

EMC[®] Documentum[®] Composer

Version 7.2

Building a Documentum Application Tutorial

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Preface

This tutorial describes the process of creating an insurance claims application.

Revision History

Revision Date	Description
February 2015	Initial publication.

Creating the insurance claims application

This tutorial describes how to build a sample Documentum application in Composer, install it to a repository, and use the custom artifacts within Webtop. The following list describes the artifacts that you will create when going through the tutorial:

- A custom type, `insurance_claim`, represents an insurance claim form.
- A lifecycle, `claim_lifecycle`, contains the states that support a typical insurance claim process. Objects of type `insurance_claim` are attached to this lifecycle.
- Two permission set templates, `claim_processors` and `claim_adjudicators`, that define users who can process and approve the insurance claims that are attached to the `claim_lifecycle` lifecycle.
- An alias set, `claim_aliasset`, is used in conjunction with the two permission sets, so that the application does not have to define specific users during design time.
- Two installation parameters, `processing_parameter` and `adjudication_parameter`, allow you to specify the values for the aliases in the alias set at installation time.

Prerequisites

This tutorial is tested and verified with Composer 6.5 SP2 or later. The tutorial should function with all versions of Content Server that Composer supports, but has been tested with a 6.5 SP2 environment. Before beginning the tutorial, make sure you have completed the following tasks:

- Obtain access to a Documentum repository (5.3 SP6 or later).
- Obtain access to a Webtop installation that is connected to the Documentum repository.
- Install Composer on your system.
- Configure the connection broker in `dfc.properties` for your Composer installation.

Configuring the connection broker in the `dfc.properties` file,

Configuring the connection broker

Repository access is handled by the Documentum connection broker. Before you start Composer for the first time, you need to specify the IP address for the connection broker.

To configure the connection broker:

1. Edit the `dfc.properties` file in the `<Composer_root>\plugins\com.emc.ide.external.dfc_1.00\documentum.config` directory and specify the host or IP address for the `dfc.docbroker.host[0]` property. For example:

```
dfc.docbroker.host[0]=123.45.6.789
```

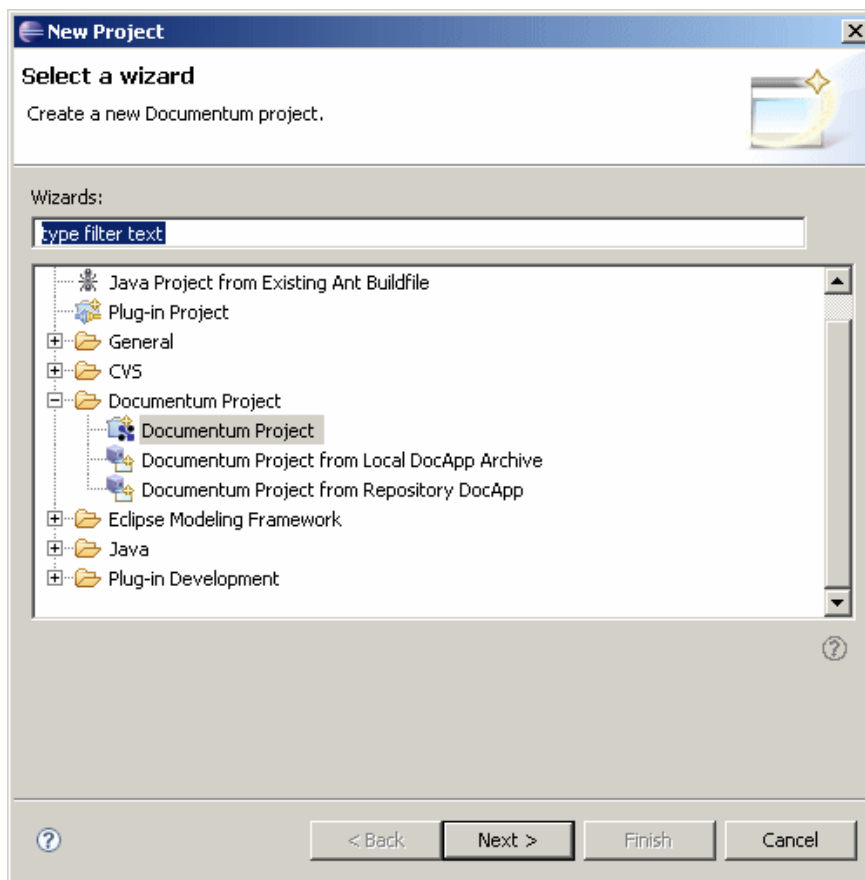
2. Save your changes.

Creating the Composer project

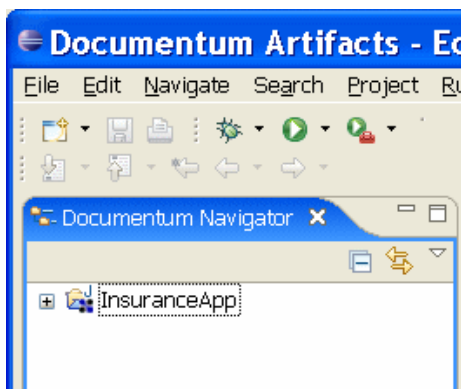
A Composer project contains a logical set of artifacts that function together to fulfill a business need. You must create a project before creating the artifacts.

To create the Composer project:

1. Start Composer and select a workspace.
2. Start a new project by clicking the **File > New > Project...** menu item. The **New Project** wizard appears.
3. Select **Documentum Project > Documentum Project** and click **Next**.



4. In the **Project Name** field, type **InsuranceApp** and click **Finish**. Composer will take a few moments to create the project.
5. If you are prompted to switch to the Documentum Artifacts perspective, click **Yes**. This perspective enables features that are useful in creating Documentum applications. Your new project appears in the **Documentum Navigator** view of Composer.



Creating the type

When the project is created, you can now add artifacts to it. The insurance claim type represents the insurance claim forms that get submitted by health care offices. Documents of this type need to be processed and reviewed before being paid out by the insurance provider.

To create the type:

1. In the **Documentum Navigator** view, right-click the **InsuranceApp > Artifacts > Types** folder and select **New > Other....** The New wizard appears.
2. Select **Documentum Artifact > Type** from the list and click **Next**.
3. In the **Artifact name** field, type **insurance_claim** and click **Finish**.
4. On the **General** tab, click **Select...** for the **Supertype** field, select **dm_document** from the list, and click **OK**.

General

Info

Type name:

Supertype:

Storage area:

Default Attached Aspects

Select the aspects to be attached a new instance of this type:

Constraints

Expression	Enforcement

General Attributes Display

5. On the **Attributes** tab, click **New** and select **newattribute1** from the list on the left.
6. In the **Structure** section, specify the following values for the fields:
 - Name — status
 - Data type — STRING
 - Length — 20

Structure

Name:

Data type: ▼

Length:

Repeating: ☐ Non-qualifiable: ☐

Default values:

New Remove

Constraints

Expression	Enforcement

New... Remove Edit

- Expand the **status** attribute node and click on **Value mapping**. The **Conditional Assistance** and **Value Mapping Table** sections appear on the right side.

Type Attributes

Display in the list below:

- ☒ Only attributes defined for this type
☐ All attributes including inherited from supertype

status

- Application Interface Display
- Value mapping**

New Remove

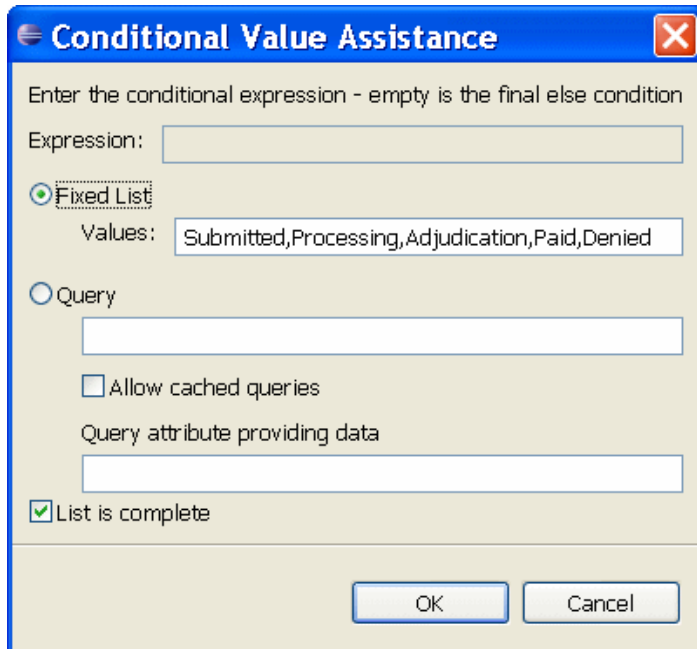
Conditional Assistance

Enter the condition and the possible values:

Condition	Possible Values

General Attributes Display

- In the **Conditional Assistance** section, click on **New....**
- Click on the **Fixed List** radio button and type **Submitted, Processing, Adjudication, Paid, Denied** for the **Values** field. This list populates a drop down menu where the user can select the status during the creation of an insurance claim document in Webtop.



Conditional Value Assistance

Enter the conditional expression - empty is the final else condition

Expression:

☒ **Fixed List**

Values:

☐ Query

☐ Allow cached queries

Query attribute providing data

☒ List is complete

OK Cancel

10. Select the **List is complete** checkbox and click **OK**. This prevents any custom input to be entered for the **status** attribute.

11. Click the **New** button four more times and specify attribute properties for each newattribute item in the list according to the information below:

newattribute2

- Name — date_of_service
- Data type — TIME

newattribute3

- Name — physician_name
- Data type — STRING
- Length — 50

newattribute4

- Name — patient_name
- Data type — STRING
- Length — 50

newattribute5

- Name — procedure_code
- Data type — INTEGER

12. In the **Display configuration list** section of the **Display** tab, click **New....** The **Display Configuration** window appears. This window lets you configure a new view in Webtop so the custom attributes are displayed when an insurance_claim object's properties are viewed.

13. In the **Configuration Label** field, type **Insurance claim attributes**. This will be the name of the tab as displayed in Webtop.

14. Select the **Custom Attributes only** check box. The list displays only the attributes that you created.
15. Select all of the attributes in the list (date_of_service, patient_name, physician_name, procedure_code, status) and click **Add**, then **OK**.

Display Configuration

Configuration name: NewConfig2

Configuration Label: Insurance claim attributes

Available attributes:

Ordered chosen attributes:

date_of_service
patient_name
physician_name
procedure_code
status

☒ Custom attributes only
☐ Hidden attributes only

Buttons: Add >, < Remove, Up, Down, Add Separator, Remove Separator, Make Secondary, OK, Cancel

16. In the **Application Interface Display** section, type **Insurance claim** for the **Type Label** field. This text is displayed in the drop down menu when selecting a type for a new document in Webtop.

Type UI Information

Display Configuration	Application Interface Display
Scope: webtop Remove Display configuration list: Info Insurance claim attributes New... Remove Edit Up Down Attributes in display configuration: date_of_service patient_name physician_name procedure_code	Type label: Insurance claim User help: Comments for developers:

General | Attributes | Display

17. Save the type.

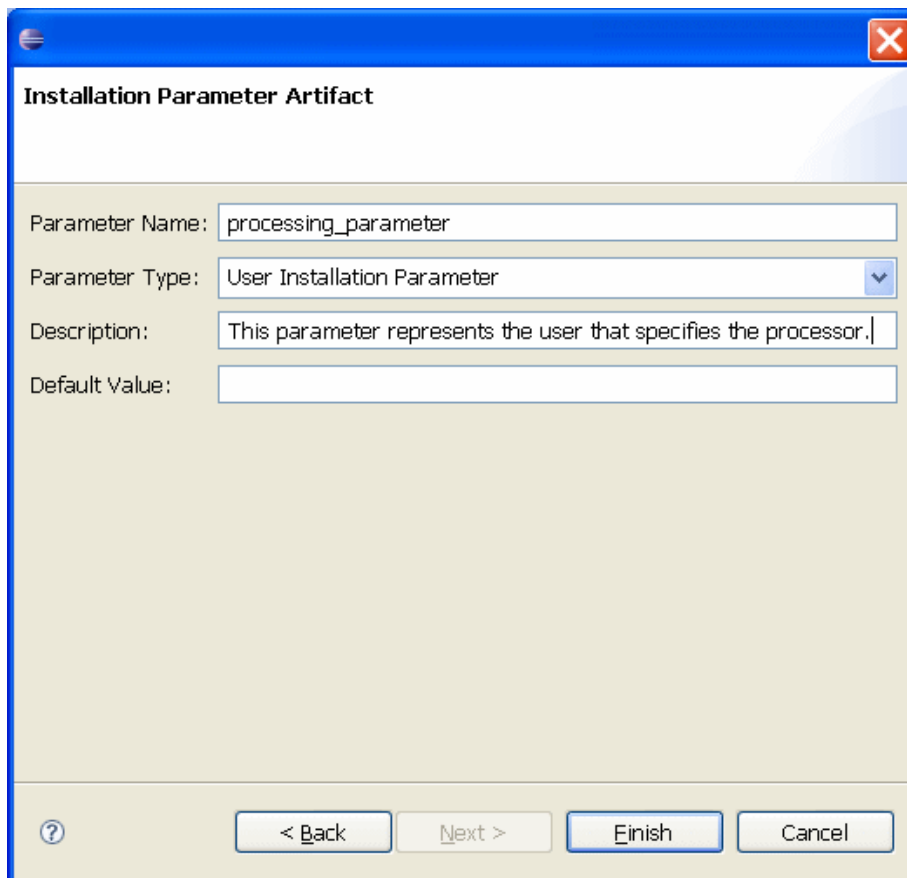
18. Check the **Problems** tab to see if there are any errors with the type. If there are errors, make sure you have completed all of the necessary steps above.

Creating the installation parameters

You need to create two installation parameters for the two aliases in the alias set that you will create later in this tutorial. The two aliases allow you to specify users who have the rights to process and approve insurance claims. With installation parameters, you can specify the values for the aliases during the installation of the application.

To create the installation parameters:

1. In the **Documentum Navigator** view, right-click the **InsuranceApp > Artifacts > Installation Parameters** folder and select **New > Other...**
2. In the **New** wizard, select **Documentum Artifact > Installation Parameter** and click **Next**.
3. In the **Artifact name** field, type **processing_parameter** and click **Next**.
4. Select **User Installation Parameter** from the **Parameter Type** drop down menu.
5. In the **Description** field, type **This parameter represents the user that specifies the processor.**



Installation Parameter Artifact

Parameter Name:

Parameter Type:

Description:

Default Value:

6. Click **Finish**.
7. Save the installation parameter.
8. Create another installation parameter with the following settings:
 - Artifact name — adjudication_parameter
 - Parameter Type — User Installation Parameter
 - Description — This parameter represents the user that specifies the adjudicator.
9. Check the **Problems** tab to see if there are any errors with the installation parameters. If there are errors, make sure you have completed all of the necessary steps above.

Creating the alias set

This alias set is used by the permission set that you will create later in this tutorial. The alias set allows you to set approved reviewers of the insurance claim during installation time instead of at design time. This allows more flexibility for the application to run in different environments and scenarios. The alias set contains the following aliases:

- processing_user — This alias represents a person who is authorized to review submitted claims and check them for completed information.
- adjudication_user — This alias represents a person who is authorized to approve or deny processed claims.

To create the alias set:

1. In the **Documentum Navigator** view, right-click the **InsuranceApp > Artifacts > Alias Sets** folder and select **New > Other....**
2. In the **New** wizard, select **Documentum Artifact > Alias Set** and click **Next**.
3. In the **Artifact name** field, enter **claim_aliasset** and click **Finish**. The **Alias Set** pane appears in Composer.
4. In the **Description** field of the **General** section, type **Alias set for claim_processors and claim_adjudicators permission sets**.
5. In the **Aliases** section, click on **Add**. The **New Alias** window appears.
6. Specify the following information for the fields and click **OK**:
 - Name — processing_user
 - Type — User

The alias is added to the aliases list.

7. Ensure that the alias that you just created is highlighted and click on the **Parameter** radio button in the **Value** section.
8. Click on the **Select** button for the **Parameter** field and select the **processing_parameter** installation parameter from the list.
9. Specify the following text for the **Description** field: **A user authorized to process submitted claims**.

Alias Set

General		Alias Details											
Name:	claim_aliasset	Name:	processing_user										
Description:	Alias set for claim_processors and claim_adjudicators permission sets	Type:	User										
Aliases <table border="1"> <thead> <tr> <th>Type</th> <th>Name</th> </tr> </thead> <tbody> <tr> <td>User</td> <td>processing_user</td> </tr> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> </tbody> </table> <div> Add Remove </div>		Type	Name	User	processing_user							Value <input type="radio"/> Leave It Blank <input checked="" type="radio"/> Parameter: processing_user Select...	
Type	Name												
User	processing_user												
		Category:	0										
		Description:	A user authorized to process submitted claims.										

Overview

10. Add another alias to the alias set with the following information:

- Name — adjudication_user
- Type — User
- Description — A user authorized to approve or deny claims.
- Parameter — select the radio button and choose **adjudication_parameter**

Alias Set

General		Alias Details											
Name:	claim_aliasset	Name:	adjudication_user										
Description:	Alias set for claim_processors and claim_adjudicators permission sets	Type:	User										
Aliases <table border="1"> <thead> <tr> <th>Type</th> <th>Name</th> </tr> </thead> <tbody> <tr> <td>User</td> <td>adjudication_user</td> </tr> <tr> <td>User</td> <td>processing_user</td> </tr> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> </tbody> </table> <div> Add Remove </div>		Type	Name	User	adjudication_user	User	processing_user					Value <input type="radio"/> Leave It Blank <input checked="" type="radio"/> Parameter: adjudication_user Select...	
Type	Name												
User	adjudication_user												
User	processing_user												
		Category:	0										
		Description:	A user authorized to approve claims										

Overview

11. Save the alias set.

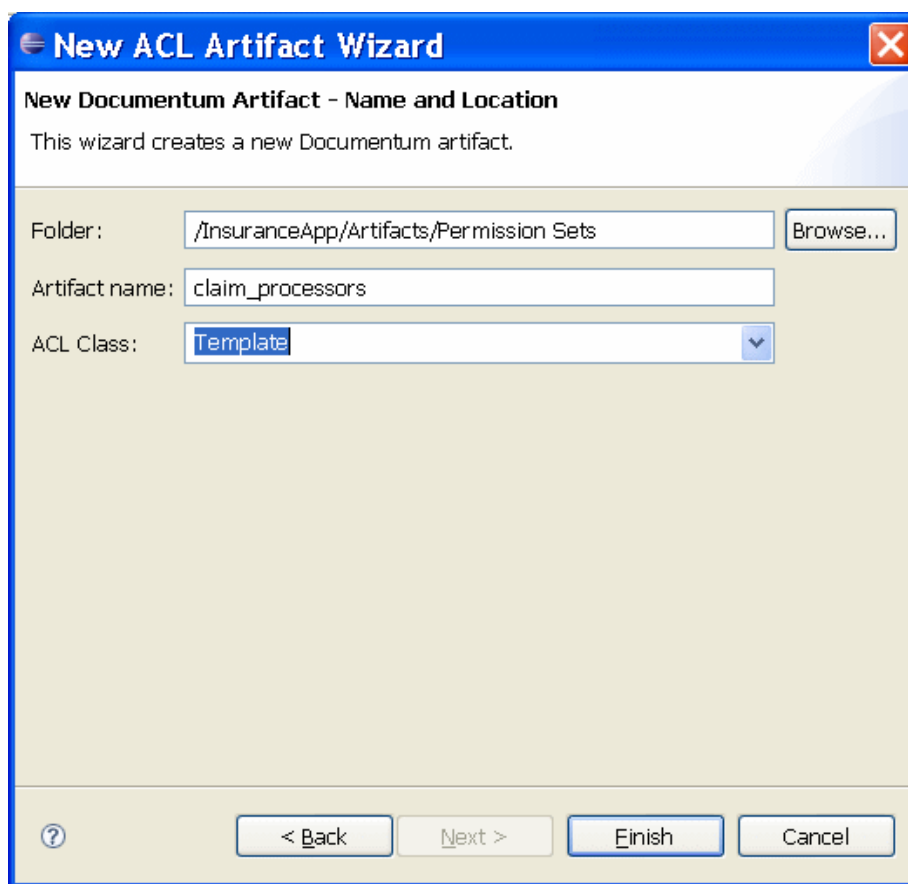
12. Check the **Problems** tab to see if there are any errors with the alias set. If there are errors, make sure you have completed all of the necessary steps above.

Creating the permission sets

Permission sets or ACLs (access control lists) allow you to set permissions for objects in the repository. The permission sets that you will create allow you to specify who can access the documents that are attached to the lifecycle and who can change the states of the document. The alias set that is used in conjunction with these permission sets let you specify these users at installation time.

To specify the permission sets:

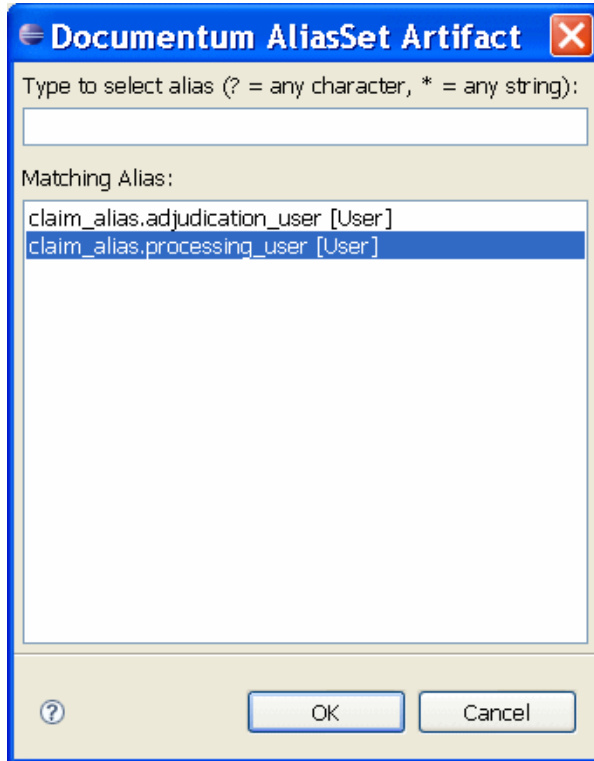
1. In the **Documentum Navigator** view, right-click the **InsuranceApp > Artifacts > Permission Sets** folder and select **New > Other...**
2. In the **New** wizard, select **Documentum Artifact > Permission Set** and click **Next**.
3. Fill in the fields with the following information and click **Finish**:
 - Artifact name — `claim_processors`
 - ACL Class — `Template`



The **Permission Set Template** pane appears in Composer.

4. In the **Description** field of the **General** section, type **Authorized insurance claim processors**.

5. In the **All Users and Groups** section, click on the **Add Alias** button. The **ACL Entry Details** section appears on the right side.
6. Click **Select...** for the **Owner Alias** field. The **Documentum AliasSet Artifact** window appears.
7. Select **claim_aliasset.processing_user** from the list and click **OK**.



8. Select **Write (includes Browse, Read, Relate, and Version)** from the **Permissions** drop down menu.
9. Select the following check boxes from the extended permissions table:
 - Change Location
 - Change State
 - Change Permissions

ACL Entry Details

Owner Alias: Select...

Permissions: Write (includes Browse, Read, Relate, and Version) ▼

Extended Permissions	Description
<input type="checkbox"/> Execute Procedure	Superusers can change the owner of an item and can use Execute Procedure to run external procedures on certain item types
<input checked="" type="checkbox"/> Change Location	Users with Change Location permission can move an item in the repository
<input checked="" type="checkbox"/> Change State	Users with Change State permission can change the state of an item that has a lifecycle applied to it
<input checked="" type="checkbox"/> Change Permissions	Users with Change Permissions can modify the basic permissions of an item
<input type="checkbox"/> Change Ownership	Users with Change Ownership permission can change the owner of an item
<input type="checkbox"/> Extended Delete	Users with the Delete Object extended permission have the right to only


10. Save the permission set.
11. Create another permission set named “claim_adjudicators” by using the “adjudication_user” alias. Specify **Write** permissions and select the **Change Location**, **Change State**, and **Change Permissions** check boxes.
12. Check the **Problems** tab to see if there are any errors with the permission set. If there are errors, make sure you have completed all of the necessary steps above.

Creating the lifecycle

When you have completed creating the type, alias set, and permission sets, you can now create the lifecycle that objects of type insurance_claim can be attached to. The lifecycle represents the states that an insurance claim can be in:

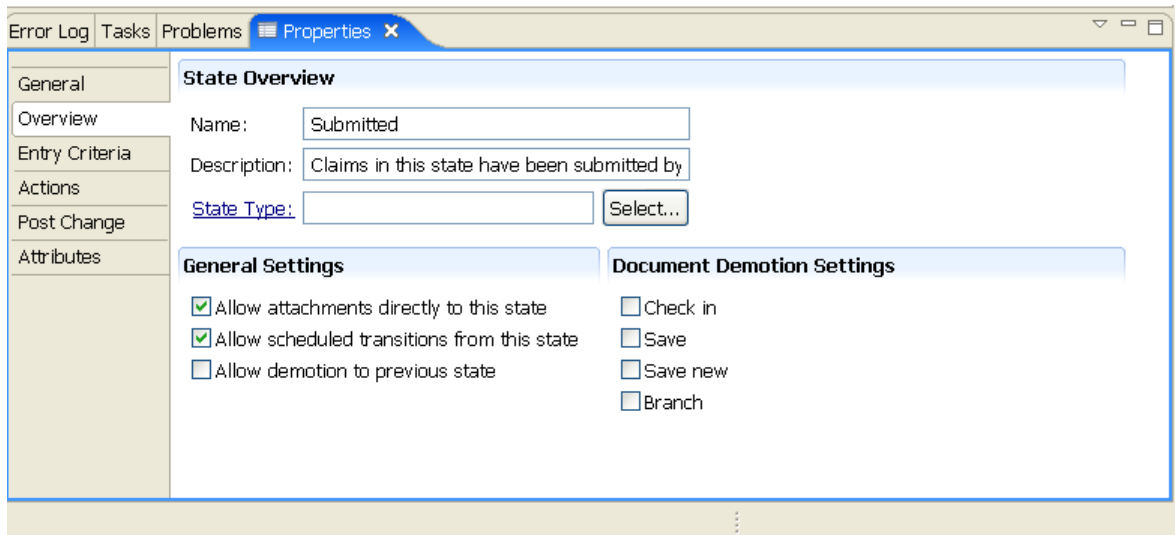
- Submitted — This state represents the claim being submitted for approval. Upon entry of this state, the permission set is set to “claim_processors” so that only users that are part of this permission set have the ability to change the state of the document.
- Processing — This state represents the claim being processed and checked for completeness.
- Adjudication— This state represents the claim being reviewed and verified. Upon entry of this state, the permission set is set to “claim_adjudicators” so that only users that are part of this permission set have the ability to change the state of the document.
- Paid — This state represents the insurance claim being paid.
- Denied— This exception state represents the insurance claim being denied.

To create the lifecycle:

1. In the Documentum Navigator view, right-click the **InsuranceApp > Artifacts > Lifecycles** folder and select **New > Other...**
2. In the **New** wizard, select **Lifecycle** and click **Next**.
3. In the **Artifact name** field, enter **claim_lifecycle** and click **Finish**.
The claim_lifecycle artifact is added to the **Lifecycles** folder in your project. When the lifecycle is added, the **Properties** tab containing a **General** tab appears on the bottom frame of Composer. Settings that you change in the **General** tab apply to the entire lifecycle. If you do not see the **Properties** tab, click on the **Show Properties** icon on the toolbar. 
4. In the **General** tab, click **Select...** for the **Primary type** field and select **insurance_claim** in the list that appears.
5. Click on **Add...** in the Alias sets section, select **claim_aliasset** from the list, and click **OK**
6. Click on the **Normal State** button and click on the white canvas to add a new state. When the state is added and selected, the **Properties** tab is populated with more sections: **Overview**, **Entry Criteria**, **Actions**, **Post Change**, and **Attributes**. Changes that you make in these sections apply to the state itself and not the entire lifecycle.

7. In the **Overview** section, fill in the fields with the following information:

- Name — Submitted
- Description — Claims in this state have been submitted by an insurance customer
- Allow attachments directly to this state and Allow scheduled transitions from this state — select the check boxes.



8. In the **Actions** section, click on **Set attribute**. The **Set Attribute** window appears.

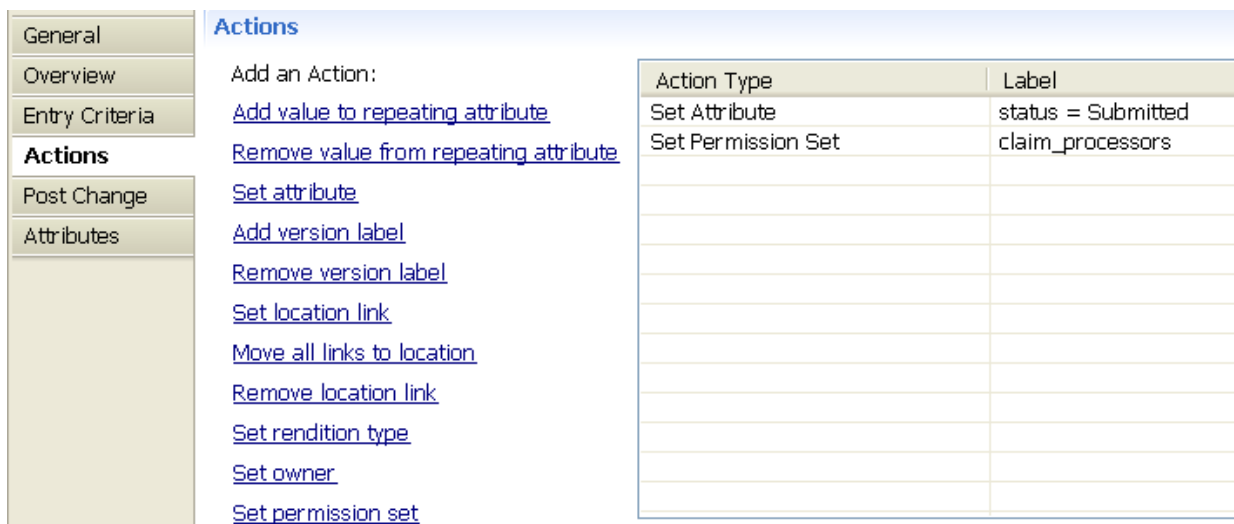
9. Select the **status** attribute from the **Attribute** drop down menu.

10. Select the **Specify a value** radio button, type **Submitted** for the field, and click **OK**.

11. In the **Actions** section, click on **Set permission set**. The **Permission Set** window appears.

12. Click on the **Select...** button, select **claim_processors** from the list, and click **OK**.

13. Click **OK**.



Action Type	Label
Set Attribute	status = Submitted
Set Permission Set	claim_processors

14. Add four more states specifying the following information for each state:

The Processing state

- **Overview section**
 - Name — Processing
 - Description — Claims in this state are ready to be verified to have complete and accurate information.
 - Allow demotion to previous state — select the check box
- **Actions section**
 - Set Attribute — select the “status” attribute from the attribute drop down menu and specify **Processing** for the value

The Adjudication state

- **Overview section**
 - Name — Adjudication
 - Description — Claims in this state are being investigated for validity.
 - Allow demotion to previous state — select the check boxes
- **Actions section**
 - Set Attribute — select the “status” attribute from the attribute drop down menu and specify **Adjudication** for the value
 - Set permission set— select the “claim_adjudicators” permission set from the list

The Paid state

- **Overview section**
 - Name — Paid
 - Description — Claims in this state have been approved and paid out to the insurance claimer.
 - Allow demotion to previous state — select the check boxes
- **Actions section**
 - Set Attribute — select the “status” attribute from the attribute drop down menu and specify **Paid** for the value

The Denied state (create an Exception State instead of Normal State)

- **Overview section**
 - Name — Denied
 - Description — Claims in this state have been denied through findings from the adjudication process
- **Actions section**
 - Set Attribute — select the “status” attribute from the attribute drop down menu and specify **Denied** for the value

15. Click on the **Connection** button to create connections between the states in the following manner:

- Connect Submitted to Processing.
- Connect Processing to Adjudication.

- Connect Adjudication to Paid.
 - Connect Adjudication to Denied.
16. Save the lifecycle.
 17. Check the **Problems** tab to see if there are any errors with the lifecycle. If there are errors, make sure you have completed all of the necessary steps above.

Installing the project to a repository

Your Composer project is now complete, so you need to install the project to a repository to use it.

To install the project to a repository:

1. In the **Documentum Navigator** view, right-click the InsuranceApp project and click Install Documentum Project.... The **Install Wizard** appears.
2. Fill in the fields with the following information:
 - Repository name — Select the repository that you want to install the artifacts to. This should be a development repository where your artifacts won't affect production repositories. If you cannot select a repository, then you did not specify a valid connection broker in your dfc.properties file as described in [Configuring the connection broker in the dfc.properties file,, page 7](#)
 - User name — The user name to login to the connection broker
 - Password — The password to login to the connection broker

You can accept the default values for the rest of the fields.

Install Wizard

Installation Settings

Enter the required fields and click Next to edit the installation parameter values for this repository

Repository Details

Enter repository information, installation parameter file, and installation options

Select or enter the repository:

Repository name: techpubs

User name: dmadmin

Password: ••••••••

Domain:

Login

Install option

Use Project and Artifact Settings

Installation Parameter File Details

☐ Use an installation parameter file

Installation Parameter File: Browse...

Localization

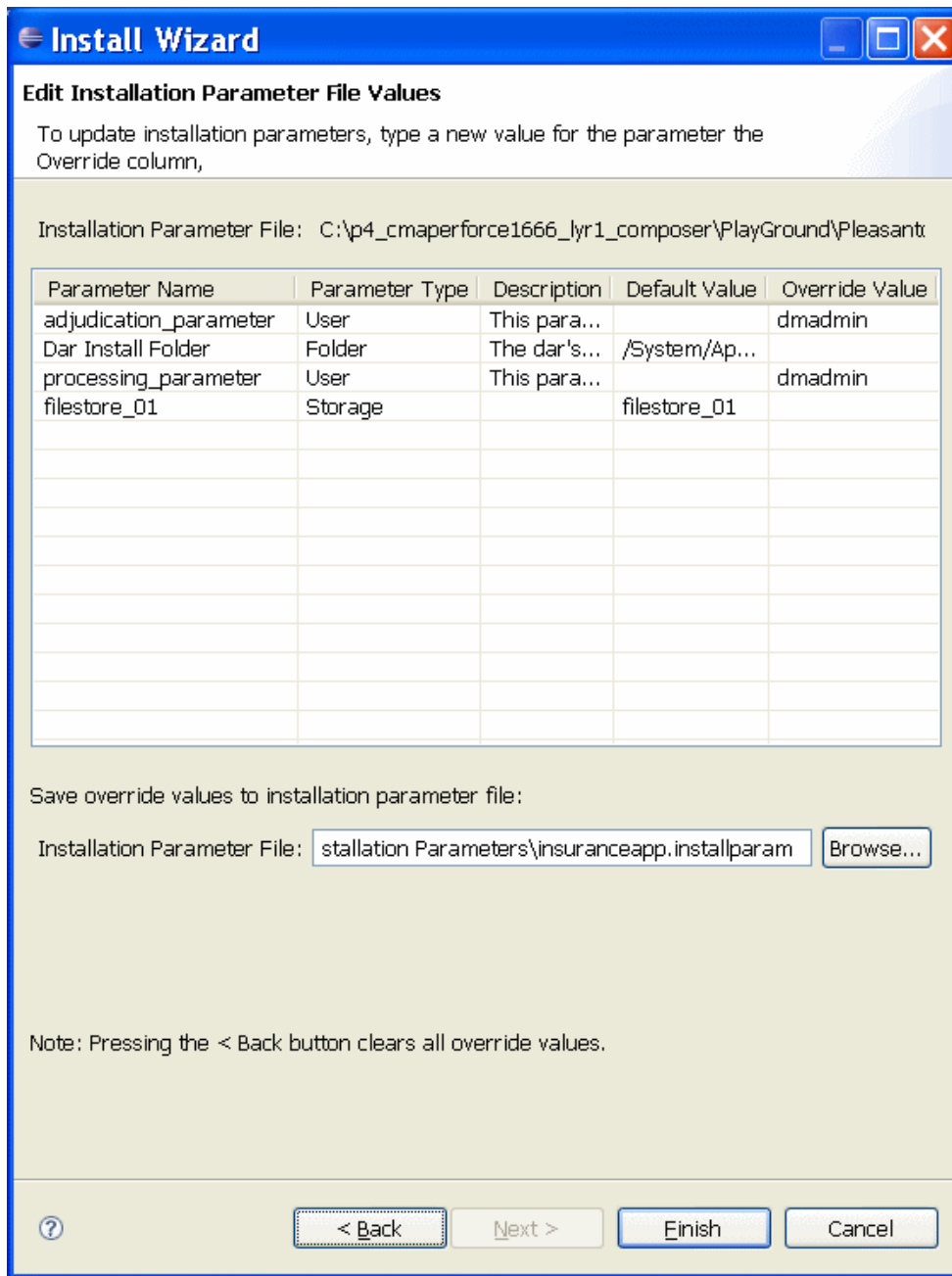
☐ Install localized artifact data

Locale Properties Folder: Browse...

< Back Next > Finish Cancel

3. Click **Login**. If your login is successful, the **Next** button is enabled. If the **Next** button is not enabled, verify your login credentials and try again. Click **Next**. The **Edit Installation Parameter File Values** window appears.
4. For the `processing_parameter` row, specify a user that is in the repository for the **Override Value** column. This will assign the appropriate person to be able to process the insurance claims. For simplicity, specify the username that will install this project.
5. For the `adjudication_parameter` row, specify a user that is in the repository for the **Override Value** column. This will assign the appropriate person to be able to approve or reject the insurance claims. For simplicity, specify the username that will install this project.

- In the **Installation Parameter File** field, specify **Installation Parameters\insuranceapp.installparam**. The installation parameters are saved to this file so you can use them for a future installation.



Install Wizard

Edit Installation Parameter File Values

To update installation parameters, type a new value for the parameter the Override column,

Installation Parameter File: C:\p4_cmaperforce1666_lyr1_composer\PlayGround\Pleasant

Parameter Name	Parameter Type	Description	Default Value	Override Value
adjudication_parameter	User	This para...		dmadmin
Dar Install Folder	Folder	The dar's...	/System/Ap...	
processing_parameter	User	This para...		dmadmin
filestore_01	Storage		filestore_01	

Save override values to installation parameter file:

Installation Parameter File:

Note: Pressing the < Back button clears all override values.

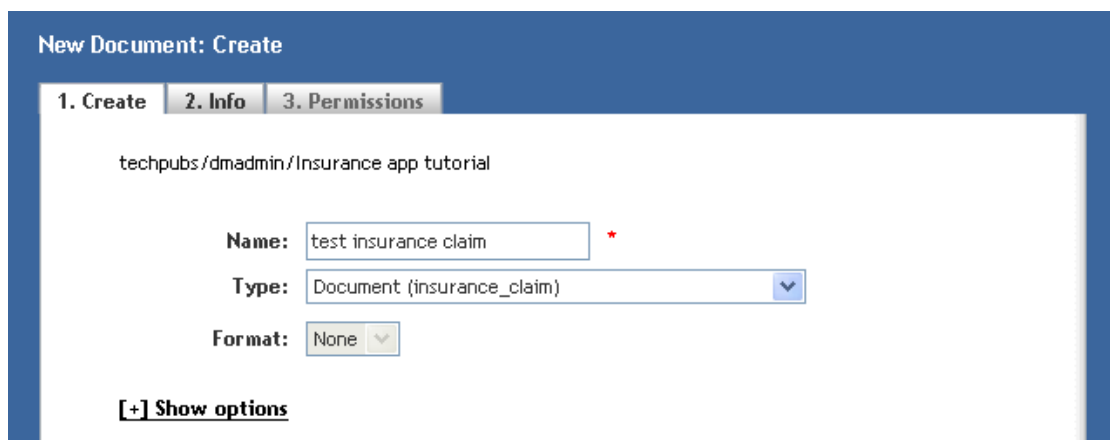
- Click on **Finish** to install the application to the repository. If no errors are returned, your application installed correctly.

Testing your Documentum application in Webtop

After installing the application , verifying the application with Webtop is a simple way to test out its functionality.

To test your Documentum application in Webtop:

1. In Webtop, create a test insurance_claim document
 - a. Click on **File > New**. The **New Document** wizard appears and displays the **Create** tab.
 - b. Fill in the fields with the following information:
 - Name — test insurance claim
 - Type — Document (insurance_claim)



New Document: Create

1. Create 2. Info 3. Permissions

techpubs/dmadmin/Insurance app tutorial

Name: test insurance claim *

Type: Document (insurance_claim) ▼

Format: None ▼

[+] Show options

- c. Click **Next**. The **Info** tab is displayed.
 - d. Scroll to the bottom of the **Info** tab to view the custom attributes that we created for the insurance_claim type. Fill in the custom fields with the following information and click **Finish**:
 - date_of_service — Choose today's date
 - patient_name — Test patient
 - physician_name — Test physician
 - procedure_code — 11
 - status — leave blank (Remember that only documents can be attached to the Submitted state in the lifecycle. When we attach this document to the lifecycle, it will update the status to Submitted.)

New Document: Info

1. Create 2. Info 3. Permissions

Info

Name: test insurance claim *

Title:

Subject:

Keywords: [Edit](#)

Authors: [Edit](#)

Full Content Size: 0

Owner Name: [Edit](#) dmadmin

Version Label: [Edit](#) 1.0, CURRENT

Checkout Date: Nov 24, 2008 11:44:45 AM

Checked Out By: dmadmin

Lifecycle ID: [Select](#)

Current State:

► **Show More**

NewConfig2

date_of_service: Dec 1, 2008 12:00:00 AM

patient_name: Test patient

physician_name: Test physician

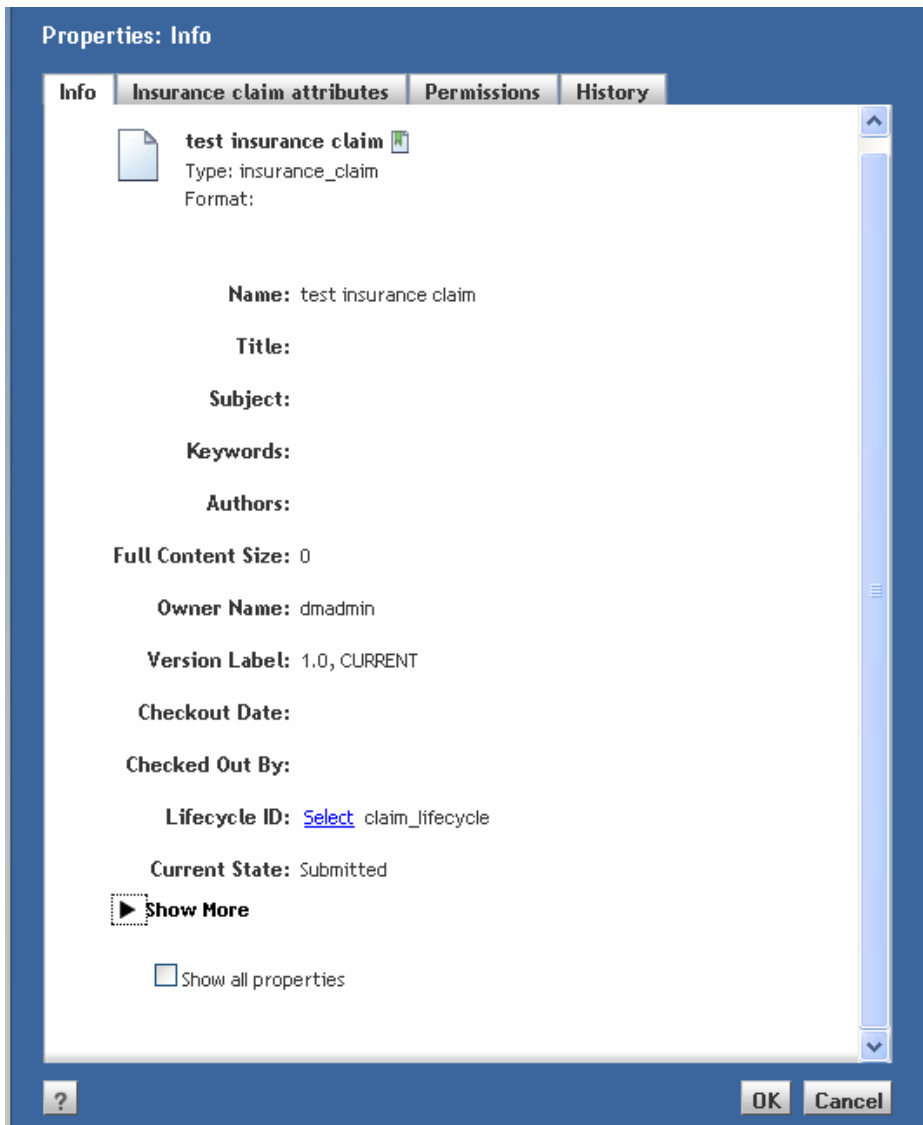
procedure_code: 11

status: ▼

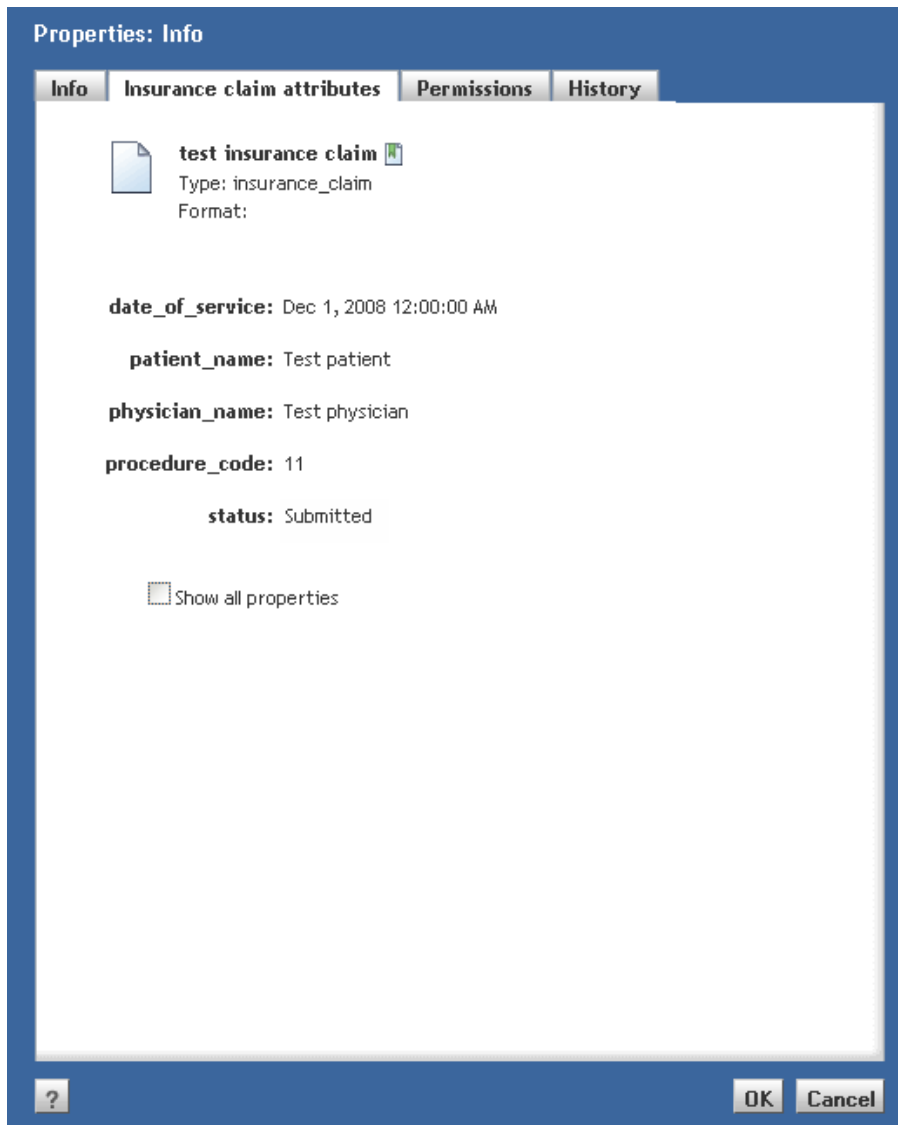
☐ Show all properties

? Previous Next Finish Cancel

2. Right-click the newly created test insurance claim document and select **Lifecycle > Apply**. The Apply Lifecycle screen appears.
3. Select the **claim_lifecycle** from the list and click **OK**. The document is now attached to the lifecycle.
4. Right-click the test insurance claim document and click on **Properties**. It will display that the document is attached to the claim_lifecycle and that the state is set to submitted.



5. Click on the Insurance claim attributes tab to view the document's properties. The status of the document has been set to submitted by the lifecycle.



6. Click **OK** to leave the Properties view.
7. Right-click the document in Webtop and select **Lifecycle > Promote** to promote the document to the Processing state.
8. Right-click the document in Webtop and select **Properties**. You should see that the **Current State** of the document has been updated to **Processing**.

Congratulations! In this tutorial, you have successfully:

- Created a type.
- Created an alias set with two aliases.
- Created two permission set templates.
- Created a lifecycle.
- Installed the artifacts into a repository.

- Attached a document to a lifecycle.
- Promoted the document to the next state in the lifecycle