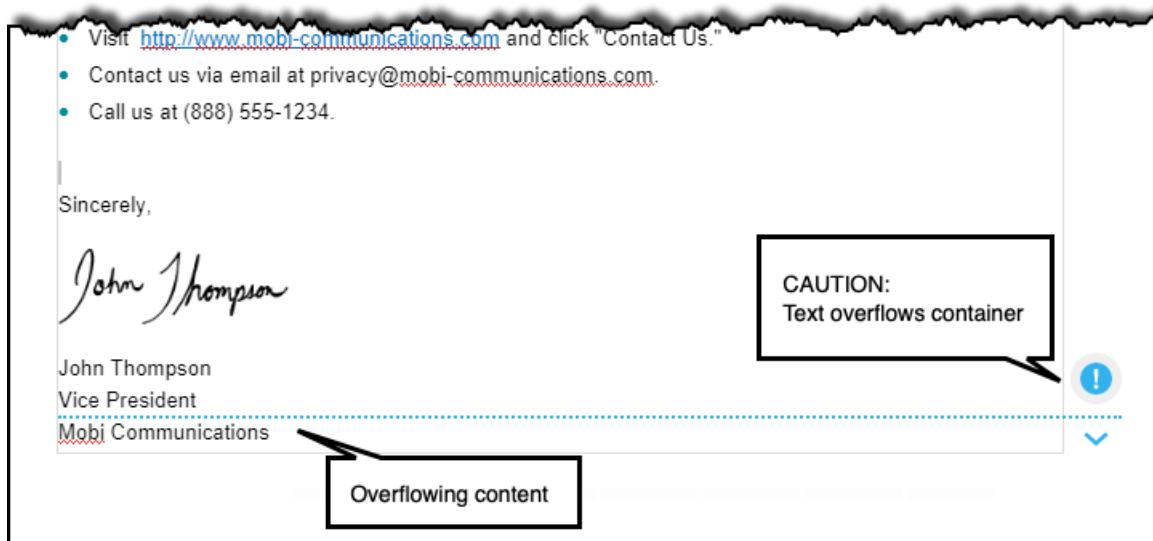
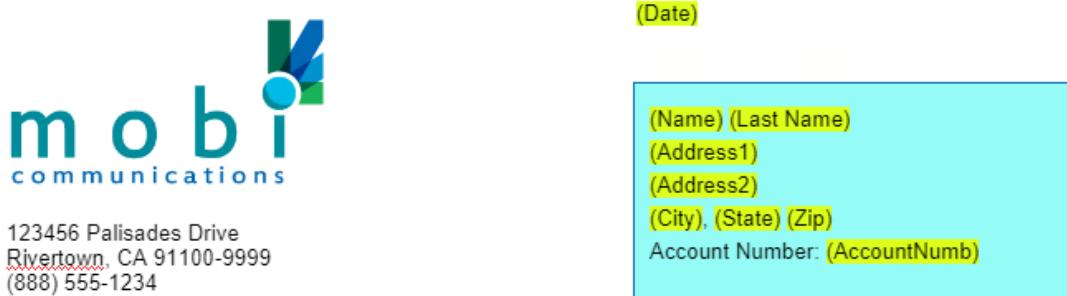


Figure 10-34: Overflowing text

Once completed the communication will look like the figure below:



Welcome to Mobi Communications!

Dear (Name),

You've made a great choice by joining the fastest-growing telecommunications company in the nation, servicing metropolitan and rural areas in 48 states, with plans to expand to major cities in Alaska and Hawaii by 2012. Our network equipment is top-of-the line and built for speed and capacity, so your phone calls will be clear and your mobile data access will be fast.

We strive to provide you with the best service and support you'll ever experience. Our customer service and technical support representatives are available for your convenience 24 x 7 x 365, so you can get assistance whenever and wherever you need it.

We value the feedback and suggestions of our customers, so if there's anything you think we can improve, please visit our Web site at <http://www.mobi-communications.com> and click "Contact Us."

If you have any questions or comments regarding the Privacy Policy, please:

- Visit <http://www.mobi-communications.com> and click "Contact Us."
- Contact us via email at privacy@mobi-communications.com.
- Call us at (888) 555-1234.

Sincerely,



John Thompson
Vice President
Mobi Communications

Figure 10-35: Completed (Page) communication



Create a Component

1. Select the text box containing the customer information.
2. Click the  (Create component) button.
3. In the Create new component window set the following information and click **Create**:
 - Name: **CustomerInfoComponent**
 - Description: **Component containing customer contact info and account number.**

The component is added and locked. This component is made available for use in other pages.



Submit document for approval

1. Click the **Change content state** button.

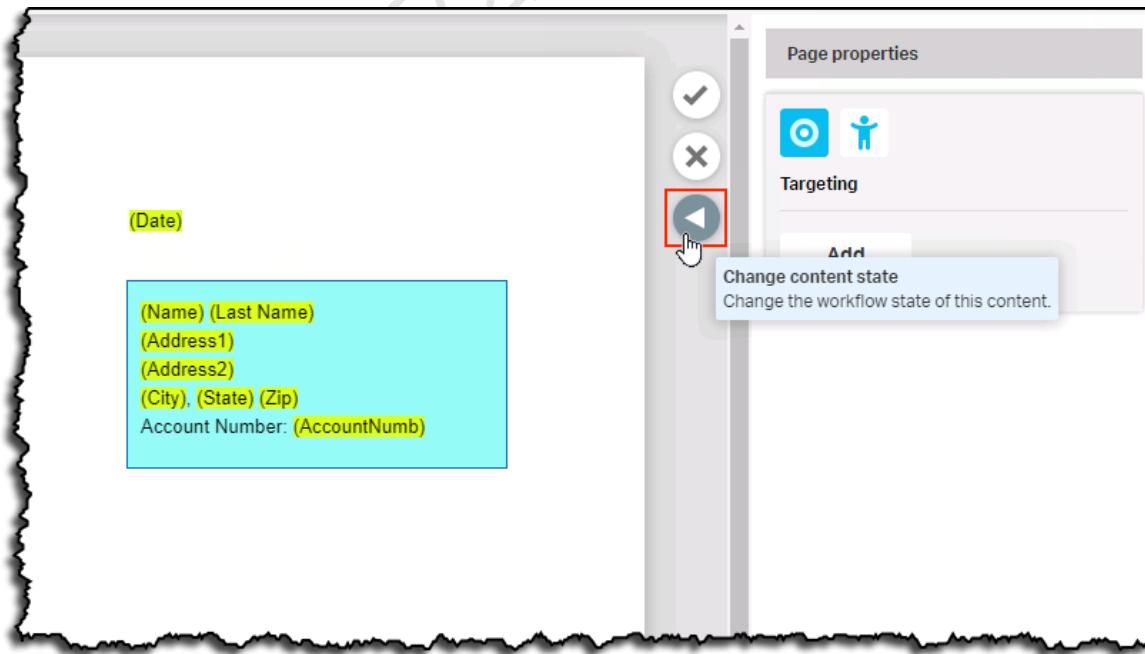


Figure 10-36: Change state

2. Click the **Submit** button (orange arrow).
3. In the Workflow state change window enter some comment relevant for the reviewer and click **Change**.

Note that the state changed to Submitted for approval ►.

4. Save the page.
5. Click the close button 

You are redirected back to the composer page.

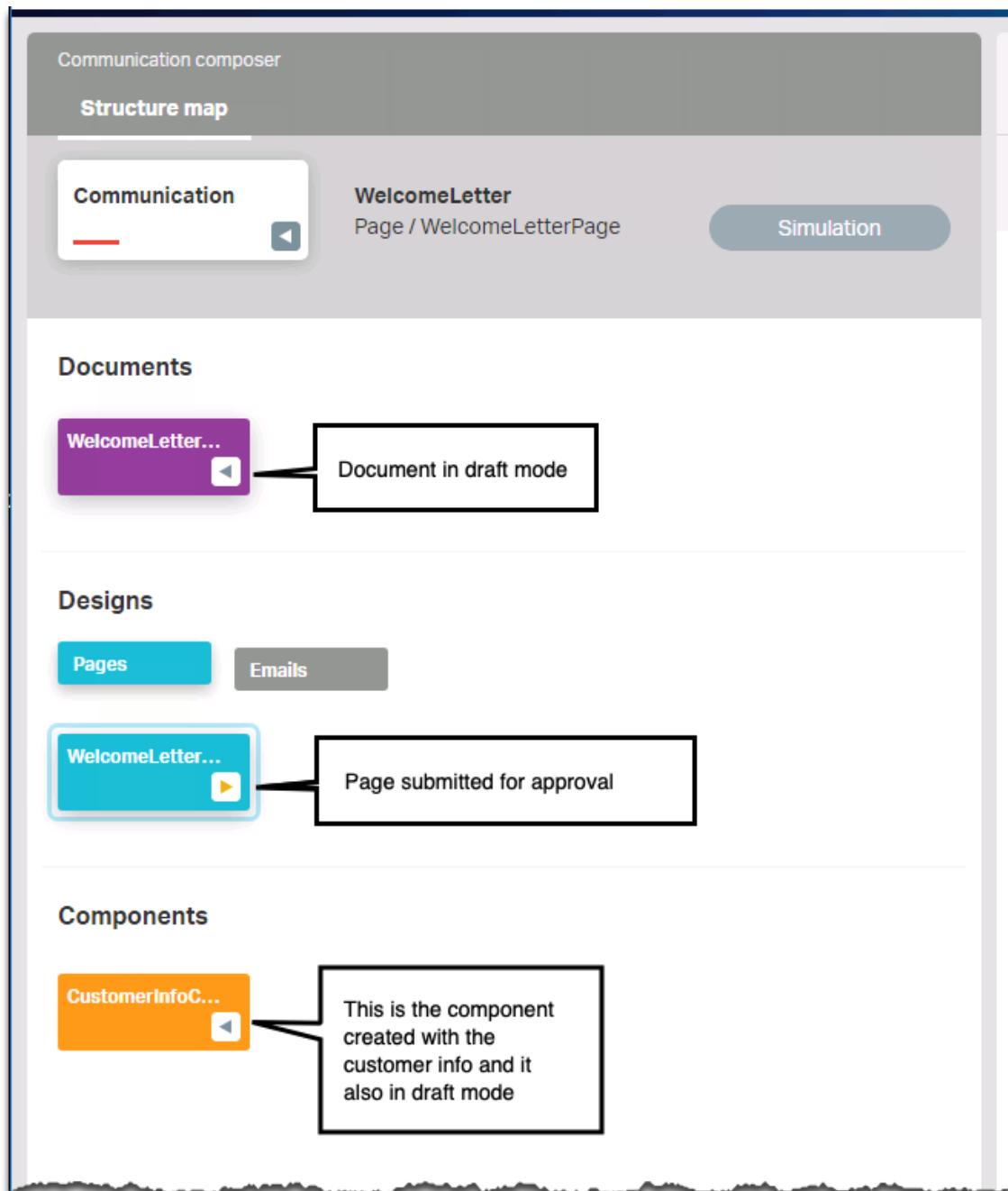


Figure 10-37: Completed communication

Step 5-2:
Communications
Designer - Email

In this step you will create an Email communication.



Create an Email

1. Make sure you have Communications composer open and logged in as exuser/opentext.
2. Select **Communications > WelcomeLetterDocument > Emails** and click the “+” button.
3. In the Properties panel set the following information for the new email:
 - Name: **WelcomeLetterEmail**
 - Description: **HTML email for the Welcome Letter communication**
 - Width: **600**
4. Click **Create**.
5. Click **WelcomeLetterEmail** and click **Open**.

A template email with 3 containers is created. Each container has a text box for the text they display.

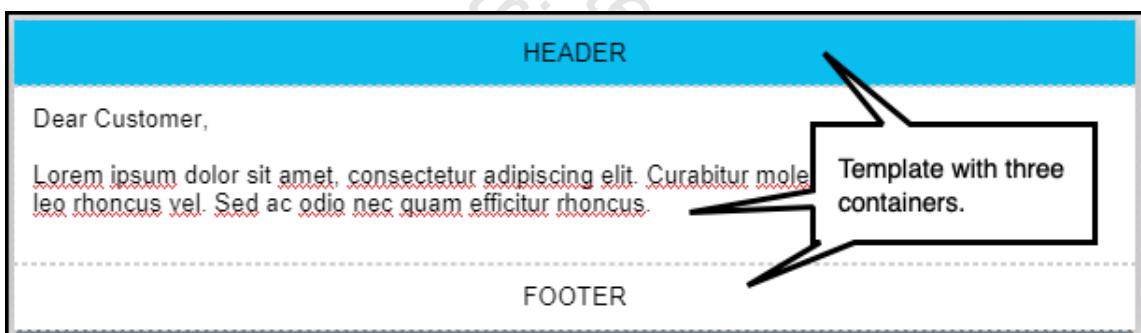


Figure 10-38: Email template

6. Click (once) on the **HEADER** text in the top container and press **Delete** in the keyboard to delete the text box.
7. Repeat the same with the other 2 containers to delete their corresponding text boxes.

Figure 10-39:

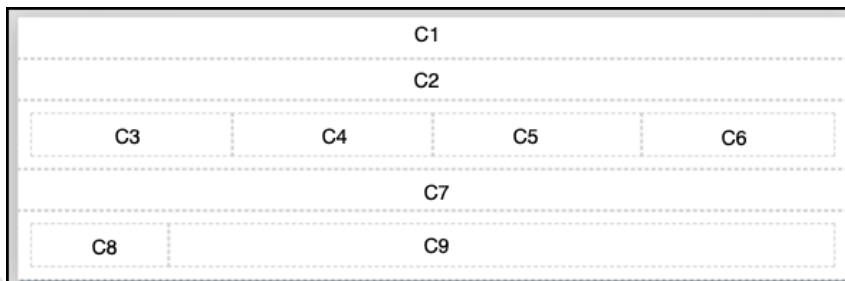
Empty template



8. Click the top container and in the properties clear the **Background color** check box.

The container structure that we want to create is the following:

Figure 10-40:
Container structure



Based on this figure and the default template created, we need to add two more (row) containers and later we can split the rows in columns.

9. Click the 3rd container and then click the bottom arrow twice to add 2 containers.

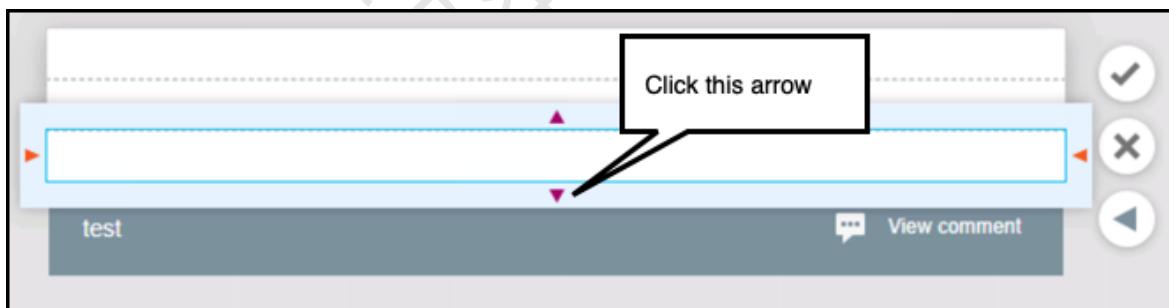
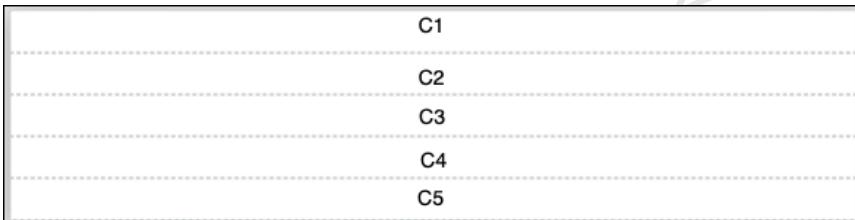


Figure 10-41: Add containers

Once completed, you have 5 row containers.

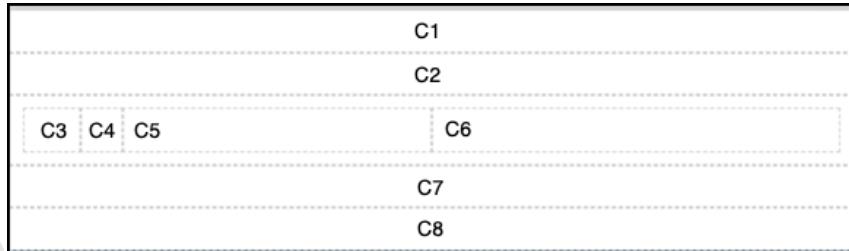
Figure 10-42:
5 row containers



10. Click the 3rd row container and then click the left arrow to add one column.
11. Still on the same 3rd row container click the left arrow of the 1st column container.

12. Still on the same 3rd row container click the left arrow of the 3rd column container.

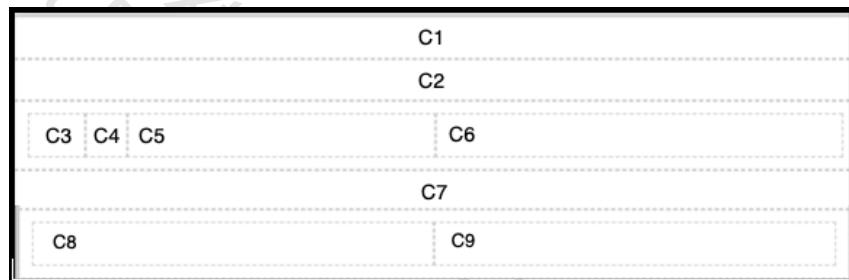
Figure 10-43:
3 columns added



Don't mind the width of the columns.

13. Click the 5th row container and then click the left arrow once to add one column.

Figure 10-44:
2 columns added



Next we will proceed to configure each container.



Configure the C1 container

1. Select the C1 container and then select the (insert image) button.
2. Select **Insert from library**.
3. In the list of available images select **Mobi_logo.jpg** and click **Select**.
The image is placed on the page.
4. Making sure the image is selected, in the properties set the width to **200px**.

5. Click the container to unselect the image and in the properties panel set the Padding bottom to 0px.

Figure 10-45:

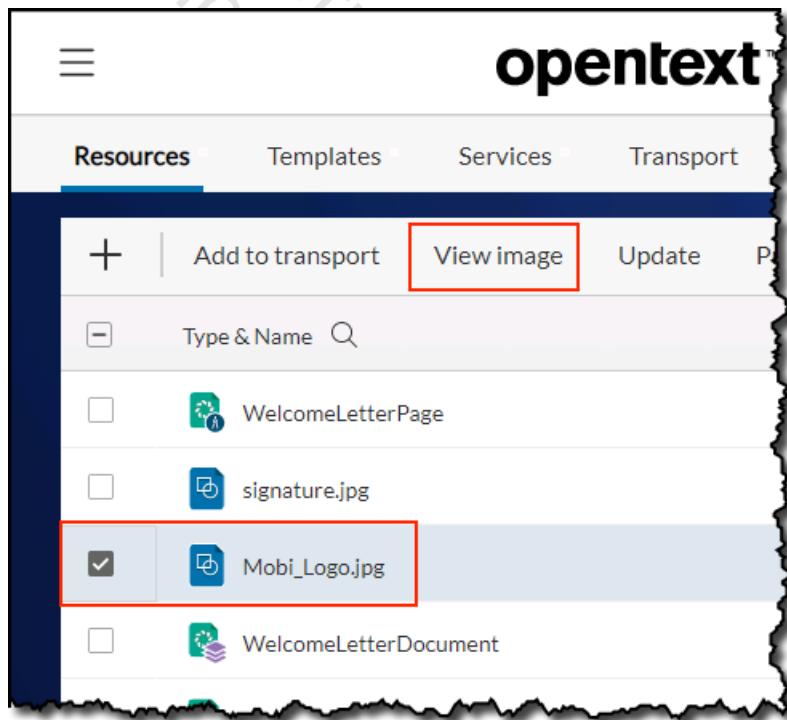
C1 container



6. Switch (without closing the Communications Designer tab) to the Chrome tab where WorkShop is open.
7. In WorkShop locate and select the check box for the **Mobi_Logo.jpg** resource, then click the **View Image**.

Figure 10-46:

View image



The image opens.

8. Right-click the image and select **Copy image address**.



Figure 10-47: Copy image address

9. Close the image and return to the tab where Communications Designer is open.
10. Select the Mobi logo and in the image properties panel paste the image address from the clipboard into the URL field.
11. Click the (Save) button in the toolbar.



These previous steps are required so that when the communication is processed the Engine knows where to get the image from.



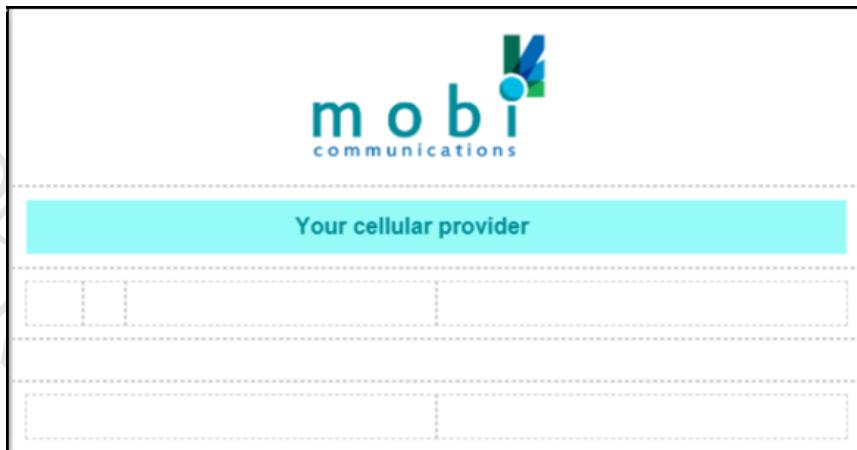
Configure the C2 container

1. Select the C2 container.
2. Set the top and bottom padding to **0 px**.
3. Click the icon (insert text box) button.
4. Click inside the text box and enter **Your cellular provider**.

5. In the properties panel set the following values:
 - Left margin: **230px**
 - top and Bottom margin: **0px**
 - Background color: **Selected** Color: **Mobi Blue - 50%**

Figure 10-48:

C2 container



Configure the C3 container

1. Select the C3 container and then in the properties panel set the Column width (%) to **25%**.
2. Making sure that the C3 container is selected click the (insert text box) button.
3. Click inside the text box and enter **The Company**.
4. Select the **The Company** text and then select the **Hyperlink** from the styles drop-down.
5. Making sure that the **The Company** text is selected click the (Hyperlink) button in the toolbar.
6. In the Insert a hyperlink window set the URL to **http://thecompany.com** and click **Insert**.

7. In the properties panel set the following values:
 - Left, top and bottom margins: **10px**
 - Background color: **Selected** Color: **Mobi Blue - 50%**

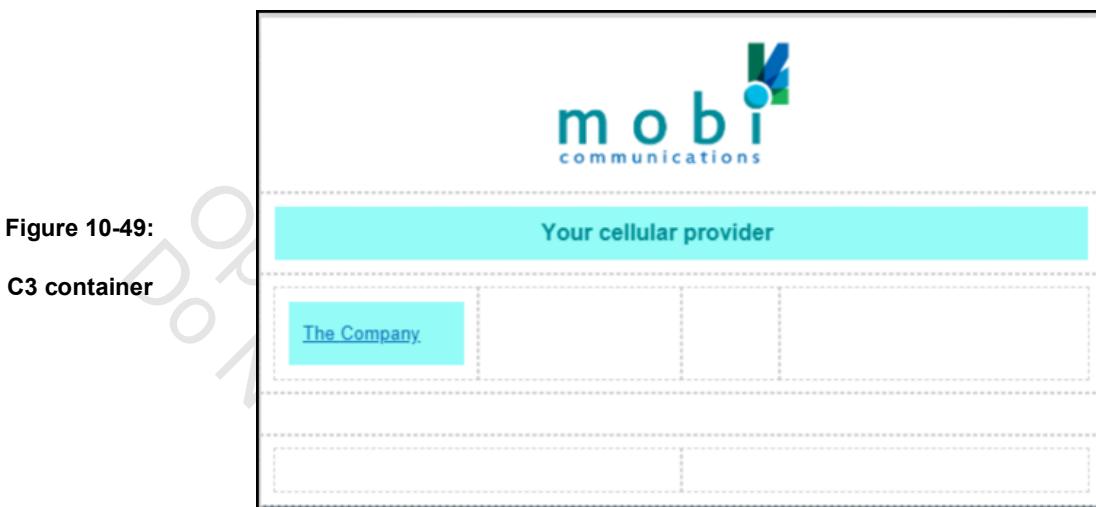


Figure 10-49:

C3 container



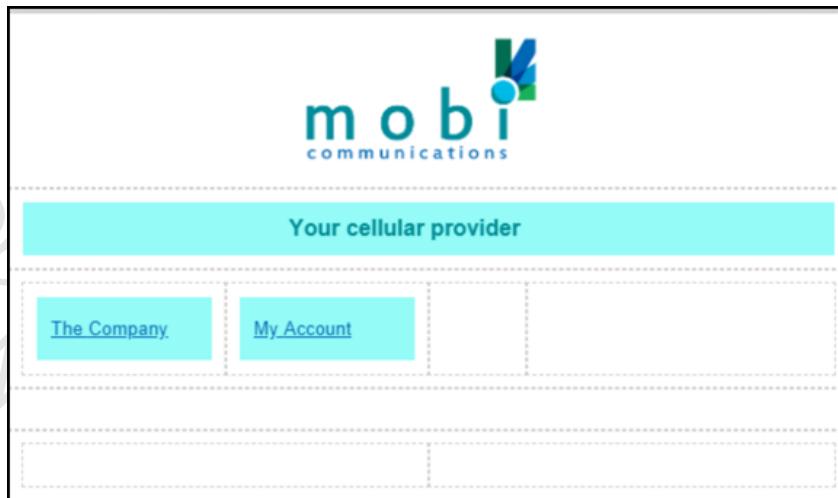
Configure the C4 container

1. Select the C4 container and then in the properties panel set the Column width (%) to **25%**.
2. Making sure that the C4 container is selected click the (insert text box) button.
3. Click inside the text box and enter **My Account**.
4. Select the **My Account** text and then select the **Hyperlink** from the styles drop-down.
5. Making sure that the My Account text is selected click the (Hyperlink) button in the toolbar.
6. In the Insert a hyperlink window set the URL to **http://thecompany.com/myaccount** and click **Insert**.

7. In the properties panel set the following values:
 - Left, top and bottom margins: **10px**
 - Background color: **Selected** Color: **Mobi Blue - 50%**

Figure 10-50:

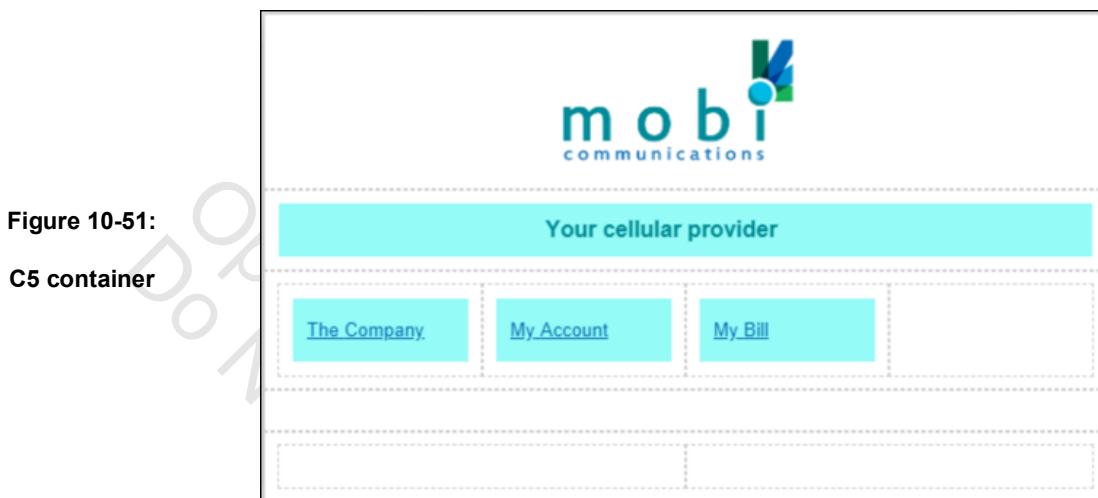
C4 container



Configure the C5 container

1. Select the C5 container and then in the properties panel set the Column width (%) to **25%**.
2. Making sure that the C5 container is selected click the (insert text box) button.
3. Click inside the text box and enter **My Bill**.
4. Select the **My Bill** text and then select the **Hyperlink** from the styles drop-down.
5. Making sure that the My Bill text is selected click the (Hyperlink) button in the toolbar.
6. In the Insert a hyperlink window set the URL to **http://thecompany.com/mybill** and click **Insert**.

7. In the properties panel set the following values:
 - Left, top and bottom margins: **10px**
 - Background color: **Selected** Color: **Mobi Blue - 50%**



Configure the C6 container

1. Select the C6 container and then in the properties panel set the Column width (%) to **25%**.
2. Making sure that the C6 container is select the (insert text box) button.
3. Click inside the text box and enter **FAQ**.
4. Select the **FAQ** text and then select the **Hyperlink** from the styles drop-down.
5. Making sure that the FAQ text is selected click the (Hyperlink) button in the toolbar.
6. In the Insert a hyperlink window set the URL to **http://thecompany.com/faq** and click **Insert**.

7. In the properties panel set the following values:
 - Left, top and bottom margins: **10px**
 - Background color: **Selected** Color: **Mobi Blue - 50%**

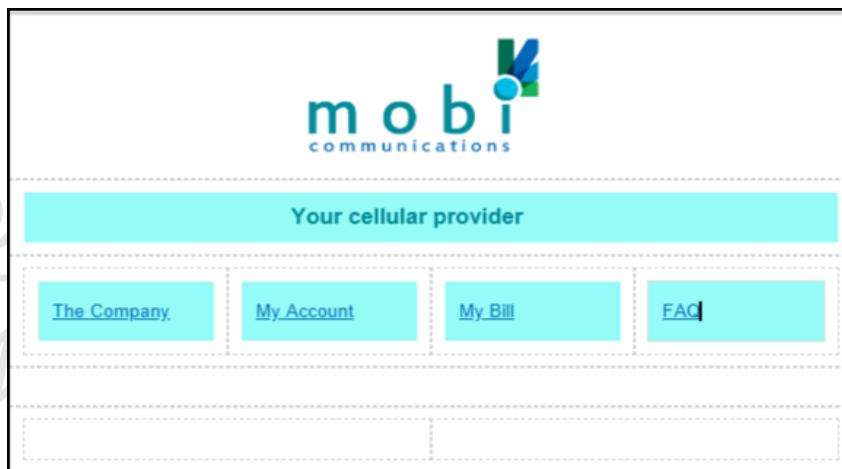


Figure 10-52:

C6 container



Configure the C7 container

1. Select the C7 container and then select the (insert text box) button.
2. Click inside the text box and enter paste the content of
**C:\Training\Introduction\Text
Files\Mobi_Welcome_Letter_010112.txt**.

3. Enter <RETURNS> so that document looks like the following:

Welcome to Mobi Communications!

Dear <Customer_Name_First>,

You've made a great choice by joining the fastest-growing telecommunications company in the nation, servicing metropolitan and rural areas in 48 states, with plans to expand to major cities in Alaska and Hawaii by 2012. Our network equipment is top-of-the line and built for speed and capacity, so your phone calls will be clear and your mobile data access will be fast.

We strive to provide you with the best service and support you'll ever experience. Our customer service and technical support representatives are available for your convenience 24 x 7 x 365, so you can get assistance whenever and wherever you need it.

We value the feedback and suggestions of our customers, so if there's anything you think we can improve, please visit our Web site at <http://www.mobi-communications.com> and click "Contact Us."

If you have any questions or comments regarding the Privacy Policy, please:
Visit <http://www.mobi-communications.com> and click "Contact Us."
Contact us via email at privacy@mobi-communications.com.
Call us at (888) 555-1234.

Sincerely,

John Thompson
Vice President
Mobi Communications

Figure 10-53: Formatted Text

4. Click the line containing **Welcome to Mobi Communications!** and select **Major Heading** from the Style drop-down.

5. Select <Customer_Name_First> and in the Variables properties select Name.

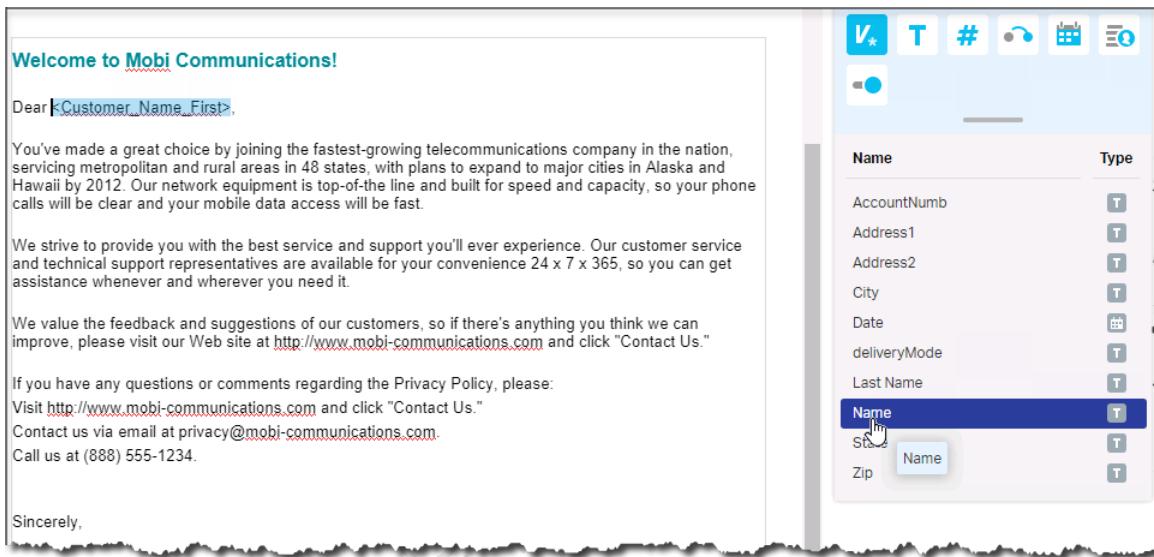


Figure 10-54: Name variable

6. Select the three lines below the line **If you have any questions**.
 7. With the three lines selected select **Bulleted list** from the style drop-down.
 8. Select **http://www.mobi-communications.com** and click the (Hyperlink) button in the toolbar.
 9. In the Insert a hyperlink window set the hyperlink to **http://www.mobi-communications.com**.
 10. Select **http://www.mobi-communications.com** and select **Hyperlink** from the Style drop-down.
 11. Repeat the previous three steps to format the other instance of the **http://www.mobi-communications.com** in the Visit **http://w....** line.
 12. Place the cursor in the line before John Thompson and click the (insert image) button.
 13. In the Insert an image window select **Insert from library**, select the **signature.jpg** and then click the **Select** button.
- The image is inserted in the text.
14. Select the signature image and in the Properties set the width to **120 px**.
 15. Switch (without closing the Communications Designer tab) to the Chrome tab where WorkShop is open.

16. In WorkShop locate and select the check box for the **signature.jpg** resource, then click the **View Image**.

The image opens.

17. Right-click the image and select **Copy image address**.
 18. Close the image and return to the tab where Communications Designer is open.
 19. Making sure that the signature image is selected then in the image properties panel paste the image address from the clipboard into the URL field.
 20. Click the  (Save) button in the toolbar.

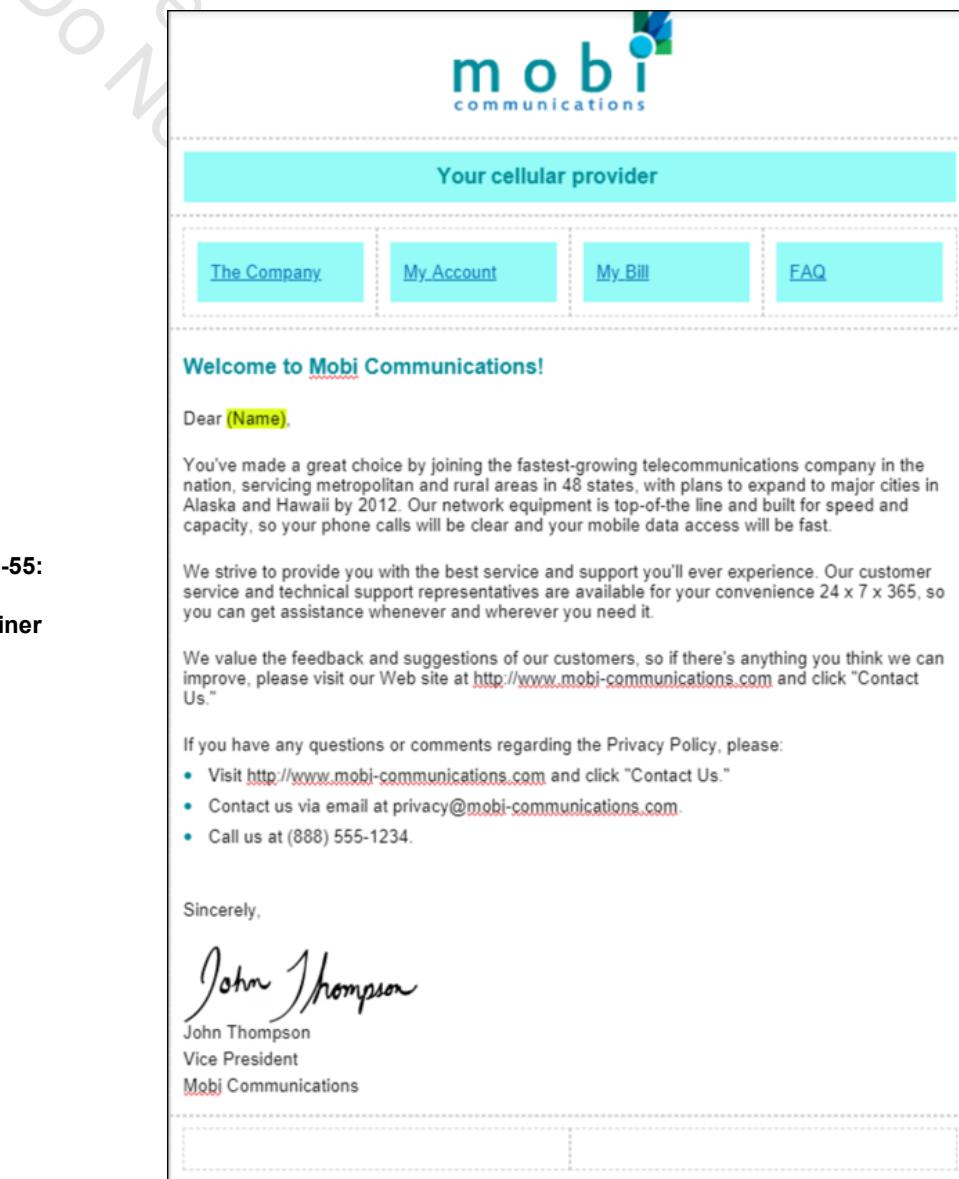


Figure 10-55:
C7 container



Configure the C8 container

1. Select the C8 container and then set the Column width to 20%.
2. Select the C8 container and then select the (insert image) button.
3. Select **Insert from library**.
4. In the list of available images select **Mobi_logo.jpg** and click **Select**.
The image is placed on C8.
5. Set the image width to **80px**.
6. Switch (without closing the Communications Designer tab) to the Chrome tab where WorkShop is open.
7. In WorkShop locate and select the check box for the **Mobi_Logo.jpg** resource, then click the **View Image**.
The image opens.
8. Right-click the image and select **Copy image address**.
9. Close the image and return to the tab where Communications Designer is open.
10. In the image properties panel paste the image address from the clipboard into the URL field.
11. Click the (Save) button in the toolbar.



Configure the C9 container

1. Select the C9 container and then select the (insert text box) button.
2. Enter **Copyright thecompany.com 2019** in the text box.
3. Select C9 container and in the properties set the alignment to lower-center.

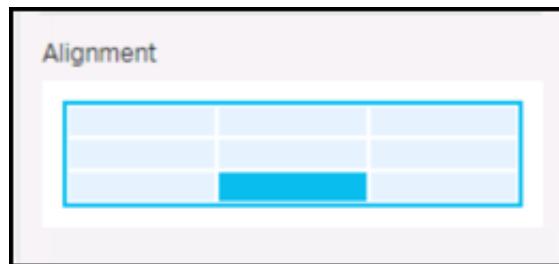


Figure 10-56:

Alignment

The resulting email should look like the following:

The screenshot shows an email template for Mobi Communications. At the top is the company logo, which consists of the word "mobi" in lowercase with a stylized blue and green "o", followed by the word "communications". Below the logo is a teal header bar with the text "Your cellular provider". Underneath is a navigation bar with four teal buttons: "The Company", "My Account", "My Bill", and "FAQ". The main content area begins with a heading "Welcome to Mobi Communications!". It includes a personal greeting "Dear [Name].", a paragraph about the company's growth and service, and a statement about customer support. It also encourages feedback via the website. A section for privacy policy questions follows, with three bullet points: visiting the website, emailing privacy@mobius-communications.com, and calling (888) 555-1234. The email concludes with a handwritten signature of "John Thompson" over "John Thompson", "Vice President", and "Mobi Communications". At the bottom left is the company logo, and at the bottom right is the copyright notice "Copyright thecompany.com 2019".

Figure 10-57: Final (Email) communication

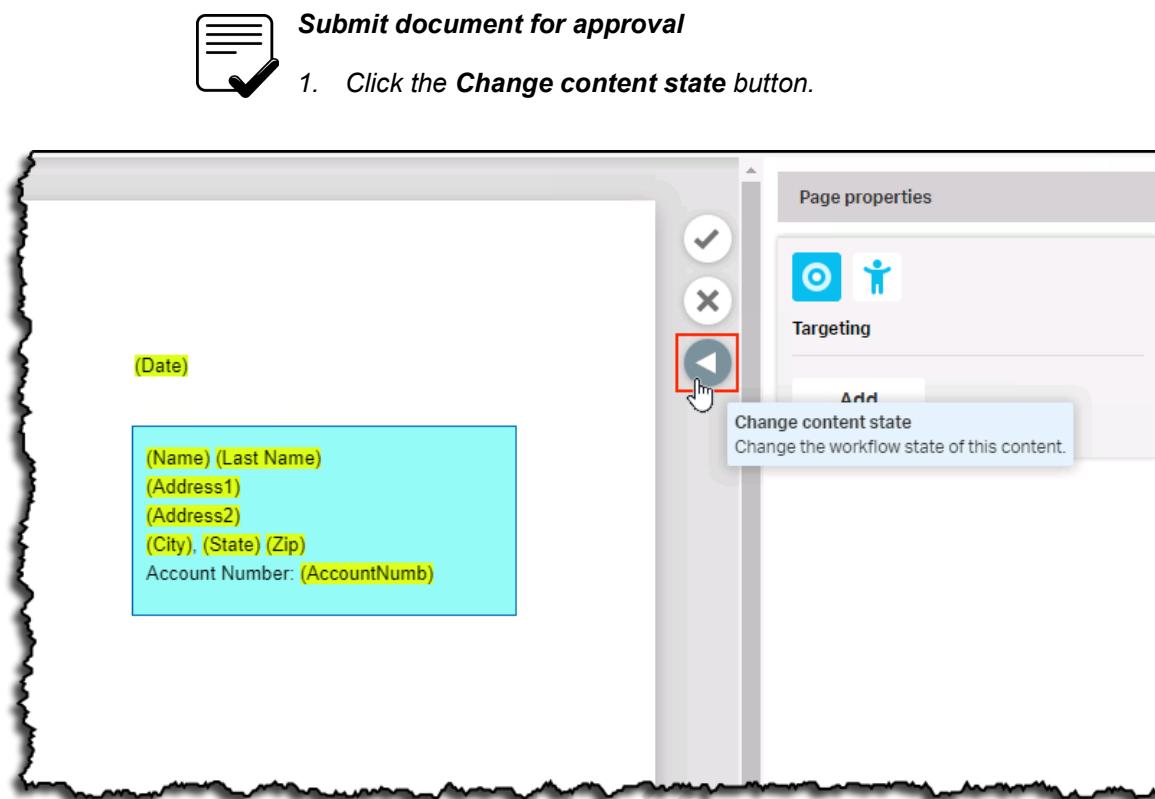


Figure 10-58: Change state

2. Click the **Submit** button.
3. In the Workflow state change window enter some comment relevant for the reviewer and click **Change**.

Note that the state changed to Submitted for approval .

4. Save the page.
5. Click the close button .

You are redirected back to the composer page.

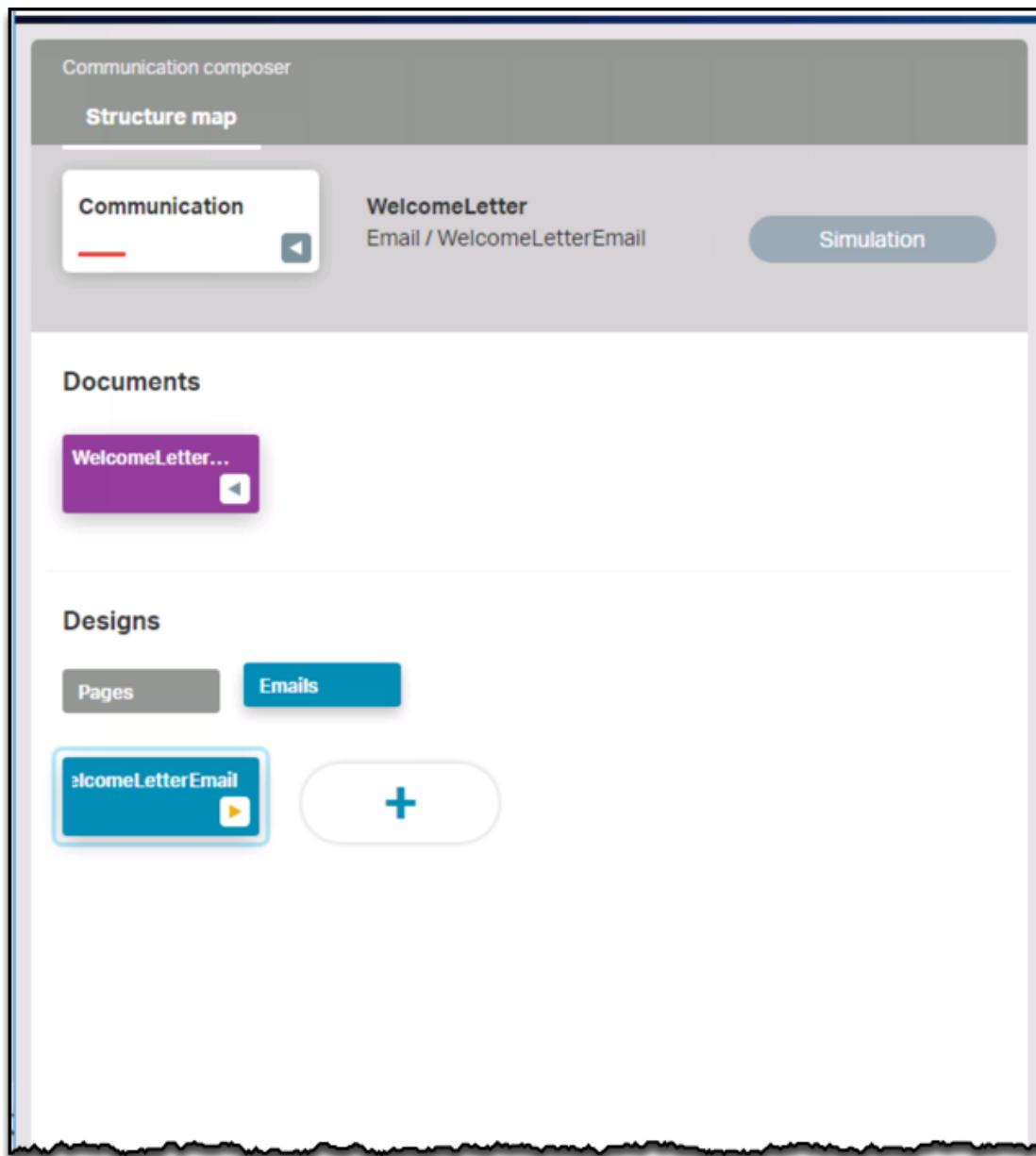


Figure 10-59: Completed email communication

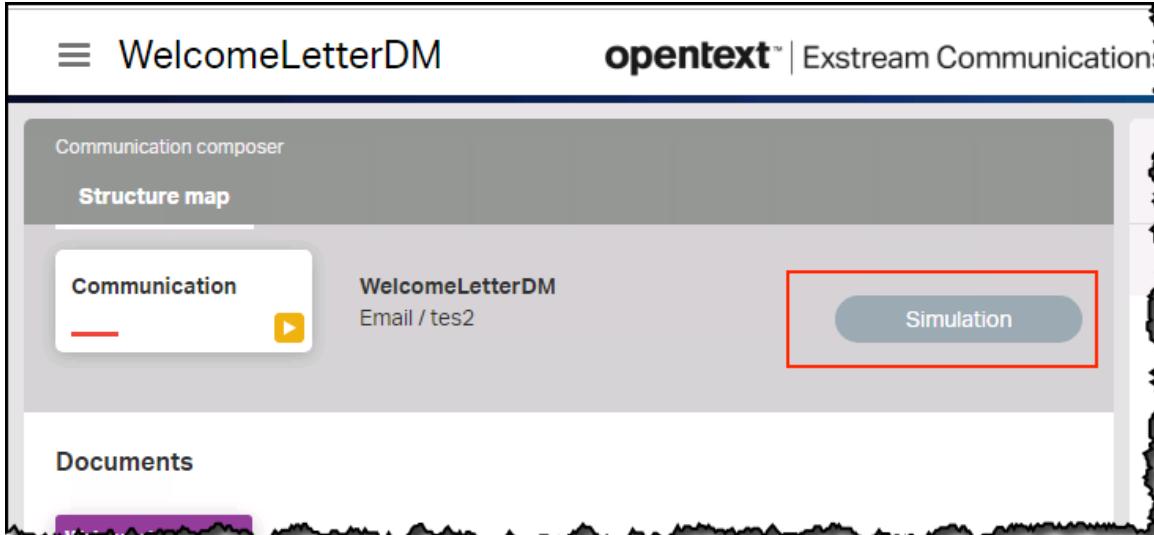
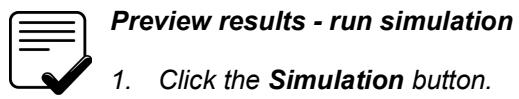
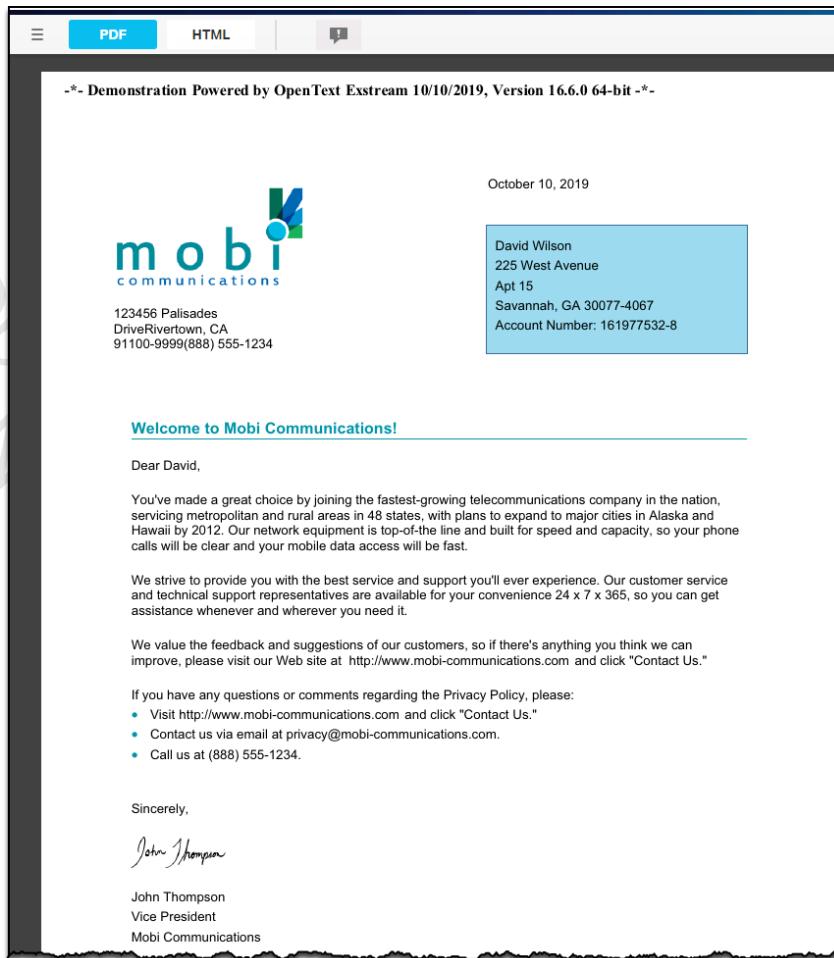


Figure 10-60: Simulation

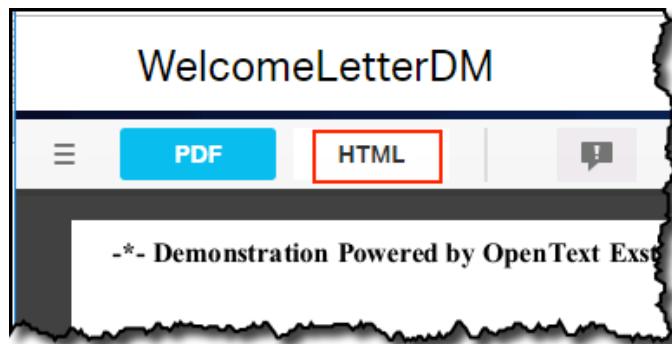
The PDF simulation opens.

Figure 10-61:
PDF Simulation

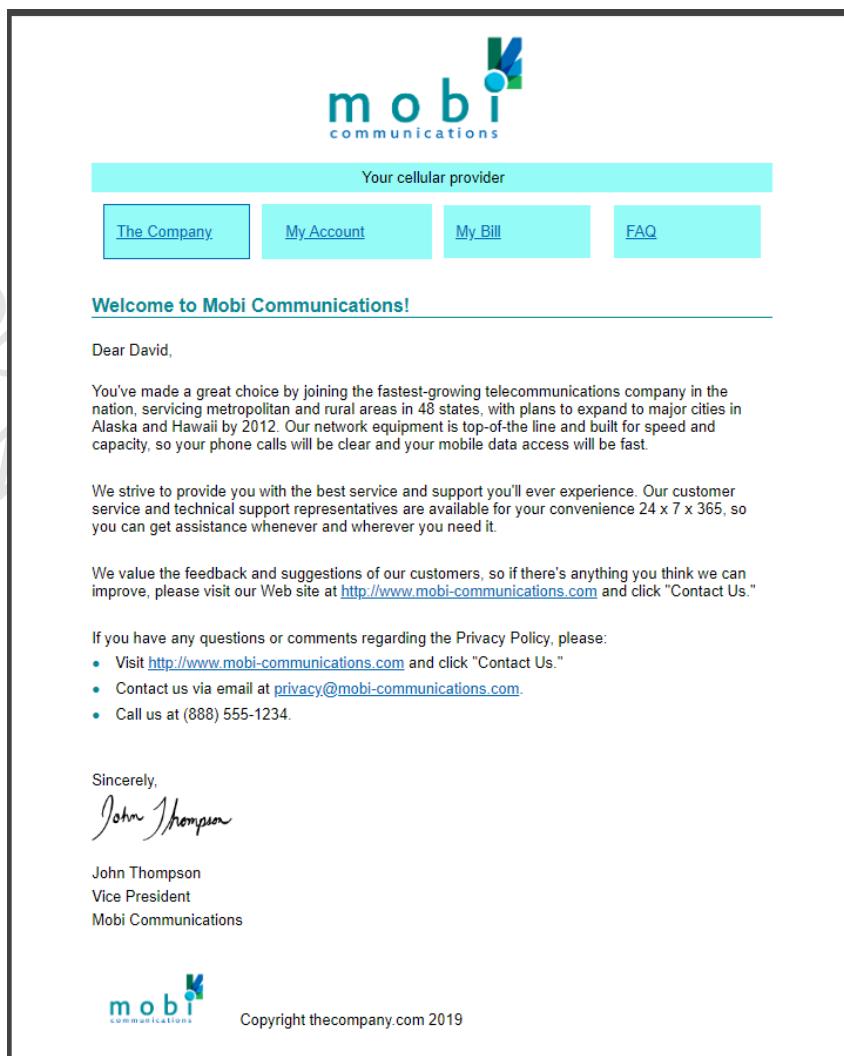


2. Click the **HTML** button.

Figure 10-62:
HTML button



The HTML simulation opens.



3. Click the **Close** button.



Review the resources uploaded to CAS from Communications Designer

1. In Chrome navigate to **Workshop**.

Type & Name	Categories	Description	State
>WelcomeLetterEmail	Email created in Communications Designer	HTML email for the Welcome Letter...	
>WelcomeLetterDocument	Document created in Communications Designer	Document for the Welcome Letter c...	
>WelcomeLetterPage	Page (PDF) created in Communications Designer	PDF for the Welcome Letter comm...	
CustomerInfoComponent	Component created in Communications Designer	Component containing customer c...	
>WelcomeLetterDM	Communication created in Content Launcher for Communications Designer	including a PDF an...	
CustomerLetterSimulation-1	Simulation created in WorkShop		
CustomerLetter	None		
CustomerLetterDP	None		
Customer Letter	None		
Customer Letter	None		
CustomerList-Delimited.csv	None		
Mobi_Logo.jpg	None		
signature.jpg	None		
BankStmt	None		
Bank Correspondence	None		
Bank Correspondence	None		
WelcomeLetterApplication	None		
WelcomeLetterApplication	None		

Figure 10-64: Resources



Approve the communication and its components

1. Close Chrome.
2. Open Chrome and sign in to **Communications Designer** as **exadmin/opentext**.
3. Scroll down and open the **WelcomeLetterDM** communication.
4. Navigate to **Communication > WelcomeLetterDocument > Pages > WelcomeLetterPage**.

5. Click the **CustomerInfoComponent's Change content state** icon, select **Submit for Approval**, enter some workflow comment and click **Change**.
6. Click the **CustomerInfoComponent's Change content state** icon, select **Approve**, enter some workflow comment and click **Change**.
7. Click the **WelcomeLetterPage Change content state** icon (orange arrow) and select **Approve**.
8. In the Workflow state change window enter **Looks OK!** as the comment and click **Change**.

The Orange arrow changes to green indicating that it is approved.

9. Click **Emails**.
10. Click the **WelcomeLetterEmail Change content state** icon (orange arrow) and select **Approve**.
11. In the Workflow state change window enter **Looks OK!** as the comment and click **Change**.

The Orange arrow changes to green indicating that it is approved.

12. Click the **WelcomeLetterDocument Change content state** icon (gray arrow) and select **Submit for approval**.
13. In the Workflow state change window enter **Review and approve** as the comment and click **Change**.

The gray arrow changes to orange.

14. Click the **WelcomeLetterDocument Change content state** icon (orange arrow) and select **Approve**.
15. In the Workflow state change window enter **Looks OK!** as the comment and click **Change**.

The orange arrow changes to green.

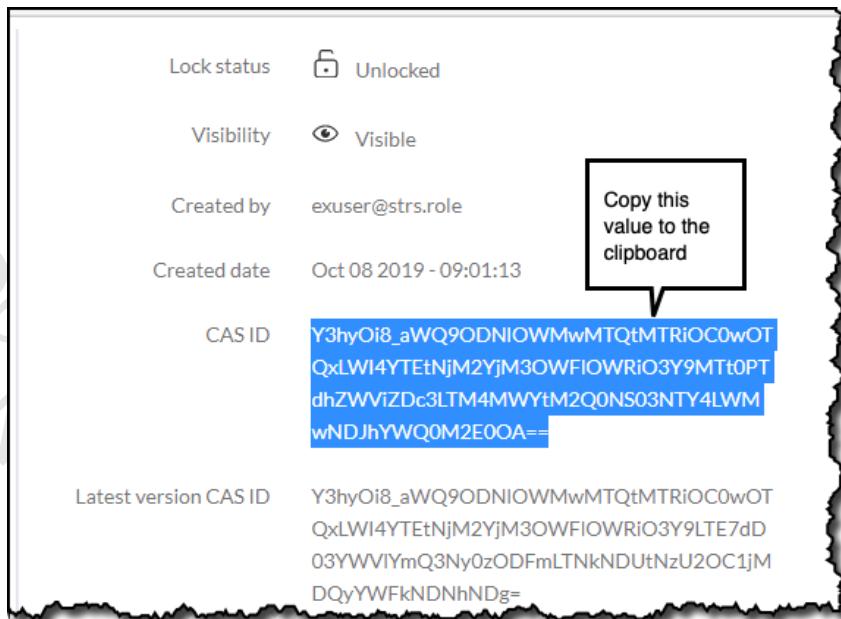


Publish the application

1. In the Resources tab of WorkShop select the **WelcomeLetterDM** application.
2. In the toolbar select the **•••** button and select **Publish/Unpublish**.
3. Select **domain1** in the Available domains panel and click the **>** arrow to move it to the Selected domains panel.
4. Click **Close**.
5. Making sure that the **WelcomeLetterDM** application is still selected, click **Properties** in the tool bar.

6. In the Properties tab of the **WelcomeLetterDM** window, copy the CAS ID to the clipboard.

Figure 10-65:
CAS ID



7. Click **Close**.



Update the application ID in the Communications Builder project

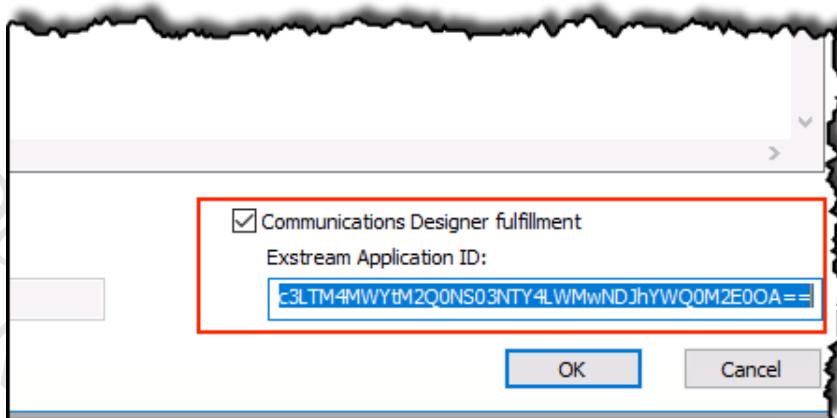
1. Open the **CustomerLetter** project in Communications Builder.
2. In the Project panel double-click the **Engine** node.

The Exstream configuration window opens.

3. In the Exstream configuration window click the **Communications Designer fulfillment** check box and paste the application CAS ID from the clipboard obtained in the previous activity in the Exstream Application ID text box.

Figure 10-66:

Application ID



4. Click **OK**.
5. Save the project.
6. In the toolbar click the **Create release** button.
7. In the Export window click **Export**.
8. Click **Close**.
9. Save any unsaved objects.
10. In the Create release window, enter **Release3** for the label and click **OK**.
11. Click **OK**.

The project is released to CAS now containing the ID of the fulfillment application that will be used when running the project in Control Center.



Deploy and run the project

1. Open **Control Center**.
2. Connect to **tenant1** using the default values.
3. Navigate to **tenant1 > Application domains > domain1 > thecompany.com**.
4. Right-click the **CustomerLetter** application and select **Deploy Export file**.
5. In the Deploy window click the **Browse** button to deploy the export file from CAS.
6. In the Select release window select **CustomerLetter** in the left panel and select the **Release 3** in the right panel.
7. Click **OK**.

8. Click **Next**.
9. Click **Finish**.
10. Click **OK**.
11. The project is deployed and the application is restarted.
12. Click **OK**.
13. Make sure the application is started and no error is reported.
14. Switch to **Communications Builder**.
15. In the Project panel double-click the **CustomerLetterRSet** node.

The CustomerLetterRSet window opens in the right panel.

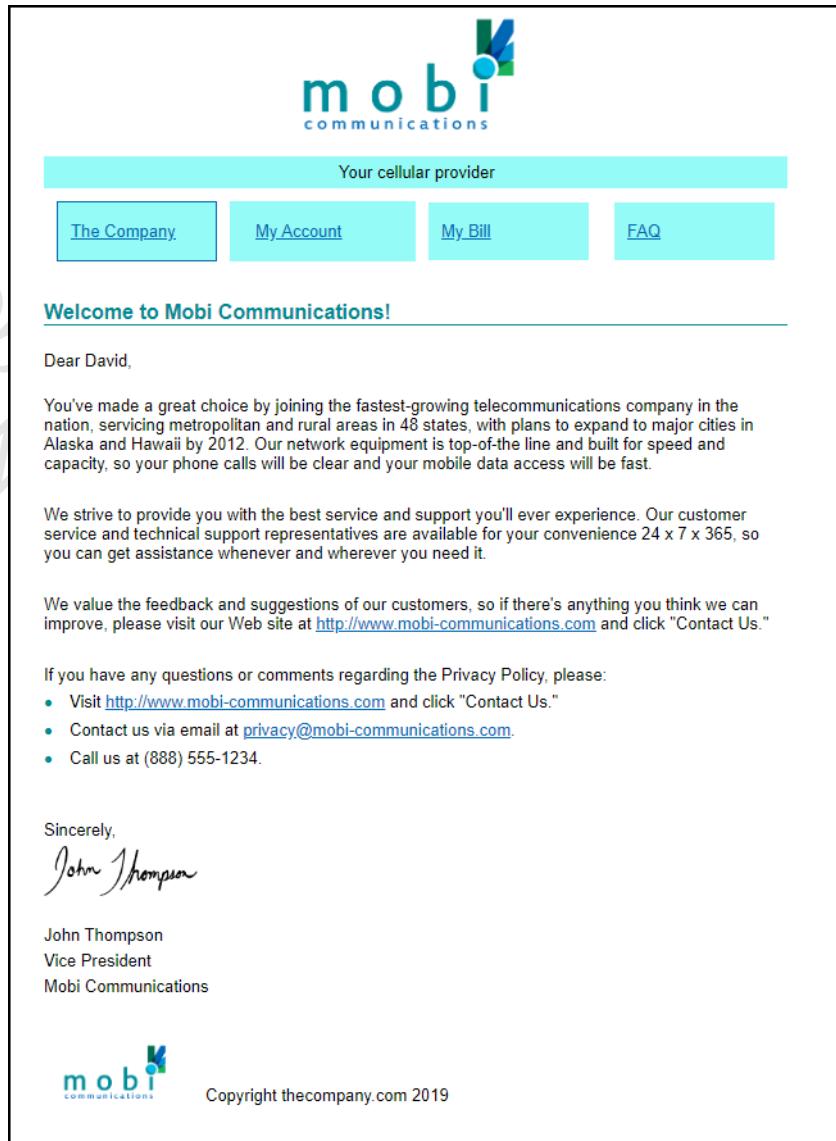
16. In the **CustomerLetterRSet** window right-click **CutomerList-Delimited.csv** driver file and select **Extract To File**.
17. Save the driver file to **C:\DEV\IN** folder.

18. In Windows Explorer navigate to C:\Training\Introduction\Output Files and you should have both communications: **CustomerLetter.pdf** and **CustomerLetter.html**.

Figure 10-67:

PDF



Figure 10-68:**HTML**

Open Text Internal Use Only
Do Not Distribute

11. Content Author

Objectives

On completion of this chapter, participants should be able to:

- Describe the use of Content Author and identify its functionality
- Create Designer Manager design packs
- Use frames in Design Manager designs to hold messages for Content Author
- Use Content Author to customize communication messages
- Describe the use of Exstream Empower
- Design a communication for Empower use

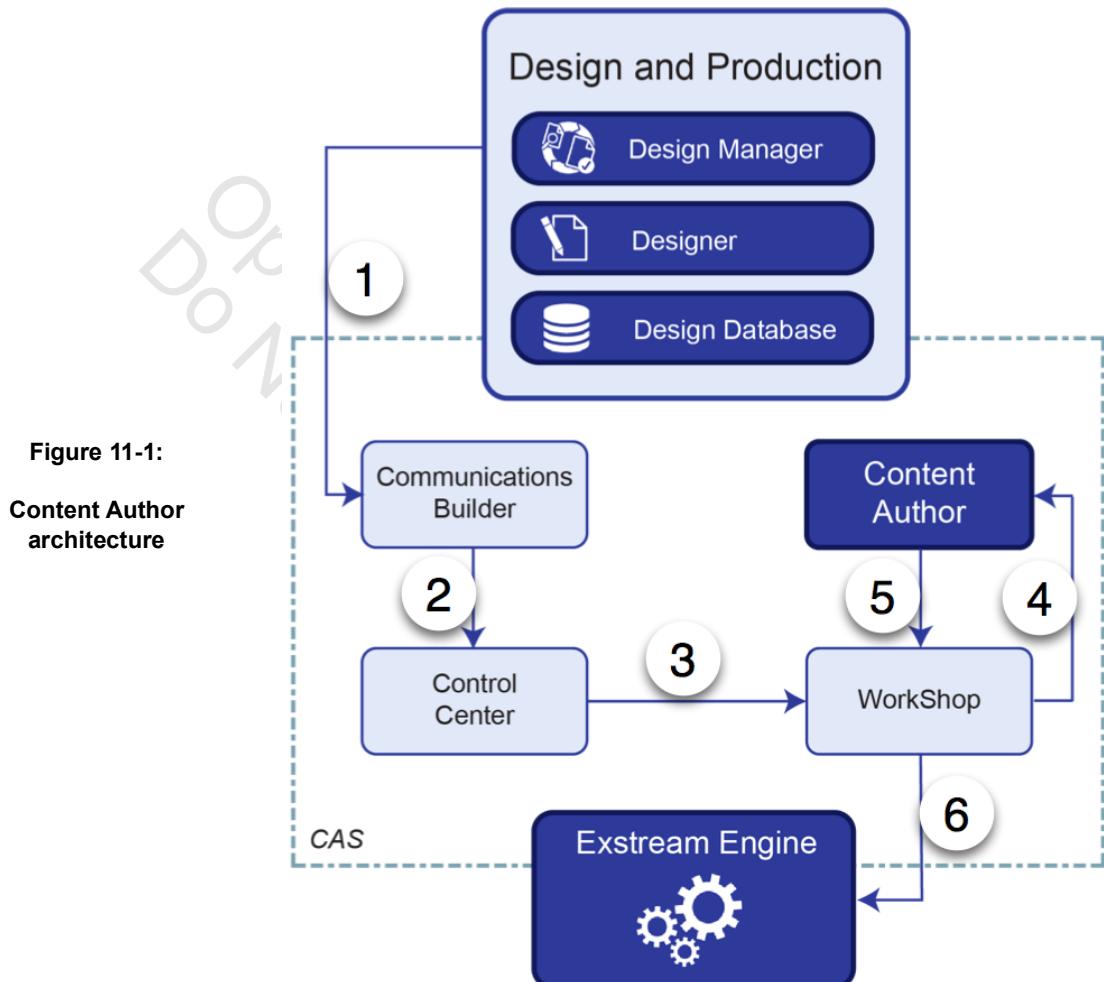
Overview

Content Author is a web application running on the Exstream platform that simplifies your internal processes for creating customer communications by giving business users the ability to update designs that you create in Design and Production. In so doing, Content Author lets you set up applications that business users can personalize for individual customers, and reuse again and again without the need for changes to the original Design and Production application. Best of all, you can specify which elements are available to end users in Content Author (including fonts, style sheets, colors, variables, and rules) to ensure that your customer communications are properly branded.

The basic process for Content Author designs begins with a robust application in Design and Production that contains all the same elements that you would typically use in any customer communication. For Content Author designs, however, you also include editable graphic and text messages within your larger customer communication (known as a theme in Content Author). Content Author then lets business users open your design to edit the messages you have included.

After end users modify the theme in Content Author, you simply publish the updated theme so that the new content is included in the next engine run. And all of this happens without the need for repackaging your application.

Content Author architecture Content Author runs as part of the Exstream platform, and it accesses content that has been uploaded to the common asset service (CAS). Following is a graphic that shows the overall Content Author architecture and how it fits in with the other elements of the Exstream platform:



#	Action	Description
1	Upload the application and build the project	Your Content Author application begins with a design and application created in Design and Production. You upload the application to the common asset service (CAS) repository when you package the application in Design Manager.
2	Deploy the project	After packaging your application for the CAS, you use Communications Builder to connect to the Exstream engine and deploy your project.
3	Run your application	With the connection to the Exstream engine in place, you use Control Center to run your application on the Exstream platform.

#	Action	Description
4	Create a theme and upload resources in Workshop	Use Workshop to access all of the elements of your application and upload any other resources that end users will need in Content Author. In Workshop, you create a theme, which is the file that end users open in Content Author.
5	Update and save the theme in Content Author	In Content Author, end users add messages to the frames in the design you created in Design and Production. End users save their work and close Content Author when they have finished.
6	Publish the theme	When end users have finished making updates to the theme, you use Workshop to publish the theme so that it can be picked up by the Exstream engine in order to create customer output.

Content Author Interface

Content Author provides the graphic design interface for your application that lets business users easily update documents and include those edits in the following run of the project without any IT intervention.

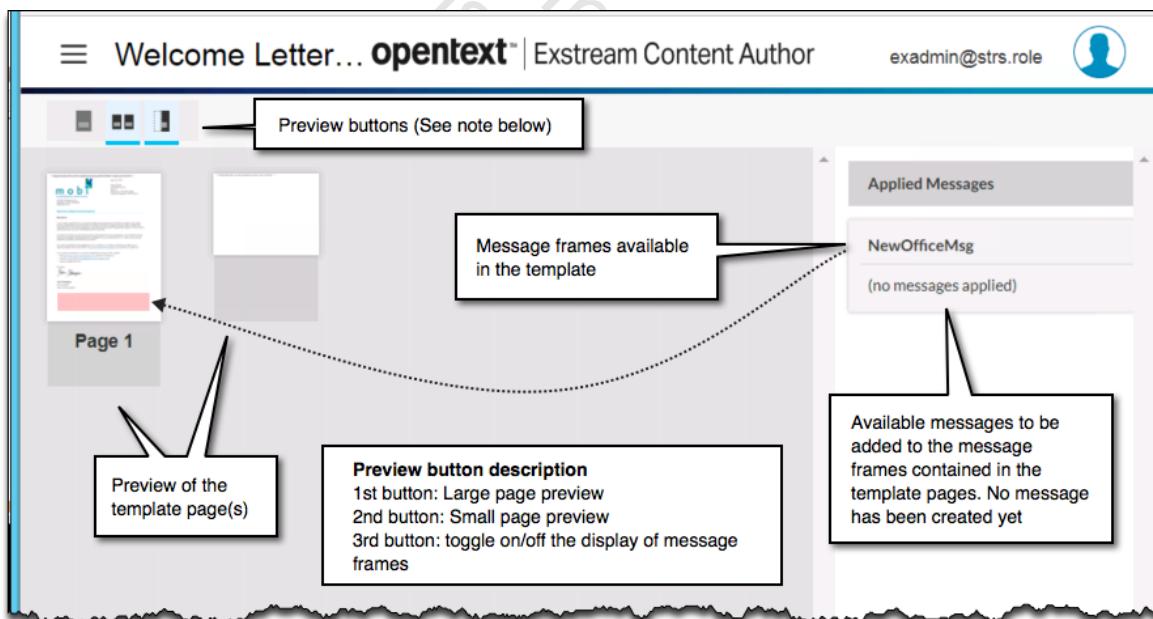


Figure 11-2: Content Author interface

Designing an application for Content Author

When you create applications for Content Author, you can create a pre-approved design that allows end users to focus only on updating content, or you can use a blank message that gives end users free rein to build a design with the resources you make available. This section describes the basic process that you must follow if you want to allow end users to use Content Author to edit content that will be included in customer communications.

The following provides a high-level overview of the steps you will follow in order to design an application for Content Author:

1. Prerequisites

Install the Exstream Platform and deploy the Content Author web application. (When you are ready to deploy a Content Author application, you will need access to Design and Production, Communications Builder, Command Center, and Workshop.)

Because Content Author uses the common asset service (CAS) repository to store files, you must configure Design Manager so that it can access CAS using OTDS authentication.

2. Create a design that end users will access in Content Author to update content

In Design and Production, your Content Author applications contain basically the same elements as standard applications – with the main exception of the design pack (discussed below). In order for end users to edit content in Content Author, however, you must include one or more graphic messages or text messages that are placed inside of message frames. No other elements that you include in your design will be editable in Content Author.

3. Create a design pack in Design Manager to specify the resources that will be available to end users in Content Author

The design pack lets you specify resources such as fonts, styles, colors, rules, and variables that will be available to end users in Content Author. By including resources in a design pack, you can better control the overall appearance of your communications, and you can ensure adherence to corporate standards.

With a design pack in place, you associate it with your Content Author application in Design Manager so that the resources you have included are exported to CAS to be available to end users in Content Author.

4. Add a PDF output queue to your application

Even if you do not plan to create PDF customer output, you must include a PDF output queue in your application so that end users can preview available messages – and the changes that they make to those messages – in Content Author Communication View.

5. Deploy your application

This step in the process involves packaging your application and exporting it to CAS from Design Manager, and then using various other components of the Exstream platform to make the application available for Content Author. If you update an existing application, you will use the same components to redeploy the updated application.

6. Create customer output

After end users have finished making updates in Content Author, you will publish the theme in Workshop so that it can be processed by the Exstream engine. From there, you can use the output directly for customer communications, or you can dynamically import the output files into other Design and Production applications to create even more sophisticated customer communications.

Using a design pack with your Content Author application

Design packs are Design Manager objects that are used only with Content Author applications. They allow you to restrict the resources (including fonts, style sheets, colors, variables, and rules) that are available to end users in Content Author to ensure that your customer communications are properly branded. If you are designing applications for Content Author, you must associate a design pack with your application—even if you do not add any resources to it.

The following elements can be included in a design pack:

- Style sheets** You can use style sheets in your Content Author applications just as you would in other Design and Production applications. The main thing to remember here is that you can either add a style sheet to your design pack, or else you can specify fonts (and font-formatting options). If you specify both, Content Author honors only the style sheet.
- Fonts** As you add fonts and font styles to your design pack, remember that you cannot use specific font settings alongside a style sheet in your design pack. If you specify both, Content Author honors only the style sheet.
- Color families** You can add color families to your design pack as a means of giving end users extra predefined color options in Content Author, or you can go a step further to ensure adherence to corporate branding standards by restricting color options to only those available in the color families that you specify.
- Variables** Adding variables to your design pack lets end users set up messages that are populated with data targeted to individual customers. Remember, though, that you use a sample data file when you deploy your application, so end users will see only sample data as they work in Content Author. The Exstream engine populates the variables with real data after the messages have been published.

Library rules In Content Author, rules can be applied to entire messages so that they are included or excluded in final customer communications based on certain conditions. You can include library rules in your design pack so that end users have easy access to predefined rules, or end users can use variables to build their own custom rules.

Deploying a Content Author application

After you have designed a Content Author application in Design and Production, you will use the Exstream platform to deploy that application so that end users can add edits and updates. In order to deploy the application, however, you must first have performed the following prerequisites:

- Installed the Exstream platform and have deployed the Content Author web application.
- Created a project in Communications Builder to use as a basis for connecting the Exstream engine to your deployed application.

You use several different components of the Exstream platform to deploy your Content Author application (including Communications Builder, Control Center, and Workshop), but you begin in Design Manager.

Creating customer output from a Content Author theme

When end users have finished making updates to the theme in Content Author, you must update the production job in Communications Builder so that the Exstream engine can pick up the latest version of the theme. After that, you simply publish the theme in Workshop.

Most of the steps detailed here will be automatically initiated based on how you have set up your Exstream platform environment. They are listed here to explain the end-to-end process of going from Design and Production application to finished customer communication. In a typical Exstream environment, you can simply publish the updated theme in Workshop.

After you publish the updated theme in Workshop, the theme content is then available to the Exstream engine. When you run the production job using the orchestration features in the Exstream platform environment, the Exstream engine runs and creates the specified output. From there, you can use the output directly for customer communications, or you can dynamically import the output files into other Design and Production applications to create even more sophisticated customer communications.

Lab: Content authoring

Part I: Preparing the application for Content Author

Content Author like Communications Designer use a design pack to encapsulate the design components that will be exposed to users for editing purposes. This design pack may be shared by both applications, however there are sections in the design pack for each application.

In the previous chapter we created a design pack for Communications Designer use. In this chapter we will re-use the same pack and simply add the Content Author specifics.



Create the design pack

1. *Launch Design Manager (you can navigate to Programs > OpenText Exstream 16.6.0 > Design Manager).*
2. *Sign in to Design Manager using the following information:*
 - *User: exadmin*
 - *Password: opentext*
3. *In the Library Panel navigate to ProcComm > Environment > Designs > Design Packs.*
4. *Double-click CustomerLetterDP to open it in the Property panel.*
5. *Click the Design tab and note the style sheet and color families have already been populated in the previous lab.*
6. *Click the Data and Logic tab and note that there is a Content Author panel.*

7. In the Content Author panel tab enter the following information by clicking the "+" icon:
- Variable: **Customer_AccountNumber**
 - User-friendly name: **Account #**

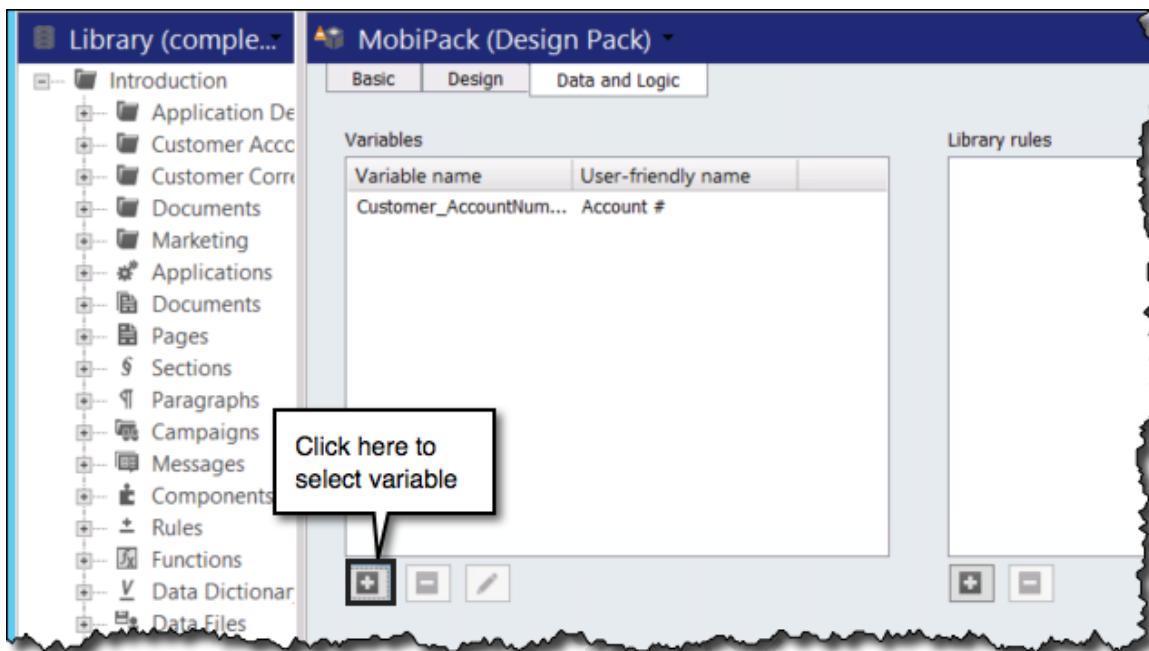


Figure 11-3: Adding variable

8. Following the same procedure add the following two additional variables:
- Variable: **Customer_City** User-friendly name: **City**
 - Variable: **Customer_State** User-friendly name: **State**
9. Save and close the design pack.

Since we will be re-using the same Customer Letter application the design pack has already been assigned.

All the changes to the actual communication will be made in Communications Designer, so we simply need to re-package the application and upload it to CAS.



Package the application and load the PUB file to CAS

1. Right-click the **Customer Letter** application object and select **Package**.

The Build Package dialog box opens.

2. Make sure that
 - The **Run Engine when complete** check box is not selected.
 - The **Package file** is set to **C:\Training\Introduction\Pub Files\CustomerLetter.pub**.
 - In the **Package file** area, select the **Create for output queue device(s)** radio button.
3. Select **Upload package file to CAS when complete** and click the pencil  next to it.

The CAS package Details window opens.

4. Make sure the **Name** is set to **Customer Letter**.
5. Select **Upload a new version of an existing package**.
6. Click **OK**.
7. Click **OK**.

The Build Production Package Files displays.

8. Make sure that no error is reported and then close the **Build Production Package Files Output** window.
9. Click **Close**.

Part II: Configuring the project for Content Author



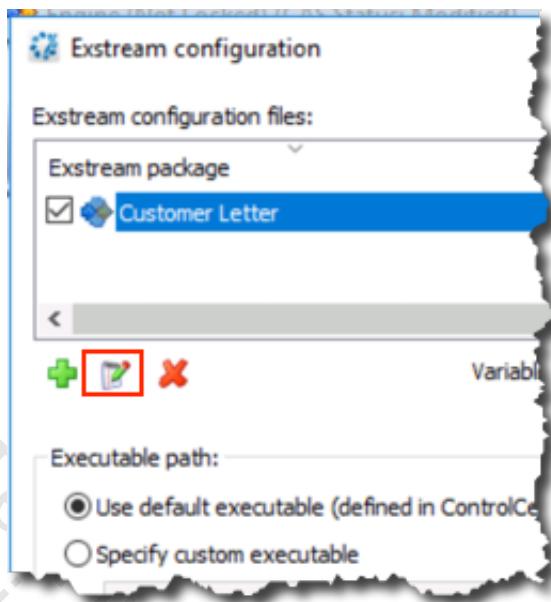
Update the Engine's package

1. Make sure that the **CustomerLetter** project is open in Communications Builder.
2. In the Project panel, double-click the **Engine** node to open it in the Main View window.
3. Double-click the **Exstream engine**.

The Exstream configuration window opens.

4. Click the **Edit selected Exstream package file** button.

Figure 11-4:
Edit package



5. In the Select CAS window click the **Find** button, select **Customer Letter** in the right panel, then select version 3 (or whatever your latest version) in the Version drop-down.
6. Click **OK**.
7. Click **OK** to close the Exstream configuration window.



Create a new project release

1. In the Communications Builder toolbar click the **Create release** button.
2. In the Export for release window click **Export**.
3. Save all the unsaved components if requested.
4. Name the new release **Release4**.
5. Click **OK** to close the Operation was successful window.



Deploy the new project release to the CustomerLetter application

1. Navigate to **Programs > OpenText Exstream 16.6.0 > Control Center**.

Control Center opens.

2. Expand the **Root node**.

3. Select **tenant1 (Disconnected)** and click the **Connect** button.

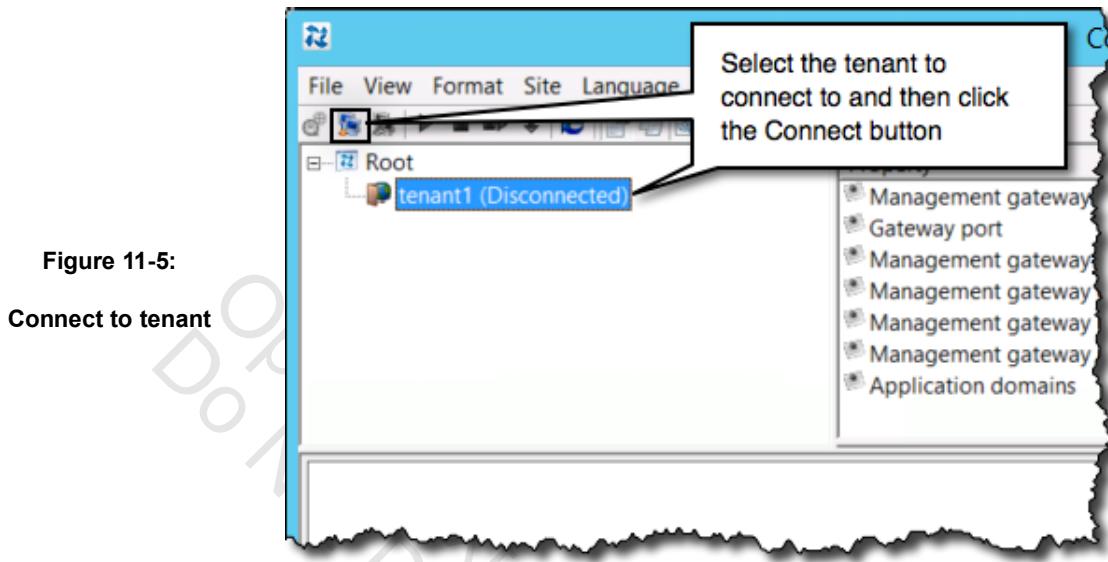


Figure 11-5:

Connect to tenant

4. In the Login to Management Gateway click **OK**.
5. Expand the **tenant1 > Application domains > domain1 > thecompany.com** node.
6. Right-click **CustomerLetter** and select **Deploy Export File**.
7. Select **Deploy export file from CAS** and click the its corresponding **Browse** button.
8. In the Select release window select **CustomerLetter**.

The right panel displays the releases that have been uploaded to CAS for the CustomerLetter project.

9. In the right panel select the **latest release (Release4)** of the project and click the **OK** button.

You are redirected back to the Deploy window.

10. In the Deploy window click the **Next** button.

The Deploy window displays the physical layers that have been created for this project.

11. Making sure that the **DEV** layer is selected, click the **Finish** button.
12. Click **OK** in the window that indicates that the project was successfully deployed.
13. Make sure the **CustomerLetter** application is started.



Add message frames to the communication for Content Author

1. Open Chrome and sign in to **Communications Designer** as **exadmin/opentext**.
2. Scroll down and open the **WelcomeLetterDM** communication.
3. Navigate to **Communication > WelcomeLetterDocument > Pages > WelcomeLetterPage** and click **Open**.

Since the page was approved it cannot be modified. We need to change it back to Draft.

4. Click the green arrow and select the Draft (gray) arrow.
5. Set the comment to **Adding message frames for Content Author.** and click **Change**.
6. Select the Frame icon in the icons toolbar
7. In the Frame type window select **Messages** and click **OK**.

A (pink) frame is added to the page.

8. Making sure that the frame is selected, in the properties panel set the following values:
 - Horizontal position: **1 in**
 - Vertical position: **9.5 in**
 - Height: **1 in**
 - Width: **6.7 in**
9. Save and close **WelcomeLetterPage**.
10. Navigate to **Communication > WelcomeLetterDocument > Emails > WelcomeLetterEmail** and click **Open**.

Since the email was approved it cannot be modified. We need to change it back to Draft.

11. Click the green arrow and select the Draft (gray) arrow.
12. Set the comment to **Adding message frames for Content Author.** and click **Change**.

13. Select the bottom container row and click the upper row.

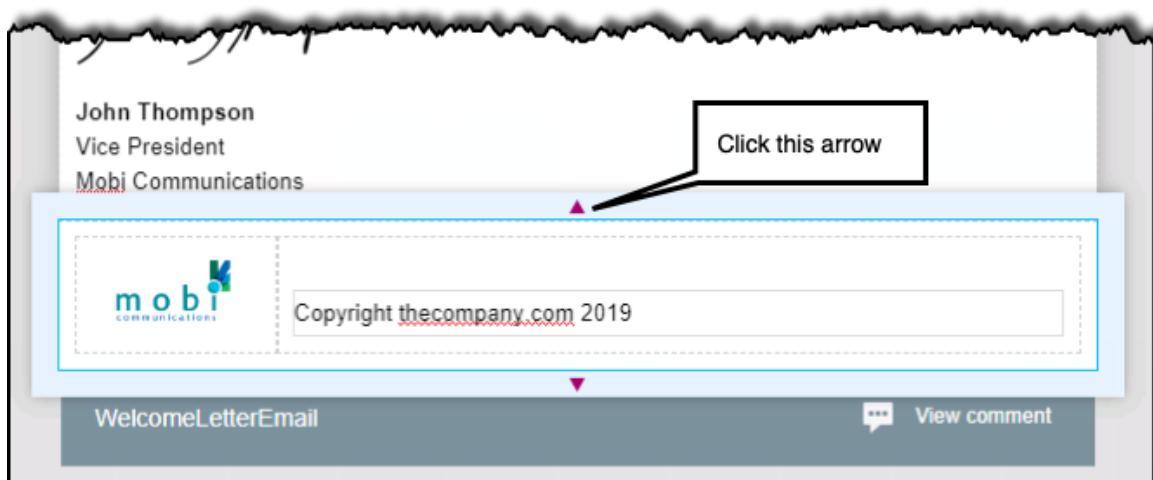


Figure 11-6: Arrow

A new container row is added.

14. Making sure that the new container row is selected, select the

Frame icon in the icons toolbar

15. In the Frame type window select **Messages** and click **OK**.

A (pink) frame is added to the container.

16. Making sure that the frame is selected, in the properties panel set the following value:

- Height: 50 px

17. Save and close **WelcomeLetterEmail**.



Create the template for Content Author

1. In Communications Designer click the **Communication** and then **Template** in the Properties panel.

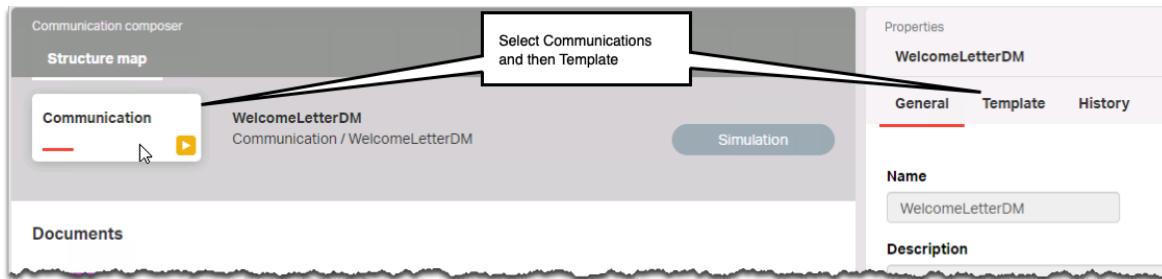
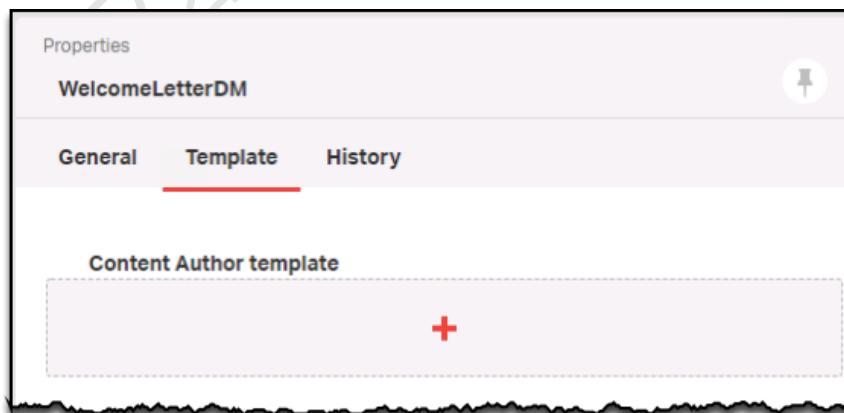


Figure 11-7: Template

2. Click the "+" under Content Author template.

Figure 11-8:

Template



A message indicating that the template was successfully created displays.

3. Click **OK**.

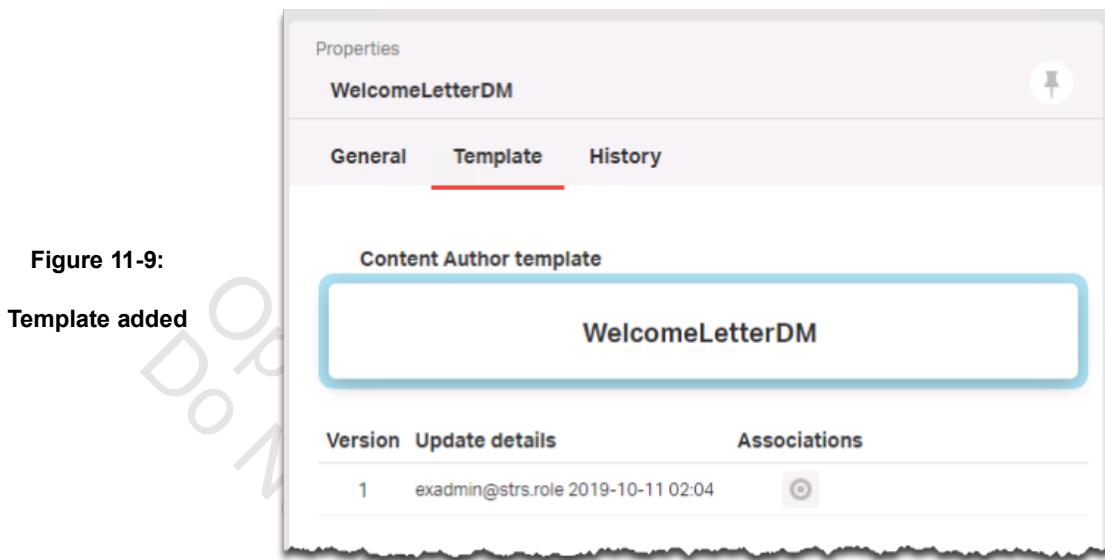


Figure 11-9:

Template added

Part III - Using WorkShop to create resources



Add an image

1. In **WorkShop** (as exadmin/opentext) click the Add resources button (+ sign) and select **Upload resource > Image**.
2. Navigate to **C:\Training\Introduction\Image Files** and select **news.jpg**.
3. Click **Upload**.

The image is added to the Resources list.



Create a simulation

1. In **WorkShop** (as exadmin/opentext) click the Add resources button (+ sign) and select **Simulation**.
2. In the Create simulation window select the **CustomerList-Delimited.csv** driver and click **Next**.
3. Set the Name to **CustomerLetterSimulation-2** and click **Create**.

The CustomerLetterSimulation-2 simulation is added to the list of resources.

4. Select the **CustomerLetterSimulation-2** check box and select **Properties** in the tool bar.
5. In the CustomerLetterSimulation-2 window select the **References** tab.

6. Select the **Add templates** tab.
7. In the Select template window, select the **WelcomeLetterDM** check box and click the **Add** button.

The screenshot shows a software interface for managing content. At the top, there's a header with a document icon, the title "CustomerLetter...", and an information icon. Below the header, there are tabs: Properties, References (which is underlined in blue), Categories, Versions, and Used. Under the References tab, there are two buttons: "Add templates" and "Add themes". A search bar labeled "Type & Name" with a magnifying glass icon is present. The main area displays a table with two rows of references:

Reference type	Type & Name	Version	Current Version
Used in	WelcomeLetterDM	1	
Uses	CustomerList-Delimited.csv	1	

Figure 11-10: Simulation

8. Click **Close**.
9. Do not close Chrome, you will use Workshop in the next activity.



Create a Theme

1. Click the **Add resources** button and select **Theme**.

2. Make sure to select **WelcomeLetterDM** in the Available templates area and **CustomerLetterSimulation-2** in the simulation drop-down.

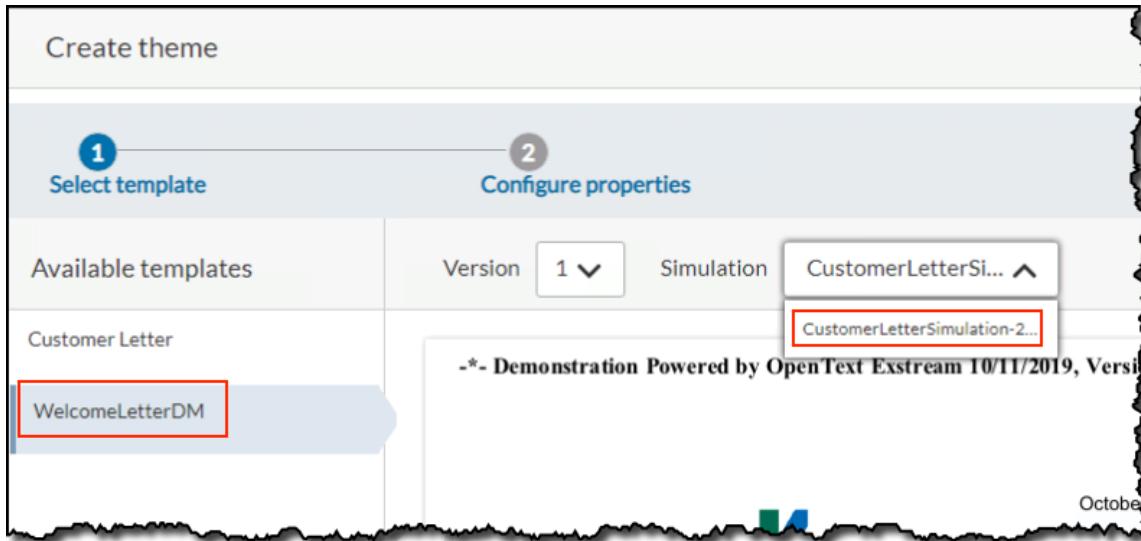


Figure 11-11: Theme

3. Click **Next**.
4. In page 2 of the Create theme wizard, enter the following information and click **Create**:
 - Name: **WelcomeLetterCAuthorTheme**

The new theme is added to the Resources page, and now it is available to Content Author.

Part IV - Using Content Author to add content to the communication

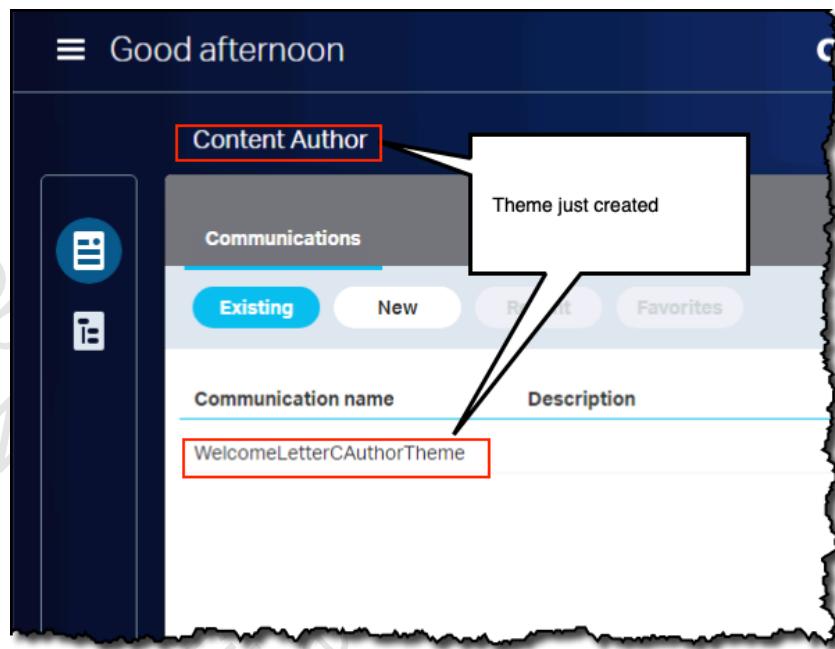


Sign in to Content Author

1. In Chrome open **Content Author** using the following information (or use the Exstream Web Applications > Content Author/Communications Designer bookmark):
 - URL: <https://thecompany.com:8443/exstream/index.html#>
 - User name: **exadmin**
 - Password: **opentext**

You are logged in to Content launcher. Note that the newly created theme displays in the Content Author area.

Figure 11-12:
Content Author



2. Select **WelcomeLetterCAuthorTheme** and click **Open**.

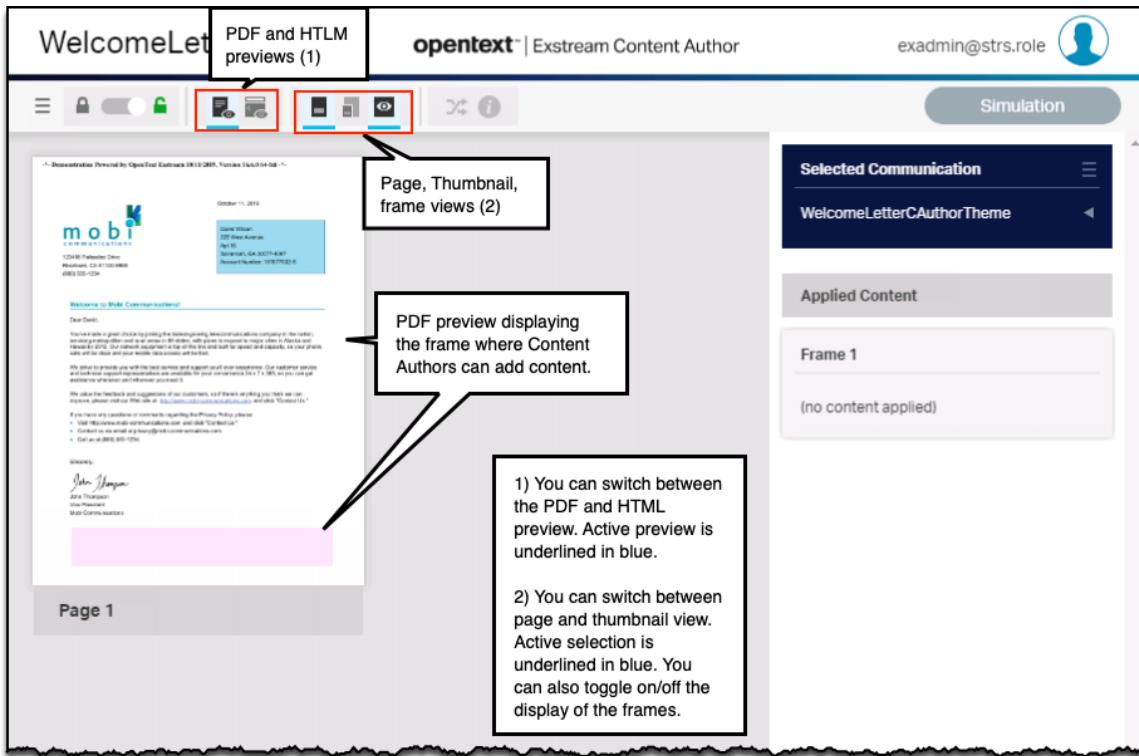


Figure 11-13: Content Author interface

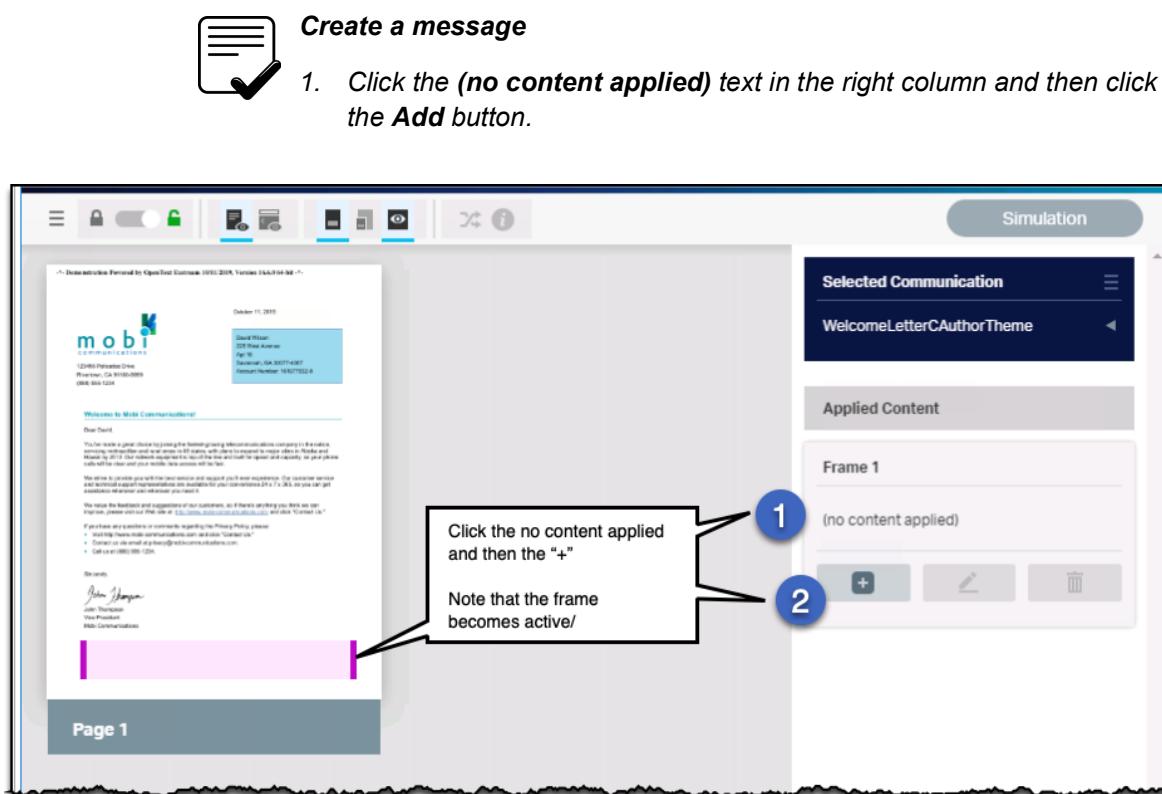


Figure 11-14: Add message

The Content Composer page displays.



Figure 11-15: Content Composer

2. Select **New Content**.

3. Enter the following information for the new content and click **Create**:
- Name: **CA new offices**
 - Description: **Message to inform CA customers of new offices in the state**
 - Description (2nd): **Advertisement**

The message editor displays.

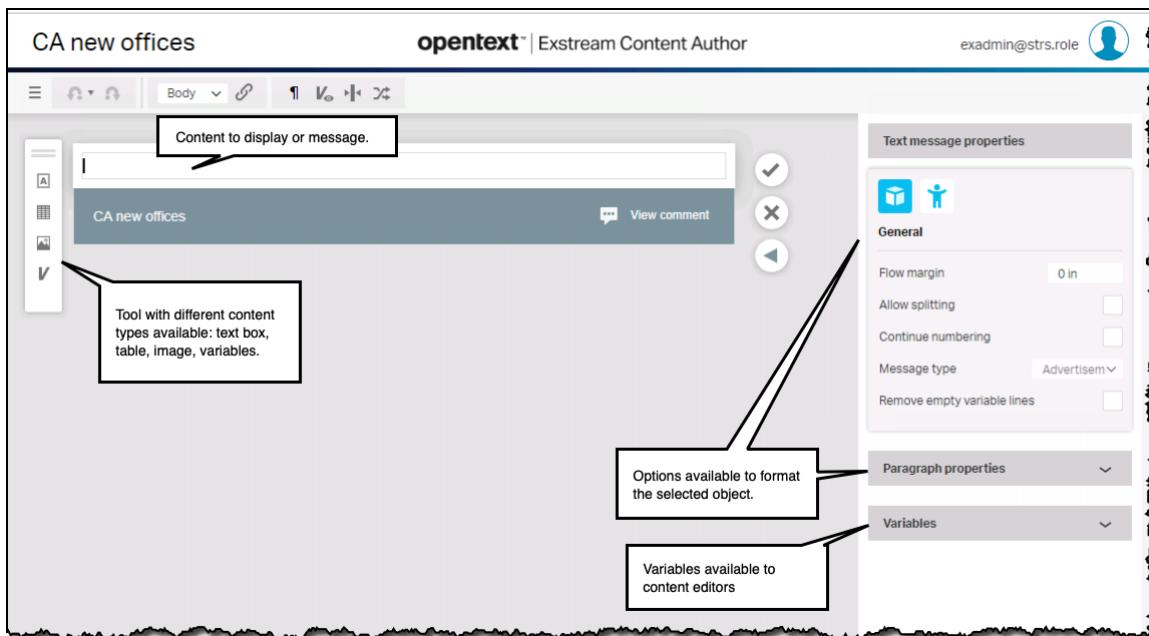
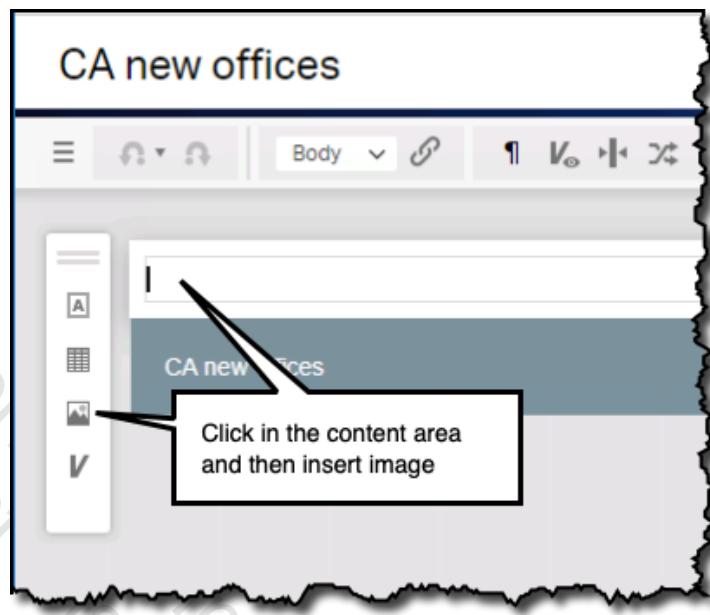


Figure 11-16: Content Editor

4. Click the content area and then click the insert image button.

Figure 11-17:
Inserting image



5. In the Insert an image window select **Insert from library**.
6. In the resources page select the **news.jpg** image and then click the **Select** button.

The image is added to the message.

Figure 11-18:
Image added



7. Switch (without closing the content editor tab) to the Chrome tab where WorkShop is open.
8. In WorkShop locate and select the check box for the **news.jpg** resource, then click the **View Image**.

The image opens.

9. Right-click the image and select **Copy image address**.
10. Close the image and return to the Chrome tab where the content editor is open.
11. Making sure that the image is selected, then in the image properties panel paste the image address from the clipboard into the URL field.
12. Next to the image type the following text: **Mobi is happy to announce the opening of a new store in San Francisco.**
13. Select all the text and then select the **Emphasis** style from the Style drop-down.

The text is formatted with the Emphasis style.

14. Click the save button .

You are redirected back to the pages preview and the message just created displays on the first page.

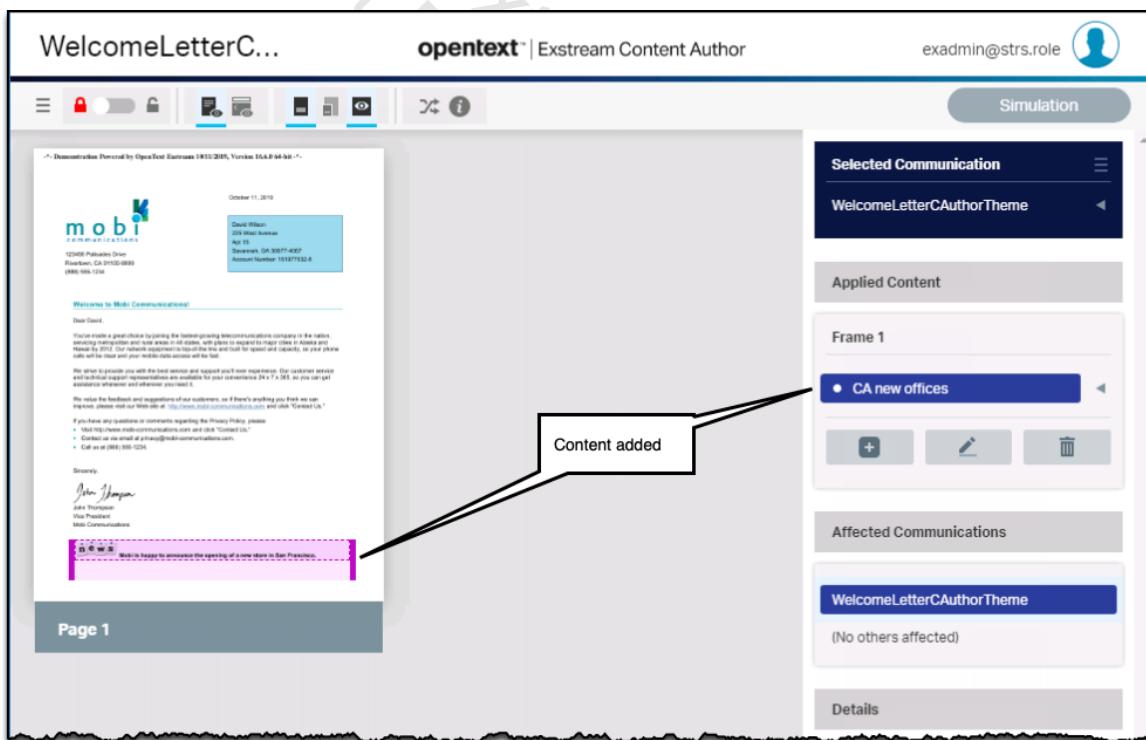


Figure 11-19: CA Content added



Create another message

1. Click the button to add a new content message.

The Content Composer page displays.

2. Select **New Content**.
3. Enter the following information for the new content and click **Create**:
 - Name: **SF new office**
 - Description: **Message to inform SF customers of new office in the city.**
 - Description (2nd): **Advertisement**

The message editor displays.

4. Click the content area and then click the insert image button.
5. In the Insert an image window select **Insert from library**.
6. In the resources page select the **news.jpg** image and then click the select button.

The image is added to the message.

7. Switch (without closing the content editor tab) to the Chrome tab where WorkShop is open.
8. In WorkShop locate and select the check box for the **news.jpg** resource, then click the **View Image**.

The image opens.

9. Right-click the image and select **Copy image address**.
10. Close the image and return to the Chrome tab where the content editor is open.
11. Making sure that the image is selected, then in the image properties panel paste the image address from the clipboard into the URL field.
12. Next to the image type the following text:
We want to welcome you at our new store in NE 1st Av. - San Francisco.
13. Select all the text and then select the **Emphasis** style from the Style drop-down.

The text is formatted with the Emphasis style.



14. Click the save button .

A message displays indicating that the content doesn't fit the targeted frame.

The reason is because Content Author is trying to place both messages in the frame (CA new offices and the SF new office and logically both won't fit).

Next you will create a rule that will apply the “CA new offices” only to CA residents but not from San Francisco and another rule that will apply the “SF new office” only to CA residents from San Francisco.

15. Click **Continue** and disregard the warning.

You are redirected back to the pages preview and the message just created displays on the first page.



Create a rule

1. Select the **CA new offices** message in the right column and then click the **Edit content** button.

The message opens in the content editor.

2. In the toolbar click the Rule Composer button .

The Rule Composer displays.

3. Create a rule using the following values for the first condition:

- 1st drop-down: **City**
- 2nd drop-down: **not equal to**
- 3rd drop-down: **San Francisco**
- 4th drop-down: **and**

4. Use the following values for the second condition:

- 1st drop-down: **State**
- 2nd drop-down: **equal to**
- 3rd drop-down: **CA**



The variables available in the drop-downs correspond to the variables you added to the Design Pack in Designer Manager.

5. Click **Insert**.

6. Click the save button

7. Click **Continue** to disregard the warning.

8. Select the **SF new office** message in the right column and then click the **Edit content** button.

The message opens in the content editor.

9. In the toolbar click the Rule Composer button .

The Rule Composer displays.

10. Create a rule using the following values for the first condition:

- 1st drop-down: **City**
- 2nd drop-down: **equal to**
- 3rd drop-down: **San Francisco**
- 4th drop-down: **and**

11. Use the following values for the second condition:

- 1st drop-down: **State**
- 2nd drop-down: **Equal to**
- 3rd drop-down: **CA**

12. Click **Insert**.

13. Click the save button .

14. Click **Continue** to disregard the warning.



Run a simulation

1. Click the **Simulation** button in the upper right corner of the Content Author interface.

The simulation runs with the data from the first customer in the driver file. Note that this customer is from Savannah, GA, so no message is displayed in the lower area of the page.

Content Author allows you to temporarily change the content of the variables used in the communication and re-run the simulation.

2. In the right panel set the State to **CA** and click the **Run** button.

Note that the **CA new offices** message is displayed.



Figure 11-20: CA message

3. In the right panel now set the City to **San Francisco**, leave the state as **CA** and click the **Run** button.

Note that the **CA new offices** message is displayed.



Figure 11-21: SF message

4. Click **Reset** to restore the values and re-run the simulation.

This previous step is really not necessary since the changes made to the variables are not persisted.

5. Click **Close** (upper right area of the browser page).

Next you will configure the Email communication with the messages and rules.

Part V: Configure the Email content



Apply the content to the Email communication

1. In the toolbar click the **HTML Preview** button.

The Email communication opens.

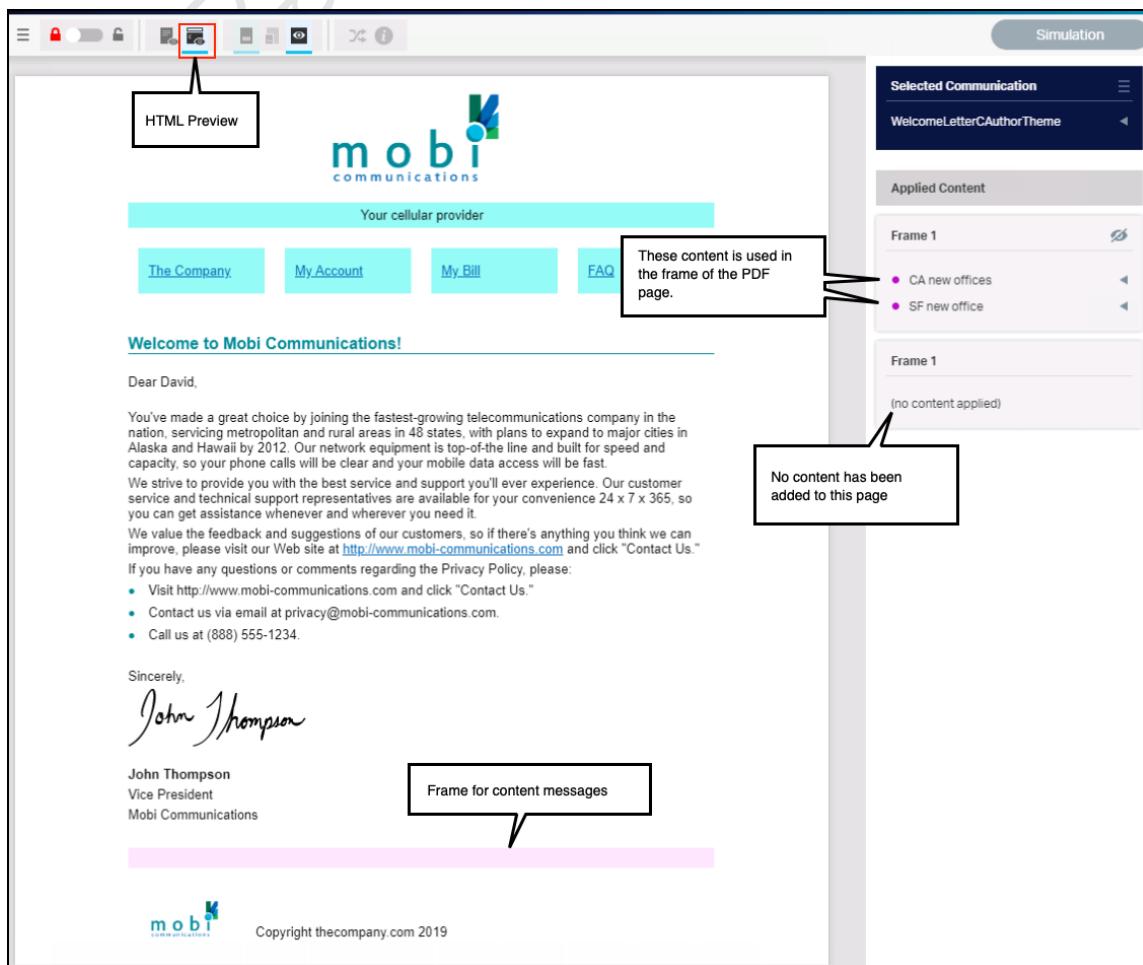
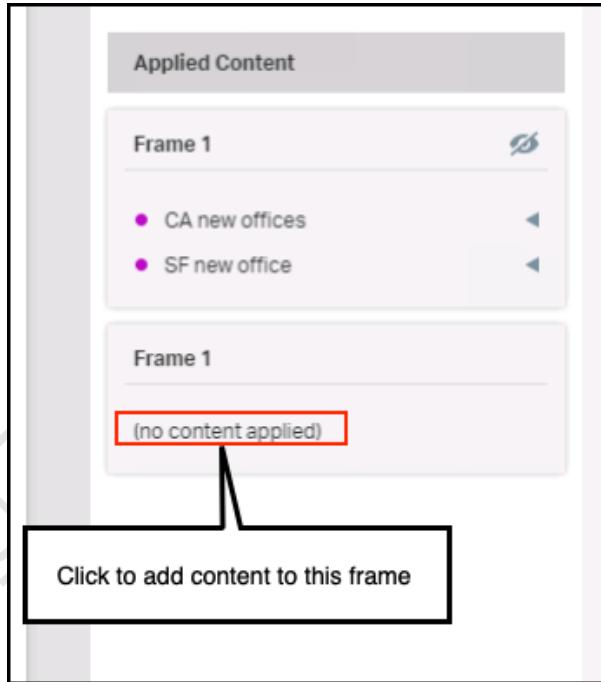


Figure 11-22: HTML Preview

2. Click the **(no content applied)** text in the lower Frame 1 (right column) and then click the **Add** button.

Figure 11-23:

Add content



The Content Composer page displays. Note that the two content messages created for the PDF page are listed in the Existing content area. We can then re-use them.

The screenshot shows the 'Content Composer' interface with the 'Existing content' tab selected. There are two items listed: 'CA new offices' and 'SF new office'. To the right of each item is a brief description. At the bottom right are 'Cancel' and 'Insert' buttons.

Content Type	Description
CA new offices	Message to inform CA customers of new offices in the state
SF new office	Message to inform SF customers of new office in the city.

Figure 11-24: Content Composer

3. Select **CA new offices** and click **Insert**.

The message is added to the Frame 1 list.

4. Again click the **Add** button.

5. Select **SF new office** and click **Insert**.

The message is added to the Frame 1 list.



Run a simulation

1. Click the **Simulation** button in the upper right corner of the Content Author interface.

The simulation again runs with the data from the first customer in the driver file. Note that this customer is from Savannah, GA, so no message is displayed in the lower area of the page.

2. In the right panel set the State to **CA** and click the **Run** button.

Note that the **CA new offices** message is displayed.



Figure 11-25: CA message

3. In the right panel now set the City to **San Francisco**, leave the state as **CA** and click the **Run** button.

Note that the **CA new offices** message is displayed.



Figure 11-26: SF message

4. Click **Close** (upper right area of the browser page).

As you can see, configuring the Email was easier than the PDF since we were able to re-use the content messages and the rules.



Publish the theme

1. Log in to WorkShop as **exadmin/opentext**.
2. Select the check box for the **WelcomeLetterCAuthorTheme**.
3. Select the **...** button in the tool bar and click **Review**.
4. Enter some review comment and click the **Review** button.
5. Making sure that **WelcomeLetterCAuthorTheme** is selected, select the **...** button in the tool bar and click **Approve**.
6. Enter some approval comment and click the **Approve** button.
7. Making sure that **WelcomeLetterCAuthorTheme** is selected, select the **...** button in the tool bar and click **Publish/Unpublish**.
8. In the Publish or unpublish theme to selected domains page, select **domain1** in the left panel and move it to the right panel using the "**>**" arrows.
9. Click **Close**.



Run the project

1. Switch to **Communications Builder** (or launch it if not open).
2. In the Project panel expand the Resources node and double-click **CustomerLetterRSet**.

The CustomerLetterRSet opens in the right panel.

3. Right-click **CustomerList-Delimited.csv** and select **Extract to File**.
4. Save the file in **C:\DEV\IN**.

You can check for no errors in the Control Center logs.

5. In Windows explorer navigate to **C:\Training\Introduction\Output Files** and review the results.

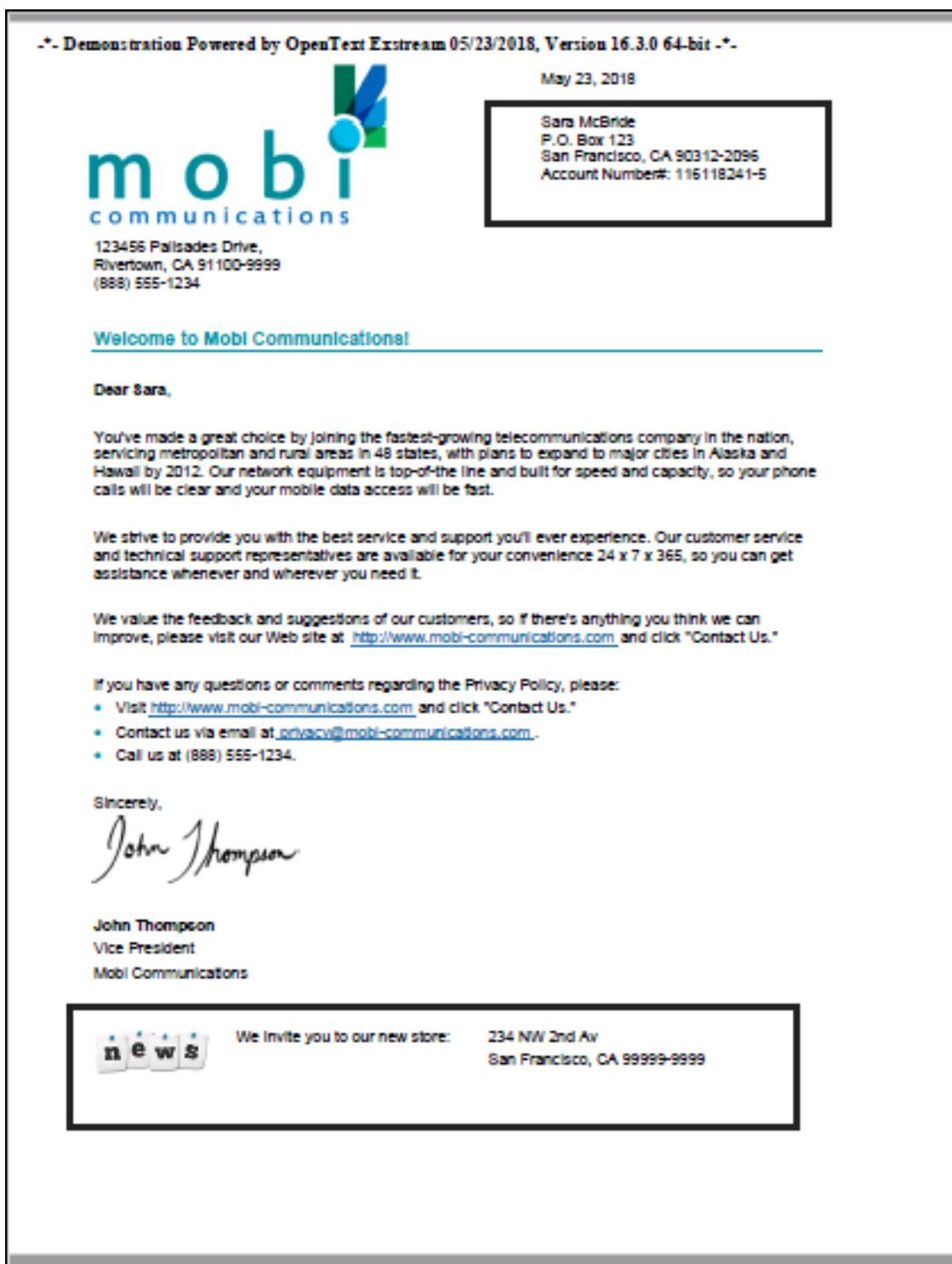
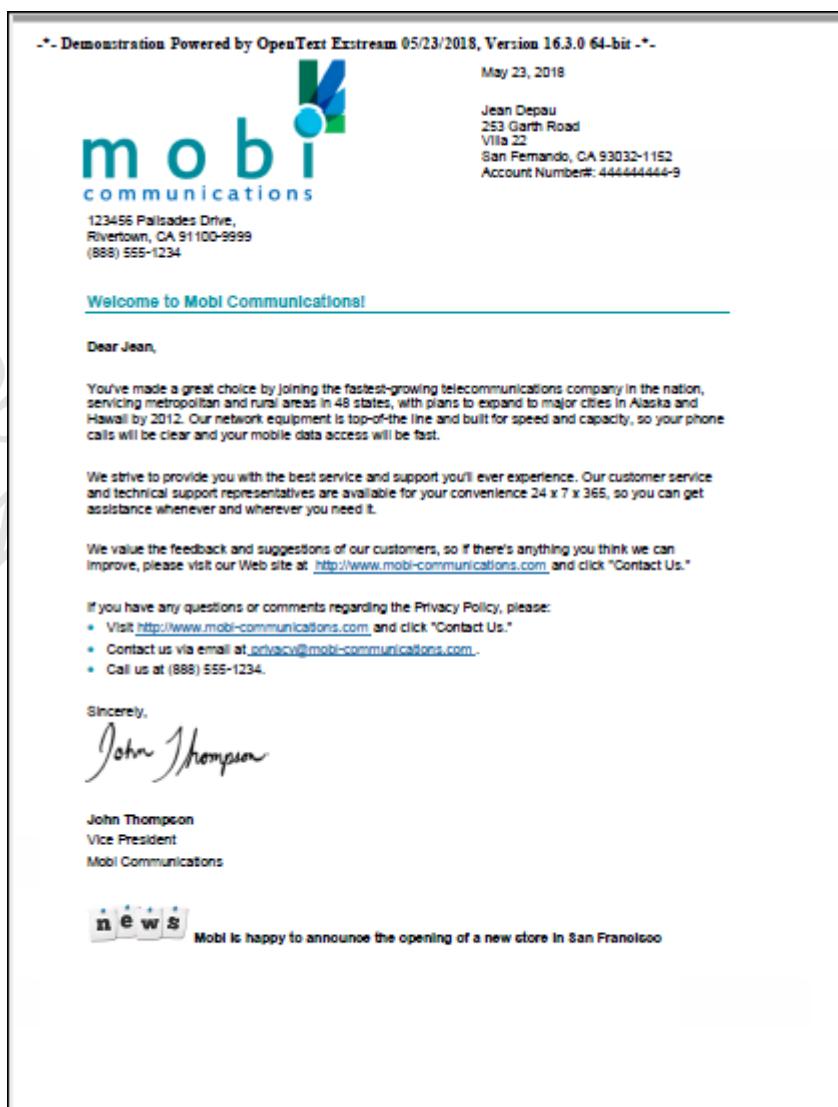


Figure 11-27: San Francisco customer Welcome Letter

Figure 11-28:

California customer
Welcome Letter



12. Exstream Communications Orchestrator

Objectives

On completion of this chapter, participants should be able to:

- Identify the use of Communications Orchestrator
- Describe the interfaces of Communications Orchestrator
- Define basic terminology for the Orchestrator Server and Flow Modeler
- Create the Orchestrator Server settings file
- Create a flow model

Overview

Communications Orchestrator is a web application used to create flow models for customer communications management processes. A flow model starts with input channels through which source data enters the flow model, and ends with output channels through which the output is delivered. To this flow model you can also add nodes for data processing.

The data flow in the model is defined by drawing connections between the flow model nodes. A connection can be static, i.e. always used, and you can also set conditions to make connections available only if the conditions are fulfilled when the flow model is run.

Orchestrator interfaces

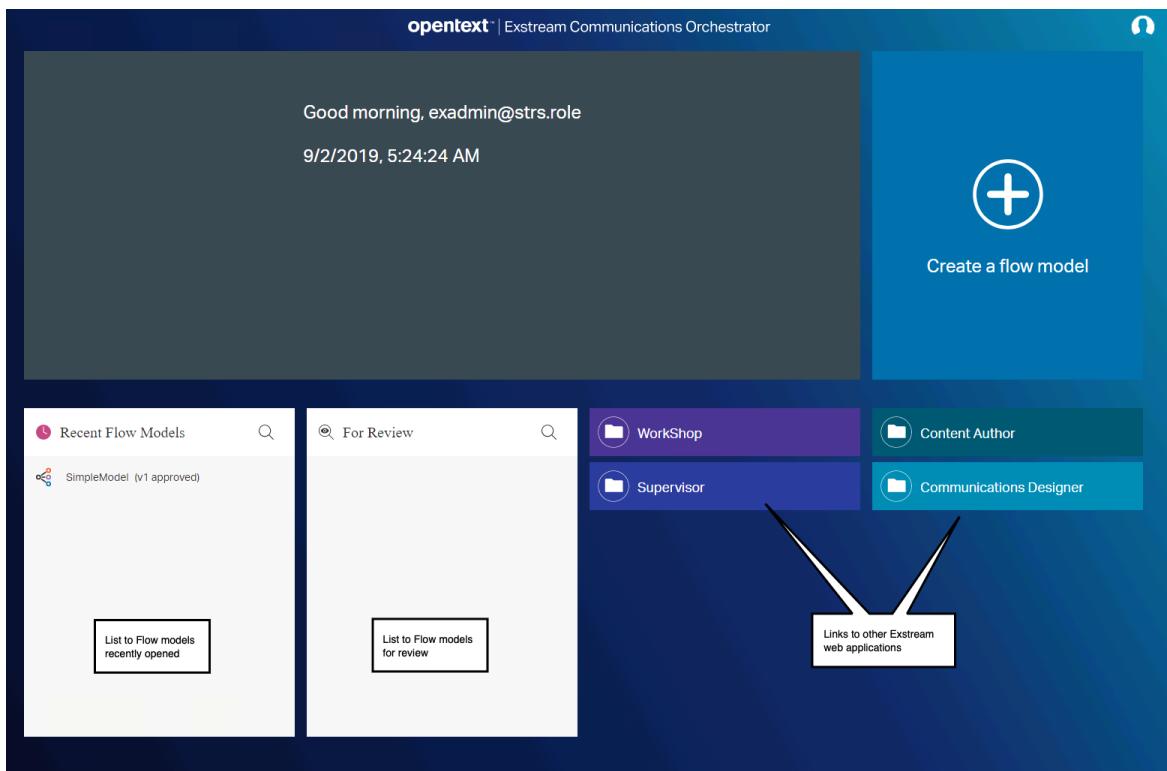


Figure 12-1: Orchestrator interface

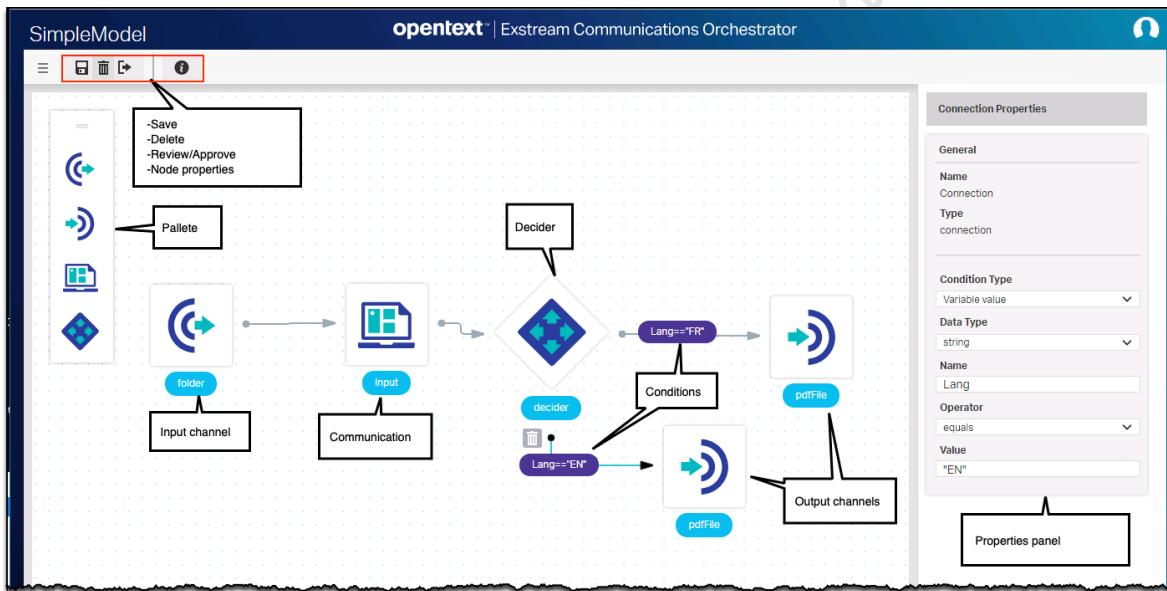


Figure 12-2: Orchestrator modeler interface (displaying a sample model)

Terminology

The following terminology is used in flow models:

- Activity** Different types of nodes you can add to a flow model:
- Input channel: Node through which source data enters the flow model.
 - Output channel: Node through which output is delivered.
- Communication** Node that processes the data and generates documents. Depending on the source data, and the configuration of the communication activity, one or several documents are generated.
- Decider – Node for branching the flow model.
- Connection** Connections defining the data flow between the activity nodes.
- Stage area** Area in Communications Orchestrator where to add and connect the activity nodes.
- Action bar** Bar containing action buttons such as Save and Submit to review.
- Tool panel** Panel containing the activity nodes.
- Properties panel** Panel for viewing and editing node, connection and flow model properties.
- Header bar** Communications Orchestrator header bar containing the flow model name, logo and user menu. Only available when Communications Orchestrator runs as a stand-alone application.

Communications Orchestrator users

There are two types of Communications Orchestrator users:

- Flow modeler** A flow modeler creates flow models based on instructions from the process owner. When the flow model is complete, the flow modeler submits the flow model for review.
- Reviewer** A reviewer reviews flow models submitted for review. If the flow model is OK, the reviewer can approve the flow model and make it ready for operation. If the flow model is not OK, the reviewer will reject the flow model and add a comment about what needs to be fixed.

States and versions

A flow model can have four states:

Draft A flow modeler always works with a flow model in draft state. A new draft version is created when:

- A new flow model is created.
- The latest approved version of a flow model is opened by a user with edit permissions.

Review When the flow modeler submits a flow model for review, the state is changed to review.

Rejected If the reviewer rejects the flow model, the state is changed to rejected. The flow modeler must set the state to draft before he can start updating the flow model.

Approved If the reviewer approves the flow model, the state is changed to approved. This is the only state in which the flow model can be run.

Creating flow models

To create a flow model you must first log on to Communications Orchestrator as a flow modeler user with permissions to create flow models. On the Communications Orchestrator landing page you can create a new empty flow model and give it a name. To this flow model you add the appropriate activity nodes, draw the connections between the nodes and then you save the flow model. When you are done you submit the flow model to a reviewer user for review.

Adding nodes

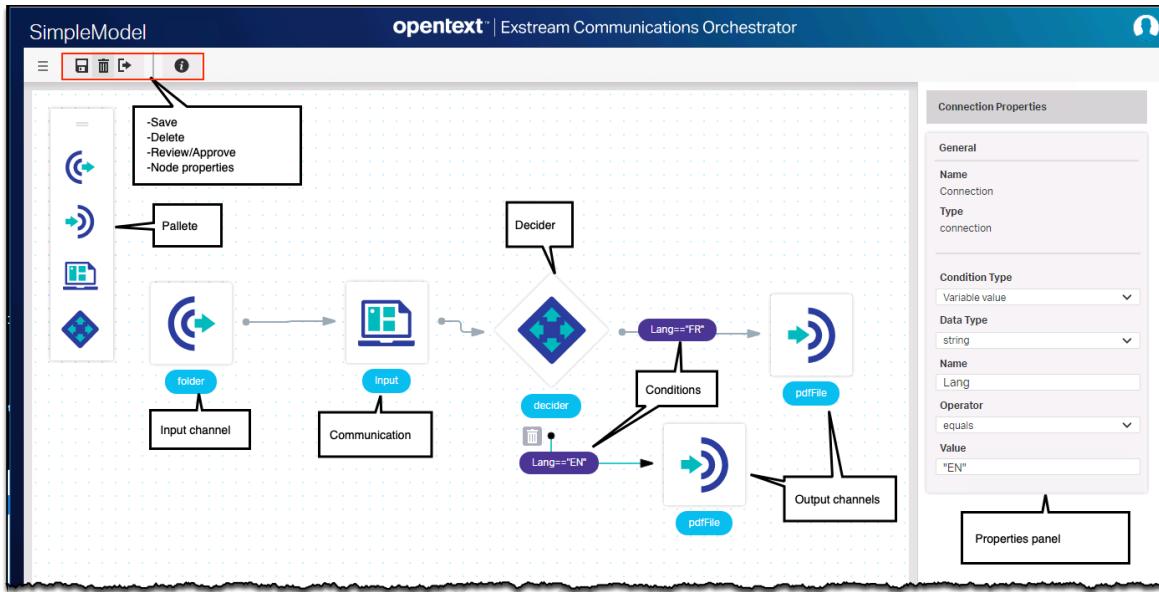


Figure 12-3: Orchestrator model

You can add the following types of activity nodes to a flow model:

- Input channel** Channel through which source data enters the flow model. After you add the node you must specify which of the available input channels to assign to the node.
- Output channel** Channel through which output is delivered. After you add the node you must specify which of the available output channels to assign to the node.
- Communication** Service that receives data from the flow model, processes the data, and returns the processed data back to the flow model. After you add the node you must specify which of the available services to assign to the node.
- Decider** Node for branching data. You can set conditions on the connections from a decider to specify whether to use the connection. The condition can be default (always use) or based on a metadata value, variable value or HTTP header value.

Connecting nodes

You must draw connections between the nodes to specify the data flow between the nodes in the flow model. The connections are visualized as arrows starting at the source node and ending at the target node. Once the connection is drawn, you can move the nodes with the arrows still attached to the nodes.

Anchor points on the source and target nodes show where you can start and end a connection. The anchor points on the source node are shown when you position the mouse over the source node, or when you click the source node. The anchor points on the target node are shown when you move the mouse towards the target node. If no anchor points are shown on a target node it means you are not allowed to use that node as target.

Viewing and editing properties

When you click a flow model component (activity node or connection), the Properties panel opens automatically showing the properties of the selected component. If you click the selected component once more to de-select it, the Properties panel will show the properties of the flow model. You can always use the

Node properties  button to show or hide the Properties panel.

You can use the Properties panel to just view the properties. In some cases you must also edit the properties, for example to select and assign a specific activity to an activity node.

Flow model approval workflow

Before a flow model can be used in production, it must pass the approval workflow.

When a flow modeler considers a flow model to be OK he submits the flow model for review. A reviewer reviews the flow model, and then either approves or rejects the flow model. If the flow model is approved it can be used in production, but if it is rejected the flow modeler must update the flow model and submit the flow model for review once more.

The following scenarios describe the approval workflow when running Communications Orchestrator stand-alone. When running Communications Orchestrator hosted, the approval workflow is controlled by the hosting application. The approval workflow can also be performed from OpenText Exstream WorkShop.

- Approve scenario**
1. The flow modeler considers the flow model to be OK and clicks the Submit to review button and then Yes to confirm.
 2. The reviewer logs on to Communications Orchestrator and finds the submitted flow model in the For review panel.
 3. The reviewer opens the flow model.
 4. The reviewer approves the flow model and clicks the Approve button and then Yes to confirm.

- Reject scenario**
1. The flow modeler considers the flow model to be OK and clicks the Submit to review button and then Yes to confirm.
 2. The reviewer logs on to Communications Orchestrator and finds the submitted flow model in the For review panel.
 3. The reviewer opens the flow model.
 4. The reviewer does not approve the flow model and clicks the Reject button, enters the reason for rejecting, and then clicks Reject to confirm.
 5. The flow modeler logs on to Communications Orchestrator and finds the rejected flow model in the Recent flow models panel.
 6. The flow modeler opens the flow model.
 7. The flow modeler clicks the Back to draft button and then Yes to confirm.
 8. The flow modeler updates the flow model according to instructions and then submits the flow model for review.

Lab: Using Orchestrator Server

For this lab we will use the Customer Letter (communication) created in the first lab of the course. A flow model will be created to send the output to either a folder ("domestic") or another ("international") based on a value stored in the driver file for each customer.

The following changes will be made:

1. In Design Manager:
 - Indicate the metadata that will be included and made available to Communications Builder.
 - Create a new application package.
2. In Communications Builder:
 - Update the Engine's Exstream package to use.
 - Create the necessary connectors to expose the service to the Orchestration Server.
 - Add a script to the Engine's output channel to expose the metadata received from the Design Manager package to the Orchestration Server.
 - Create a new release of the project.

3. In WorkShop:
 - Create an Orchestration Server configuration file.
 - Approve the configuration file.
4. In Orchestrator:
 - Create a flow model.
 - Approve the flow model.
5. In Control Center:
 - Redeploy the new release from step 2.
 - Create an Orchestrator application.
6. Test the application.

Part I: Updating the Design Manager application



Create the metadata

1. Ensure that you are connected to the **ProcComm** database as **exadmin/opentext**.
2. In the Library navigate to **ProcComm > Environment > System**, right-click **Metadata** and select **New Metadata**.
3. In the New Metadata window set the Name to **Account_number** and click **Finish**.

4. In the variable field set variable to **Customer_AccountNumber**, save and close the metadata object.

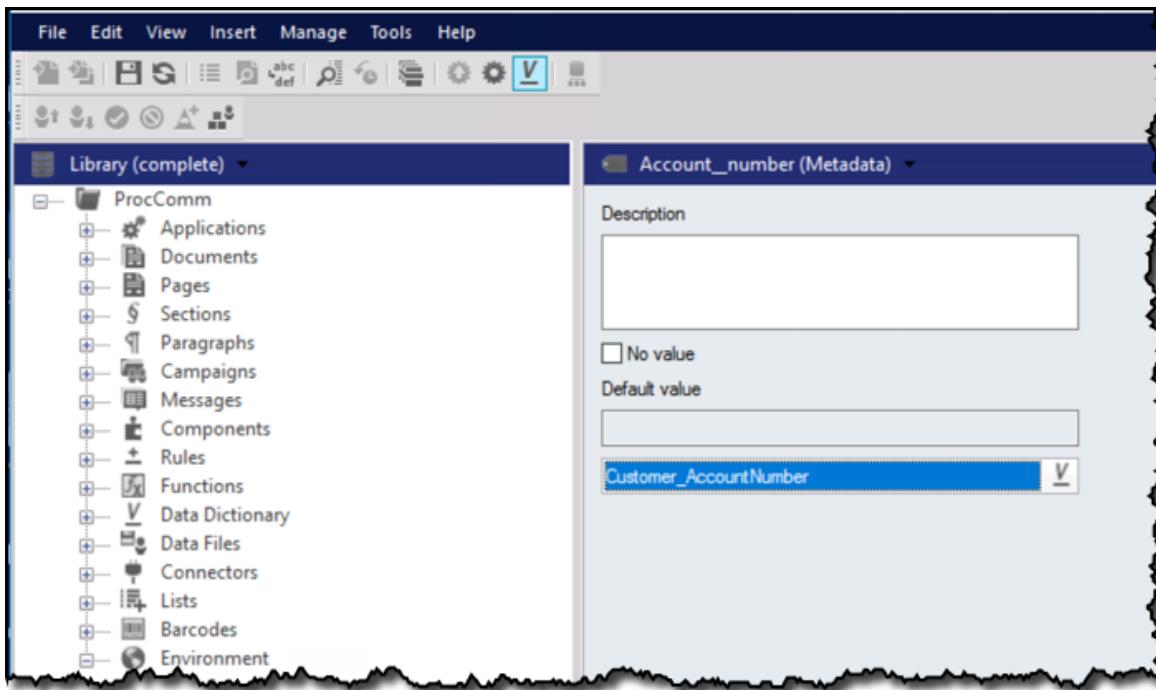


Figure 12-4: Creating the metadata

Each customer communication produced will be named after the Customer_AccountNumber.

5. Repeating the previous steps, create a new metadata object using the following information:
 - Name: **deliveryMode**
 - Variable: **deliveryMode**

The deliveryMode variable contains a value from the driver file that will be used to specify the folder where the communication will be stored.

The possible values are domestic or international.

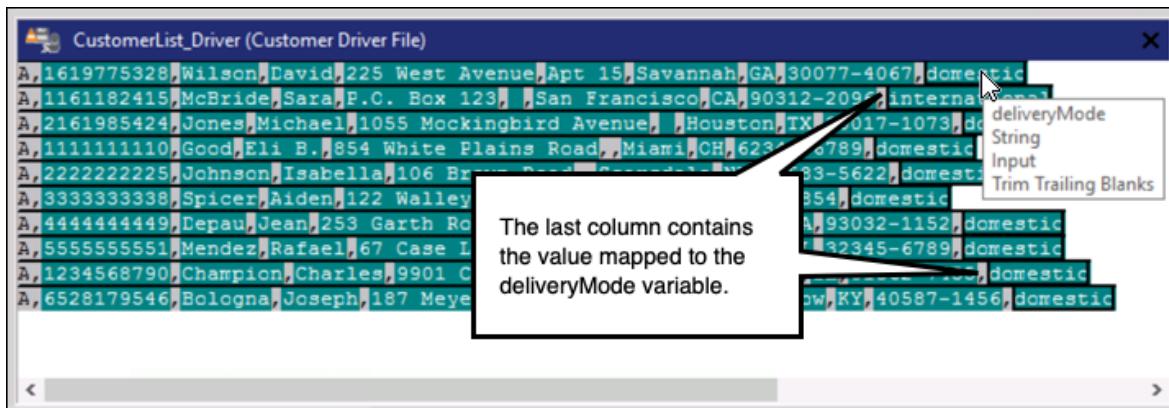


Figure 12-5: CustomerList_Driver Driver file



Add the metadata to the output queue

1. Ensure that you are connected to the **ProcComm** database as **exadmin/opentext**.
2. In the Library navigate to **ProcComm > Environment > Delivery > Output Queues** and double-click **PDF Queue**.

The PDF Queue opens in the Property Panel.

3. Select the **Delivery** tab and click the **Metadata** button.

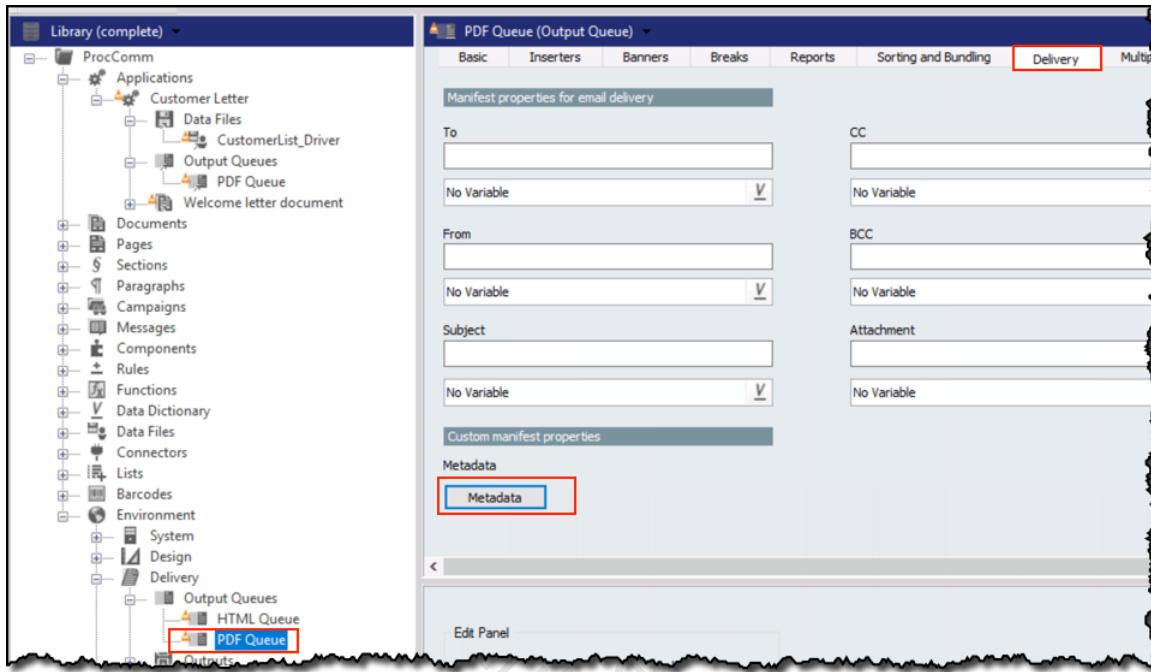


Figure 12-6: Metadata

4. In the Metadata window select **Customer_AccountNumber** and **deliveryMode** and then click the right arrow button.

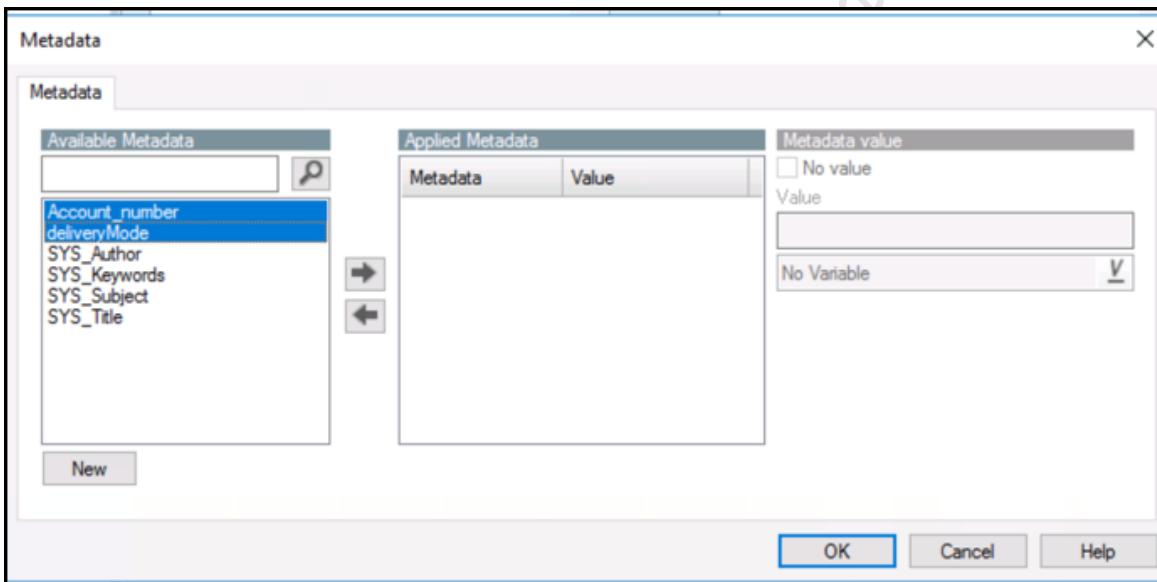


Figure 12-7: Adding the metadata objects

5. Click **OK**.

This will add the metadata to the applied metadata panel. We are assigning the metadata to this queue because it's the queue used to generate the pdf communication.

6. Leave the output queue object open.

Since we want to generate a separate pdf document for each customer we need to set a Break (Customer Break).



Set a value for the Breaks

1. Click the **Breaks** tab.
2. Set the **Customers break** to **1**.
3. Save and close the output queue object.



Package the application and upload it to CAS

1. Right-click the **OrchestratorDM** application object and select **Package**.
The Build Package dialog box opens.
2. Select **Create for output queue device(s)**.
3. Clear the **Run Engine when complete**.
4. Select **Upload package file to CAS when complete** and click the pencil next to it.

The CAS package Details window opens.

5. Make sure the Name is set to **OrchestratorDM**.
6. Select **Create a new package**.
7. Click **OK**.
8. Make sure the following settings are used:
 - a. In the **Package file** text box, enter **C:\Training\Introduction\Pub Files\Orchestrator.pub**.
 - b. Click **OK**.
9. Close the **Build Production Package file** window.

Part II: Updating the Communications Builder project



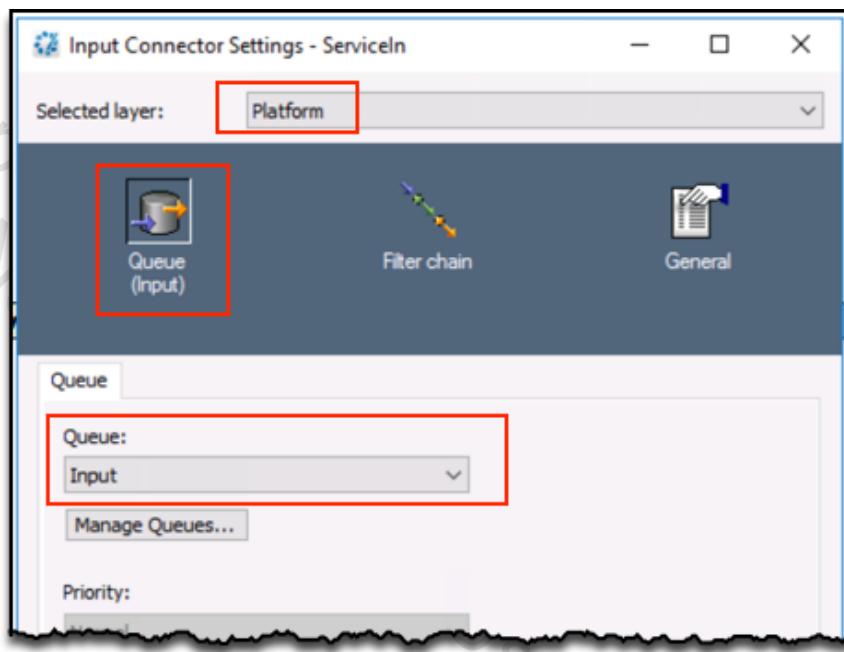
Configure the connectors

1. In Communications Builder open the **OrchestratorProject** project.
2. In the Project panel, double-click the **Platform** node to open it in the Main View window.

3. Right-click anywhere in the Platform window and select **New Input Connector**.
4. Name the new input connector **ServiceIn**.
5. Double-click the **ServiceIn** connector.
6. Making sure the Platform is selected in the Selected layer drop-down, click the **Queue** button and select **Input** in the Queue drop-down.

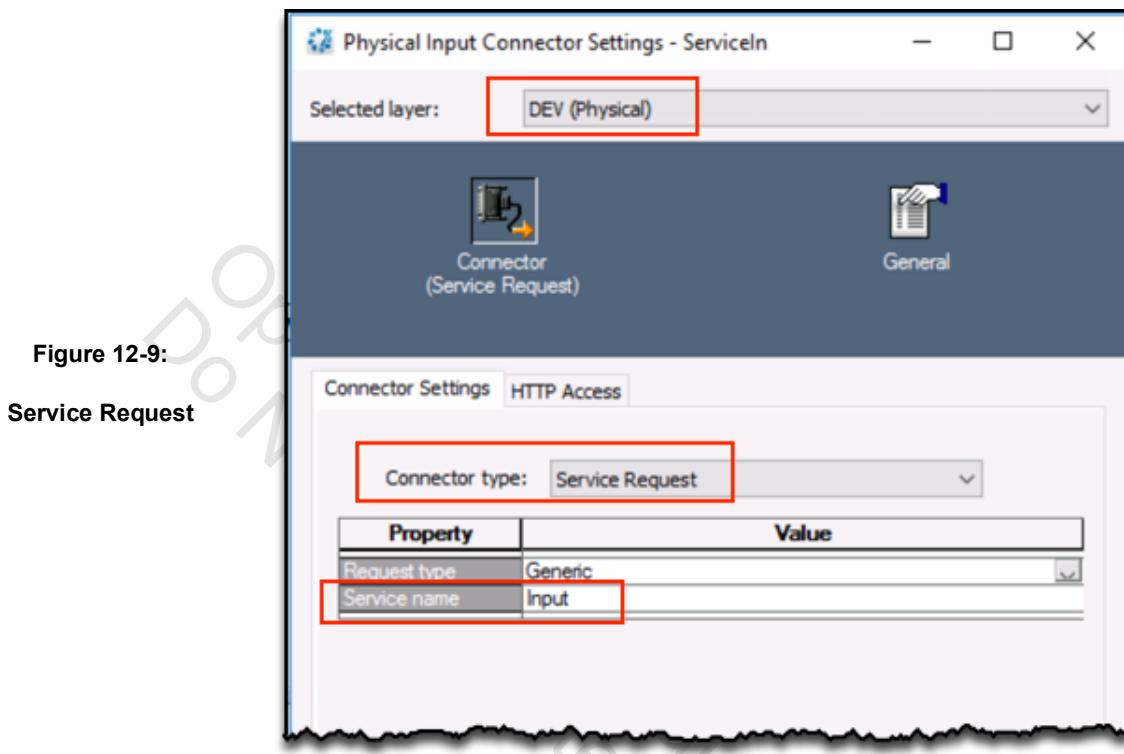
Figure 12-8:

Input queue



7. In the Selected layer select **DEV (Physical)** and select **Yes** to save the modifications.

8. In the Connector type drop-down select **Service Request** and set the Service name to **Input**.



9. Click **OK** to close the input connector.
10. Right-click anywhere in the Platform window blank area and select **New Output Connector > Generic**.
11. Name the output connector **PDFOutput**.
12. Double-click the **PDFOutput** connector.
13. In the Selected layer select **Platform**.
14. Select the **Queue** button and **Queue to Output**.
15. Select the **General** button and select the **Include result in service response** check box.
16. Click **OK** to close the output connector.

Since we have a new package file we need to update the projects Engine package file.



Update the Engine's package

1. In Communications Builder, in the Project panel, double-click the **Engine** node to open it in the Main View window.
2. Double-click the **Exstream engine**.

The Exstream configuration window opens.

3. Click the green plus sign.
4. If requested, connect to tenant1 using the default values.
5. In the Select CAS window click the **Find** button, select **OrchestratorDM** in the right panel, then select the latest version in the Version drop-down.
6. Click **OK**.
7. Clear the Communications Designer fulfillment check box.
8. Click **OK** to close the Exstream configuration window.



Update the runtime

1. In the Project panel, double-click the **Runtime** node to open it in the Main View window.
2. Right-click the Job and select **Add Runtime component**.
3. Select **Engine** and click **OK**.
4. Connect **ServiceIn** with **CustomerList_Driver**.
5. Connect **PDF Queue** with **PDFOutput**.



Add the script to expose metadata to the Orchestration Server

1. In the Project panel, double-click the **Engine** node to open it in the Main View window.
2. Right-click the **PDF Queue** output channel and select **Script**.
3. Right-click anywhere in the blank area of the platform and select **New Input Connector**.
4. Enter the following script:

```
//Communication pdf filename
$pdfname = $Account_number + ".pdf";

//variable used to redirect the output
$deliverymode = $deliveryMode;

//Save all the variables to make them available to orchestrator server
AddStoredVariables("*");
```

5. Click **OK** to save the script.



Create a project release

1. In the Communications Builder toolbar click the **Create release** button.
2. In the Export for release window click **Export**.
3. Save all the unsaved components if requested.

4. Name the new release **r1**.
5. Click **OK** to close the *Operation was successful* window.



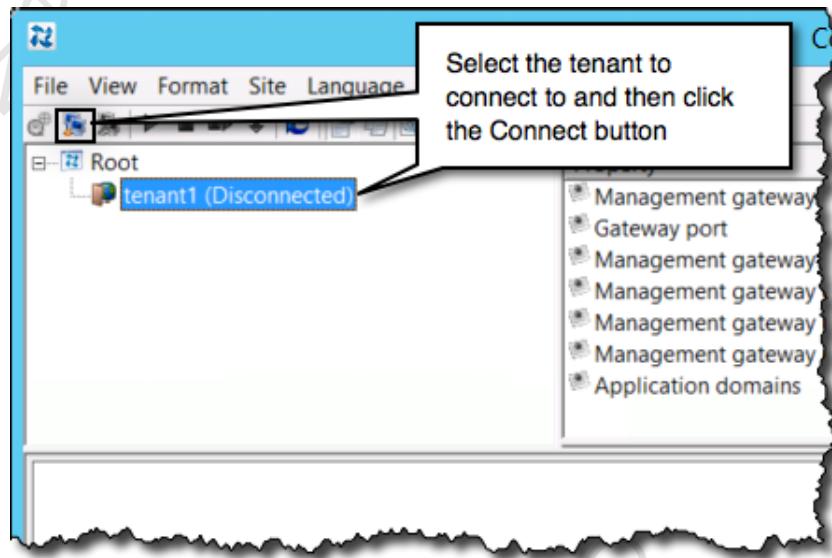
Deploy the new project release to the CustomerLetter application

1. Navigate to **Programs > OpenText Exstream 16.6.0 > Control Center**.

Control Center opens.

2. Expand the **Root** node.
3. Select **tenant1 (Disconnected)** and click the **Connect** button.

Figure 12-10:
Connect to tenant1



4. In the *Login to Management Gateway* click **OK**.
5. Expand the **tenant1 > Application domains > domain1 > thecompany.com** node.
6. Right-click **CustomerLetter** and select **Deploy Export File**.
7. Select **Deploy export file from CAS** and click the its corresponding **Browse** button.
8. In the *Select release* window select **OrchestratorProject**.

The right panel displays the releases that have been uploaded to CAS for the CustomerLetter project.

9. In the right panel select the **r1** and click the **OK** button.

You are redirected back to the Deploy window.

10. In the Deploy window click the **Next** button.

The Deploy window displays the physical layers that have been created for this project.

11. Making sure that the **DEV** layer is selected, click the **Finish** button.
12. Click **OK** in the window that indicates that the project was successfully deployed.

In the right panel you can view a set of properties related to the application and what project has been deployed to the application.

13. Start the **CustomerLetter** application.

Part III: Create the Orchestration Server components

By default tenant administrators create the Orchestrator configuration files and flow models. For this training a “cce” user has been created with enough permissions to handle all these tasks (you can check it in Supervisor).



Create the Orchestration server configuration file

1. In Chrome navigate to **Workshop** (the URL is bookmarked in Chrome as **Exstream Web Applications > WorkShop**) and sign in as **cce/opentext**.
2. Click the Add resources button (“+” sign) and select **Orchestration Server**.
3. In the Create Orchestration Server settings window set the Name to **OrchestrationSettings** and click **Create**.

A default orchestration server settings configuration file opens in Writer.

4. Click the **New channel** button.
5. In the Create a new channel window set the following values and click the **Next** button:
 - Name: **In**
 - Direction: **Input**
 - Type: **Directory**
6. In the Channel In window set the following values and click the **Create** button:
 - Directory Name: **Input**
 - File name pattern: ***.***
 - Create directory: **selected**

The new input channel definition is added to the orchestration server configuration file:

```

1  <?xml version="1.0" encoding="UTF-8"?>
2  <connectors
3      xmlns="http://schemas.streamserve.com/uid/application/communicationrunnerconnectors/1.0"
4      xmlns:xlink="http://www.w3.org/1999/xlink"
5      xmlns:pub="http://schemas.streamserve.com/public/1.0"
6  </input>
7  <connectors
8      xmlns="http://schemas.streamserve.com/uid/manager/iomanager/1.0"
9      xmlns:pub="http://schemas.streamserve.com/public/1.0"
10     xmlns:xlink="http://www.w3.org/1999/xlink">
11     <connector name="In">
12         <configuration>
13             <protocoldrivers synchronize="true">
14                 <protocoldriver type="http://schemas.streamserve.com/uid/component/fileprotocoldriver/1.0">
15                     <configuration>
16                         <pub:xlink xlink:type="simple" xlink:href="file://fileprotocoldriver.1.0.xml"/>
17                     </configuration>
18                 </protocoldriver>
19                 <protocoldriver type="http://schemas.streamserve.com/uid/component/crinconnectorhandler/1.0">
20                     <configuration>
21                         <inconnectorhandler xmlns="http://schemas.streamserve.com/uid/component/crinconnectorhandler/1.0">
22                             <channel>In</channel>
23                         </inconnectorhandler>
24                     </configuration>
25                 </protocoldriver>
26             </protocoldrivers>
27             <connectordriver type="http://schemas.streamserve.com/uid/component/directoryscanner/1.0">
28                 <configuration>
29                     <directoryscanner xmlns="http://schemas.streamserve.com/uid/component/directoryscanner/1.0">
30                         <directoryname>input</directoryname>
31                         <pattern>*,*</pattern>
32                         <filesizecheckinterval>100</filesizecheckinterval>
33                         <enabletask>true</enabletask>
34                         <sortcriteria>nosort</sortcriteria>
35                         <sortascending>true</sortascending>
36                         <savepath></savepath>
37                         <createdirectory>true</createdirectory>
38                         <deletefile>true</deletefile>
39                         <usespooldirasttmp>true</usespooldirasttmp>
40                         <synchronize>true</synchronize>
41                         <schedule>T II * * MS 0 999 500</schedule>
42                         <custom></custom>
43                     </directoryscanner>
44                 </configuration>
45             </connectordriver>
46         </configuration>
47     </connector>
48 </connectors>
49 </input>
```

Figure 12-11: New channel added

7. Click the **Save** and the **New channel** buttons.
8. In the *Create a new channel* window set the following values and click the **Next** button:
 - Name: **Out1**
 - Direction: **Output**
 - Type: **File**
9. In the *Channel Out1* window set the following values and click the **Create** button:
 - Directory Name: **domestic**
 - File name: **\$pdfname**
 - Create directory: **selected**

The new output channel definition is added to the orchestration server configuration file.

10. Click the **Save** and **New channel** buttons.
11. In the *Create a new channel* window set the following values and click the **Next** button:
 - Name: **Out2**
 - Direction: **Output**
 - Type: **File**
12. In the *Channel Out1* window set the following values and click the **Create** button:
 - Directory Name: **international**
 - File name: **\$pdfname**
 - Create directory: **selected**

The new input channel definition is added to the orchestration server configuration file.

This creates the input channel and the two output channels.

13. Click the **Save** button.
14. Using the hamburger menu, navigate to **Workshop**.
15. Select the check box for the **OrchestrationSettings** configuration file and in the toolbar navigate to **... > Review**.

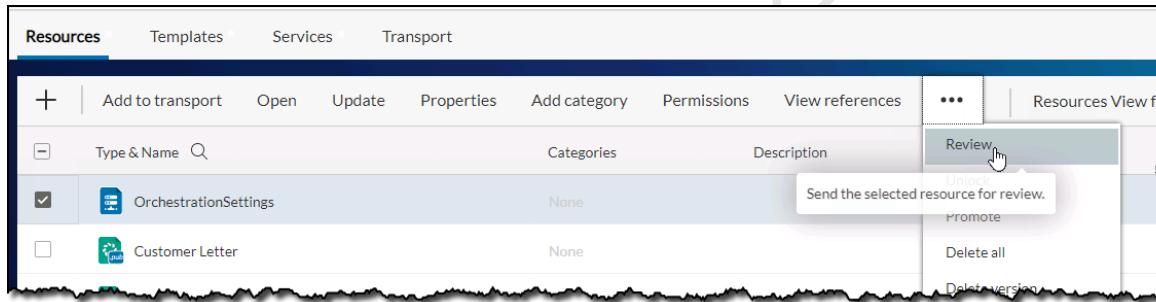


Figure 12-12: Review

16. In the *Review* window click the **Review** button (a comment is optional).
17. Making sure that the check box for the **OrchestrationSettings** configuration file is still selected, navigate to **... > Approve** (in the toolbar).

Part IV: Create the Flow Model



Create the flow model

1. Open Chrome and navigate to **Orchestrator** (the URL is bookmarked in Chrome as **Exstream Web Applications > Orchestrator**) and sign in as **cce/opentext**.

The Exstream Communications Orchestrator opens.

2. Click the “+” sign to create a flow model.
3. In the Create New Flow Model window, set the Name to **FlowModel** and click **Create**.

The Exstream Communications Orchestrator (flow modeler) opens.

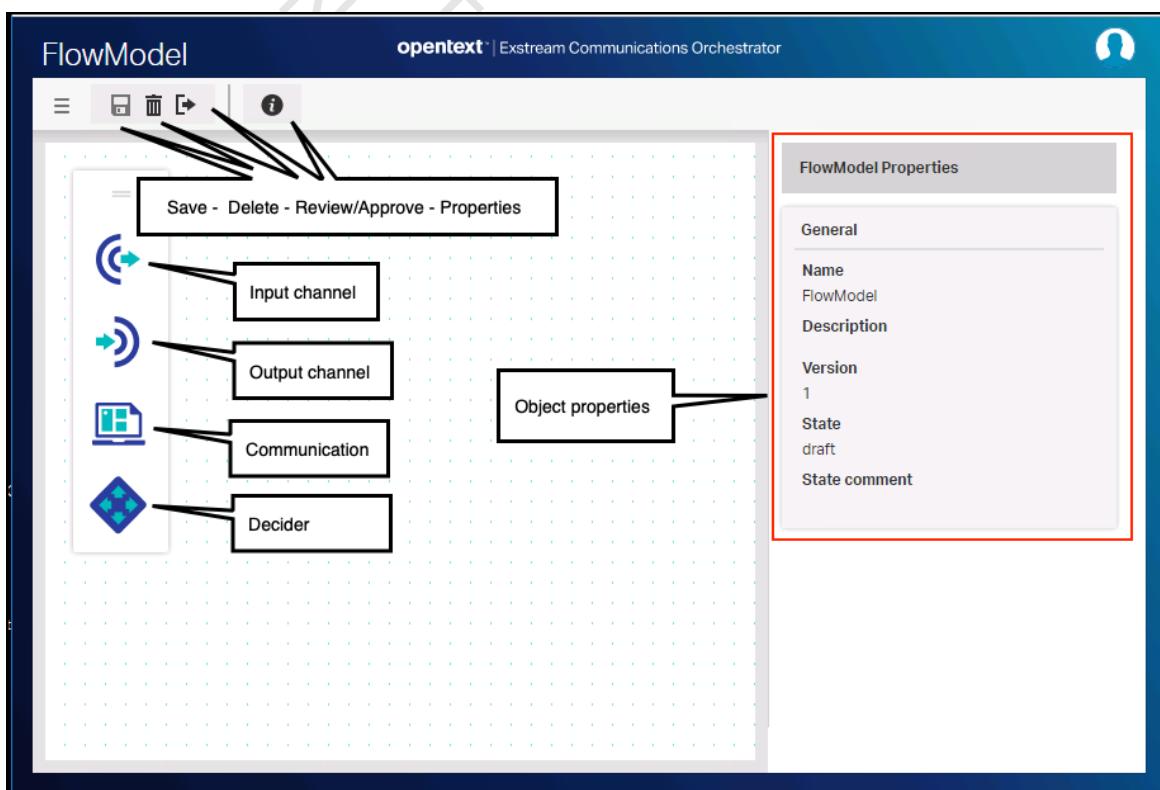


Figure 12-13: Flow modeler

4. Drag-and-drop on the drawing area one input channel, two output channels, one decider and one communication, arranging and connecting them as indicated in the following figure:

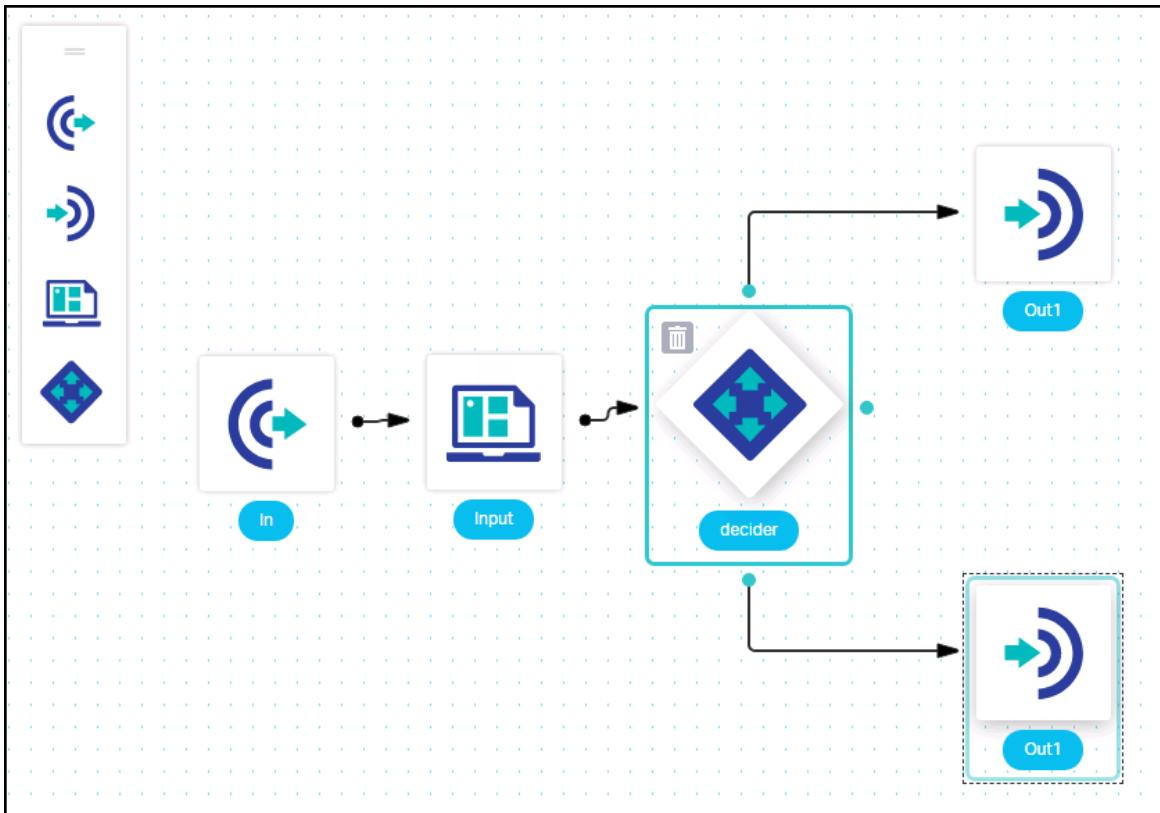


Figure 12-14: Flow model

5. Click the **Save** button.

6. Click the lower-right output channel connector to select it and then in the properties select **Out2** from the Name drop-down.

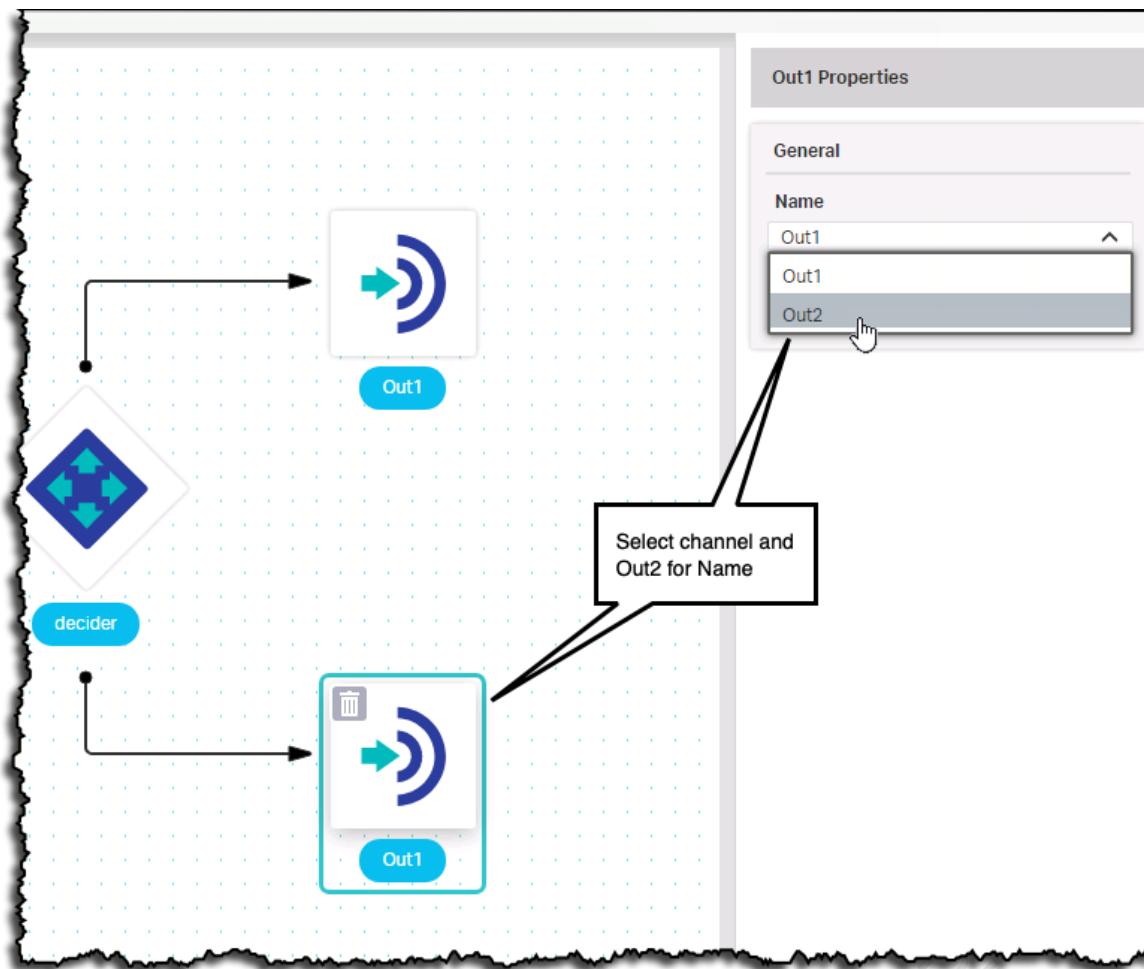
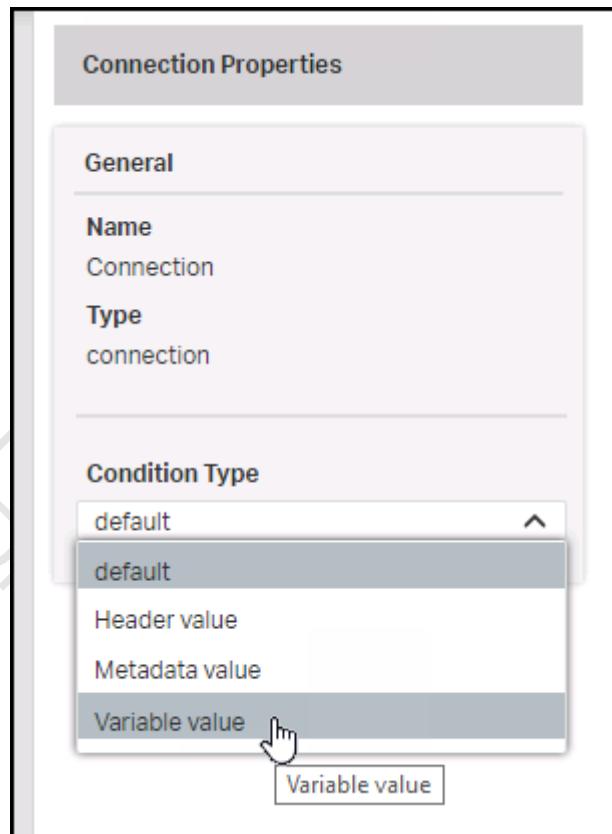


Figure 12-15: Out2 channel

7. Select the connector between the **decider** and the **Out1** channel.

8. Making sure that the connector is selected (it should be surrounded by a blue box) select **Variable value** from the Condition Type drop-down.

Figure 12-16:
Connector properties



9. Complete the properties using the following values:

- Data Type: **String**
- Name: **\$deliverymode**
- Operator: **equals**
- Value: **domestic**

Figure 12-17:
All properties

The screenshot shows the 'Connection Properties' dialog box. It has two main sections: 'General' and 'Condition Type'. In the 'General' section, 'Name' is set to 'Connection' and 'Type' is set to 'connection'. In the 'Condition Type' section, the 'Variable value' dropdown is selected. The 'Data Type' dropdown is set to 'string'. The 'Name' field contains '\$deliverymode'. The 'Operator' dropdown is set to 'equals'. The 'Value' field contains 'domestic'.

10. Click the **Save** button.
11. Select the connector between the **decider** and the **Out2** channel.
12. Making sure that the connector is selected (it should be surrounded by a blue box) select **Variable value** from the Condition Type drop-down.

13. Complete the properties using the following values:

- Data Type: **String**
- Name: **CustomerLetterSimulation-1**
- Operator: **equals**
- Value: **international**

14. Click the **Save** button.

15. In the toolbar click the **Review** button.

16. Confirm by clicking **Yes** to submit to review.

You are directed back to the Orchestrator main page showing the FlowModel in the Recent Flow Models panel.

17. Click the **FlowModel** in the Recent Flow Models panel to open it.

18. Click the **Approve** button in the toolbar.

19. Confirm by clicking **Yes** to approve it.

You are directed back to the Orchestrator main page showing the FlowModel in the Recent Flow Models panel.

Part V: Update Control Center applications

Since we created a new release of the Communications Builder project (R2) we need to deploy the new release to the CustomerLetter application.

Also, an Orchestrator Server application must be created to run the flow mode.



Create the Orchestration Server application

1. In Control Center, make sure that the **tenant1 > Application domains > domain1 > thecompany.com** node is expanded.
2. Right-click **thecompany.com** and select **New Application**.
3. Enter the following information in the New Application window and click **OK**:
 - Application type: **OrchestrationServer**
 - Application name: **Orchestration**
4. Start the **OrchestrationServer** application.

The OrchestrationServer application starts and loads the Orchestration Server configuration file that you created earlier which defines the one input and two output channels.

Part VI: Test the flow model

The input channel (which is a Directory type) is located in the working directory of the OrchestrationServer application, that is:
C:\ManagementGateway166\16.6\root\applications\Orchestration\wd\input.

The two output channels (which are of File type) will be placed in a “domestic” or “international” folder in also located in the working directory of the OrchestrationServer application, that is:
C:\ManagementGateway166\16.6\root\applications\Orchestration\wd\domestic or
C:\ManagementGateway166\16.6\root\applications\Orchestration\wd\international.



Test

1. *Using Windows Explorer copy the **CustomerList-Delimited.csv** driver file from: C:\Training\Introduction\Data Files to
C:\ManagementGateway166\16.6\root\applications\Orchestration\wd\input.*

The corresponding 8 pdfs will be placed in
C:\ManagementGateway166\16.6\root\applications\Orchestration\wd\domestic and 2 pdfs in
C:\ManagementGateway166\16.6\root\applications\Orchestration\wd\international.