Lesson: Dependent workflow processing

Overview

Why is this lesson important to you?

You are designing an IBM FileNet BPM solution. In your business scenario, one workflow process is dependent on a second workflow process. The first workflow must wait for a certain condition to occur in the second workflow before the first workflow can continue. You define two workflows and use the WaitForCondition system function to model this processing behavior. You must test the workflows to verify the changes.

Activities

- Define dependent workflows: Challenge
- Define dependent workflows: Walkthrough

Lesson dependency

You must have successfully completed the previous lesson activities.

Requirements

The activities in this unit assume that you have access to the student system configured for these activities.

Virtual student system

Connect to your student system to complete these lab activities. See the Readme First file on the Materials tab if you need instructions to connect to the student system.

System startup and system check

IBM FileNet P8 software services on your student system must be started. If you have not already started the IBM FileNet P8 software on your system, do the procedures in *Appendix A: System startup and system check* before proceeding with the lessons in this unit.

Perform a system check whenever you start up an IBM FileNet P8 system or start working on a system that is in an unknown state. These activities assume that you have performed a system check when you begin an activity session.

User accounts

Type	User ID	Password
FileNet Workplace XT	p8admin	IBMFileNetP8

Note

Passwords are always case-sensitive. User names are not case-senitive. Many user names use only lowercase letters on the student system.

Define dependent workflows: Challenge

Challenge

Add a condition identifier to the prepared waited-for bank statement workflow. Transfer the waited-for workflow.

Modify the Loan Processing workflow that you saved to the object store in the previous activity. Add a WaitForCondition system step after the Collect Bank Statement step in the Complete Loan Map submap of the Loan Processing workflow. Add elements to the waiting workflow to model the following business logic.

- If the Bank Statements Workflow returns statements, then go to the Complete Loan Package step.
- If the Bank Statements Workflow returns with no statements, then terminate the process.

Data

Item	Value
Prepared waited-for workflow definition file	C:\Labs\F145\MultipleWorkflows\ Waited-For Bank Statement Workflow.pep
Condition identifier for Bank Statement Workflow	`CustomerID + StatementStatus`
Previous file name in the Object Store	LoanProcess > Workflows > Loan Processing - Creation
Add Workflow Properties for Loan Processing workflow	Data Field: • Name: `condition_row_number` • Type: `Integer` • Expression: `-1` Attachment: • Name: `bank_statements` • Array: \<Checked\>

Item	Value

WaitForCondition system step properties	• Step Name: `Wait For Statements`
	• Condition 1 Workflow: Bank Statement Workflow
	• Condition 1 Condition: `customer_name + "Have bank statements"`
	• Condition 1 Assignments:
	  - bank_statements = `BankStatements`
	  - status = `StatementStatus`
	• Condition 2 Workflow: Bank Statement Workflow
	• Condition 2 Condition: `customer_name + "No bank statements"`
	• Condition 2 Assignment:
	  - status = `StatementStatus`
	• Timeout Expression: `addminutes(systemtime(),5)`
	• Condition Result Data Field: `condition_row_number`

Verification

- You must launch and process the Loan Processing workflow (the waiting workflow) through to completion.
- The Complete Loan Map submap for must look similar to the following diagram. This diagram includes a WaitForCondition step with conditional outgoing routes.
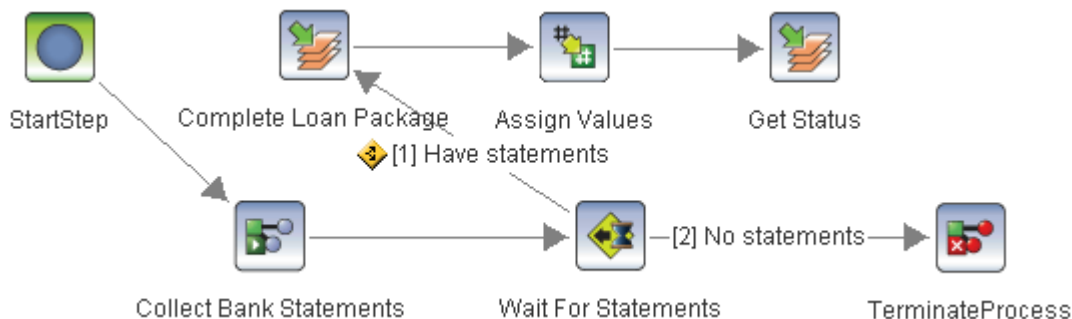
Define dependent workflows: Walkthrough

Introduction

This exercise gives you practice in using the WaitForCondition system function to define dependent workflows.

Procedure 1: Transfer the waited-for workflow

In this procedure, you modify and transfer a workflow definition that will be waited for by the workflow in the next procedure. This first workflow is for collection of bank statements. You worked with a version of this workflow in the previous lesson.

1. On your student Windows XP system, log in to FileNet Workplace XT using the p8admin user account listed in the "Lesson Overview" section.

2. Open a prepared workflow definition file.

   a. In Workplace XT, click Tools > Advanced Tools > Process Designer.

   b. Click File > Open.

   c. Locate and open the following file:

   C:\Labs\F145\MultipleWorkflows\Waited-For Bank Statement Workflow.pep

   d. Explore the workflow definition to familiarize yourself with the process flow and notice the following items:

   - This workflow is for collecting customer bank statements to be used as supporting documents in the loan processing workflow that you built in previous units.
   - The Workflow Name property is defined as Bank Statement Workflow.
   - In this workflow, the loan processor collects and attaches bank statements in the Prepare Bank Statements step. The loan underwriter reviews these bank statements in the Review Bank Statements step.
   - At the Prepare Bank Statements step, the loan officer selects a response that defines the workflow routing: "Have bank statements" or "No bank statements".
   - The workflow data field called CustomerID holds information about the loan customer. The LaunchStep assigns the CustomerID parameter.
   - The StatementStatus data field holds the status of the Bank Statement Workflow. This data field is assigned in an Assignment After Completion of the Prepare Bank Statements step, depending on the response selected by the loan officer.
   - The attachment array field called BankStatements is a workflow property that contains the documents collected in the Prepare Bank Statements step.

3. Define a condition identifier to be used by a waiting workflow.

   a. In Workflow Properties, click the Advanced tab.

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b. Type the following value in the Condition Identifier field:

    `CustomerID + StatementStatus`

4. Validate and transfer the workflow definition.

    a. Validate the workflow and correct validation errors, if any.

    b. Click File > Transfer Workflow Collection.

        Do **not** launch the workflow.

    c. Click OK in the Check workflow name window.

    d. When prompted, complete the "Save the workflow definition to an object store" wizard using the following information.

        •   Object store: `LoanProcess > Workflows`
        •   Document Title: `Waited-For Bank Statement Workflow`
        •   Security: <Accept default values.>

    e. Click Close in the Transfer Workflow window.

    f. Click File > Close and select Cancel the checkout.

    g. Leave Process Designer open for the next procedure.

Procedure 2: Add a WaitForCondition step

In this procedure, you modify the Loan Processing workflow that you saved in the previous lesson. You add a WaitForCondition step that waits for the Bank Statement Workflow that you transferred in the Procedure 1.

The Prepare Loan and Process Loan submap steps are assigned to the EMPTY MAP submap, which contains no steps. Therefore, the Prepare Loan Map and Process Loan Map submaps are not executed. You work only with the Complete Loan Map submap in this activity. This technique is used to save time when you test the workflow.

1. Open the Loan Processing workflow definition file.

    a. In Process Designer, click File > FileNet > FileNet Open/Checkout.

    b. Locate and open the following file:

        LoanProcess > Workflows > Loan Processing Workflow - Creation

    c. Select "Open As Checkout" and click Open.

> **!** **Important**
>
> This file is the workflow definition file that you built and saved to the object store in the previous lesson. If you did **not** successfully complete all steps in the previous lesson activity, then you must open the following starting file located on the local disk:
>
> C:\Labs\F145\Solutions\MultipleWorkflows\
> Loan Processing - Multiple Workflows - Creation solution.pep

2. Add additional workflow and step properties for use with a WaitForCondition step.

   a. In Workflow Properties, click Data Fields.

   b. Add a new data field using the following information:

      - Name: `condition_row_number`
      - Type: Integer
      - Merge Type: Override
      - Expression: `-1`
      - Description: `Used in WaitForCondition`

   c. Click Attachments.

   d. Add a new attachment field using the following information:

      - Name: `bank_statements`
      - Array: Checked
      - Description: `Customer bank documents`

   e. Verify that bank_statements is selected and click Field Usage.

   f. Select Complete Loan Map in the Submap field.

   g. Move Complete Loan Package from the list of Available Steps to the list of Selected Steps.

   h. Select status in the Field Name field.

   i. Move Complete Loan Package from the list of Available Steps to the list of Selected Steps.

   j. Click Close to close the Field Usage window.

3. Verify the Create step properties.

   a. On the maps toolbar, click Maps and select Complete Loan Map.

   b. Select the Collect Bank Statements step.

   c. Verify that Bank Statement Workflow appears in the Workflow Name field. If not, select it from the list.

   You transferred this workflow in Procedure 1.

d. Verify that the Assignments area contains the assignment as shown in the following table. If not, make this assignment.

Name	Expression
CustomerID	`customer_name`

4. Add a WaitForCondition system step with two conditions.

   a. Drag a WaitForCondition system step from the General System Palette onto the map and place it to the right of the Collect Bank Statements step.

   b. Type the following in Step Name field of the WaitForCondition step properties:

   `Wait For Statements`

   c. In the Wait For Statements General step properties, click the Add icon to add a new Condition 1.

   d. Select Condition row 1 and click the Modify icon to open the Condition Parameters window.

   e. Assign the following parameters for Condition 1 in the Condition Parameters window.

   - Workflow Name: Bank Statement Workflow
     Tip: Be sure to click in the Workflow Name field and select Bank Statement Workflow.
   - Condition Identifier: CustomerID + StatementStatus
     Tip: This identifier is automatically filled in for you and comes from the waited-for workflow that you selected.
   - Operator: is equal
   - Expression: `customer_name + "Have bank statements"`
   - Assignments

Name	Expression
bank_statements	`BankStatements`
status	`StatementStatus`

     Tip: If you use the Expression Builder window to assign the Expression, you select BankStatements from the Attachment Fields (Waited for workflow) list. You select StatementStatus from the Data Fields (Waited for workflow) list.
   - Map: <None>

   f. Click Close to close the Condition Parameters window.

   g. In the Wait For Statements General step properties, click the Add icon to add a new Condition 2.

   h. Select Condition row 2 and click the Modify icon to open the Condition Parameters window.

i. Assign the following parameters for Condition 2 in the Condition Parameters window.

- Workflow Name: Bank Statement Workflow
- Condition Identifier: CustomerID + StatementStatus
  Tip: This identifier is automatically filled in for you and comes from the waited-for workflow that you selected.
- Operator: is equal
- Expression: `customer_name + "No bank statements"`
- Assignments

Name	Expression
status	`StatementStatus`

- Map: <None>

j. Click Close to close the Condition Parameters window.

k. In the General step properties, assign the following properties.

- Timeout Expression: `addminutes(systemtime(),5)`
- Condition Result Data Field: `condition_row_number`

Note

In this procedure and in a workflow development environment, you use a WaitForCondition timeout expression with a very short time period to expedite processing and testing your workflow. When a process is deployed in a business environment, the timeout expression is assigned an appropriate value.

For purposes of this lesson activity, when testing the workflow, you must process the waited-for workflow within 5 minutes to avoid the timeout limit.

5. Add a TerminateProcess step and draw routes.

a. Drag a TerminateProcess system step from the General System Palette onto the map and place it to the right of the Wait For Statements step.

b. Right-click the route from Collect Bank Statements to Complete Loan Package and click Delete.

c. Draw a route from the Collect Bank Statements step to the Wait For Statements step.

d. Draw a route from the Wait For Statements step to the Complete Loan Package step and assign the following properties.

- Name: `Have statements`
- Conditional Route: `condition_row_number = 1`

e. Draw a route from the Wait For Statements step to the TerminateProcess step and assign the following route properties.

- Name: `No statements`
- Routing: Always true
  Note that this option is already selected.

6. Verify that your Complete Loan Map submap looks similar to the following diagram. This diagram includes a WaitForCondition system step with conditional outgoing routes.
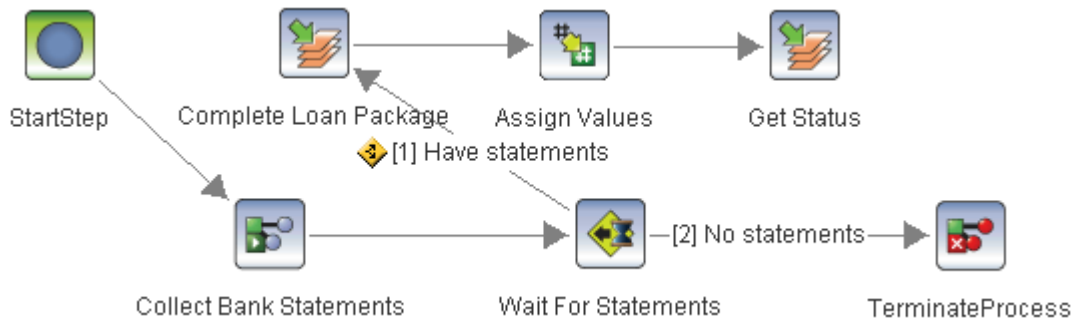
Procedure 3: Test the workflow definitions

1. Validate and launch the waiting workflow definition.

   a. Validate the workflow and correct validation errors, if any.

📝 **Note**

When you validate, you might receive three validation warnings for the Wait For Statements and Collect Bank Statements steps with messages similar to the following:

`"... work class, Bank Statement Workflow, but no work class of that name was found with the transfer flag set in the workflow collection. Using the definition previously transferred to the server."`

Ignore these three validation warnings and proceed with the next step in this procedure. You learn about workflow collections in a later lesson in this unit.

   b. Click File > Launch Main Workflow.

   c. Click OK in the Check workflow name window, if the window is displayed.

   d. Complete the "Checkin Workflow Definition" wizard using the following information.

   - Document Title: `Loan Processing Workflow - Waiting Workflow`
   - Security: <Accept default values.>

2. Complete the Launch Step processor.

   a. In the Launch Step window, click Data Fields.

   b. In the Data Fields view, type the following values in the fields.

      - customer_name: `Max Logan`
      - down_payment: `14000.`
      - loan_date: <a future date and time>
      - loan_id: `L123`
      - loan_term: `15`
      - purchase_price: `121000.`

   c. In the Attachments view, assign an attachment of your choice to loan_document.

   d. Click Launch.

3. Use Process Administrator to locate the work item for the Loan Processing workflow.

   a. In Process Designer, select Tools > Process Administrator.

   b. Construct and execute a filtered search of LoanRoster by using the loan_id exposed field and the data in the following table.

Search criteria	Value
Look for	Work Items
In	Workflow Roster
Select one	LoanRoster
Search mode	Edit (all fields)
Criteria	`loan_id = 'L123'`

   c. Verify that your work item appears in the results pane and is in the Delay(0) queue.

   The Loan Processing work item is waiting for the Bank Statement Workflow.

4. Verify that the Bank Statement Workflow (the waited-for workflow) was launched.

   a. Construct and execute a search for the created work item in the BankStatementRoster using the following information.

Search criteria	Value
Look for	Work Items
In	Workflow Roster
Select one	BankStatementRoster
Search mode	Edit (all fields)

   b. Verify that the created work item appears in the results pane and is in the LoanProcessor queue.

5. Process the first activity step in the Bank Statement Workflow.

   a. In the results pane, select the row containing the work item in the LoanProcessor queue.

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b. Click Open Step Processor on the results pane toolbar.

c. Verify that CustomerID contains the value `Max Logan`.

> The value of CustomerID in the Bank Statement Workflow was assigned using the customer_name field from the creating workflow, the Loan Processing workflow.

d. Select the "Have bank statements" response.

e. Assign documents of your choice to the BankStatements attachment array.

f. Click Complete.

g. Click Find Now to reexecute the roster search of BankStatementRoster.

h. In the results pane, notice that the work item is in the LoanUnderwriter queue and the StatementStatus field contains the value "Have bank statements".

> The Bank Statement Workflow has satisfied Condition 1 in the waiting workflow. Therefore, the waiting workflow is available for processing the next workflow step, which in this case is the Complete Loan Package step. Next, you complete processing of the waiting workflow. You complete processing of the Bank Statement Workflow in a later step.

6. Complete processing of the Loan Processing workflow and verify exchange of data from the Bank Statement Workflow.

a. Construct and execute a search for the work item using the following information.

Search criteria	Value
Look for	Work Items
In	Workflow Roster
Select one	LoanRoster
Search mode	Edit (all fields)
Criteria	`loan_id = 'L123'`

b. In the results pane, select the row containing the work item in the LoanUnderwriter queue.

c. Click Open Step Processor on the results pane toolbar.

d. Expand the bank_statements attachment item and verify the item contains the documents that you assigned in step 5e.

e. Verify that the status field contains the following value "Have bank statements".

f. Click Complete.

g. Click Find Now to reexecute the roster search of LoanRoster.

h. In the results pane, select the row containing the work item in the LoanCustomer queue.

i. Click Open Step Processor on the results pane toolbar.

j. Click Complete.

k. Click Find Now to reexecute the roster search of LoanRoster.

l. In the results pane, select the row containing the work item in the LoanUnderwriter queue.

m. Click Open Step Processor on the results pane toolbar.

n. Click Complete.

o. Click Find Now to reexecute the roster search of LoanRoster.

p. Verify that the work item is no longer listed in the results pane.

The Loan Processing Workflow is complete.

7. Complete processing of the Bank Statement Workflow.

a. Construct and execute a search for the created work item in the BankStatementRoster using the following information.

Search criteria	Value
Look for	Work Items
In	Workflow Roster
Select one	BankStatementRoster
Search mode	Edit (all fields)

b. In the results pane, select the row containing the work item in the LoanUnderwriter queue.

c. Click Open Step Processor on the results pane toolbar.

d. Verify that the StatementStatus field contains the value "Have bank statements".

e. Click Complete.

f. Click Find Now to reexecute the roster search of BankStatementRoster.

g. Verify that the work item is no longer listed in the results pane.

The Bank Statement Workflow is complete.

8. Use the skills that you have learned to continue testing the workflow definition by creating another work item. If needed, use Process Administrator and Process Tracker to troubleshoot and follow the workflow process. The following are suggestions for testing.

- Test Condition 2 of the WaitForCondition step by selecting the "No bank statements" response at the Prepare Bank Statements step.

  Verify that Bank Statement Workflow is terminated, the Terminate map in the Loan Processing workflow is executed, and status contains the value "No bank statements" in the Set Loan Document Status step.

- Allow the timeout on the WaitForCondition to expire by waiting 5 minutes before processing the Bank Statement Workflow.

Verify that Loan Processing waiting work item follows the "No statements" route and the Terminate map is executed without resetting the status field.

Tip: You can check for the timeout expiration in Process Administrator by watching for the waiting work item to leave the Delay system queue and go into the LoanUnderwriter queue. When this action occurs, the condition_row_number has the value 0.

9. Close all applications.

   a. Close Process Administrator.

   b. Return to Process Designer.

   c. If you have not already done so, check in your final version of the workflow definition. Otherwise, close the file and cancel the checkout.

   d. Exit Process Designer.

   e. Log out of Workplace XT and close the browser.