opentext™

OpenText™ Exstream™

Using Exstream Web Applications

Design and Production Documentation

Release 16.6.0

OpenText™ Exstream
Using Exstream Web Applications
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1 About Exstream web applications

The Exstream platform includes browser-based web applications that provide users with easy-to-use design and authoring environments that can be accessed without requiring complex installation and configuration steps on individual workstations.

This section discusses the web applications that are available in the Exstream WAR file, which is available as a separately installable component for the Exstream platform. For more information about installing the Exstream WAR file, see *Installation and Upgrade Information* in the Exstream Design and Production documentation.

The Exstream WAR file gives you access to the following web applications in the Exstream platform:

Communications Designer

Communications Designer provides an intuitive design environment for rapid customer communication development to easily create email or page-based customer communications. The web interface is used to create designs that can leverage resources that are set up in Design Manager—such as fonts, styles, data files, variables, and output queues—as well as image resources from the common asset service (CAS) and variables that are created in the data source editor. The resulting personalized customer communications are then fulfilled using the engine orchestration features in Communications Server, which lets you take advantage of all of the available content integration and delivery capabilities in the Exstream platform.

Communications Designer includes a data source editor that enables authorized users to map variables to a data source. The mapped data source can then be associated with a communication to personalize the output. You can choose to create new variables in the data source editor, as well as use variables that are contained in a design pack.

Designers can also use Communications Designer to create templates that can then be used by business users in Content Author to add business content to the communication.

Communications Designer supports a subset of the design features that are available in Designer, which you can use to create several types of simple communications to meet your business needs, such as correspondence and marketing communications.

Content Author

Content Author empowers non-technical business users to create and manage changes to business content without the need to involve IT resources. Once created, the content can be shared across communications, reducing the need to make changes in multiple locations when updates are required. Best of all, the content and any applied changes can be viewed by the business user in the context of the resulting communications, allowing the author to see the impact of the changes before sending them for final approval.

Marketing users can control content that is targeted for key areas in communications, compliance users can manage iterations of content based on regulatory changes, and line-of-business users can not only control content, but also create communications that are more effective and timely in driving the right content to the right customers.

Leveraging existing Exstream applications as templates with targeted content frames, business users now control the content that is placed within the templates. After moving through the approval process, the resulting communication can be fulfilled directly to create customer communications, or it can be configured to be edited by interactive users in Empower Editor.

1.1 Accessing Exstream web applications

You can access the Communications Designer and Content Author interface from a common Exstream web application dashboard—the Content Launcher—which is a convenient hub that provides easy access to one or more applications based on the OTDS roles and permissions assigned to a user.

Web application access URL

You can use the following URL to access the Content Launcher:

`http://<host>:<port>/exstream/#`

where:

- `host` is the fully qualified domain name (FQDN), host name, or IP address of the computer that runs the Java application server or web server to which you deployed the Exstream web aplications. Open Text recommends that you use the FQDN to specify the host, and that you do not use `localhost`.
- `port` is the port number for the Java application server or web server.

The first time that you access the URL, you must enter the tenant and domain information for your environment. You can then use your OTDS credentials to sign in and view the Content Launcher.

Tip: If you are hosting the Exstream web applications in an iframe, you can use the hosted URL to remove the Open Text logo and product name from the upper center of the screen, as well as the username and avatar from the upper right corner of the screen. For example, suppose that the top of the parent iframe in your Exstream environment already contains buttons that allow users to navigate to different parts of a communication, or to submit a communication for approval. In that scenario, you can use the hosted URL to reduce visual clutter and make buttons on the parent iframe easier to see.

To use hosted mode, you simply change the resolved Content Launcher URL so that it uses the `hosted` parameter instead of the `index` parameter. So if the standard resolved URL for Content Launcher is `https://server.company.com:8443/exstream/index.html#/landing`, then the resolved URL for hosted mode will be `https://server.company.com:8443/exstream/hosted.html#/landing`. Any Exstream web applications that users launch from the hosted Content Launcher URL will open without the Open Text logo, product name, user name, and avatar at the top of the screen.

Content Launcher widgets

The Content Launcher provides widgets launching Communications Designer and Content Author, as well as for accessing additional administration tools for these web applications.

The following widgets can be accessed from the Content Launcher:

- **Content Author**
- **Communications Designer**
- **Communication asset management**

The access roles that are assigned to a user determine which widgets are visible in the Content Launcher.

Users who have permission to access the **Communication asset management** widget will see a toolbar on the left side of the Content Launcher, and can use this toolbar to switch between the **Communications** and **Communication assets** pages.

The following table describes the Content Launcher toolbar buttons and the widgets that you can access from each launcher page:

Toolbar button	Widgets
Communications 	• Communications Designer • Content Author

Toolbar button	Widgets
Communication assets 	Communication asset management

You can sign out of the current user account and sign in as a different user. To sign out, click either the user icon on the top right corner of the page or the hamburger menu on the top left corner, and then click **Sign out**.

From the hamburger menu, you can also access additional information about Exstream web applications:

- To see the online help, click **Help**. Alternatively, you can press **ALT** + **F1**.
- To see the version information for the Exstream web applications, click **About Exstream**.

User roles and access permissions

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:

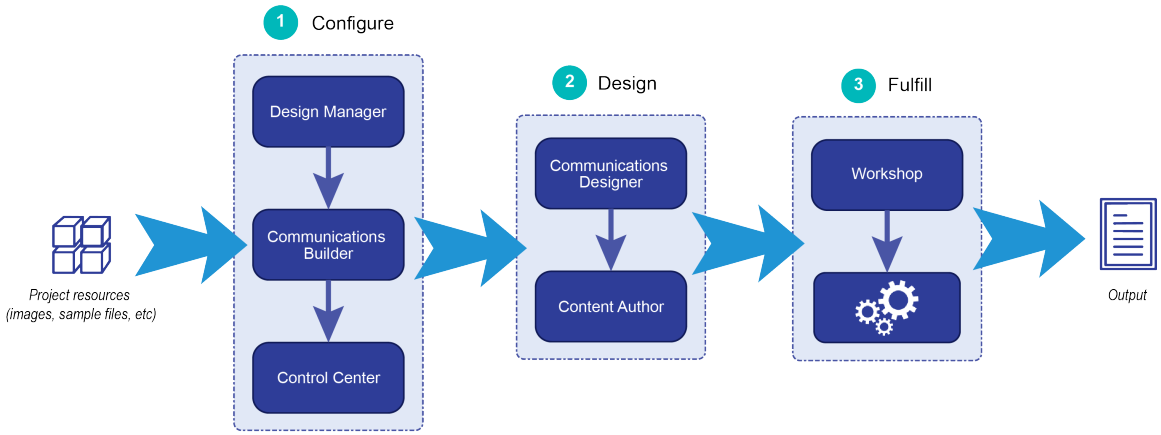
Role	OTDS group	Communications Designer access	Content Author access
Content Author user	strsbcausers	No access	Full access
Communications Designer user	strscommdesigners	Full access	No access
On-demand user	strsondemand	No access	No access
Reviewer	strsreviewer	Partial access	No access
Tenant user	strstenantusers	Full access	Full access
Tenant administrator	strstenantadmins	Full access	Full access

1.2 Exstream web application workflow

This topic provides a high-level overview of the use cases involving the Exstream web applications—one using both Communications Designer and Content Author, and one using only Content Author.

You can use the Exstream web applications independently or in conjunction with one another. For example, you might want to use the tools available in Communications Designer to create a design that will be used as a template for customer correspondence in Content Author. On the other hand, you might want to create a design that will be used as a template for customer correspondence in Content Author, but uses design elements that are not available in Communications Designer (such as complex tables). In that case, you would create your design completely in Designer and Design Manager.

The following graphic provides a visual representation of a typical workflow for creating communications using Communications Designer and Content Author in the Exstream platform:



The following table describes the basic workflow for creating communications using the Communications Designer and Content Author in the Exstream platform:

Overview for creating designs using Communications Designer and Content Author

Step	Explanation
 **Step 1: Configuring applications and the Exstream engine**	1. **In Design Manager, create and package an application**—In order to use the design features available in Communications Designer, you must first set up an application in Design Manager, and then package and upload that application to CAS. If you plan on creating your designs in Communications Designer before you use Content Author, you only need to set up a shell application. However, if you choose to use Content Author only, then you must create a complete design in Designer and Design Manager. 2. **In Communications Builder, configure the Exstream engine to process your applications**—Communications Builder lets you create a model for how your orchestration environment will work—including input connectors, output connectors, and engine settings. In Communications Builder, create a project that contains the Exstream engine as a plug-in, and configure the engine to process the communications that you create in the Communications Designer and Content Author. 3. **In Control Center, deploy the export file**—You will then use Control Center to deploy the export file to a Communications Server application.
 **Step 2: Designing the communications**	1. **In Communications Designer, use the resources available in CAS to create a design**—With your design pack and image resources uploaded to CAS, and a project created and deployed, designers can use Communications Designer to create a complete communication (stored as Exstream applications in CAS). This step is applicable only if you are using Communications Designer to create your designs. 2. **Create a template for use in Content Author**—If you want to make your Communications Designer communication available to business users in Content Author, you create a template in Communications Designer that users can then use to create Content Author themes. If you choose to do this, you must also approve and publish the Exstream application that corresponds to your Communications Designer communication before you can create the template.. 3. **In Content Author, open or create customer communications**—Use Content Author to add business content to a customer communication. You can choose to create communications (stored as themes in CAS) from templates that are created in Communications Designer, or you can choose to create communications based on the template that corresponds to the application that you uploaded from Design Manager. Optionally, you can choose to create themes in Workshop, and then open and modify those themes in Content Author.
 **Step 3: Fulfilling the applications to create output**	1. **In Workshop, publish the theme**—After you have finished creating your communications and approved the associated resources, publish your Exstream application or theme in Workshop. When you publish the application or theme, you can choose the domain to which you publish it. 2. **Access the generated output**—When you publish an application or a theme, all approved resources associated with that application or theme are made available to the Exstream engine, and your communication is processed to create the specified output. From there, the resulting communication can be fulfilled directly to create customer communications, or it can be configured to be edited by interactive users in Empower Editor.

2 Setting up Communications Designer applications

Communications Designer lets you design communications in an intuitive web-based design environment. Use this section to help you set up an application in Design Manager to enable access to the resources you need to create a communication in Communications Designer.

Overview for creating applications for use with Communications Designer

Step	Explanation	Links
1. Ensure that your Exstream environment meets all of the prerequisites needed in order to use Communications Designer.	Before you begin creating an application for use with Communications Designer, you should ensure that you have properly installed and configured the Exstream platform, and that the Communications Designer module is enabled on your Design and Production key file.	*Getting Started* in the Exstream Design and Production documentation *System Administration* in the Exstream Design and Production documentation
2. In Design Manager, create a structurally valid shell application.	The applications that you create for Communications Designer are simply shell applications that contain resources like style sheets, fonts, and variables that you use to create communications in Communications Designer.	"Configuring a design pack for Communications Designer" on page 14 "Creating an application for Communications Designer" on page 17

2.1 Communications Designer feature support

Communications Designer supports a subset of the design features that are available in Designer, which you can use to create several types of communications to meet your business needs, such as correspondence and marketing communications.

Tip: If you plan on creating complex communications, such as bank or mortgage statements, consider using Designer to create your design layouts. For more information about creating communications using Designer, see *Designing Customer Communications* in the Exstream Design and Production documentation.

This section provides a quick reference to the design features that are supported in Communications Designer, in addition to the supported design resources from Design Manager that you add to a design pack for your communication. For detailed information about creating designs in Communications Designer, see *OpenText™ Exstream™ Communications Designer Online Help*.

Supported output types

You can create communications for the following output types:

- HTML (email) output
- Most page-based output types that are supported by the Exstream engine. Exstream Live output is not supported.

  For information about the page-based output types that are supported in Exstream, see *Creating Output* in the Exstream Design and Production documentation.
- Empower output.

  You can add supported interactive features to your design that end users can then edit in Empower Editor. In addition, you can also create your communication in Communications Designer and then use Content Author to add supported interactive features. For information about Empower features supported in Content Author, see *OpenText™ Exstream™ Content Author Online Help*.

Communication structure and supported communication-level settings

The following table lists the communication objects that make up the structure of a communication, and the communication-level settings that you can apply to each object type:

Object	Supported features
Document	• Use a variable to specify document bookmarks for print output. • Choose whether to restart page numbering for that document in print output. • Apply a targeting rule to include or exclude the document for a customer.

Object	Supported features
Page design	• Specify the paper type used by the page design. • Apply a targeting rule to include or exclude the page for a customer. • Specify flow pages to handle overflow content on the page. • Specify accessibility settings for how the page content is handled by assistive technology tools.
Email design	• Specify the width of an email design. • Apply a targeting rule to include or exclude the email for a customer.

Design objects and supported design features

Communications Designer provides a intuitive, object-based design environment to create your design layouts. The following table lists the design objects that you can insert in a page or email design in Communications Designer, and the design features supported for each object type:

Object	Supported features
Text box	• Format text paragraphs and text box appearance using standard formatting options. • Use variables to customize text and personalize communications based on business data. • Choose whether the text box should split and flow to handle overflow content. You cannot target a specific flow frame to handle the overflow content. • Apply a targeting rule to include or exclude the text box for a customer. • Specify accessibility settings for how the text box is handled by assistive technology tools. • Embed another design object, such as a table, a text box, or an image. One level of embedding is supported, that is, you cannot embed objects in an embedded object.
Table	• Create static or simple automated tables. Complex tables are not supported. • Automate rows using variable data. • Format text content in the table and table appearance using standard formatting options. • Join cells in a single row, and split previously joined cells. • Choose whether the table should split and flow to handle overflow content. You cannot target a specific flow frame to handle the overflow content. • Apply a targeting rule to include or exclude a table for a customer. • Specify accessibility settings for how the table is handled by assistive technology tools. • Embed another design object, such as a table, a text box, or an image in a table cell. One level of embedding is supported, that is, you cannot embed objects in an embedded object.

Object	Supported features
Images	• Insert images from an external link. You can specify a URL, or use a variable to populate the URL during an engine run. • Insert images using placeholder variables. Using placeholders variables lets you use different images based on variable data. • Insert images from the common asset service (CAS). To add an image to CAS, you can either upload it directly in Workshop, or add it the resource set of a Communications Builder project. • Format the size and position of the image in the design. • Choose whether the image should move when the position of other content on the page changes to accommodate growing objects • Apply a targeting rule to include or exclude the image for a customer
Frames	• Insert content flow frames to reserve space for adding business content in Content Author, or to indicate space for containing overflow content. • Insert message frames to reserve space for adding business content in Content Author. Creating message content is not supported. • Apply a targeting rule to include or exclude a frame for a customer. • Specify read order accessibility settings for the frame. • Embed another design object, such as a table, a text box, or an image in a table cell. One level of embedding is supported, that is, you cannot embed objects in an embedded object.
Components	• Create reusable design objects (called components) from existing design objects. • Insert components in new designs from the component library. • Unlink components in new designs to use components as starter objects. Unlinking a component lets you use the design object in the component in your design, and any changes you make to that design object are not reflected in the original component.
Variables	• Insert variables that are available in the design pack that is associated with the communication or that were created in the data source editor. • Show or hide variable values based on the sample data file that is associated with the communication. • Use variables to automate table rows and customize text and images based on business data.
Hyperlinks	• For electronic output formats such as HTML (email) or PDF, insert hyperlinks to the text within a text box or a table cell, or to a design object itself. • Insert hyperlinks using a specific URL, or using a variable to populate the URL during an engine run. • Specify accessibility settings for how the hyperlink is handled by assistive technology tools.

Design environment features

The Communications Designer design environment includes some convenient features that enable you to create effective communication designs:

- The design environment includes the **Rule Composer** that you can use to create targeting rules using the variables in your communication. Click  on the design toolbar to access the **Rule Composer**.
- You can use the **Display read order** button  on the design toolbar to show the read order of design objects in your design.
- You can use the **Variable sample data** button  on the design toolbar to see sample values for the variables in your design.
- The property panel in Design View is a dynamic panel and the settings available in the panel change based on the design object that you select in your design.
- Email designs are responsive by default and do not require you to manually configure any settings when you create your design layouts.

2.2 Configuring a design pack for Communications Designer

Design packs are Design Manager objects that are required for Design and Production applications that will be used for Communications Designer or in Content Author.

Design packs let you include resources (fonts, style sheets, colors, data files, rules, and variables) in your package file and make those resources available in the Communications Designer and Content Author environments. By restricting the fonts, colors, and style sheets that are available to users, you can ensure that your customer communications are properly branded.

If you are designing applications for use with Communications Designer or Content Author, you must associate a design pack with your application.

Creating a design pack

1. In Design Manager, in the Library, go to **Environment > Design** and right-click **Design Packs**, and then click **New Design Pack**.
2. In the **Name** box, enter a name for the design pack. Optionally, in the **Description** box, enter a description.
3. Click **Finish**.

Adding the design pack to your application

1. In the Library, select the application that you want to package for use in Communications

Designer.

2. On the **Author and Design** tab of the application properties, click the **Design pack** box and select the design pack that you just created, then click **OK**.

Configuring the design pack

After you create the design pack, you can add resources to it based on your requirements:

- **Adding design resources**

  You can add style sheets, fonts, and color families to your design pack and use these resources in Communications Designer just as you would in other Design and Production applications. Design resources give you the ability to ensure that your customer communications are properly branded.

  When you add style sheets or fonts to a design pack, keep in mind that if you specify both a style sheet and font settings, Communications Designer honors only the style sheet.

  a. In Design Manager, in the design pack properties, click the **Design** tab.

  b. Complete the following steps as required:

To include	Do this
Style sheets	i. In the **Style Sheet** box, click  . ii. Select a style sheet from the list, and then click **OK**.
Fonts	i. Under the **Fonts** box, click  . ii. Apply font options as needed in the **Select Font** dialog box, and then click **OK**. iii. Optionally, you can add superscript and subscript versions of a font by selecting the font from the list, and then clicking  . In the **Font Properties** dialog, select the **Include superscript and subscript** check box, then click **OK**.
Color families	i. Under the **Color families** box, click  . ii. Select a color family from the list, and then click **OK**. iii. Optionally, select the **Use only these color families in the design environment** check box to prevent users from applying custom colors to content.

- **Adding data and logic resources**

  Adding variables to your design pack lets users set up messages that are populated with data targeted to individual customers. Keep in mind that you use a sample data file when you

deploy your application, so that users will see only sample data as they work on their communications. The Exstream engine populates the variables with real data during fulfillment.

a. In Design Manager, in the design pack properties, click the **Data and Logic** tab.

b. In the Communications Designer area, complete the following steps as required:

To include	Do this
Data files (as a means of adding multiple mapped variables)	i. Under the **Data files** box, click  . **Note:** You can also include multiple data files by selecting and dragging the files from the Library. ii. In the **Look in** box, select the folder that contains the data files that you want to add, and click **OK**. iii. In the **Name** box, type the name of the data file from which you want to include variables, or select the data file from the selection list, and click **OK**.
Variables	i. Under the **Variables** box, click  . **Note:** You can also add multiple variables by selecting and dragging them from the Library. ii. Click  and then select the variable that you want to add. iii. Optionally, in the **User-friendly name** box, enter an alternate name for the variable that users will see in Communications Designer. If you do not specify an alternate name, users will see the name of the variable as it appears in Design Manager. iv. Click **OK**.
Rules	i. In Design Manager, in the design pack properties, click the **Data and Logic** tab. ii. Under the **Library rules** box, click  . iii. Select a library rule from the list, and then click **OK**. **Note:** You can also add multiple rules by selecting and dragging them from the Library.

2.3 Creating an application for Communications Designer

Communications Designer provides a web-based environment to create communication designs that use resources from Design Manager. The application that you build in Design and Production determines the resources that are available to designers in Communications Designer.

To set up an application for use with Communications Designer:

1. **Select an application in Design Manager.**

   You can choose to create a new application in Design Manager or use an existing application. However, keep in mind that in Communications Designer, you can use only the data files and output queues from an existing application. Your existing page designs will not be visible in Communications Designer.

   If you create a new application, you must add at least one document to the application, and make sure that the document contains at least one page object. This is required to successfully package the application.

2. **Associate a design pack with your application**

   Create and configure a design pack and associate it with your application. The design pack lets you specify resources such as fonts, styles, colors, rules, and variables that will be available to users in Communications Designer. You can associate a single design pack with multiple Design and Production applications.

3. **Add output queues to your application.**

   Add output queues to your application. You can add existing output queues to your application, or create new output queues.

4. **Add data files to your application.**

   You can add existing mapped data files to your application, or create and map new data files. The data files that you reference in your application will be used when you run the engine to create output from Communications Designer.

   If you want to use a mapped data source created in the Communications Designer data source editor, your application must include a Communications Designer data file.

5. **Add a design view to your application.**

Because you can create both page and email designs in Communications Designer, you must make sure that you configure your application so that users can preview their designs. By default, applications use a default standard preview device that is configured for use with standard page designs. If you plan on creating email designs in Communications Designer, make sure that the preview device that is associated with your application matches the container design label that you have selected in your HTML (email) output object.

To associate a preview device with your application:

a. Open the application properties and click the **Author and Design** tab.

b. In the **Content Author design views** area, click  .

c. Select the appropriate design view from the list, then click **OK**.

d. (Optional) To set a new default design view, select the design view from the list and click  .

e. Select the **Set as default Content Author preview device** check box, then click **OK**.

> **Note:** You cannot delete the default preview device. If you need to delete a default preview device, you must first create a different default preview device.

3 Setting up Content Author applications

Content Author lets business users add content to update designs in an intuitive web-based design environment. Use this section to help you set up an application in Design Manager to enable access to the resources you need to let business users modify communications in Content Author.

Overview for creating applications for use with Content Author

Step	Explanation	Links
1. Ensure that your Exstream environment meets all of the prerequisites needed in order to use Content Author.	Before you begin creating an application for use with Content Author, you should ensure that you have properly installed and configured the Exstream platform.	*System Administration* in the Exstream Design and Production documentation
2. In Design Manager, create a structurally valid application.	The applications that you create for Content Author are not significantly different from traditional Design and Production applications, with the main exception of the design pack. Additionally, there are a handful of other elements that your application must contain, such as pages and data files.	"Configuring a design pack for Communications Designer" on page 14 "Creating an application for Communications Designer" on page 17
3. In Designer or in Communications Designer, create the design that business users will update in Content Author.	Your base Content Author design must contain at least one page that, in turn, contains at least one content flow frame or message frame that is configured to be used in Content Author.	"Designing an application for Content Author" on page 22 *Communications Designer Online Help*

3.1 Configuring a design pack for Content Author

Design packs are Design Manager objects that are required for Design and Production applications that will be used for Communications Designer or in Content Author.

Design packs let you include resources (fonts, style sheets, colors, rules, and variables) in your package file and make those resources available in the Communications Designer and Content Author environments. By restricting the fonts, colors, and style sheets that are available to users, you can ensure that your customer communications are properly branded.

If you are designing applications for use with Communications Designer or Content Author, you must associate a design pack with your application.

Creating a design pack

1. In Design Manager, in the Library, go to **Environment > Design** and right-click **Design Packs**, and then click **New Design Pack**.
2. In the **Name** box, enter a name for the design pack. Optionally, in the **Description** box, enter a description.
3. Click **Finish**.

Adding the design pack to your application

1. In the Library, select the application that you want to package for use in Content Author.
2. On the **Author and Design** tab of the application properties, click the **Design pack** box and select the design pack that you just created, then click **OK**.

Configuring the design pack

After you create the design pack, you can add resources to it based on your requirements:

- **Adding design resources**

  You can add style sheets, fonts, and color families to your design pack and use these resources in Content Author just as you would in other Design and Production applications. Design resources give you the ability to ensure that your customer communications are properly branded.

  When you add style sheets or fonts to a design pack, keep in mind that if you specify both a style sheet and font settings, Content Author honors only the style sheet.

a. In Design Manager, in the design pack properties, click the **Design** tab.

b. Complete the following steps as required:

To include	Do this
Style sheets	i. In the **Style Sheet** box, click  . ii. Select a style sheet from the list, and then click **OK**.
Fonts	i. Under the **Fonts** box, click  . ii. Apply font options as needed in the **Select Font** dialog box, and then click **OK**. iii. Optionally, you can add superscript and subscript versions of a font by selecting the font from the list, and then clicking  . In the **Font Properties** dialog, select the **Include superscript and subscript** check box, then click **OK**.
Color families	i. Under the **Color families** box, click  . ii. Select a color family from the list, and then click **OK**. iii. Optionally, select the **Use only these color families in the design environment** check box to prevent users from applying custom colors to content.

- **Adding data and logic resources**

  Adding variables to your design pack lets users set up messages that are populated with data targeted to individual customers. Keep in mind that you use a sample data file when you deploy your application, so that users will see only sample data as they work on their communications. The Exstream engine populates the variables with real data during fulfillment.

  a. In Design Manager, in the design pack properties, click the **Data and Logic** tab.

  b. In the Content Author area, complete the following steps as required:

To include	Do this
Variables	i. Under the **Variables** box, click  . **Note:** You can also add multiple variables by selecting and dragging them from the Library. ii. Click  and then select the variable that you want to add. iii. Optionally, in the **User-friendly name** box, enter an alternate name for the variable that users will see in Content Author. If you do not specify an alternate name, users will see the name of the variable as it appears in Design Manager. iv. Click **OK**.
Rules	i. In Design Manager, in the design pack properties, click the **Data and Logic** tab. ii. Under the **Library rules** box, click  . iii. Select a library rule from the list, and then click **OK**. **Note:** You can also add multiple rules by selecting and dragging them from the Library.

3.2 Designing an application for Content Author

Content Author lets business users add content to message frames and content flow area frames based on the type of customer communication they are creating. Depending on the frames that you include in each communication, business users can create text or graphic messages, or they can add flowing paragraph content. Flowing paragraph content in content flow area frames—known as clauses—can be configured in Content Author to be edited in Empower Editor.

The application that you build in Design Manager determines the resources (such as fonts, colors, and variables) that are available to business users in Content Author. And the design that you create in Designer or Communications Designer determines how the overall customer communications look. Content Author supports multiple themes per Design and Production application.

Important: If you are upgrading to Exstream 16.6.0 from a previous version, and if you plan on creating output from Content Author from a design that you created in the previous version, keep the following considerations in mind:

- You can use the application in your upgraded design database to create Content Author communications. However, you will need to reupload that application to CAS, and then recreate any Content Author themes that were based on that application.
- You must also update your Communications Builder project to include image/png support in the configuration for the Exstream engine. For more information, see the *OpenText Exstream: Communications Builder Configuration Guide*.

- For more information about creating applications in Design and Production, see *Designing Customer Communications* in the Exstream Design and Production documentation.
- For more information about creating message frames, see *System Administration* in the Exstream Design and Production documentation.

This topic describes the process for setting up Content Author applications on the Exstream platform, as well as some important things to consider when creating your Content Author designs.

Make sure that you meet the following prerequisites before you start:

- Install the Exstream platform and ensure that it is running properly. For information about which elements of the Exstream platform are necessary in order to create and deploy applications for Content Author, see "Exstream web application workflow" on page 8.
- Assign users to the `bcauser` OTDS group (`bcauser@strs.role`) as needed to control access to Content Author resources. You can read about how to configure the `bcauser` OTDS group in the *OpenText Exstream: Communications Server Administration Guide*.
- Make sure that cascading approvals are disabled on the Management Gateway. If you do not disable cascading approvals, then approval workflow for Content Author will not work properly, and you will not be able to run the Exstream engine to create customer communications.

  For information about disabling cascading approvals, see *Installation and Upgrade Information* in the Exstream Design and Production documentation.

3.2.1 Creating a structurally valid application in Design Manager

To create a valid application:

- **Associate a design pack with your Content Author application:** The design pack lets you specify resources such as fonts, styles, colors, rules, and variables that will be available to business 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. You can associate a single design pack with multiple applications.
- **Add an output queue to your application:** Make sure that you include an output queue for any output types that you intend to create from your application. For example, if you are creating output that will be edited in Empower Editor, you will need to ensure that you include an Empower output queue in your application.

  For information about creating output queues, see *Creating Output* in the Exstream Design and Production documentation.
- **Set and configure your design views:** Because Content Author supports both standard and container designs, you must make sure that you configure your application so that business users can preview, create simulations for, and download simulations from content in Content Author Communication View. By default, Content Author applications use a default standard design view that is configured for use with standard designs.

  You can read about creating and downloading simulations in Content Author Communication View in the Content Author help (on the Content Author menu bar, click  **> Help**).

  > **Important:** If you are using only standard designs in your Content Author design, then you do not have to select a preview device. Design Manager will automatically use the default standard design view when you package your application to CAS. However, if you are using a container design for your design, you must select the container design label that is associated with the container design as a design view.

  To add a design view in Design Manager:

  a. Open the application properties and click the **Author and Design** tab.

  b. In the **Content Author design views** area, click  .

  c. Select **Standard** for standard designs (only necessary if you have previously removed the **Standard** preview device from the application), or select a container design label from the list, then click **OK**.

  d. (Optional) To set a new default preview, select the preview device from the list and click  .

  e. Select the **Set as default Content Author preview device** check box, then click **OK**.

  > **Note:** You cannot delete the default preview device. If you need to delete a default preview device, you must first create a different default preview device.

For information about creating container design labels, see *Designing Customer Communications* in the Exstream Design and Production documentation.

- **Add at least one page and one document:** Your application must contain at least one page and one document to be structurally valid. You can read about creating pages and documents in Design Manager in *Designing Customer Communications* in the Exstream Design and Production documentation. You can read about creating pages and documents in Communications Designer in the Communications Designer help (on the Communications Designer menu bar, click  **> Help**).
- **Add data files as needed:** You can add existing mapped data files to your application, or create and map new data files. The data files that you reference in your application will be used when you run the engine to create output from Content Author.

3.2.2 Creating a design that business users can update in Content Author

In order for business users to edit content in Content Author, you must include one or more content frames in your design. In Content Author, business users will add content based on the types of frames that you include in your design. No other elements that you include in your design will be editable in Content Author.

Content Author allows business users to create accessible content through settings in the user interface. In order for those settings to be honored, however, you must ensure that your application supports accessible output. For information about configuring accessible output, see *Creating Output* in the Exstream Design and Production documentation.

Selecting the right frame types for your design

Business users add content to the editable frames that you place in your design. Each frame type can hold text, graphics, and tables—they just differ in how content is placed and how it flows. As you set up your design you need to think about what types of changes that business users will need to make to content before each communication makes its way into customers' hands. The following list provides a brief overview and use case for each type of frame that you can use:

- **Message frames:** Content Author supports both graphic and text messages in message frames. Keep in mind, though, that graphic and text messages in Content Author behave a little differently than graphic and text messages in traditional Design and Production applications. For information about messages in traditional Design and Production applications, see *Managing Marketing Messages* in the Exstream Design and Production documentation.

  - **Graphic messages:** When you use graphic messages, business users have more control over where objects are placed. Because the size of graphic message frames is static, graphic messages are best suited for graphics-heavy pieces of content that need to fit within a specific area and do not need to flow. (Remember that in order to create a graphic message frame, you must first create a graphic message template.)
  - **Text messages:** In spite of the name, text messages can contain the same elements that graphic messages contain (text, images, and so on); the difference is that all elements in a text message are placed inline like text. Unlike graphic messages, text message frames can grow to accommodate extra content. Additionally, they can split and flow to another text message, provided that there are no other frames between the two frames. Text messages are best suited for text-heavy content that is limited in scope, like sidebars or callout boxes.

- **Content flow frames:** By including content flow frames in your design, you can let business users add flowing paragraph content (known as "clauses" in Content Author) to customer communications. As with text messages, clauses treat non-text content (images and tables) like text and place it inline. Content flow frames are best suited for correspondence content that might need to flow to one or more overflow frames. Content flow frames are the only type of frames that you can use for a communication that will be edited in Empower Editor.

  Important: Content Author supports only single-column content flow frames. Additionally, you cannot share content flow frames between PDF and HTML designs.

Making content frames available for Content Author

Any frames that will be used in Content Author must be configured in your design:

- In Designer, select the **Use in Content Author** check box just below the **Frame name** box (in Designer, on the **Message Frame** tab of the message frame properties, and on the **Flow Frame Properties** tab of the content flow frame properties).

  Note that if you configure a frame to be used in Content Author, you cannot use that same frame on a page template. For information about using page templates, see *System Administration* in the Exstream Design and Production documentation.

- In Communications Designer, select the **Use in Content Author** check box on the card for the frame properties.

The **Frame name** that you specify for the content frame will help business users differentiate between the various frames that they see in the Content Author Communication View.

Important: In order to avoid confusion, you should not use Content Author-enabled frames in repeating section-driven documents.

Making frames from Content Author available for editing in Empower Editor

You can use content flow frames to make content from Content Author designs editable in Exstream Empower Editor.

As an example of a typical use case, suppose that a content creator works in the corporate office for an insurance company and that he or she is putting together the body of a letter that will be sent to customers who are making insurance claims. The letter needs to include text that can be personalized for individual customers, as well as boilerplate legal information about the company that will remain the same for all customers. In that scenario, the content creator might make one clause editable in Empower Editor for the part of the letter that can be personalized for each customer. But, because the content creator does not want the boilerplate legal information changed, he or she would make the other clause non-editable in Empower Editor. The content creator would use Content Author to set the properties for each clause, and then the insurance agents in field offices who use Empower Editor to update the letter can edit only the clause that you specified as editable.

To make content flow frames from Content Author available for editing in Empower Editor, simply create Empoweroutput when you run the engine to fulfill your Content Author application.

You can read about how to configure Empower settings for content in Content Author in the Content Author help (on the Content Author menu bar, click **> Help**).

> **Note:** If Content Author users apply inclusion rules on clauses or communications that are editable in Empower Editor, then the rules will honor the rule execution timing set on the Empower Settings object (in Design Manager, in the **Default variable substitution & rule execution time** list, on the **Editor Framework** tab).

For information about creating output, see *Creating Output* in the Exstream Design and Production documentation.

Designating container-only pages

Because Content Author supports both standard and container designs, you can use both in a single communication, and business users can switch between the two designs in Content Author Design View.

By default, all pages in Designer have an associated standard design, even if the pages are used only for container designs. If you have pages in your application that use only container designs, you can specify that any unused standard designs are not available to business users in Content Author.

To designate a container-only page in a Content Author application:

1. In Design Manager, drag a page to the Property Panel.
2. Click the **Basic** tab.
3. Select the **Use for container designs only** check box.

4 Packaging and uploading applications

After you have set up your applications in Design Manager, you must package and upload those applications to the common asset service (CAS) to make the resources in those applications available to Communications Designer and Content Author.

Keep the following considerations in mind when you package your applications:

- **Configure your environment to allow uploading large package files to CAS.**

  By default, the service gateway is configured to upload package files that are smaller than 500MB. To upload larger package files, you must modify the service gateway properties to increase the maximum file size allowed. To modify the service gateway properties:

  a. Go to the `<MGW>\<version>\root\applications\<SGW>\wd` directory, where `MGW` is the management gateway installation directory, and `SGW` is the service gateway that you are using.

  b. Open the `application.properties` file, and change the value of `multipart.maxFileSize` to the desired size.

  Note: If you are using NGINX as reverse proxy, you must change the maximum file size allowed in the reverse proxy settings. To modify the reverse proxy settings, in the `<MGW>\<version>\root\revproxy\conf` directory, open the `proxy.conf` file, and change the value of `client_max_body_size` to the desired size.

- **Configure Design Manager to allow sufficient time to complete uploading large package files.**

  By default, Design Manager waits for 10 minutes for a package file to finish uploading to CAS before the upload times out. To change the amount of time to wait before an upload times out, in Design Manager, go to **Tools > Options**, and enter the desired timeout value in the **CAS package upload timeout (seconds)** box.

For information about packaging options when uploading a package file to CAS, see *Preparing Applications for Production* in the Exstream Design and Production documentation.

5 Exporting content from Design Manager to CAS

Exporting your content to CAS lets you use individual RTF files, as well as existing paragraph content from Designer and Design Manager, so that you do not have to recreate the same content in Content Author. After you export your content to CAS, it becomes available immediately for configuration in Workshop or for business users to add to communications in Content Author.

Because you export paragraphs from Designer and Design Manager at the application level, the application from which you export content must have a design pack associated with it. Furthermore, the paragraph content that you export can only be used in Content Author communications that share the same design pack.

The content export tools let you optionally test the content that you want to export so that you are aware of any issues before you perform the full export. Whether you are testing or exporting your content, the tool reports general information about the content, as well as any issues that it finds, in the export dialog box and in a log file that you specify.

Important: If you make changes to paragraph content that you have already exported, and you want to export the updated version, you must first delete the existing paragraph content from Workshop and then export the content again. If you do not delete the content first, then the export will fail.

For information about deleting content from Workshop, see *OpenText Exstream: Workshop User Guide*.

Testing or exporting paragraph content

To test or export the content in an application:

1. In Design Manager, in the Library, select the application that contains the content that you want to export.
2. Do one of the following:
   - Right-click the application, and select **Export Content to CAS** from the menu.
   - SelectOn the Menu bar, click **Tools > Export Content to CAS**.
3. In the **Export Content to CAS** dialog box, click  to specify a name and location for the log file, or type the name and location for the log file in the Log file box. The log file records the same information that appears in the **Results** box when you test or export your content. You must specify a name and location for the log file before you test or export content.

4. Select a workflow status for the content that you want to export by moving the **Includes selected status and any statuses above it** slider to one of the following options:
   - **Approved**—Includes all content with a status of approved or archived
   - **Submitted for Approval**—Includes all paragraphs with a status of submitted for approval, approved, and archived
   - **Work in Progress**—Includes all paragraphs with a status of work in progress, submitted for approval, approved, and archived
   - **Rejected**—Includes all paragraphs with a status of rejected, work in progress, submitted for approval, approved, and archived

   Note that no matter the status that you select, all exported content will be in Draft workflow state when business users open it in Content Author. You can subsequently specify a different workflow state in Workshop for each individual piece of content.

   For information about changing the workflow state for content in Workshop, see *OpenText Exstream: Workshop User Guide*.
5. Do one of the following:
   - To test the content in your application before exporting it to CAS, click **Test**.

     Important: You should test each application before exporting the content to CAS so that you are aware of and can fix any issues before you actually export.

   - To export the content in your application to CAS, click **Export**.

   In the **Results** box and in the log file, the export tool provides information about each paragraph in the application. For any paragraphs that contain features that Content Author does not support, the tool provides information about each of those features. In some cases, the tool will remove or replace the unsupported feature during export. In other cases, an unsupported feature can prevent the tool from exporting a paragraph. Refer to the **Results** box or open the log file for specific information.

Testing or exporting external RTF content

To test or export the RTF content into CAS:

1. In Design Manager, on the Menu bar, click **Tools > Export External Content to CAS**.
2. In the **Export External Content to CAS** dialog box, do the following:
   a. In the **Content location** box, type a path for the location where the external content is located, or click  to navigate to the location.

b. In the **Log file** box, type a path for the location of the log file, or click  to navigate to the location. The log file records the same information that appears in the **Results** box when you test or export your content. You must specify a name and location for the log file before you test or export content.

c. In the **Design pack** list, select the design pack that is associated with the application where the external content is used. If you do not associate a design pack that contains the correct font resources, Design Manager will substitute fonts as needed during export.

d. Optionally, in the **File name prefix** box, enter text that will be prepended to the name of each exported file in CAS. The file name prefix that you specify must be 25 characters or fewer, and you can use only alpha and numeric characters, as well as underscores and dashes.

e. Do one of the following:

- To test the external content before exporting it to CAS, click **Test**.

  Important: You should test the external files before exporting them to CAS so that you are aware of and can fix any issues before you actually export.

- To export the external content to CAS, click **Export**.

In the **Results** box and in the log file, the export tool provides information about each file that you are exporting. For any files that contain features that Content Author does not support, the tool provides information about each of those features. In some cases, the tool will remove or replace the unsupported feature during export. Invalid RTF files will not be exported. Refer to the **Results** box or open the log file for specific information.

Differences between RTF content saved from Microsoft Word and Microsoft WordPad

As you export external RTF content from Design Manager to CAS, you might notice some of the following differences between RTF files saved from Microsoft Word when compared to RTF files saved from Microsoft WordPad:

- **Table borders**—Tables that appear without borders in Word can sometimes appear with borders in WordPad. In those cases, the tables also appear with a border in Content Author.
- **URLs**—In RTF content from Word, URLs are treated as plain text and will not appear as hyperlinks unless explicitly specified. WordPad, on the other hand, automatically converts URL text to hyperlinks. URLs from WordPad will appear as hyperlinks in Content Author. URLs from RTF content in Word will appear as plain text in Content Author unless specifically made into hyperlinks prior to export.

- **Font sizes**—If you use an empty paragraph to control spacing between two paragraphs, and you specify a different font size for the empty paragraph, WordPad sometimes does not honor that setting, and, as a result, the incorrect font size also appears in Content Author.

6 Configuring the Exstream engine for fulfillment

After you package and upload your applications to CAS, you must configure a Communications Builder project to use the Exstream engine, and then set up a Communications Server application to enable Communications Designer and Content Author fulfillment.

1. **Create a Communications Builder project.**

   In Communications Builder, create a project that uses the Exstream engine, and references the Exstream package file that you uploaded to CAS.

   You can choose to add resources such as a sample data file or images to CAS by adding them resource set in your Communications Builder project, or you can add those resources to CAS by uploading them directly to Workshop.

   For detailed information about configuring projects, see the *OpenText Exstream: Communications Builder Configuration Guide*.

2. **(Optional) Set up a default simulation.**

   In Communications Designer and Content Author, simulations allow users to preview communications. When you configure your project in Communications Builder, you can include a sample data file in the project to set up a default simulation. However, you can also create simulations by uploading sample data files directly in Workshop and connecting those simulations with the template that is associated with your Communications Designer or Content Author communication.

   For information about creating default simulations by including sample file in your Communications Builder project, see *OpenText Exstream: Communications Builder Scripting Reference Guide*.

3. **Configure the Exstream engine plug-in to enable Communications Designer processing.**

   By default, the Exstream engine processes the designs that are included in the package file that is added to the engine configuration in the Communications Builder project. For Communications Designer fulfillment, you must configure the Exsteam engine to process designs from Communications Designer.

   Specify the following settings in Communications Builder when you configure the Exstream engine plug-in:

a. Select the **Communications Designer fulfillment** check box.

b. In the **Exstream Application ID** box, specify the CAS ID for the Exstream application object that corresponds to the communication that you created in Communications Designer.

   You can specify the CAS ID in one of the following ways:

   - Enter the CAS ID for the Exstream application object as it appears in Workshop. To find the CAS ID, in Workshop, select the Exstream application object, and then click **Properties**. OpenText recommends that you use the CAS ID for the latest approved version of the object.
   - Enter a variable that represents the CAS ID for the Exstream application object. This variable is simply a text string that you then use in conjunction with a script to dynamically obtain the CAS ID from Workshop. For example, you can use the following script to obtain the CAS ID for the Exstream application from an HTTP input connector:

     ```
     $testAppId = GetHttpHeaderValue("testAppIdHeader");
     ```

     where `testAppId` is the variable that you enter in the **Application ID** check box, and `testAppIdHeader` is the header that contains the CAS ID for the Exstream application that you want to specify.

     For more information about the scripting functions, see *OpenText Exstream: Communications Builder Scripting Reference Guide*.

> **Tip:** If you choose to use a variable in the **Application ID** check box, you can create a Communications Builder project before you create a communication in Communications Designer.

4. **Configure a Communications Server application.**

   In Control Center, create a Communications Server application in the appropriate domain, and deploy the export file to that application. You can use multiple domains to separate the applications used for development, testing, and production.

   After the export file is successfully deployed, start the application. When you configure the Communications Server application, make sure that you specify the Exstream engine settings correctly.

   For detailed information about configuring Communications Server applications and understanding domains, see the *OpenText Exstream: Communications Server Administration Guide*.

7 Including multiple sample data files with a template

When you include variables in your design pack, users can then add those variables to their content so that their customer communications are populated with data targeted to individual customers. Generally speaking, users see only sample data as they work in Communications Designer or Content Author. The Exstream engine populates the variables with real data in fulfillment.

As users add rules to include or exclude content based on changing scenarios, however, they will likely have difficulty using static data to test how rules and variables behave in different data conditions. For example, in Content Author, suppose that a business user adds a rule to a graphic message in a communication so that only customers who live in the state of Florida will see the graphic message. If the sample data in the communication uses Georgia as the default state value, then the graphic message will never appear when business users preview the communication in Communication View. Using Simulation View, however, business users can change the value for the state variable to Florida to make sure that their rule is working properly.

But, while Simulation View allows simple changes to the existing elements of a communication, business users would be unable to make changes to elements of a communication that are excluded by rule in the design. This functionality is especially useful when the available frames or even whole pages in a communication might change when the data set changes, such as when regulations in a particular state require additional content to be included in a communication. In communications that contain variables, Simulation View is always available. The availability of sample data sets, on the other hand, is completely dependent on how you design the communication and whether you include multiple sample data files to create additional simulations in Workshop.

When you configure your project in Communications Builder, you can include a sample data file in the project to set up a default simulation. However, you can also create simulations by uploading sample data files directly in Workshop and connecting those simulations with the template that is associated with your Communications Designer or Content Author communication.

To include multiple sample data files with a template:

1. In Workshop, click **+** and then click **Upload resource > Sample file**.
2. Select a driver file that is associated with your Content Author application in Design Manager, then click **Upload**.

   Tip: Even if the file that you upload contains multiple customers, business users will see only information for the first customer in the data file.

3. Click **+** and then **Simulation**.

4. Select the sample driver file that you just uploaded, then click **Next**.
5. Add a name and description so that business users can easily differentiate the sample data set from other sample data sets, then click **Create**.
6. Select the simulation that you just created, then click **View references**.
7. Click **Add templates**.
8. Select the template from the list, then click **Add**.

   Tip: The template name matches the name that you specified when you packaged your application in Design Manager. If you did not specify a different name, then the template will have the same name as the Design Manager application.

9. Click **Close**.
10. Repeat these steps as needed to make multiple sample data files available for a particular template.

8 Creating a Content Author theme in Workshop

After you have deployed a Communications Server application that contains the Exstream engine job definition for your Design and Production application, you can use Workshop to create a theme that business users open and update in Content Author.

Creating a Content Author theme in Workshop is an optional step that is necessary only if business users will not use a template to create communications from Content Launcher in Content Author.

Important: This topic assumes that you did not specify a sample file in Communications Builder for your simulation. If you already completed that task, you can skip to step 11. For information about how to configure your Communications Builder project, see *OpenText Exstream: Communications Builder Configuration Guide*.

1. Open Workshop.
2. Click **+** and then click **Upload resource > Sample file**.
3. Select the driver file associated with your Content Author application in Design Manager, then click **Upload**.

   Tip: Use a sample driver file in this step to provide sample customer data to business users in Content Author. If you use a production data file, business users will see only information for the first customer in the data file.

4. Click **+** and then **Simulation**. The simulation allows business users to see their content in the context of the larger customer communication in **Communication View** in Content Author.
5. Select the sample driver file that you just uploaded, then click **Next**.
6. Add a name and description, then click **Create**.
7. Select the simulation that you just created, then click **View references**.
8. Click **Add templates**.
9. Select the template from the list, then click **Add**.

   Tip: The template name will match either the name that you specified when you packaged your application in Design Manager, or the name of the template that you created in Communications Designer.

10. Click **Close**.
11. Click **+** and then **Theme**. Business users will open this theme in Content Author.
12. Select the template that is associated with the Communications Builder project that you uploaded to CAS, and then double-check the values selected in the **Version** and **Simulation** lists.
13. Click **Next**.
14. Add a name and description, and then click **Create**.
15. Optionally, add any other resources (such as images) that business users will need as they work in Content Author.

9 Fulfilling applications in the Exstream platform

When all contributors and stakeholders have completed work on a communication, and the communication has been through the approval process, you then use orchestration features of the Exstream engine to process the communication. The workflow for a communication will differ based on each use case. For example, you might have created an email communication completely in Communications Designer and do not need further input from content creators in Content Author before the communication is sent to customers. In that case, you can simply use the Exstream engine to create HTML (email) output that can be sent directly to customers.

Suppose, however, that you work for the corporate office of an insurance company, and you have created a template for a piece of correspondence for potential customers. The communication uses content frames that you created in Communications Designer that were then populated with content using Content Author by members of your marketing department. After that, the communication was personalized for each customer in Empower Editor by agents in field offices throughout the country. In that scenario, you would first use the Exstream engine to create Empower output from the communication that was created in Communications Designer and Content Author, and then again after field agents finish editing it in Empower Editor. For information about configuring a Content Author communication to be edited in Empower Editor, see "Designing an application for Content Author" on page 22.

This section discusses the steps that you will follow when using the engine orchestration features of the Exstream engine to process your communications in different scenarios.

9.1 Creating output from Communications Designer

The communications that you create in Communications Designer are stored in CAS as Exstream application objects. To create output, you must fulfill these Exstream applications using the Exstream engine in the Communications Server layer.

Make sure that you have met the following prerequisites before you start:

1. In Design Manager, package and upload an application to CAS.
2. In Communications Designer, create a communication based on the design pack that you selected in Design Manager.
3. In Communications Builder, create a project that contains an Exstream engine plug-in, and deploy the export file from that project to a Communications Server application.

> **Tip:** You do not need a running Communications Server server application to be able to create communications in Communications Designer. However, to enable previews for your communication, you must have created a Communications Builder project that references the uploaded package file, and deployed it to a running Communications Server application.

To fulfill an Exstream application:

1. **(Optional) Preview your communication.**

   If you want to preview your communication before you produce output you must have uploaded a sample file to Workshop.You then use the sample file to create a simulation that is associated with the Exstream application template. This template corresponds to the package file that you initially uploaded to CAS.

   > **Tip:** You can include a sample file in your Communications Builder project, or you can upload it directly in Workshop.

   For more information about previewing communications, see the online help for Communications Designer.

2. **Approve and publish the Exstream application.**

   Only applications that are in an approved state are available to the Exstream engine. When designers have finished creating the communication, you must approve the Exstream application and all of its associated resources. You must approve Communications Designer in Workshop. When you approve resources, you must approve all child resources before you can approve a parent resource; that is, you must approve components before pages, pages before documents, and documents before the application.

   You must also approve and publish the Exstream application if you want to create a Content Author template based on your Communications Designer communication.

   > **Tip:** You might need to refresh Workshop to make sure that the most up-to-date version of the application is available.

   To approve an object in Workshop:

   a. Select the object and click **Review** to move it into the **Review** state.

   b. With the object still selected, click **Approve** to move it into the **Approved** state.

   After you have approved the Exstream application and its resources, click **Publish/Unpublish** to publish the application to the appropriate domain.

After you publish the application in Workshop to a specific domain, the approved content is then available to the Exstream engine in that domain only. You can use multiple domains to separate

the applications used for development, testing, and production. 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 the application 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 application properties, you must approve the application and then republish it to make the updated available to the 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. For detailed information about setting up and running jobs using the orchestration features in the Exstream platform environment, see the *OpenText Exstream: Communications Server Administration Guide*.

9.2 Creating output from Content Author

When business 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.

In a typical Exstream platform environment, you can simply publish the updated theme in Workshop. Be sure, however, that you have first approved all of the files that are associated with a theme in Workshop. You cannot create engine output without approved content. For information about approving files in Workshop, see *OpenText Exstream: Workshop User Guide*.

Make sure that you have met the following prerequisites before you start:

1. In Design Manager, package and upload your application to CAS.
2. In Communications Builder, create a project configuration that references the Exstream engine, and deploy the export file from that project to a Communications Server application.
3. In Content Author, business users create a communication based on the template that is associated with the uploaded package file, or based on a template that is created in Communications Designer.

To fulfill a communication from Content Author:

1. **(Optional) Preview your communication.**

   If you want to preview your communication before you produce output you must have uploaded a sample file to Workshop.You then use the sample file to create a simulation that is associated with the Exstream application template. This template corresponds to the package file that you initially uploaded to CAS, or the template that was created in Communications Designer.

> **Tip:** You can include a sample file in your Communications Builder project, or you can upload it directly in Workshop.

For more information about previewing communications, see the online help for Content Author.

2. **Approve and publish the theme in Workshop.**

   Only communications that are in an approved state are available to the Exstream engine. When business users have finished creating the communication, Content Author approval workflow requires that all of the files that are associated with a theme be approved before the communication can be published and engine output created. However, because you have to turn off cascading approvals on the management gateway when you set up your Content Author environment, you might have to use Workshop to manually approve any resources that are not approved using the approval workflow in Content Author, such as images.

   For example, Content Author users who are not assigned to the `bcauser` OTDS group can use the CAS image browser to add non-approved images to a theme in Content Author. For that reason, you must make sure that you have manually approved any non-approved images in Workshop before a theme can be approved in Content Author.

   > **Tip:** You might need to refresh Workshop to make sure that the most up-to-date version of the application is available.

   To approve an object in Workshop:

   a. Select the object and click **Review** to move it into the **Review** state.

   b. With the object still selected, click **Approve** to move it into the **Approved** state.

   After you have approved the Exstream application and its resources, click **Publish/Unpublish** to publish the application to the appropriate domain.

After you publish the theme in Workshop to a specific domain, the theme content is then available to the Exstream engine in that domain only. Keep in mind that when business users create a draft of a previously approved communication, Content Author considers that to be a completely new version of the theme that must be approved and published separately from the already-approved theme. In that case, however, both versions will be available to the Exstream engine, so you must unpublish the previous version in Workshop if you want to include only the current version in customer output.

When you run the production job using the orchestration features in the Exstream platform environment, the Exstream engine runs and creates the specified output, which might be a customer-ready communication, or a communication configured to be edited by interactive users in Empower Editor.

For detailed information about setting up and running jobs using the orchestration features in the Exstream platform environment, see the *OpenText Exstream: Communications Builder Configuration Guide* and the *OpenText Exstream: Communications Server Administration Guide*, respectively.