

Creating Your First LiveCycle® ES Application

Adobe® LiveCycle® ES

Version 8.0

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Adobe® LiveCycle® Workbench ES 8.0 Creating Your First LiveCycle ES Application for Microsoft® Windows®

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I Introduction

Note: The content provided in this tutorial is valid for Adobe® LiveCycle® ES (Enterprise Suite). The content provided is subject to change or removal, and may be simplified without notice.

The purpose of this tutorial is to introduce you to the end-to-end process of creating a LiveCycle ES application. A *LiveCycle ES application* is a solution that consists of a process version and its associated assets (form designs, images, SWF files, and form fragments), which represents an automated process. This tutorial takes you through creating a form design, creating a process that uses the form design, configuring a service, and testing the process.

In this tutorial, you will learn how to use these tools to achieve the following tasks:

- Adobe LiveCycle Workbench ES to develop your application. Your application will consist of a process and form design. After you develop your process, you can activate it and call it a *service*.
- Archive Administration to configure access to your service.
- Adobe LiveCycle Workspace ES to test your service as an end user.

Note: A prebuilt sample of the result of the tutorial is deployed as part of the samples that you can view at anytime. You can see the process in the Processes view by selecting Samples - LiveCycle ES > MortgageLoan - Prebuilt. You can also see the form and associated assets in the Resources view by selecting Samples - LiveCycle ES > MortgageLoan-Prebuilt.

Stepping through this tutorial

To successfully complete this tutorial, you must complete each of the sections in the order they appear. It is assumed that you will be using a single LiveCycle ES environment where the LiveCycle ES server and Workbench ES are installed. It is recommended that you read the <u>Audience</u>, <u>Requirements</u>, and <u>Before you begin</u> sections before you begin this tutorial.

The following sections describe the main parts of the tutorial and the estimated time it will take to complete:

- 1. Setting Up Your Workbench ES Environment (15 minutes)
- 2. Creating a Form Design (50 minutes)
- 3. Creating a Process (45 minutes)
- 4. (Optional) Exporting and Importing a LiveCycle ES Application (15 minutes)
- 5. Configuring a Service (15 minutes)
- 6. Testing a Service Using LiveCycle Workspace ES (15 minutes)

Note: You will need to follow only those tasks described in Exporting and Importing a LiveCycle ES
Application when you are using a separate LiveCycle ES environment for testing. You cannot import your application into the same environment where you created it.

Audience

This document is intended for developers who are interested in creating an application and becoming familiar with creating forms, creating processes, working with Archive Administration, and testing human-centric processes within Workspace ES. Before you step through this tutorial, it is recommended that you read the following documentation:

- LiveCycle ES Overview at http://www.adobe.com/go/learn_lc_overview
- Preparing to Install LiveCycle ES at http://www.adobe.com/go/learn_lc_prepareInstall
- Installing and Deploying LiveCycle ES for JBoss Using Turnkey at http://www.adobe.com/go/learn_lc_installTurnkey
- Installing Your Development Environment at http://www.adobe.com/go/learn_lc_installWorkbench
- The topics "About Workbench ES", "Before You Begin", and "Process Concepts", in LiveCycle Workbench ES Help

Requirements

The following list contains the necessary environment requirements to complete this tutorial:

- Either Adobe Acrobat® 8.0 or Adobe Reader® 8.0 must be installed on the computer where you intend to install Workbench ES.
- The latest version of Adobe Flash® Player must be installed on the computer where you intend to test your application. Download the latest version of Flash Player from http://www.adobe.com/go/learn_lc_FlashDownload.
- It is recommended that you use one environment for this tutorial and use the JBoss turnkey installation to install your server. It is recommended that you install the LiveCycle ES server and Workbench ES on different computers; however, you can also install both on the same computer if you have the necessary hardware requirements. The server and Workbench ES are installed separately.
- Download the following required files from http://www.adobe.com/go/learn_lc_firstApplicationZip, and download the zipped file that contains the tutorial assets. Extract the files to your hard drive and note the location for later in this tutorial.
 - financeCorpLogo.jpg
 - houselmage.jpg
 - loanTestData.xml
 - mortgageLoanSchema.xsd

Note: The MortgageLoanAppForm.xdp, MortgageLoan1.0.xml, and MortgageLoanAppEx.lca files are the outputs of this tutorial. You can use them as a reference to compare your results.

- You need to import applications and configure services in the LiveCycle Administration Console.
- The user accounts listed in the following table must be available. If the samples were installed on the server, the preconfigured user profiles listed in the table are configured for you. To verify that the users are available, log in to LiveCycle Workbench ES or LiveCycle Administration Console using the user name of kvarsen and the password of password. If you can log in successfully, then you do not need to configure the user accounts.

If you cannot log in successfully, you need to configure the user accounts. To do this, log in to LiveCycle Administration Console as the administrator and select Settings > User Management > Users and

Groups. For more information about creating user accounts, see *User Management Help* at http://www.adobe.com/go/learn_lc_adminUM.

| User | User name | Password | User profile | Purpose |
|-------------|--------------|----------|---------------------------------|--|
| Kel Varsen | kvarsen | password | Application Administrator | Use this user profile to develop and configure the application. |
| | | | Administration Console User | Use this user profile to log in to Workbench ES and LiveCycle Administration Console if another user profile is not assigned to you. |
| Rye Woodard | rwoodard | password | LiveCycle Workspace User | The applicant applying for a mortgage at Fin@nce Corporation. Use this user profile to log in to Workspace ES. |
| Alex Pink | apink | password | LiveCycle Workspace User | The loan officer at Fin@nce Corporation who can approve mortgage applications. Use this user profile to log in to Workspace ES. |
| Tony Blue | tblue | password | LiveCycle Workspace User | The bank manager at Fin@nce Corporation who can approve mortgage applications. Use this user profile to log in to Workspace ES. |

Note: If you want to use other user profiles, ensure that you configure the roles appropriately. For instance, you may have your own user profile that you want to use instead of Kel Varsen. That user profile must have the Application Administrator and Administration Console User assigned.

The server you log in to must have at least the User service and Workspace ES available.

Before you begin

In a typical scenario, before you begin to create your form design or process, you would identify the business process (see <u>Identify the business process</u>), determine the details of the process that you are automating (see <u>Determine process details</u>), and understand the environment (see <u>Understanding your environment</u>) in which you will develop your form design and process. Because this is a tutorial, the typical steps are described; therefore, you do not have to perform these steps.

Identify the business process

Before you develop your application, you must identify the business process. The following scenario is used for this tutorial:

An applicant applies for a mortgage to Fin@nce Corporation. The mortgage application allows the applicant to specify the proposed mortgage and contact information. Loans that are less than five hundred thousand dollars are considered low-risk, and loans that are five hundred thousand dollars or more are considered high-risk. Based on the risk level of the loan, a different representative from the bank will approve the loan. A loan officer handles low-risk loans; however, a bank manager must handle high-risk loans. The loan officer and bank manager can either approve or decline the applicant and then contact them by phone.

Determine process details

Before you create a form design and process, you must the determine the requirements of each.

Form design requirements

A mortgage application form is required as part of the business process. It defines the amount of the mortgage and is routed to a different person, based on the amount of the loan. You must include the following information on the form:

Mortgage information: The property sale price and down payment that the applicant is making on the property. The user can specify a suggested interest rate and term (years) of the mortgage. The amount of the mortgage should be calculated in the form design.

Applicant information: The applicant's last name, first name, social security number, and telephone phone number.

Other information: An approval check box, bank's corporate logo, form instructions, and the title of the form.

Process requirements

A process must be implemented to automate the business process. When you look at the business case, it includes the following participants, conditions, routing, and activities.

Participants

- Applicant: The person who initiates the mortgage application
- Loan Officer: The person who handles mortgages that are less than five hundred thousand dollars
- Bank Manger: The person who handles mortgages that are five hundred thousand dollars or more

Conditions

• The amount of the mortgage determines whether the mortgage application is routed to a loan officer or bank manager.

Activities and routing

- An applicant fills an electronic form and sends it to Fin@nce Corporation.
- The bank manager or loan officer approves the form.

Understanding your environment

It is important to understand the environment you use to develop and test your application. You can perform all development and testing in a single environment, which is called your *design-time environment*. However, you may choose to develop your application in one environment and test it in another. This case occurs when developers and testers have their own environments. If you are using

separate LiveCycle ES environments, you must follow the steps in <u>Exporting and Importing a LiveCycle ES Application</u> to configure and test your application.

Single environment: You create and test your applications in the same environment. For instance, you may develop and test your application on the same computer, which is typical of developer environments.

You will not need to export your application for development and testing.

Multiple environments: You develop and test your applications on separate environments. For instance, you develop the application in your own environment and then test it or use it in a separate environment.

You must export your application from your design-time environment and import it into the separate environments for testing or production.

2

Setting Up Your Workbench ES Environment

You will use Workbench ES for a majority of this tutorial; therefore, you will be introduced to perspectives and resources in Workbench ES. In this section, you will set up your environment for the remainder of this tutorial. You need to perform the tasks in the following sections:

- Logging in to a LiveCycle ES server
- Setting up assets

For more information about Workbench ES, see LiveCycle Workbench ES Help.

Logging in to a LiveCycle ES server

Before you can create form designs and processes, you must log in to a server. The user profile that you use to log in must have the Application Administrator or Super Administrator role assigned. For security purposes, after a two-hour period, you are required log in again.

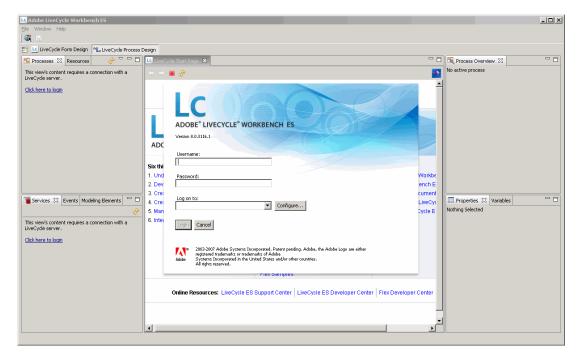
Tip: You can change the default two-hour period by modifying the assertionValidityInMinutes option in the config.xml file on the server.

➤ To log in to a server:

 Start Workbench ES. From the Start menu, select Programs > Adobe > LiveCycle Workbench ES > Adobe LiveCycle Workbench

Note: The default install location of the Workbench ES executable file is at \Program Files\Adobe\LiveCycle ES\Workbench ES\Workbench\workbench.exe.

2. Select File > Login. The Adobe LiveCycle Workbench ES login window appears as shown in this illustration.



3. In the Username box, type kvarsen and, in the Password box, type password.

Note: If you or your administrator have assigned a different user profile to access Workbench ES, type your assigned user name and password.

- 4. Beside the Log On To list, click Configure. The Manage Configured Servers dialog box appears.
- 5. Click Add New Server + . The Adding New Server dialog box appears.
- 6. In the Server Title box, type LiveCycle ES Server to describe your server. The name you enter is only a mnemonic name that is meaningful to you and is displayed as part of the Log On To list in the Adobe LiveCycle Workbench ES login window.
- 7. In the Hostname box, type either the name or the IP address of the LiveCycle ES server. You may need to consult with your administrator to get this information.
- 8. In the Protocol list, select either Simple Object Access Protocol (SOAP/HTTP) or SOAP/HTTPS. The name you choose specifies the connection protocol. You may need to consult with your administrator.
- 9. In the Server Port Number box, use the provided port number. The value you type is used to specify the port number used to connect to the server. You may need to consult with your administrator.
- 10. Verify your settings and click OK.
- 11. When you return to the Manage Configured Servers dialog box, click OK.
- 12. In the Adobe LiveCycle Workbench ES login window, verify that you selected the correct server from the Log On To list, and then click Login.

You have logged in to a server.

Logging out of a LiveCycle ES server

You may want to log in to different servers or stop using Workbench ES. Both require that you log out of the server. These steps are provided as a reference if you want to pause your tutorial at the end of a section and continue at a later time.

Caution: You should stay logged in to the server during the duration of this tutorial. Do not perform these steps unless you want to stop this tutorial and proceed at another time.

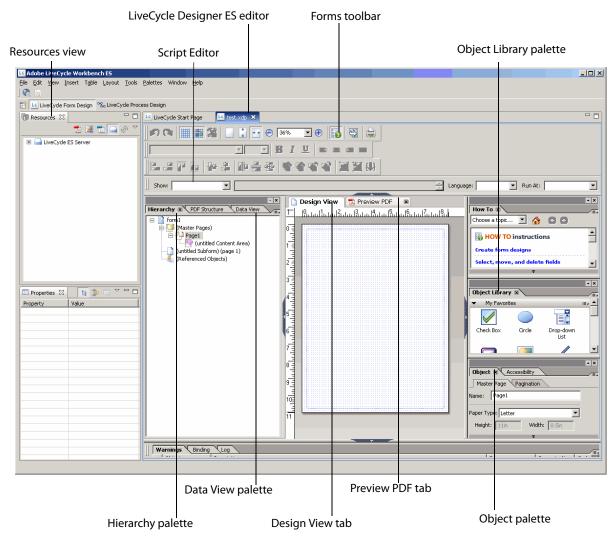
➤ To log out of the server:

- 1. In Workbench ES, select File > Logout. The Adobe LiveCycle Workbench ES logout window appears.
- 2. Click Logout.
- 3. Select File > Exit to close Workbench ES.

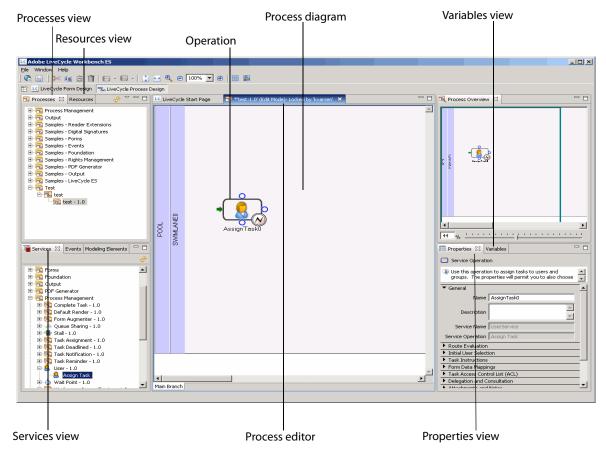
Working with perspectives

Depending on whether you are creating a form design or process, you may want to use a different perspective. In Workbench ES, *perspectives*, which are a collection of views, are available to develop form designs and processes. To develop a form, you use the LiveCycle Form Design perspective and, to develop a process, you use the LiveCycle Process Design perspective.

You use the LiveCycle Form Design perspective to create and modify a form design. When you develop a form, the perspective toolbar is selected. The LiveCycle Designer ES editor provides everything you need to design and edit a form.



You use the LiveCycle Process Design perspective to create and modify a process. The LiveCycle Process Design perspective contains a number of views that you will use to develop your process.



Switching between perspectives

You can switch between the perspectives by clicking the icon that represents each perspective in the perspective toolbar. By default, the perspective toolbar is on the left side, below the Workbench ES toolbar. Here is an illustration of the perspective toolbar with both perspectives available.



Tip: You can right-click the Open perspective [13] and dock it in another location.

Setting up assets

The Resources view represents a shared location, called the *repository*, on the server. The repository is used for storing assets. *Assets* include forms, images, form fragments, and schemas that can be shared. You may choose to create folders to organize the assets you add to the repository. The assets and folders are visible to other developers logged in to the same server.

The next step is to create folders and add your assets to the repository.

-

Creating folders

In the Resources view, you will create folders to organize your forms, images, and schemas used in this tutorial.

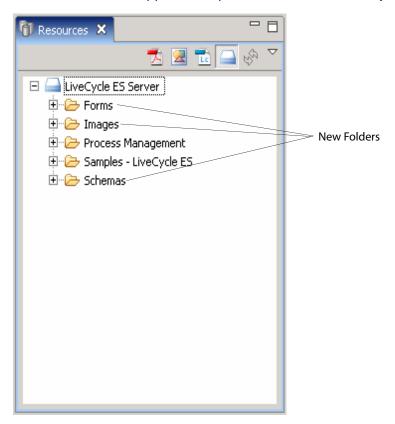
➤ To create the form, image, and schema folders:

- 1. Ensure that you are logged in to a server and you are in the LiveCycle Form Design perspective.
- 2. In the Resources view, right-click LiveCycle ES Server and select New Folder. The Create Folder In Repository dialog box appears.
- 3. In the Folder Name box, type Forms and then click OK.
- 4. Repeat steps 1-3 to create additional folders named Images and Schemas.

Tip: Consider using consistent naming conventions to make it easier for all developers to locate their assets.

You have created folders for organizing your forms, images, and schemas. The Resources view should look like this illustration:

Note: You may have additional folders appear if samples have been installed on your server.



Adding assets

Before you start your form design, you must add the required image and schema files for this tutorial. You will add an image file that is used for the logo on the form design. You will also add a schema file. A schema file contains a list of fields and field types. These assets will help to simplify the form design process later in this tutorial.

➤ To add assets to the repository:

1. On your computer, browse to the location where you had downloaded and unzipped the files required for this tutorial.

Note: The location where you select the image may be different if you copied the images required for this tutorial to a different location.

- 2. Drag the financeCorpLogo.jpg file to the Images folder in the Resources view. The financeCorpLogo.jpg file should appear below the Images folder.
- 3. Drag the mortageLoanSchema.xsd file and loanTestData.xml file to the Schema folder in the Resources view. The file should appear below the schema folder.

You have added the assets required to complete this tutorial. The next step is to create your form design.

3

Creating a Form Design

In this section, you will learn how to create and test a form design for a mortgage application. You will learn how to do the following tasks in the order shown:

- Creating a form design
- Adding a logo to your form design
- Saving your form design
- Previewing your form design
- Adding a title to your form design
- Adding form instructions to your form design
- Adding headings to your form design
- Adding fields to your form design using a schema
- Changing Text Field types to Drop-down List types
- Editing captions in your form design
- Changing the position of fields on your form design
- Enhancing the appearance of your form design
- Adding calculations to your form design

You need a form to start the process for handling mortgage applications. The form design is typically completed by a form author or form designer. Applicants will fill the form electronically using Workspace ES, and a loan officer or bank manager will approve the mortgage application using Workspace ES.

You can create a mortgage application form by using *form objects*, which represent text boxes, check boxes, images, and numeric fields. If you have defined the fields in an XML schema data file, you can drag the elements onto the form. The appropriate form objects are created based on the XSD type defined in the XML schema file.

For more information about creating form designs, see "Working with Form Designs" and "Working with Objects" in *LiveCycle Designer ES Help*.

Creating a form design

Using Workbench ES, you can create a new form design based on a blank form.

➤ To create a form design:

- 1. Ensure that you are logged in to the server and have the LiveCycle Form Design perspective open. For information, see Logging in to a LiveCycle ES server.
- 2. Select File > New > Adobe XML Form File (PDF). The New PDF Import Template dialog box appears.
- 3. Select LiveCycle ES Server > Forms. The selected folder appears in the Enter Or Select The Parent Folder box.

4. In the File Name box, type MortgageAppForm.pdf and then click Finish.

You have created your blank form design. It will appear in the LiveCycle Designer ES editor, which is where you will use various palettes to create your form design.

Tip: You can double-click the MortgageAppForm.pdf tab to maximize the work area in Workbench ES.

Tip: In the toolbar, you can click to zoom in to the form design. You will need to scroll to navigate to different areas in your form design.

Adding a logo to your form design

Next, you will add a corporate logo to your form design to indicate that the form belongs to your organization.

Tip: You can press the Tab key to move between fields in any palette.

➤ To add a logo to your form design:

- 1. Select Palettes > Layout. The Layout palette appears near the lower-right corner.
- 2. In the Object Library palette, click the Standard category and drag the Image object 💹 onto the form design.
- 3. In the Layout palette, perform the following tasks:

Note: The unit used for measurement does not need to be typed if you have set inches as the default unit of measurement.

- In the X box, type . 5in.
- In the Y box, type . 5in.
- In the Width box, type 1.85in.
- In the Height box, type . 75in.
- 4. If the Hierarchy palette is not visible, Select Palettes > Hierarchy.
- 5. In the Hierarchy palette, right-click Image1, select Rename Object, type Logo, and then press the Enter key.
- 6. In the Object palette, beside the URL box, click Browse 5. The Browse For Image File dialog box appears.
- 7. Select LiveCycle ES Server > Images > financeCorpLogo.jpg and click OK.
- 8. In the Object palette, select Embed Image Data.

You have added a logo to your form design.

Saving your form design

It is a good idea to save your form design at this point. You can save your form at any time by selecting Save from the File menu. Your form design is saved in the server's repository and is available to others who are logged in to the same server.

➤ To save your form design:

• Select File > Save.

You have saved your form design.

Previewing your form design

As you work on your form design, you can preview it at any time to see how it looks to a form filler. To continue editing your form design, you must return to Design View.

➤ To preview your form design:

Click the Preview PDF tab.

➤ To return to editing your form design:

• Click the Design View tab.

You have previewed your form design and returned to Design View.

Adding a title to your form design

Now, you will add a title to your form design to differentiate it from other forms used in your organization and to indicate to form fillers that they are using the correct form.

➤ To add a title to your form design:

- 1. In the Object Library palette, in the Standard category, drag the Text object noto the form design and position it to the right of the logo.
- 2. Double-click the text in the Text object and, in the Forms toolbar, perform the following tasks:
 - In the Font list, select Arial.
 - In the Size list, select 24.
 - Click Bold.
- 3. With the text still selected, type MORTGAGE APPLICATION.
- 4. In the Hierarchy palette, right-click Text1 and select Rename Object, type Title, and then press the Enter key.
- 5. With Title still selected in the Hierarchy palette, in the Layout palette, perform the following tasks:
 - In the X box, type 3in.
 - In the Y box, type . 75in.
- 6. Save your form design.

You have added a title to your form design.

Adding form instructions to your form design

Now, you will add text to your form design to provide instructions or communicate what happens after a form filler completes the form. You will also provide instructions for the person who approves or declines the mortgage.

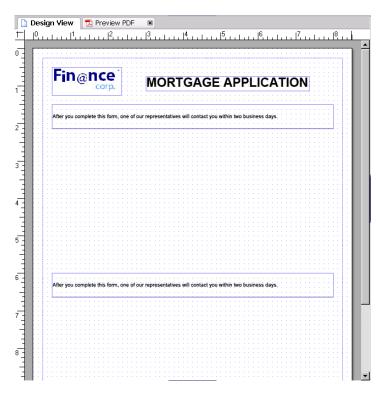
> To add instructions to your form design:

- 1. In the Object Library palette, in the Standard category, drag the Text object noto the form design and position it below the logo.
- 2. Double-click the text and, in the Designer ES editor's toolbar, perform the following tasks:
 - In the Font list, select Arial.
 - In the Size list, select the default of 10.
- 3. With the text still selected, type After you complete this form, one of our representatives will contact you within two business days..
- 4. In the Hierarchy palette, right-click Text1, select Rename Object, type AppInstructions, and then press the Enter key.
- 5. With AppInstructions still selected, in the Layout palette, perform the following tasks:
 - In the X box, type .5in.
 - In the Y box, type 1.25in.
 - In the Width box, type 7.5in.
 - In the Height box, type . 5in.
 - In the Top box, type . 25in.
 - In the Bottom box, type .25in.
- 6. Select Palettes > Border. The Border palette appears in the bottom-right corner.
- 7. In the Border palette, in the Edges list, select the default Edit Individually.
- 8. In the upper border and lower border lists, select Solid.
- 9. Select Edit > Duplicate. A copy of the instructions appears slightly below the original copy in the form design.
- 10. In the Hierarchy palette, right-click Applnstructions[1], select Rename Object, type RepInstructions, and then press the Enter key.
- 11. With Replnstructions still selected, in the Layout palette, perform the following tasks:
 - In the X box, accept the default of 0.5in.
 - In the Y box, type 6in.
- 12. On your form design, select the text in the RepInstructions object and type For Fin@nce Corp. representatives: Indicate if the mortgage is Approved or Declined and contact the applicant..

13. Save your form design.

Tip: You can also use the arrows keys on your keyboard to position the selected object in your form design.

You have added form instructions to your form design. Your form design should look like the following illustration.



Adding headings to your form design

Next, you add headings to your form design. The headings are form labels used to separate groups of fields that a form filler may fill.

> To add headings to your form design:

- 1. In the Object Library palette, in the Standard category, drag the Text object onto the form design and position it below the first set of instructions.
- 2. Double-click the text in the text object and, in the Forms toolbar, perform the following tasks:
 - In the Font list, select Arial.
 - In the Size list, select 12.
 - Click Bold.
- 3. With the text still selected, type Step 1: Mortgage Information:.
- 4. In the Hierarchy palette, right-click Text1, select Rename object, type Step1, and then press the Enter key.

- 5. With Step1 still selected, in the Layout palette, perform the following tasks:
 - In the X box, use the default value of 0.5in.
 - In the Y box, type 2.5in.
- 6. Select Edit > Duplicate. A copy of Step 1: Mortgage Information: appears slightly below the original copy in the form design.
- 7. In the Hierarchy palette, right-click Step1[1], select Rename Object, type Step2, and then press the Enter key.
- 8. With Step2 still selected, in the Layout palette, perform the following tasks:
 - In the X box, use the default value of 0.5in.
 - In the Y box, type 4 in.
- 9. On your form design, select the Step1: Mortgage Information: text, and then type Step 2: Applicant Information:.
- 10. Save your form design.

You have added headings to your form design.

Adding fields to your form design using a schema

Adding fields (or form objects) to your form design one at a time requires a series of drag actions. You will simplify the process of adding fields to your form design by using an imported schema file.

With an imported schema file, you can drag one field or a group of fields onto your form design. The form object that is created is based on the defined data type in the schema file. The additional benefit is that the appropriate form objects are automatically bound to the data source and captions are created based on the element name in the schema. For details about how form objects are created when importing a schema, see *LiveCycle Designer ES Help*, which is accessible from Workbench ES.

You will also need to embed the schema into the form design. The schema is required to access the data in the form design during the creation of your process.

➤ To create a data connection and embed a schema into a form design:

- 1. Select Edit > New Data Connection. The New Data Connection dialog box appears.
- 2. In the Get Data Description From list, select XML Schema and then click Next.
- 3. Beside the Select XML Schema File box, click Browse 👩 . The Open XML Schema File dialog box appears.
- 4. Select LiveCycle ES Server > Schemas > mortgageLoanSchema.xsd [#1.0] and then click OK.
- 5. In the New Data Connection dialog box, select Embed XML Schema, and then click Finish. A list of fields appear in the Data View palette.

Note: Select Palettes > Data View if the Data View palette is not visible.

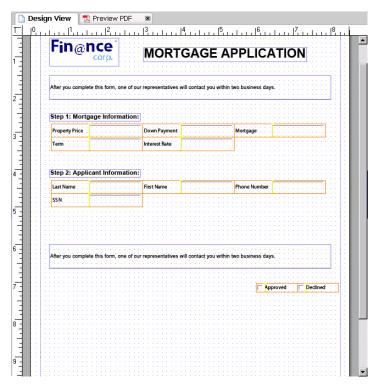
6. Save your form design.

You have imported and embedded a schema into your form design.

➤ To add fields to the form design using a schema:

- 1. Drag MortgageFields from the Data View palette onto the left side of your form design, below Step1: Mortgage Information:. A group of fields appear, based on the schema. The data connections will be set for each field automatically.
- 2. In the Layout palette, perform the following tasks:
 - In the X box, type .5in.
 - In the Y box, type 2.75in.
- 3. Select Insert > Unwrap Subform so that these fields are no longer grouped together. This makes it easier to reposition individual fields later in this tutorial.
- 4. Drag ApplicantFields from the Data View palette onto the left side of your form design, below Step 2: Applicant Information:.
- 5. In the Layout palette, perform the following tasks:
 - In the X box, type .5in.
 - In the Y box, type 4.25in.
- 6. Select Insert > Unwrap Subform.
- 7. Drag ApprovalFields from the Data View palette centered onto your form design, below the second set of instructions and the group of Applicant Fields you added in step 4.
- 8. In the Layout palette, perform the following tasks:
 - In the X box, type 6.0in.
 - In the Y box, type 7.0in.
- 9. Select Insert > Unwrap Subform.
- 10. Save your form design.

You have created a data connection based on an XML schema file and added multiple fields to your form design. Your form design should look like the following illustration.



Changing Text Field types to Drop-down List types

As you work on your form design, you may want the applicant to enter information into a field by selecting from a list of predefined values. You will change the Term and InterestRate fields to a Drop-down List object and provide predefined values that appear in the drop-down list.

➤ To change a Text Field type to a Drop-down List type:

- 1. In the Hierarchy palette, select Term.
- 2. In the Object palette, click the default Field tab and, in the Type list, select Drop-down List.
- 3. Click Add [], type 5, and then press the Enter key.
- 4. Type the values 10, 15, 20, 25 and 30, pressing the Enter key after each entry.
- 5. Repeat steps 1-4 for InterestRate, but type the values 5.00, 5.50, and 6.00.
- 6. Save your form design.

You have changed a Text Field object to a Drop-Down List object and added items to each drop-down list.

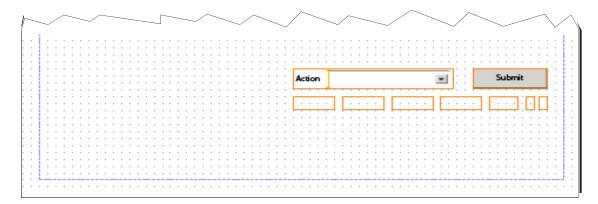
Using your form design in Workspace ES

You will use your form design in Workspace ES; therefore, a collection of fields with specific data-binding names to transport data must be added to your form design. A custom type is provided to simplify the process of enabling a form for Workspace ES.

You must add a custom object named Process Fields to a form design so that it operates correctly in Workspace ES.

➤ To add the Process Fields object to your form design:

- 1. Select Insert > Custom > Process Fields. A group of fields appears in the middle of the form design.
- 2. Scroll the form design so that the bottom of it appears.
- 3. With Process Fields still selected on your form design, use the arrow keys to move the group of fields approximately one inch above the bottom of your form design. After you complete the task, your Process Fields should look like the following illustration in your form design.



4. Save your form design.

You have added the Process Fields object to the form design. Now, Workspace ES can use the form design.

Editing captions in your form design

You may notice that the captions for the fields you dragged onto your form design are already predefined in a user-friendly manner. This is not always the case because most schema files are created based on a table in a database. Names from a database are okay for a person who is familiar with the database; however, it is not usually the text you want to display to the person filling your form.

You will now edit some of the captions. Editing captions does not affect the binding names.

➤ To modify the caption of a field:

- 1. In the Hierarchy palette, select Term.
- 2. In the Object palette, click the Field tab and, in the Caption box, type Term (Years).
- 3. Save the form design.

You have modified a caption in your form design.

Changing the position of fields on your form design

Next, you will position the fields on your form design so that the form design is more visually appealing.

➤ To change the position of fields on your form design:

- 1. In the Hierarchy palette, select Mortgage and, in the Layout palette, type 3.498in in the Y box, and then press the Enter key.
- 2. Repeat step 1 using PhoneNumber but, in the Y box, type 4.998in.
- 3. On the form design, select the Mortgage field, hold down the Control key and select the Term field, and then select Layout > Align > Left.
- 4. On the form design, select the Phone Number field, hold down the Control key and select the SSN field, and then select Layout > Align > Left.
- 5. In the Hierarchy palette, select DownPayment, hold down the Control key and select InterestRate and FirstName.
- 6. In the Layout palette, in the X box, type 4in, and then press the Enter key.
- 7. In the Hierarchy palette, select Declined.
- 8. In the Layout palette, in the X box, type 6.0in and, in the Y box, type 7.5in, and then press the Enter key.
- 9. Save the form design.

You have changed the positions of some of the fields in your form design.

Enhancing the appearance of your form design

Next, you will enhance the appearance and usability of your form design. You can modify several fields at the same time to quickly change the appearance of your form design. In this tutorial, you will make the following enhancements to your form design:

- Changing field sizes
- **Changing** spacing for captions
- Changing fonts
- Adding default values
- Formatting field values
- Changing a field to use combs

Changing field sizes

You will change the size of fields so that each field will allow enough space for the user to enter information and make each field appear next to each other.

➤ To change the size of a field:

1. In the Hierarchy palette, select PropertyPrice, hold down the Control key and select DownPayment, Mortgage, Term, InterestRate, LastName, FirstName, PhoneNumber, and SSN.

2. In the Layout palette, in the Width box, type 3in, and then press the Enter key.

You have changed the size for multiple fields in your form design.

Changing spacing for captions

You will increase the spacing between the caption and the text that a form filler enters.

➤ To change the spacing of a caption:

- 1. In the Hierarchy palette, select PropertyPrice, hold down the Control key and select DownPayment, Mortgage, Term, InterestRate, LastName, FirstName, PhoneNumber, and SSN.
- 2. In the Layout palette, in the Reserve box, type 1.2in, and then press the Enter key.

You have changed the spacing of the field captions in your form design.

Changing fonts

You will change the fonts so that the size of the caption is a smaller font. You will also change the color of the text that a form filler enters.

➤ To change fonts on a form design:

- 1. Select Palettes > Font. The Font palette appears. Drag and dock it to the left of the form in the LiveCycle Form Design perspective. You may need to adjust the size of your other palettes.
- 2. In the Hierarchy palette, select PropertyPrice, and then hold down the Control key and select DownPayment, Mortgage, Term, InterestRate, LastName, FirstName, PhoneNumber, and SSN.
- 3. In the Font palette, in the Currently Editing Caption and Value list, select Edit Caption and perform the following tasks:
 - In the Font list, select Arial.
 - In the Font list, select the default of 10.
 - In the Style list, select Bold.
- 4. In the Font palette, in the Currently Editing Caption and Value list, select Edit Value and perform the following tasks:
 - In the Font list, select Arial.
 - In the Size list, select 12.
 - Click the Color box and select the blue color swatch.
- 5. In the Hierarchy palette, select Approved, and hold down the Control key and select Declined.
- 6. In the Font palette, perform the following tasks:
 - In the Font list, select Arial.
 - In the Size list, select 12.
 - In the Style list, select Bold.

You have changed the fonts in your form design.

Adding default values

You will add default values to the PropertyPrice, DownPayment, InterestRate, and Term fields. The purpose of defaults is to reduce the amount of text a form filler may need to type.

➤ To change a default value to a field:

- 1. In the Hierarchy palette, select PropertyPrice.
- 2. In the Object palette, click the Value tab and, in the Default box, type 0.
- 3. Repeat steps 1-2 and specify the default for the following fields:
 - For DownPayment, in the Default box, type 0.
 - For the Term, in the Default list, select 5.
 - For InterestRate, in the Default list, select 5.00.

You have specified default values to populate field values in your form design.

Formatting field values

Next, you will format field values so that they appear correctly after the user types them. For instance, in the form design, you need a dollar sign to appear in fields that represent money, and you need parentheses around area codes of phone numbers.

You can choose from a list of predefined display patterns or you can create a custom pattern. In this case, you will create a custom pattern using the numeric symbols 9 and z, as well as the currency symbol (\$) and the left and right parenthetic characters (). In our example, given the input 1234567.98, the custom display pattern (\$z,zzz,zz9.99) will display \$1,234,567.89. For more information about patterns, see LiveCycle Designer ES Help, which is accessible from Workbench ES.

➤ To format the display and edit values:

- 1. In the Hierarchy palette, select Mortgage and, in the Object palette, perform the following tasks:
 - Click the Value tab and, in the Type list, select Calculated Read Only.
 - Click the Field tab and click Patterns. The Patterns Numeric Field dialog box appears.
 - Click the Display tab and, in the Pattern box, type (\$z,zzz,zz9.99) and then click Apply.
 - Click the Edit tab and, in the Pattern box, type (\$z,zzz,zz9.99), and then click Apply and click
- 2. In the Hierarchy palette, select PropertyPrice, and then hold down the Control key and select DownPayment.
- 3. In the Object palette, perform the following tasks:
 - Click the Value tab and, in the Type list, select User Entered Required.
 - Click the Field tab and click Patterns. The Patterns Numeric Field dialog box appears.
 - Click the Display tab and, in the Pattern box, type (\$z, zzz, zz9.99), and then click Apply.
 - Click the Edit tab and, in the Pattern box, type (\$z, zzz, zz9.99), click Apply, and then click OK.
- 4. In the Hierarchy palette, select PhoneNumber and, in the Object palette, perform the following tasks:

- Click the Value tab and, in the Type list, select User Entered Required.
- Click the Field tab and click Patterns. The Patterns Numeric Field dialog box appears.
- Click the Display tab, select Telephone (USA Canada), and then click Apply.
- Click the Edit tab, select Telephone (USA Canada), click Apply, and then click OK.

You have formatted the fields in your form design so that fields are displayed with a dollar sign that represent monetary amounts and parentheses surround area codes of phone numbers.

Changing a field to use combs

Lastly, you will change a field to use a comb. When you use combs for a field, it divides the field with vertical lines. Combed fields are useful for visually indicating to the form filler the correct number of characters that must be entered in a field. For instance, you will change the SSN (Social Security Number) field to use a comb of nine characters.

➤ To change the SSN field to use a comb:

- 1. In the Hierarchy palette, select SSN.
- 2. In the Object palette, click the Field tab, select Comb Of, type 9 in the corresponding box, and then press the Enter key.

You have changed the SSN field to use a comb.

Adding calculations to your form design

You will make a form more interactive by adding a calculation to your form design. You add JavaScript by using the Script Editor to calculate the mortgage amount in your form design.

Note: You may need to drag the bottom of the Forms toolbar to expand the area for the Script Editor.

➤ To add a calculation to the mortgage amount:

- 1. In the Hierarchy palette, select Mortgage.
- 2. In the Script Editor, select the appropriate options:
 - In the Show list, select calculate.
 - In the Language list, select JavaScript.
 - In the Run At list, select the default Client.
- 3. In the Script Source field, type the following calculation:

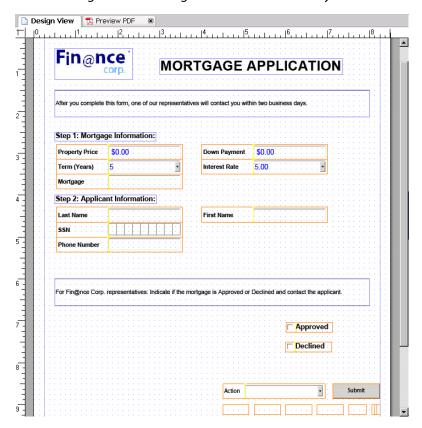
```
if (PropertyPrice.rawValue > DownPayment.rawValue)
{
   this.rawValue = PropertyPrice.rawValue - DownPayment.rawValue;
}
else
{
   this.rawValue = 0;
}
```

4. In the Script Editor, click Check Script [7] to ensure that there are no syntax errors.

5. Save your form design.

You have added a calculation to the Mortgage field.

You have finished the form design. The following illustration shows how your form looks in Design View.



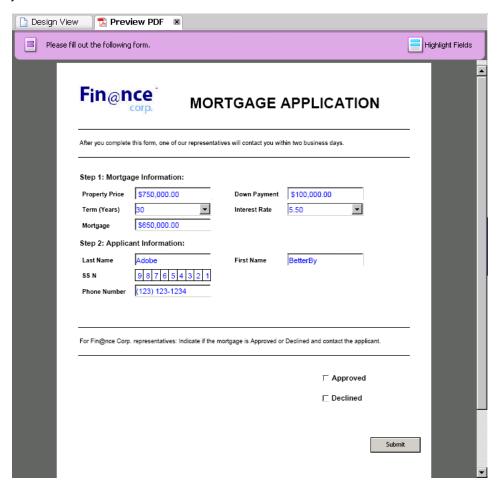
Testing form designs

It is a good idea to test your form before you use it in a process. You will use a sample data file to preview your form when it is merged with data. Testing your form with data is recommended to ensure that it functions as designed.

➤ To test your form design using sample data:

- 1. Select Edit > Form Properties. The Form Properties dialog box appears.
- 2. Click the Preview tab.
- 3. Beside the Data File box, click Browse 🛐 to find the data file. The Open XML File dialog box appears.
- 4. Select LiveCycle ES Server > Schemas > loanTestData.xml file and click OK.
- 5. In the Form Properties dialog box, click OK.
- 6. Click Preview PDF to see how the form looks when it contains data.

You have created and tested your form design. You can now use it in a process. The following illustration shows how your form looks in Preview PDF.



4

Creating a Process

In this section, you will learn how to create, edit, and activate a process using Workbench ES. You will learn how to do the following tasks in the order shown:

- Creating the process to handle mortgage applications
- Editing your process version for the mortgage application process
- Activating your process version for the mortgage application process as a service

You create a process by using Workbench ES to automate a business process. When a process is created, a process version is automatically created. You can create multiple process versions to represent different versions of your process. Each process version has a process diagram. A process diagram is the visual representation of that business process that you want to automate. You add elements to the process diagram, which include operations, events, routes, and modeling elements.

You can automate human-interaction tasks and electronic tasks. Here, you will create a process that requires human interaction. Human interaction tasks require interaction with a user. Such tasks include approving a form, signing a form, and reviewing a document.

The mortgage application form that you created is used by the process. Here are the basic steps to create a process.

Create a process category: You will create a process category to organize the process you create.

Create a process: You will create a process to represent your business process. As you create your process, you will also create a process category to organize processes that you create for loans.

Edit the process version: When you first create a process, the process diagram is empty. You will add operations, routes, variables, and swimlanes to the process diagram. In addition, you can define the business rules for your process.

Activate a process version: After you save your process version, you will activate it. The result is a new service is available that can be invoked or used by other processes.

For more information about working with processes, see LiveCycle Workbench ES Help.

Creating the process to handle mortgage applications

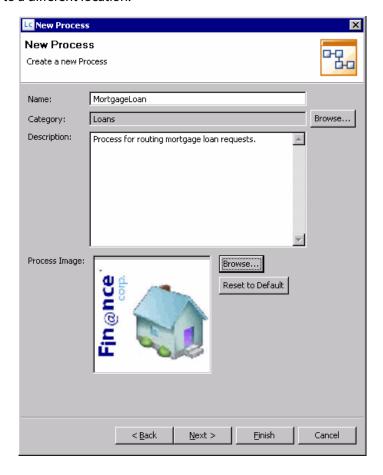
You will create a process to automate the routing of mortgage applications at Fin@nce Corporation. When you create a process, you can create additional process categories to organize your processes. You will create a process category to store loan-related processes.

➤ To create a process to handle mortgage applications:

- 1. Ensure that you are logged in to the LiveCycle ES server and are in the LiveCycle Process Design perspective. For information, see <u>Logging in to a LiveCycle ES server</u>.
- 2. Select File > New > New Process. The New Process dialog box appears.
- 3. In the Select An Option for Creating Your Process area, select Create A New Process, and then click Next.
- 4. In the Name box, type MortgageLoan.

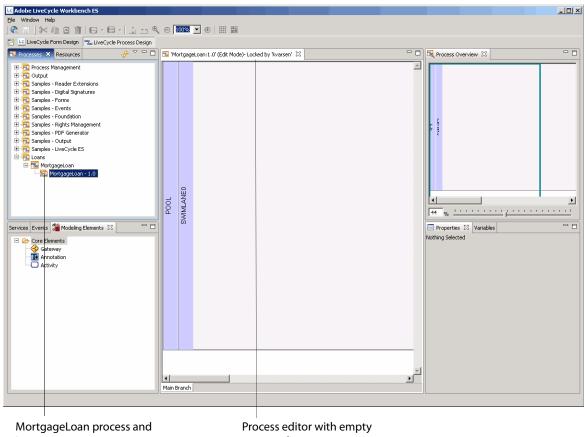
- 5. Click New. The New Process Category dialog box appears.
- 6. In the Name box, type Loans and, in the Description box, type Loan processes, and then click Finish.
- 7. In the New Process dialog box, in the Category list, ensure that Loans is selected.
- 8. In the Description box, type Process for routing mortgage loan requests..
- 9. Click Browse. An Open dialog box appears.
- 10. Browse to the location where you downloaded files required for this tutorial, select houseImage.jpg file, and click Open. The image appears in the Process Image area as shown in the illustration below.

Note: The location where you select the image may be different if you copied the images required for this tutorial to a different location.



11. Click Next, accept the defaults provided, and then click Finish.

You have created a process named MortgageLoan, which you will see in the Processes view. You will see a process version created automatically beneath the MortgageLoan process. In addition, an editor named MortgageLoan: 1.0 (Edit Mode) appears. Workbench ES should look like the following illustration.



Loans category.

process diagram.

Editing your process version for the mortgage application process

When you edit a process, you are editing a specific variation of the process called a process version. You will perform these tasks to build and edit the details of your process:

- Renaming your pool
- Adding a swimlane
- Modifying your swimlanes
- Saving your process version
- Defining operations in your process diagram
- Assigning values to variables in your process version
- Drawing routes in your process diagram

Renaming your pool

A process diagram is used to visually represent the operations that occur in your business process. Pools contain a number of swimlanes and identify the participants in a process, and are often used to represent an organization or business entity.

You will rename the pool to describe the business process where an applicant applies for a mortgage with an organization called Fin@nce Corporation.

➤ To rename your pool in the process version:

- 1. On the MortgageLoan 1:0 tab, click the text POOL to select the pool. The POOL properties appear in the Properties view.
- 2. In the Properties view, in the Name box, type FIN@NCE CORPORATION and, in the Description box, type External facing business process used to route mortgage applications based on the mortgage amount..

You have renamed the pool in your process version.

Adding a swimlane

Swimlanes are used to visually organize activities that a participant or a group of participants perform. You will add a swimlane to separate operations performed by people who approve the loans at Fin@nce Corporation.

➤ To add a new swimlane in your pool:

 On the MortgageLoan tab, right-click the text SWIMLANE0 and select Insert a Swimlane > Below Selected Swimlane.

You have added a swimlane to your pool. A new swimlane named SWIMLANE1 appears beneath SWIMLANE0.

Saving your process version

You should save your process version at regular intervals. When you save your process version, it becomes visible to other users who are logged in to the same server.

➤ To save your process version:

Select File > Save.

You have saved the MortgageLoan process version.

Modifying your swimlanes

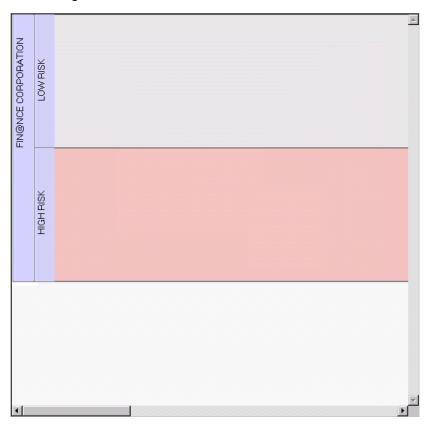
You can rename swimlanes to better describe their purpose. You can also change their size and color. You will name one swimlane *LOW RISK* and the other swimlane *HIGH RISK*.

Tip: You can also modify the height of a swimlane by dragging the lower border up or down.

➤ To rename the swimlanes in your pool:

- 1. In the process diagram, select SWIMLANEO. The SWIMLANEO properties appear in the Properties view.
- 2. Click the General property group. A list of properties appears.
- 3. In the Properties view, click the General category and type the following information:
 - In the Label box, type LOW RISK to replace SWIMLANEO.
 - In the Height box, type in 250.
 - In the Description box, type Fin@nce Corp. representatives who approve loans that are low risk..
- 4. Select SWIMLANE1 in the process diagram.
- 5. In Properties view, click the General category and perform the following tasks:
 - In the Label box, type HIGH RISK to replace SWIMLANE1.
 - Click the ellipses button beside Color and, in the Color palette, select the color red and then click OK.
 - In the Height box, type in 250.
 - In the Description box, type Fin@nce Corp. representatives who approve loans that are high risk..
- 6. Save your process version.

You have modified the names, height, and colors of the swimlanes in your pool. Your process diagram should look like the following illustration.



Defining variables for your process version

You will now define variables for your process version. Variables are used to save data during the execution of your process, such as information that enters the process. Variables are used to store information that is passed out of your process or to store information that can be referenced during the execution of operations in your process. Variables of different types can store different types of information. You will create variables of the following types to store the form and the mortgage amount:

xfaform: This type associates the render and submit operations for an XML-based form. It will be used as an input variable to access the form's data, point to a form design in the repository, and to specify the render and submit operations for a form design. This form type is referenced as the form variable for the MortgageLoan process.

This variable is required because processes need a form design to be associated with it. A form is the mechanism for users to interact with a process.

float: This type saves the amount of the mortgage as a float value. It will be used to determine where to route the mortgage application in a conditional statement.

➤ To define a variable to store your form:

- 1. In the Variables view, click Add A New Variable 1. The Variable dialog box appears.
- 2. Type the following information:
 - In the Name box, type LoanForm.
 - In the Title box, type Loan form data.
 - In the Description box type Form submitted and stored in a xfaForm type..
- 3. In the Type list, select xfaForm. Additional boxes and buttons appear in the Datatype Specific Settings area.
- 4. In the General area, select Required and Input.
- 5. In the Enduser UI Items area, select Searchable and Visible In UI.
- 6. Beside the Template URL box, click Browse. The Select Form dialog box appears.
- 7. Select Forms > MortgageAppForm.pdf [X.Y] (where [X.Y] represents the version of the form design) and click OK.
- 8. In the Variable dialog box, click OK.

Note: If the form design has an embedded schema, click Schema Settings. The schema appears in the Form Schema Settings dialog box. You may need to click Reload From Form if you change the schema in your form design.

➤ To define a variable to store the mortgage amount:

- 1. In the Variables view, click Create New Variable [1]. The Variable dialog box appears.
- 2. Type the following information:
 - In the Name box, type LoanAmount.
 - In the Title box, type Amount of Mortgage.
 - In the Description box, type Mortgage amount to use as part of the condition for routing ...
- 3. In the Type list, select float.
- 4. Select Required and click OK.

You have defined the necessary variables for the MortgageLoan process.

Defining operations in your process diagram

You use operations to define the steps in the process diagram for your process version. You will use operations to represent the people involved in your automated process and for performing operations to data in your automated process. You will add the following operations in your process diagram to satisfy the established business process:

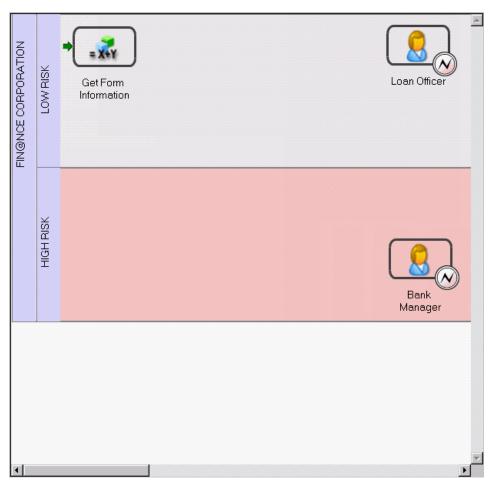
- An Execute operation to retrieve the data from the form that is used as input into the process
- Two Assign Task operations to involve specific users from Fin@nce Corporation in the process

➤ To define the operations in the process diagram:

- 1. In the Services view, select Foundation > Set Value 1.0.
- 2. Drag the Execute operation to the upper-left corner of the LOW RISK swimlane.
- 3. In the Properties view, in the General category, perform the following tasks:
 - In the Name box, type Get Form Information.
 - In the Description box, type Retrieve information from the form and assign values to variables.
- 4. In the Services view, select Process Management > User 1.0.
- 5. Drag two Assign Task operations to these locations in the specified order:
 - Upper-right corner in the LOW RISK swimlane
 - Lower-right corner in the HIGH RISK swimlane
- 6. In the LOW RISK swimlane, select the AssignTask1 operation and, in the Properties view, in the General category, perform these tasks:
 - In the Name box, type Loan Officer.
 - in the Description box, type Approver for loans less than \$500,000...

- 7. In the HIGH RISK swimlane, select the AssignTask2 operation and, in the Properties view, in the General category, perform these tasks:
 - In the Name box, type Bank Manager.
 - In the Description box, type Approver for loans \$500,000 or more...
- 8. Save your process version.

You have defined the process diagram for your process version, which should look like this illustration.



Assigning values to variables in your process version

You use operation properties to assign values to variables in your process version. Other operations in your automated process can also use the variables. You will assign the mortgage amount from the filled form to the LoanAmount variable and deselect the Approved and Declined options.

Caution: The steps listed are dependent on the schema that you embedded in your form design.

➤ To map operations to the LoanAmount variable:

- 1. In the process diagram, select the Get Form Information operation.
- 2. In the Properties view, in the Mappings category, click Add A List Entry 🗣 . An entry appears in the table.

- 3. Click [Location], and then click the ellipsis button that appears beside [Location]. The XPath Builder dialog box appears.
- 4. Under Process_data, double-click LoanAmount. The text /process data/@LoanAmount appears in the middle pane.
- 5. Click OK.
- 6. Click [Expression], and then click the ellipsis button that appears beside [Expression]. The XPath Builder dialog box appears.
- 7. In the drop-down list located in the lower-middle pane, select Number.
- 8. In the bottom-middle pane, double-click Number(object?).
- 9. The text number (object?) appears in the middle pane.
- 10. In the middle pane, select the text Object? so that it is highlighted. With the object? text selected, select Process_data > LoanForm > Object > Data > Xdp > Datasets > Data > MortgageApp > MortgageFields, and double-click Mortgage.
- 11. The following text appears in the middle pane:

number(/process data/LoanForm/object/data/xdp/datasets/data/MortgageApp/ MortgageFields/Mortgage).

- 12. Click OK.
- 13. Save your process version.

You have assigned the mortgage amount to the LoanAmount variable in your process version. You will use this variable later to route the form appropriately.

➤ To deselect the Approved and Declined options:

- 1. With the Get Form Information operation still selected, in the Properties view, in the Mappings area, click Add A List Entry *. Another entry appears in the table.
- 2. Click [Location], click the ellipsis button beside [Location]. The XPath Builder dialog box appears.
- 3. Select Process data > LoanForm > Object > Data > Xdp > Datasets > Data > MortgageApp > ApprovalFields, and double-click Approved. The following text appears in the middle pane: /process data/LoanForm/object/data/xdp/datasets/data/ MortgageApp/ApprovalFields/Approved.
- 4. Click OK.
- 5. Click [Expression], and then click the ellipsis button beside [Expression]. The XPath Builder dialog box appears.
- 6. In the middle pane, type "0" and then click OK.

Note: Be sure that you type the quotation marks.

- 7. Repeat steps 1 6, but select Process_data > LoanForm > object > data > xdp > datasets > data > MortgageApp > ApprovalFields, and double-click Declined.
- 8. Save your process version.

You have deselected the Approved and Declined options in your process version. This will ensure that if the applicant accidently selects the Approved or Declined option, they will be deselected.

Setting operation properties in your process version

Each operation you dragged onto the process diagram has several properties that can be configured. You configure operation properties to change the way an operation executes. For instance, when the Assign Task operation executes, it will require a form specified by a variable in the process version.

➤ To set the Loan Officer operation properties:

- 1. In the process diagram, select the Loan Officer operation.
- 2. In the Properties view, click the Initial User Selection category and, in the Select Initial User area, select Assign To Specific User.
- 3. Click Browse. The Select User dialog box appears.
- 4. In the Search Type list, select User Name, and then click Find.
- 5. In the Results pane, select Alex Pink and click Add. Alex Pink appears in the Select User pane. Click OK.
- 6. In the Properties view, click the Task Instructions category and, in the Task Instructions list, select Literal Value.
- 7. In the box below the Task Instructions list, type Approve or decline loans...
- 8. Click the Form Data Mappings category and perform the following tasks:
 - In the Input Form Variable box, type /process data/LoanForm.
 - In the Output Form Data list, select Variable. In the list below, select LoanForm.
- 9. Save the process version.

➤ To set the Bank Manager operation properties:

- 1. In the process diagram, select the Bank Manager operation.
- 2. In the Properties view, click the Initial User Selection category and, in the Select Initial User area, select Assign To Specific User.
- 3. Click Browse. The Select User dialog box appears.
- 4. In the Search Type list, select User Name, and then click Find.
- 5. In the Results pane, select Tony Blue and click Add. Tony Blue appears in the Select User pane. Click OK.
- 6. In the Properties view, click the Task Instructions category and, in the Task Instructions list, select Literal Value.
- 7. In the box below the Task Instructions list, type Approve or deny loans...
- 8. Click the Form Data Mappings category and perform the following tasks:
 - In the Input Form Variable box, type /process data/LoanForm.
 - In the Output Form Data list, select Variable and in the list below, select LoanForm.

9. Save the process version.

You have set the operation properties for the applicant, loan officer, and bank manager.

Drawing routes in your process diagram

Routes are used to define the order in which a process proceeds through the operations that are defined in a process diagram. You can draw routes from one operation to another by dragging *connectors* from one operation to another. When an operation is selected in the process diagram, an anchor appears as a small circle on each side of the operation.

You can specify conditions and various operations to execute based on the conditional logic of each route. You can rename the routes to identify the condition in the process diagram. You can access data that are submitted in XML forms using an XPath expression. An XPath expression is a representation of the data based on the schema of the form. You must understand the schema that the form uses to build an XPath expression. The schema that is used is based on the schema you embedded into the form design when you created it.

➤ To draw routes between operations:

- 1. In the process diagram, select the Get Form Information operation. Anchors appear on the operation.
- 2. Drag the right anchor of the Get Form Information operation to the left edge of the Loan Officer operation.
- 3. With the Get Form Information operation still selected, drag the right anchor to the left edge of the Bank Manager operation.

➤ To rename routes:

- 1. Select the route from the Get Form Information operation to the Loan Officer operation.
- 2. In the Properties view, click the General category and perform the following tasks:
 - In the Name box, type If mortgage is less than \$500,000.
 - In the Description box, type Route mortgages less than \$500,000 to the loan officer..
 - Drag the If Mortgage Is Less Than \$500,000 route label and position it above the border that divides the HIGH RISK and LOW RISK swimlanes.
- 3. Select the route from the Get Form Information operation to the Bank Manager operation.
- 4. In the Properties view, click the General property group and perform the following tasks:
 - In the Name box, type If mortgage is \$500,000 or more.
 - In the Description box, type Route loans \$500,000 or more to the bank manager..
 - Drag the If Mortgage Is \$500,000 Or More route label and position it below the border that divides the HIGH RISK and LOW RISK swimlanes.
- 5. Save your process version.

➤ To modify the evaluation order of routes:

1. In the process diagram, select the Get Form Information operation.

- 2. In the Properties view, click the Route Evaluation category. A list of routes appears that originate from the Get Form Information operation.
- 3. Select If Mortgage Is \$500,000 Or More and click Move Route Up Condition . It now appears first in the list of routes.
- 4. Save your process version.

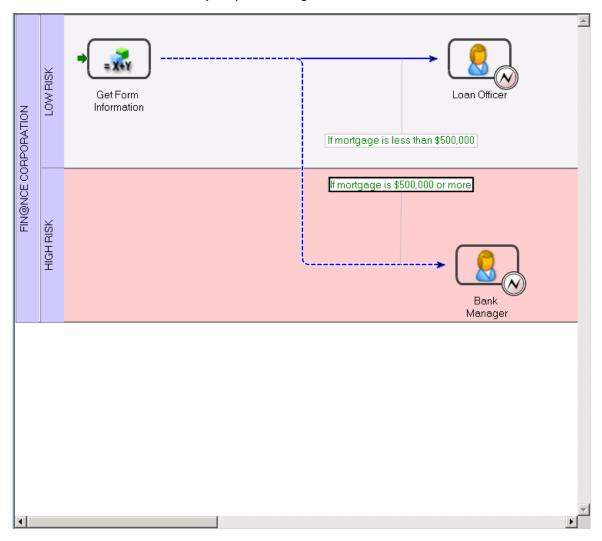
➤ To add a condition to the If mortgage is \$500,000 or more route:

- 1. In the process diagram, select the If Mortgage Is \$500,000 Or More route. The route appears highlighted.
- 2. In Properties view, click the Conditions category.
- 3. Click Add Route Condition . The Route Properties dialog box appears.
- 4. In the Expression box on the left, type /process_data/@LoanAmount.

Tip: You can use the XPath Builder in the Conditions pane to build the expression.

- 5. In the Operation list, select >= .
- 6. In the Expression box on the right, type 500000, and then click OK. The route from the Get Form Information operation to the Bank Manager operation changes to a dashed line. A condition also appears in the Properties view in the Conditions category.
- 7. Save the process version.

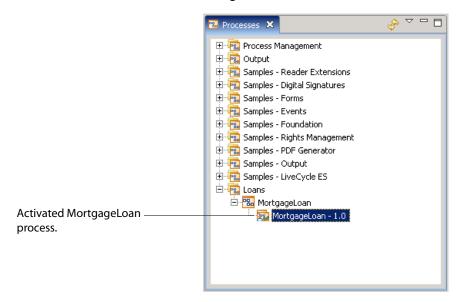
You have defined the routes used in your process diagram, which should look like this illustration.



Activating your process version for the mortgage application process as a service

When you activate the process, it becomes available as a service on the server. By default, a service is available to be initiated programmatically using EJB or SOAP.

- 1. In the Processes view, select Loans > MortgageLoan process.
- 2. Right-click MortgageLoan 1.0 and select Activate. A check mark appears on top of the process version icon in the Processes view as shown in the following illustration.



You have activated your process as a service on the server. You have completed creating the process for your application.

Next, you will configure your service so that it can be used from Workspace ES. If you are testing your application in a different environment, follow the tasks described in Exporting and Importing a LiveCycle ES Application.

5

Exporting and Importing a LiveCycle ES Application

In this section, you will learn how to do the following tasks to move an application from one environment to another:

- Exporting your application.
- Importing your application.

Note: You do not need to follow the tasks in this section if you are working in the same environment that you are planning to use for your application.

For more information about working with archive files, see LiveCycle Workbench ES Help.

Exporting your application

You use Workbench ES to export your application. The application is exported as an archive file, which is a file that contains a specific version of a process version and all of its associated assets.

➤ To export your application:

- 1. Log in to the server where you are exporting an application. For information, see <u>Logging in to a LiveCycle ES server</u>.
- 2. In the Processes view, select Loans > MortgageLoan.
- 3. Right-click MortgageLoan 1.0 and select Create LiveCycle Archive. The Create A LiveCycle Archive File dialog box appears. The internal name for the archive file is made unique by the system by appending the date and time to the name.
- 4. Beside the Destination box, click the ellipsis button. The Save As dialog box appears.
- 5. Browse to the location to save your archive file and, in the File Name box, type MortgageLoanAppEx, and then click Save.
- 6. In the Create a LiveCycle Archive File dialog box, click OK.
- 7. Verify that the MortgageLoanAppEx.lca file is created in the location you specified.

You have exported your application to an archive file. The archive file can be used to import your application into another server.

Importing your application

You must use Archive Administration to import an application into another environment. Archive Administration is accessed by logging in to LiveCycle Administration Console. The user profile that you use must be assigned either the Application Administrator or Super Administrator role.

➤ To log in to the LiveCycle Administration Console:

- 1. In the URL line of a web browser, type http://[server]: [port]/adminui (where [server] represents the network name of the LiveCycle ES server and [port] represents port number of the application server). For example, on the computer where you installed LiveCycle ES using the turnkey method, in the URL line of the web browser, type http://localhost:8080/adminui. The Administration login prompt appears.
- 2. Press Enter.
- 3. In the User Name box, type kvarsen and, in the Password box, type password, and then click Login.

Note: If you or your administrator have assigned a different user profile to access the LiveCycle Administration Console, type your assigned user ID and password.

You have logged in to the LiveCycle Administration Console.

➤ To access Archive Administration:

- 1. On the LiveCycle Administration Console Home page, click Services.
- 2. On the Services page, click Archive Administration.

You have accessed Archive Administration.

➤ To import your archive file using Archive Administration:

- 1. In Archive Administration, click Archive Management.
- 2. On the Archive Management page, click Import.
- 3. On the Archive Import page, click Browse. The Choose File dialog box appears.
- 4. Browse to the location where the MortgageLoanAppEx.lca file was saved, select the MortgageLoanAppEx.lca file, and click Open.
- 5. On the Archive Import page, click Preview.
- 6. On the Archive Preview page, verify the list of resources and objects, and then click Import.
- 7. On the Import Results page, verify that resources were imported, and click OK
- 8. Click Logout.

You have imported your application as an archive file into another environment. You are now ready to configure your service.

Configuring a Service

In this section, you will learn how to configure a service. Before your service can be used, you must configure and enable an endpoint. An *endpoint* specifies how a service is to be invoked. Here, you will configure an endpoint to be invoked from Workspace ES.

After you configure the endpoint, it appears as a process card in Workspace ES. Your endpoints can also be organized in groups, called *categories*, that you create here.

Note: The categories you create here are different from the process categories that you created in Workbench ES.

To configure a service, you must perform the following tasks in the specified order:

- Accessing Archive Administration.
- Creating a category for the MortgageLoan service.
- Configuring your service to be used from Workspace ES.

For more information, see Archive Administration Help, accessible from LiveCycle Administration Console.

Accessing Archive Administration

You must log in to the LiveCycle Administration Console to access Archive Administration. Archive Administration is an administrative tool for configuring an endpoint. The user profile you use must have administrator privileges on the server.

➤ To log in to the LiveCycle Administration Console:

- 1. In the URL line of a web browser, type http://[server]: [port]/adminui (where [server] represents the network name of the LiveCycle ES server and [port] represents the port number of the application server). For example, on the computer where you installed LiveCycle ES using the turnkey method, in the URL line of the web browser, type http://localhost:8080/adminui. The LiveCycle Administration Console login prompt appears.
- 2. Press Enter.
- 3. In the Name box, type kvarsen and, in the Password box, type password, and then click Login.

Note: If you or your administrator have assigned a different user profile to access LiveCycle Administration Console, type in your assigned user ID and password.

You have logged in to LiveCycle Administration Console.

➤ To access Archive Administration:

- 1. On the LiveCycle Administration Console Home page, click Services.
- 2. On the Services page, click Archive Administration.

You have accessed Archive Administration.

Creating a category for the MortgageLoan service

You will create a category for services that involve loans. The category you create will be visible as a container of endpoints in Workspace ES.

Note: The category you create here is different from the process categories you created in Workbench ES.

➤ To create a category for the MortgageLoan service:

- 1. On the Archive Administration page, click Category Management.
- 2. On the Category Management page, click Add.
- 3. In the Name box, type Loan Applications.
- 4. In the Description box, type Forms used for all loan applications., and then click Add.
- 5. Click Archive Administration.

You have created a category that appears in Workspace ES.

Configuring your service to be used from Workspace ES

When you create an endpoint, it is visually represented as a process card within Workspace ES. When that process card is selected in Workspace ES, the form design you created will be used to present a form to the user.

Now, you will create and configure an endpoint to specify how your service will be invoked. You will also configure permissions so that any validated user who can access Workspace ES can invoke your service. Finally, you will save the changes to your service. Your service cannot be invoked unless an endpoint has been both configured and enabled.

➤ To configure an endpoint to be initiated from Workspace ES:

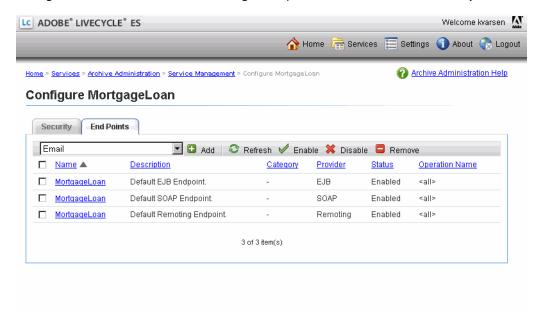
- 1. On the Archive Administration page, click Service Management.
- 2. On the Service Management page, find and click MortgageLoan: 1.0. You may need to use the page links near the bottom of the web page to find your process.

Note: Ensure that you click MortgageLoan: 1.0, which represents the process you activated as a service, not the installed sample called MortgageLoan-Prebuilt:1.0 link.

3. On the Configure MortgageLoan page, click the End Points tab and, in the list of endpoints, click TaskManager.

4. Click Add.

The following illustration shows the TaskManager endpoint selected in the list before you click Add.



- 5. On the Add TaskManager Endpoint page, provide a name and description:
 - In the Name box, type Mortgage Application.
 - In the Description box, type Form used for starting a mortgage application..
- 6. In Task Instructions box, type Complete the application and one of our representatives will contact you within two business days..
- 7. In the Categorization list, select Loan Applications and, in the Operation Name list, select Invoke.
- 8. Click Add.

Note: If Status is not Enabled, select the option left of Mortgage Application, and click Enable.

You have configured a Task Manager endpoint for the process, which allows the process to be invoked from Workspace ES.

➤ To specify permissions to invoke your service:

- 1. Click the Security tab and then click Add Principal.
- 2. On the Select Principal page, select All principals in domain Sample Organization, Finance Corp. You must select all principals for the domain that your users belong to.

Note: You can also select the All Principals option, which allows all users that have access to Workspace ES to start a process. In production systems, it is recommended that you do not select this option.

- 3. On the Add Permissions page, select INVOKE_PERM, and then click Add.
- 4. Click Logout.

You have configured your service so that everyone who can access Workspace ES can invoke the service.

7

Testing a Service Using LiveCycle Workspace ES

In this section, you will learn how to use Workspace ES to test your service. You must perform these tasks in the specified order:

- Logging in to Workspace ES
- Starting a mortgage application
- Verifying mortgage application routing

You will log in to Workspace ES using various user IDs in order to test your service:

Rye Woodard: You will use this user profile to fill and submit a mortgage application.

Alex Pink: You will use this user profile to log in as the loan officer.

Tony Blue: You will use this user profile to log in as the bank manager.

Logging in to Workspace ES

You must log in to the system using various user IDs in order to test your service.

➤ To log in to Workspace ES:

- 1. In the URL line of a web browser, type http://[server]: [port]/workspace (where [server] represents the network name of the LiveCycle ES server and [port] represents the port number of the application server). For example, on the computer where you installed LiveCycle ES using the turnkey method, in the URL line of the web browser, type http://localhost:8080/workspace. The Workspace ES login screen appears.
- 2. Press Enter.
- 3. In the Name box, type the appropriate user ID and, in the Password box, type your password, and then click Login.

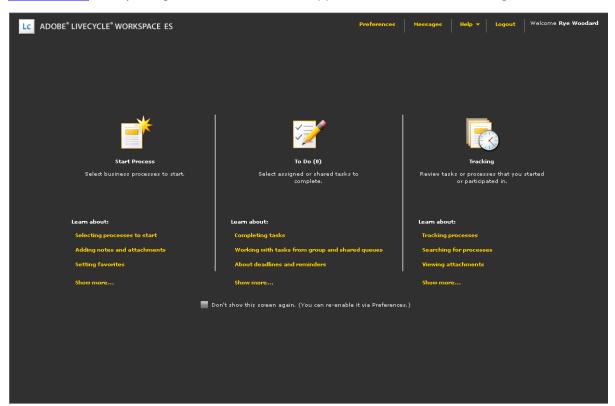
You have logged in to Workspace ES.

Starting a mortgage application

In Workspace ES, you must start a process to fill a form to initiate the mortgage approval service. You have already configured an endpoint and assigned it to a category. In Workspace ES, the endpoint you configured is visually represented by a process card that is accessible from the category you assigned. When you click the process card, the MortgageLoan service is invoked, which displays the form design.

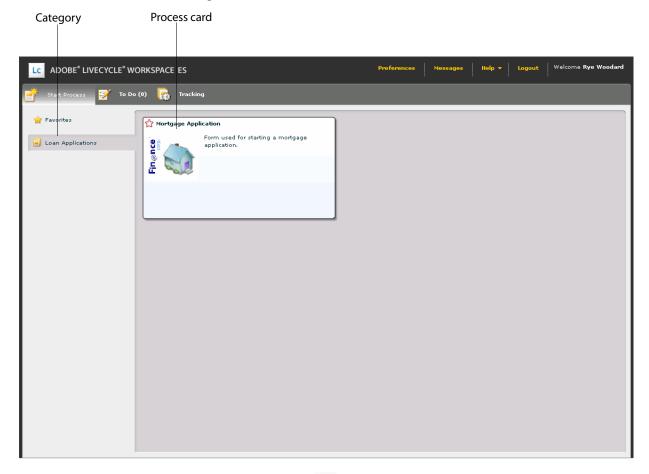
➤ To fill a form:

1. Log in to Workspace ES using Rye Woodard to start the activity. For information, see Logging in to Workspace ES. After you log in, the Welcome screen appears as shown in the following illustration.



1. On the Welcome screen, click Start Process 📑.

2. On the Start Process tab, click Loan Applications. The mortgage application is displayed as a process card as shown in the following illustration.

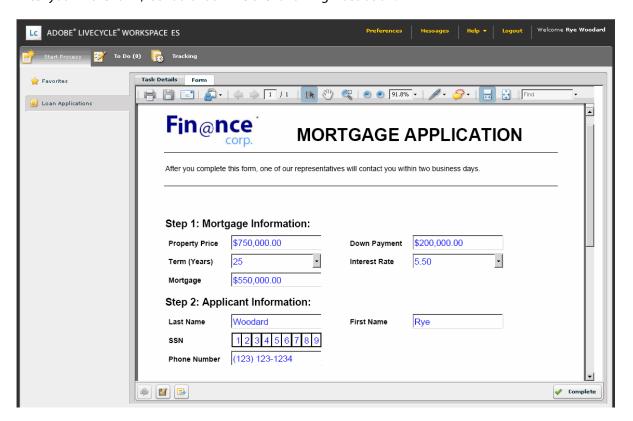


3. In the process card, click the Fin@nce Corp. icon . The Task Details and Form tabs appear; the Form tab is selected.

Note: If you click an area other than the Fin@nce Corp. icon in the process card, the Task Details and Form tabs appear but the Task Details tab is selected.

- 4. On the Form tab, under Step 1: Mortgage Information, perform the following tasks:
 - In the Property Sale Price box, type 750000.
 - In the Down Payment box, type 200000. In the Mortgage Amount box, the value of \$550,000 appears.
 - In the Term (Years) list, select 25.
 - In the Interest Rate list, select 5.50.
 - In the Last Name box, type Woodard.
 - In the First Name box, type Rye.
 - In the SSN box, type 123456789.

• In the Phone Number box, type 1231231234 and press the Enter key. After you fill the form, it should look like the following illustration.



Note: You will notice that the Submit button is no longer present in the form. Instead, the Complete button is used to submit a form.

- 5. Below the form, click Submit This Task <a> complete. A prompt appears in the lower-right corner that indicates that the task was submitted.
- 6. Click Logout. A Please Confirm dialog box appears with the prompt "Are you sure you want to logout?"
- 7. Click OK.

You have filled out a mortgage application and logged out of Workspace ES.

Verifying mortgage application routing

Because you applied for a mortgage of \$550,000, you must verify whether the form was routed to the bank manager. You will log in as both the loan officer and the bank manager to verify that the loan application was correctly routed. The following two results occur:

- 1. The mortgage application was not routed to the loan officer because the loan amount is more than five hundred thousand dollars.
- 2. The mortgage application is routed to the bank manager because the amount is equal to or greater than five hundred thousand dollars.

Logging in as the loan officer

- 1. Log in as Alex Pink. For information, see Logging in to Workspace ES.
- 2. On the Workspace ES Welcome page, verify that no number appears next to To Do.
- 3. Click Logout. A Please Confirm dialog box appears.
- 4. Click OK.

You have verified that the mortgage application did not route to the Alex Pink, the loan officer.

Logging in as the bank manager and approving the mortgage

- 1. Log in as Tony Blue. For information, see Logging in to Workspace ES.
- 2. On the Workspace ES Welcome page, verify that the number 1 appears next to To Do, and then click To Do 📝.
- 3. On the To Do tab, click the image on the Bank Manager card. The Task Details and Form tabs appear.
- 4. In the Form tab, scroll down to the Approved and Declined fields, select the Approved field, and then, below the form, click Complete. A prompt appears in the lower-right corner that indicates that the task submitted successfully. Also, the number in the To Do tab decrements by one.
- 5. Click Logout.

You have verified that the mortgage application was routed correctly. You have selected Approved. All you need to do is call your new customer to give them the good news.

You have now completed testing the mortgage application section and this tutorial.