

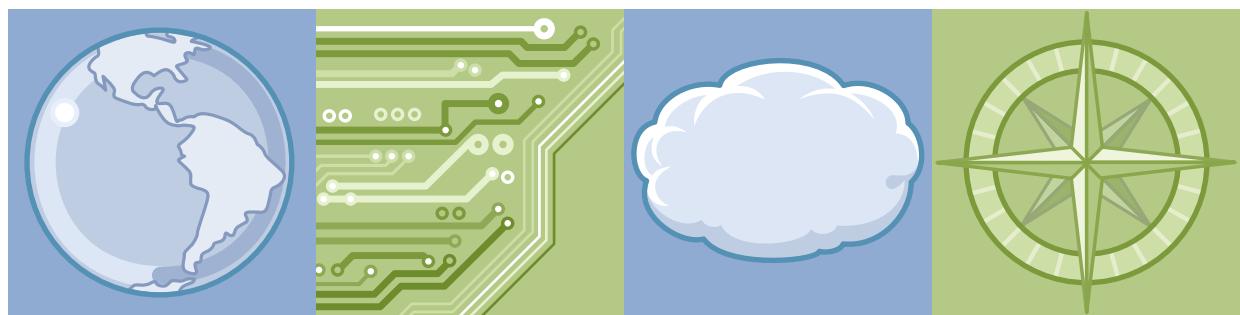


IBM Training

Student Notebook

IBM Case Foundation 5.2.1: Administration

Course code F247 ERC 1.0



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Course description

IBM Case Foundation 5.2.1: Administration

Duration: 4 days

Purpose

This course provides training for common IBM Case Foundation administration tasks.

Audience

This course is for anyone who is responsible for day-to-day operations of a production IBM Case Foundation workflow application. You work with an IBM Case Foundation system to practice and complete workflow system administration tasks.

Prerequisites

- Familiarity with Windows 2008 operating systems.
- Familiarity with Java and Java Virtual Machines.
- General knowledge of relational database management systems.
- General knowledge of P8 Platform security concepts.
- General workflow terminology:
 - Workflow
 - Workflow definitions
 - Queues
 - Rosters
- Start a P8 Platform system.
- Familiarity with P8 Platform administration interfaces, including:
 - Administration Console for Content Platform Engine
 - IBM Content Navigator
- Recommended training path:
 - F230 IBM Case Foundation 5.2.1: Introduction
 - F247 IBM Case Foundation 5.2.1: Administration

Objectives

After completing this course, you should be able to:

- Configure the workflow system
 - Identify the components of a workflow system.
 - Create and configure a workflow system to support FileNet workflow applications.
 - Create and configure an isolated region.
 - Create a connection point and isolated region.
 - Create isolated region objects.
 - Expose data fields.
 - Define indexes for queues and rosters.
 - Create and configure in-baskets and roles.
 - Configure Content Navigator for workflow.
 - Configure a web application and step processor.
- Security
 - Inspect workflow system security settings.
 - Add users and groups to a workflow system. Identify and resolve security issues.
- Maintain the Workflow System
 - Use administrative tools for maintenance.
 - Monitor with the Process Services Ping page. Monitor with System Dashboard.
 - Monitor with vwtool.
 - Maintain event logs.
- Manage Work in Progress
 - Use Case Foundation tools to search for work with basic and advanced search criteria.
 - Modify work items.
 - Process and manage work.
 - Manage a workflow exception.
- Component Integration
 - Understand the purpose of component integration in workflow applications.
 - Understand the architecture of the Component Manager Frameworks.

- Understand what component queues provide.
- Create and configure a Java component.
- Monitor and maintain component queues.

Curriculum relationship

- Visit the IBM Training Paths website to view the training paths for IBM Case Foundation 5.2.1.

Unit 1. IBM Case Foundation 5.2.1: Configure the workflow system

What this unit is about

This unit explains how to configure a workflow system. It starts with workflow system concepts, then goes into details of how to configure a workflow system and all its components. It is intended for workflow system administrators as well as workflow authors.

What you should be able to do

After completing this unit, you should be able to:

- Create and configure a workflow system to support FileNet workflow applications.
- Create an isolated region.
- Define isolated region objects to support workflow applications.
- Expose data fields to support workflow applications.
- Configure indexes to provide efficient search and sorting of work in a workflow system.
- Create and configure in-baskets and roles.
- Configure Content Navigator for workflow.
- Configure a web application and step processor.

How you will check your progress

- Knowledge checkpoint exercises and hands on labs

References

IBM FileNet P8 Platform V5.2.1 Documentation

http://www.ibm.com/support/knowledgecenter/SSNW2F_5.2.1/com.ibm.p8toc.doc/welcome_p8.htm

IBM Content Navigator V2.0.3 documentation

http://www.ibm.com/support/knowledgecenter/SSEUEX_2.0.3/contentnavigator_2.0.3.htm

IBM Case Foundation 5.2.1: Configure the workflow system

Unit objectives



After completing this unit, you should be able to:

- Create and configure a workflow system to support FileNet workflow applications
- Create an isolated region
- Define isolated region objects to support workflow applications
- Expose data fields to support workflow applications
- Configure indexes to provide efficient search and sorting of work in a workflow system
- Create and configure in-baskets and roles
- Configure Content Navigator for workflow
- Configure a web application and step processor

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Figure 1-1. Unit objectives

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IBM Case Foundation 5.2.1: Configure the workflow system

Unit lessons

This unit contains these lessons:

- Lesson 1: Workflow system concepts
- Lesson 2: Configure a workflow system
- Lesson 3: Create and configure an isolated region and region objects
- Lesson 4: Expose data fields
- Lesson 5: Define indexes
- Lesson 6: Configure in-baskets and roles
- Lesson 7: Configure Content Navigator for workflow
- Lesson 8: Configure a web application and step processor

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Figure 1-2. Unit lessons

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Notes:

This unit has eight lessons. Do these lessons in the sequence presented.

Workflow system concepts

Configure a workflow system

Create and configure an isolated region and region objects

Expose data fields

Define indexes

Configure in-baskets and roles

Configure Content Navigator for workflow

Configure a web application and step processor

Lesson 1.1. Workflow system concepts

Lesson

Workflow system concepts



Why is this lesson important to you?

- As a workflow administrator, you are responsible for defining and configuring the workflow system to run FileNet workflow applications.
- As a workflow author, you design and implement FileNet workflow applications.
- To do these tasks effectively, you need to understand what a workflow system is and what it provides for FileNet workflow applications.

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Figure 1-3. Workflow system concepts

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Workflow system concepts

Activities that you need to complete

- Identify workflow system concepts
- Identify workflow system components

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Figure 1-4. Activities that you need to complete

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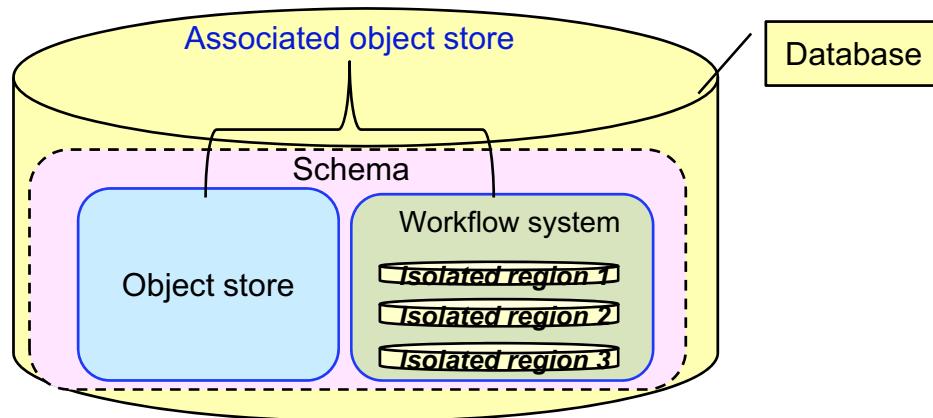
Notes:

Activities that you need to complete in this lesson.

Workflow system concepts

What is a workflow system?

- A logical structure that contains
 - A collection of isolated regions
 - Each isolated region contains the queues, rosters, and event logs necessary to create and process workflows
- Associated with one object store
 - Uses the same schema



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Figure 1-5. What is a workflow system?

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Notes:**Help path**

FileNet P8 Platform 5.2.1>Administering>Administering Content Platform Engine>Defining the workflow system>Workflow systems

A workflow system is:

- A logical structure that contains one or more isolated regions.
 - Stores the information that is required to support workflow processing
 - Running instances of workflows
 - Work item processing
 - Event logging
 - Statistics collection
- Associated with one object store, collocated in the same database under the same schema.

The diagram shows how the workflow system and the object store share a common schema in the database. The workflow system contains the isolated regions.

Each object store can contain only one workflow system.



Important

A workflow system can be used to process objects (documents, ...) or service workflow events from any object store, it is not restricted to the object store that it is associated with.

Workflow system concepts

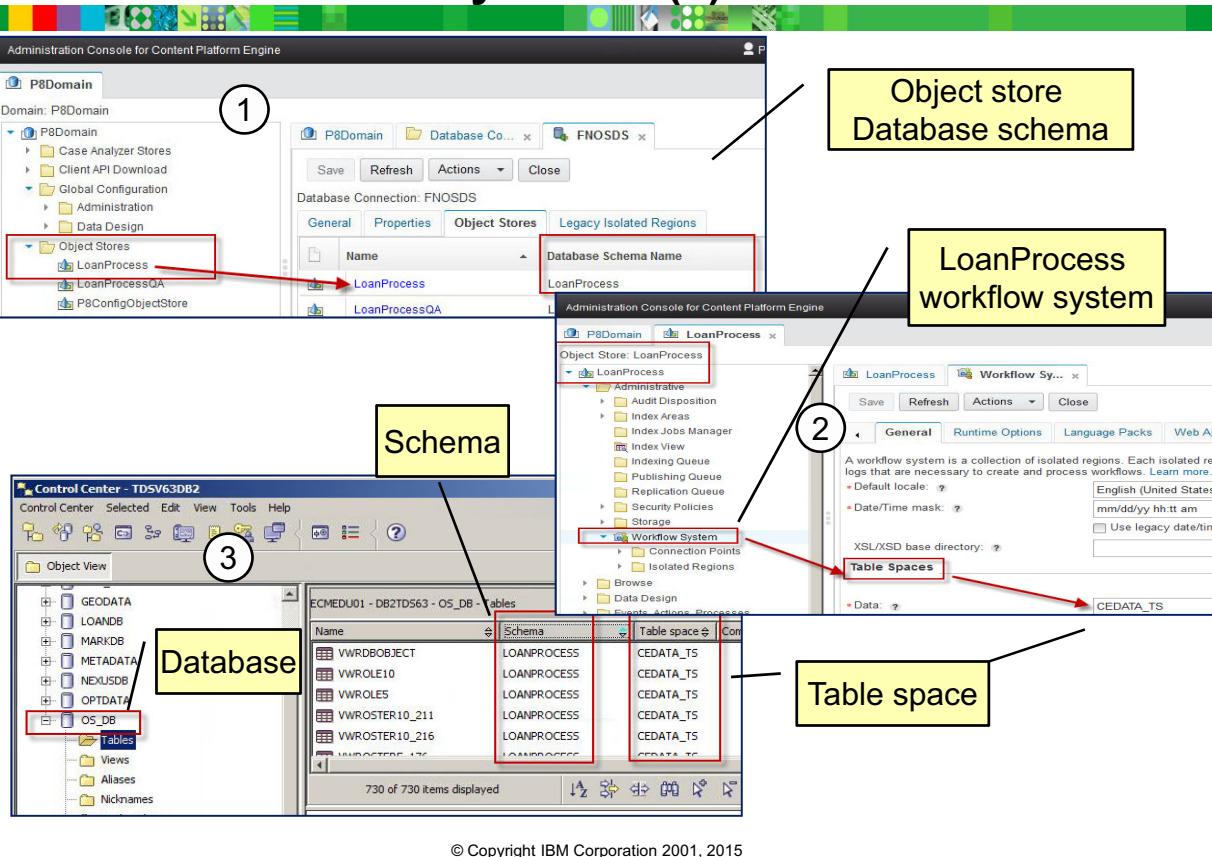
What is a workflow system? (2)

Figure 1-6. What is a workflow system? (2)

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Notes:

The screen captures show you how to view the workflow system properties with Administration Console for Content Platform Engine and schema and tables in the DB2 database.

Each screen capture shows:

1. The Administration Console for Content Platform Engine, displaying the expanded object stores, and showing the object store “LoanProcess” and its database schema name.
2. The administration console with the “LoanProcess” object store open, showing the workflow system and the database table space name.
3. The IBM DB2 Control Center showing a few of the database tables for the LoanProcess workflow system.
 - a. Notice that the schema name matches the schema name for the object store (screen capture #1).
 - b. Notice that the table space name matches the table space name for the workflow system (screen capture #2).

Workflow system concepts

Workflow system components

- Workflow system properties
 - Properties common to all isolated regions in the workflow system
- Connection points
 - Connect a client application to an isolated region
- Isolated regions
 - Logical subdivision of the workflow system
 - Used to separate work areas for specific groups of users and workflow applications

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Figure 1-7. Workflow system components

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Notes:

Help path

FileNet P8 Platform 5.2.1>Administering>Administering Content Platform Engine>Defining the workflow system>Workflow systems

Workflow systems have three main components:

- Workflow system properties
 - Properties that are common to all isolated regions in the workflow system.
- Connection points
 - Used by client applications to connect to an isolated region.
- Isolated regions
 - A logical subdivision of the workflow system.
 - Used to separate work areas for specific groups of users and workflow applications.

Workflow system concepts

Workflow system properties

- Workflow system properties
 - System-wide options for a workflow system
 - Properties are grouped:
 - General
 - Runtime Options
 - Language Packs
 - Web Applications
 - DbExecute Connections
 - Remote Servers
 - Isolated Regions
 - Advanced

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Figure 1-8. Workflow system properties

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Notes:

A workflow system contains system-wide properties that can be configured. You use either the Administration Console for Content Platform Engine or the Process Configuration Console to configure the properties.



Information

The Administration Console for Content Platform Engine is the new web administration tool, introduced with IBM Case Foundation 5.2.0. The Process Configuration Console is the legacy workflow system configuration tool that is still supported. All of the materials in this unit use the Administration Console for Content Platform Engine. There are still references, in the IBM Knowledge Center, to the Process Configuration Console. The information is still applicable because both tools organize the data in similar ways.

The properties are grouped, and displayed as tabs in the workflow system properties page:

- General – Default locale, Date/Time mask, Workflow system security groups, ...

- Runtime Options – System-wide settings that enable/disable workflow system features.
- Language Packs – Add language packs for email notification.
- Web Applications – Define the server base URL for web applications.
- DbExecute Connections – External database connection to allow execution of stored procedures.
- Remote Servers - Configure email server, email notifications, configure Rules Listener.
- Isolated Regions – Lock/Unlock, Initialize existing isolated regions.
- Advanced – Fine-tune your workflow system.

The workflow system properties will be covered, in more detail, in the next lesson.

Workflow system concepts

Connection points

- Connection points
 - Identify and provide access to an isolated region.
- A client application, such as IBM Content Navigator
 - Use the connection point to connect to an isolated region to process workflows.
- An isolated region can have multiple connection points.

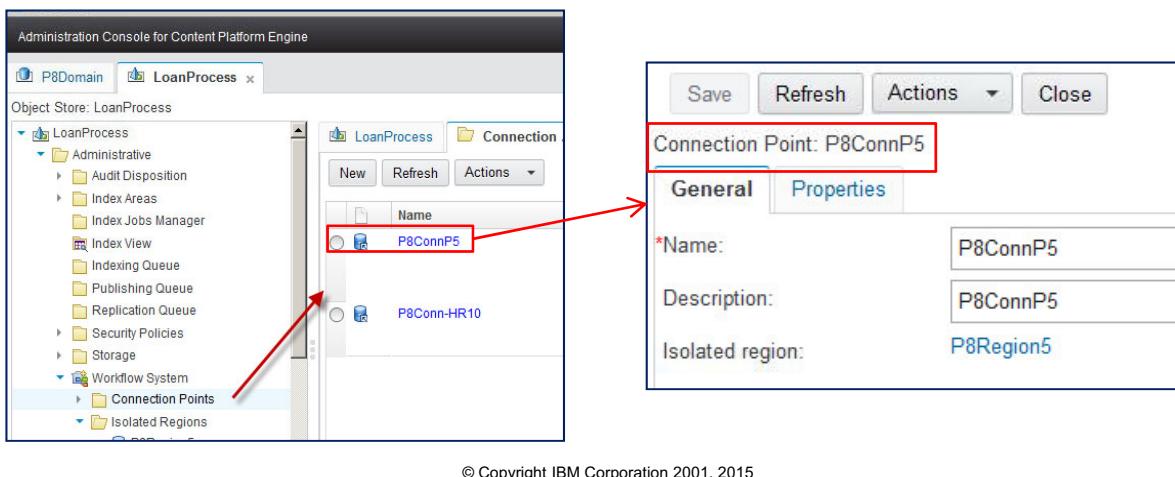


Figure 1-9. Connection points

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Notes:

Help path

FileNet P8 Platform 5.2.1>Administering>Administering Content Platform Engine>Defining the workflow system

Connection points are used by an application to connect to an isolated region. For example, an IBM Content Navigator desktop or a custom application.

Connection points replace the router process that is used in releases before IBM Case Foundation 5.2.0.

Connection points are defined in the Content Engine API (the PEConnectionPoint and IsolatedRegion classes) and persisted in the Global Configuration Data (GCD) on the Content Engine.

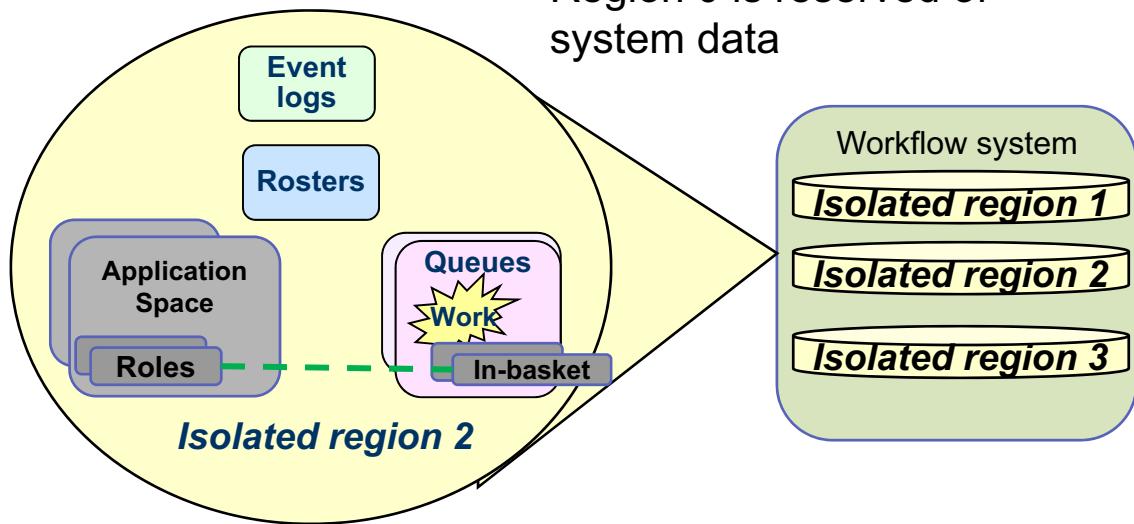
You can define multiple connection points that point to the same isolated region. Use this feature to define a unique connection point for each workflow application but still use the same workflow system isolated region.

The screen capture shows general properties of the connection point, P8ConnP5.

Workflow system concepts

Isolated regions

- Contain
 - Queues
 - Rosters
 - Event logs
 - Application spaces
- A workflow system can contain up to 1000 isolated regions
 - Identified by a number 1 - 999.
 - Region 0 is reserved of system data



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Figure 1-10. Isolated regions

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Notes:**Help path**

FileNet P8 Platform 5.2.1>Integrating workflow into document management>Configuring the workflow system>Getting started with Process Configuration Console>Queue, roster, and event log properties

An **isolated region** is a logical subdivision of the workflow system that contains the queues, event logs, rosters, and application spaces.

As illustrated in the diagram on this page, an isolated region is a logical workflow system structure that is used to maintain separate work areas for specific groups of users.

An isolated region contains queues, rosters, application spaces, and event logs.

A default version of these region objects is created when the region is initialized.

A workflow author or workflow system administrator can add and configure more of these region objects to support workflow applications. Work items cannot cross the boundaries of an isolated region.

A workflow system can contain up to 1000 isolated regions, although a client application can access only one isolated region at a time.

Each isolated region has a unique identifier, which is a number in the range 0 - 999.

Isolated region 0 contains system data and is reserved for system software use. Isolated regions 1 - 999 can be defined.

Workflow system concepts

Isolated region objects: Queues and In-baskets

- Queues
 - Organize the flow of work
 - Contain active work items that are waiting to be processed.
 - Work items move from queue to queue as they are processed.
 - Types of queues
 - User queues – work items that are waiting to process by an individual
 - Work queues – work items that more than one user or an automated process, can process.
 - Component queues – Allow processing of a workflow step by an external entity
- In-baskets
 - Filtered view of a queue
 - Display work items appropriate for a specific role
 - Defined inside the queue

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Figure 1-11. Isolated region objects: Queues and In-baskets

F2471.0

Notes:

Help paths

FileNet P8 Platform 5.2.1>Administering>Administering Content Platform Engine>Defining the workflow system>Coordinating workflow design>Workflow options>Defining queues>Workflow queues

FileNet P8 Platform 5.2.1>Administering>Administering Content Platform Engine>Defining the workflow system>Coordinating workflow design>Workflow options>In-baskets

This slide looks at the isolated region objects, queues, and in-baskets.

Queues

- Organize the flow of work and contain active work items, waiting to be processed.
- Work items move from queue to queue as they are processed.

There are three types of queues:

- User queues
- Work queues

- Component queues

User queues hold work to process by a specific individual.

When an isolated region is initialized, two default user queues are created, Inbox and Tracker. More inboxes cannot be created.

- **Inbox** is the queue that holds work items that are waiting to process by an individual user.
- **Tracker** is a queue for tracker items that are assigned to a specific user. For example, a workflow manager would want to view and possibly modify all processing work items for all the members of the department.

Work queues hold work to process by more than one user or an automated process. Workflow system administrators or workflow authors can add and configure work queues. No work queues are configured by default.

Component queues enable processing of a workflow step by an external component, such as Java or Java Message Service (JMS). Workflow system administrators or workflow authors can add and configure component queues. Component queues are discussed in another unit. No component queues are configured by default.

In-baskets

Provide a filtered view of a queue that allows a workflow author or workflow system administrator to filter the work items and the data fields, for a specific user.

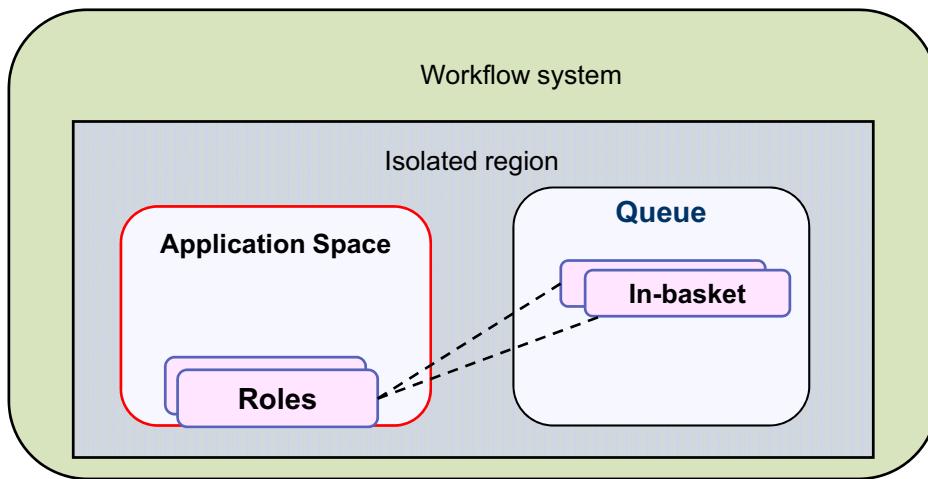
The client application, IBM Content Navigator, requires that in-baskets be defined to perform work. There is no capability to view the entire queue from an IBM Content Navigator desktop, as was the case with the previous client applications, Workplace, and Workplace XT.

The extra configuration step lets you adjust the work items and data fields to display, depending on the role of the user.

Workflow system concepts

Isolated region objects: Application spaces

- Application spaces
 - Organize the resources for a client application that uses a workflow
 - Contains roles that are defined for the workflow application
 - Each role is associated with one or more in-baskets



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Figure 1-12. Isolated region objects: Application spaces

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Notes:

Help path

FileNet P8 Platform 5.2.1>Integrating workflow into document management>Configuring the workflow system>Manage application spaces>About application spaces, roles, and in-baskets

An application space is a way of organizing the resources for a custom application that contains workflows.

An application space contains:

- Roles, such as Clerk, Approver, to organize the types of users who process different types of activities in the application.

You assign in-baskets to the roles. The in-basket is a filtered view of the work items in a queue, which is assigned to a specific role.

The diagram shows the architectural relationship between:

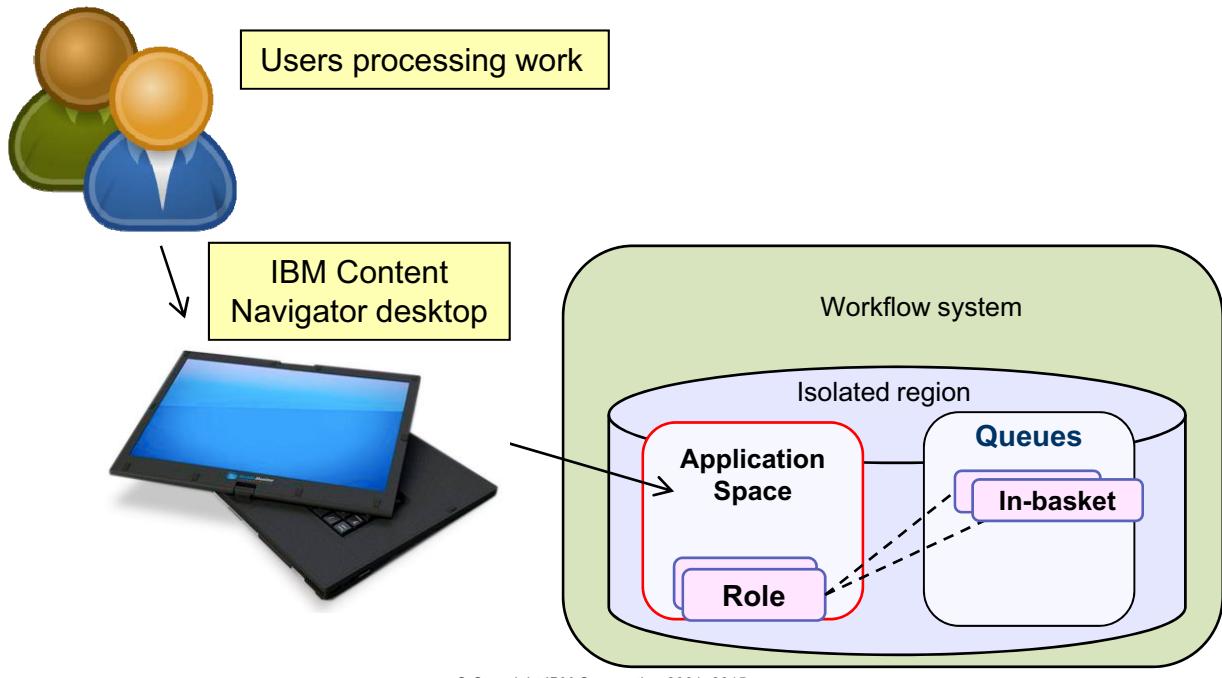
- A workflow system
- An isolated region

- An application Space and the defined Roles
- A Queue and the defined in-baskets

Create and configure an isolated region and region objects

Isolated region objects: Application spaces (2)

- An IBM Content Navigator desktop requires an application space, role, and in-baskets to list work items to be processed.



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Figure 1-13. Isolated region objects: Application spaces (2)

F2471.0

Notes:

Help path

FileNet P8 Platform 5.2.1>Integrating workflow into document management>Configuring the workflow system>Manage application spaces>About application spaces, roles, and in-baskets

IBM Content Navigator desktops are assigned application spaces, which contain roles that point to in-baskets. The applications spaces, roles, queues, and in-baskets must be defined in the isolated region before the user can view and process work items in a workflow application.



Information

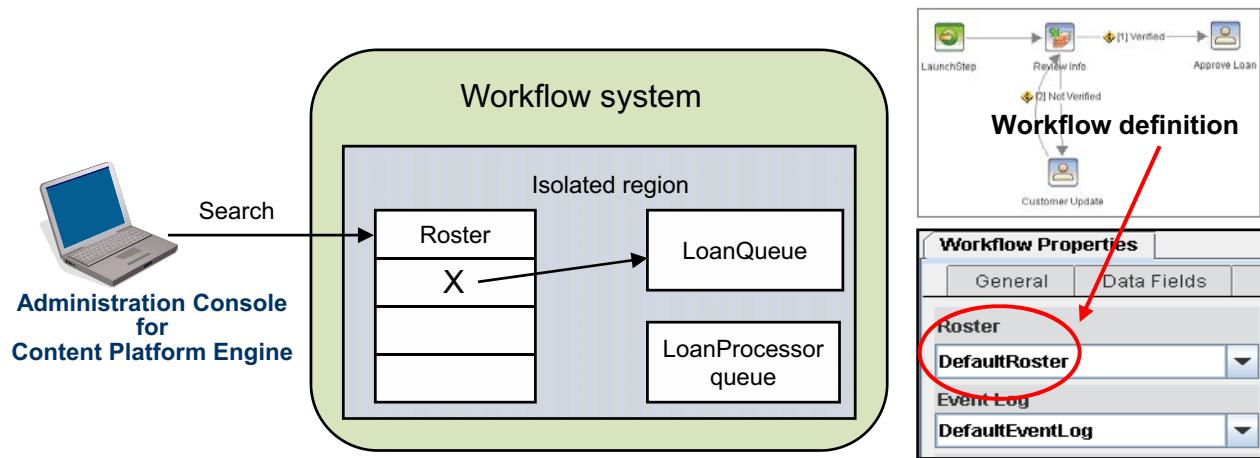
Application spaces are not new but not used much in releases prior to IBM Case Foundation 5.2.0. Starting with IBM Case Foundation 5.2.0, IBM Content Navigator desktops are used as the default client application for workflow processing, instead of Workplace and Workplace.

The diagram shows users who are connected to an IBM Content Navigator desktop, which is associated with an Application Space. The application space is contained in a specific isolated region, which is contained in the workflow system.

Workflow system concepts

Isolated region objects: Rosters

- Rosters
 - Keep track of work in progress
 - Provide an efficient way to locate specific active workflows
 - Contain location information about workflows and work items
 - Each workflow definition is configured to use only one roster



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Figure 1-14. Isolated region objects: Rosters

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Notes:**Help path**

FileNet P8 Platform 5.2.1>Administering>Administering Content Platform Engine>Defining the workflow system>Coordinating workflow design>Workflow options>Defining queues>Creating workflow rosters

Queues contain work items. Rosters contain references to work items that can be used to search for work.

When you initialize an isolated region, a roster that is called DefaultRoster is automatically created for that isolated region. The workflow author can use the configuration tool, within the Process Designer application, to configure more rosters for the workflow applications. More rosters can speed the search for work by allowing for a more precise search.

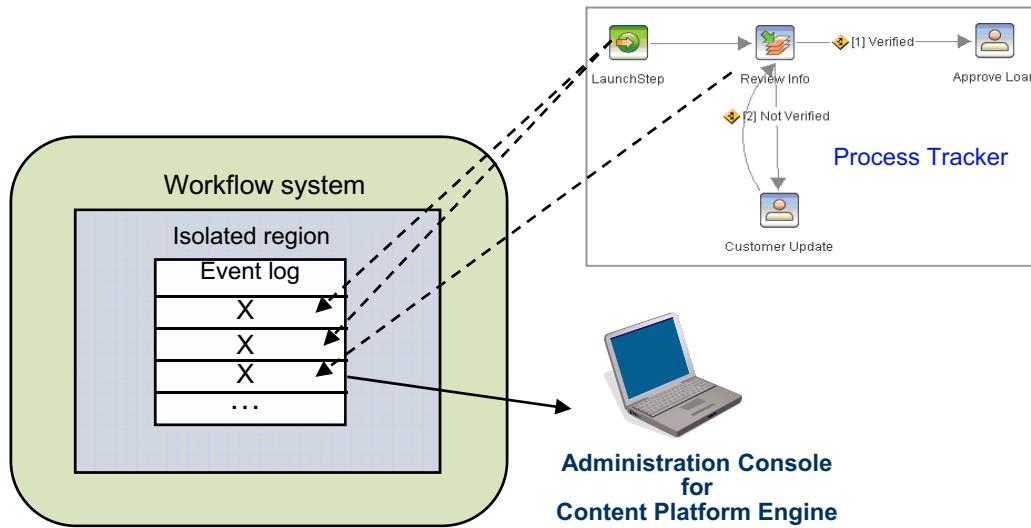
The lower right screen capture shows the Workflow Properties tab, with the Roster setting of DefaultRoster assigned to the workflow definition. When the workflow is launched, an entry is added to the designated roster table in the workflow system, center diagram, and the work item is queued to the first step in the workflow. The roster entry, points to the queue that currently contains

the work item, LoanQueue. The Administration Console for Content Platform Engine can be used to search the roster to locate the work item in progress.

Workflow system concepts

Isolated region objects: Event logs

- Event logs
 - Record each event that occurs in the running workflows
 - Contain a record of specific system or workflow-related events
 - Provide useful information for tracking workflow activity



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Figure 1-15. Isolated region objects: Event logs

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Notes:**Help path**

FileNet P8 Platform 5.2.1>Administering>Administering Content Platform Engine>Defining the workflow system>Coordinating workflow design>Workflow options>Managing event logs

An event log is assigned to every workflow definition. When the workflow is launched and processed step-by-step, one or more events are added to the event log for each step. The Process Tracker view, of the workflow in progress, is generated with the event log information.

The Administration Console for Content Platform Engine or the Process Administrator tool can be used to search the event log for information about running workflows.

The screen capture on the upper right, shows the Process Tracker with a workflow in progress. The diagram on the left shows the Event log, contained in the isolated region. Each step in the workflow definition, points to an event log entry.



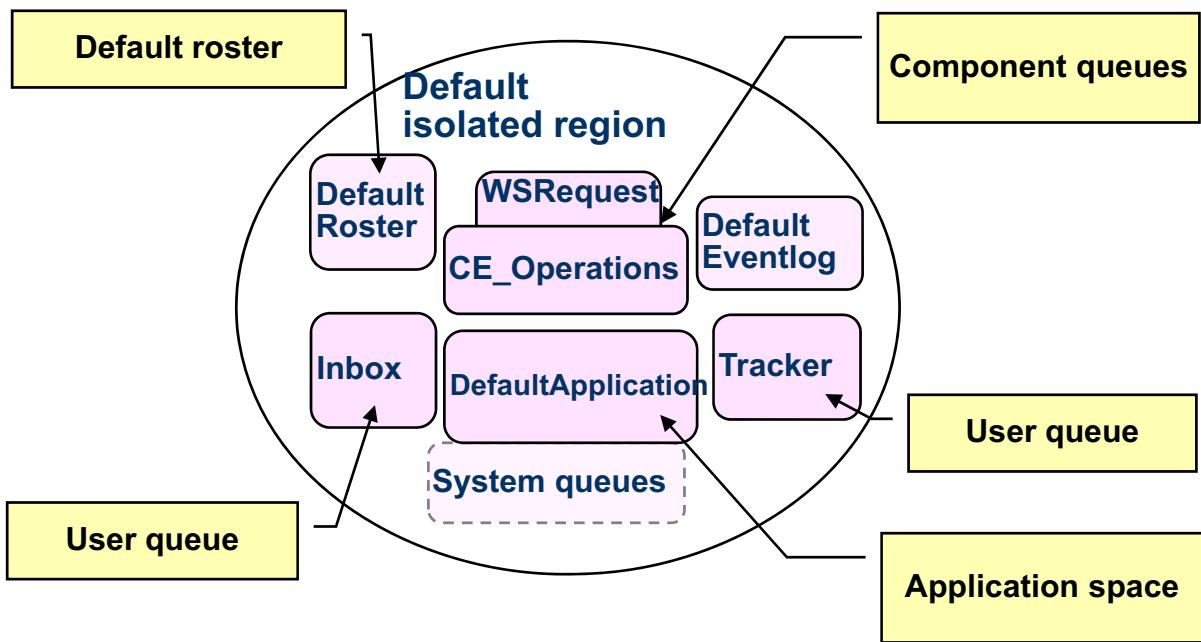
Information

Before the IBM Case Foundation 5.2.1 release, the Process Configuration Console was used to create and configure new event logs and the Process Administrator tool was used to search the event logs.

Workflow system concepts

Default isolated region

- Objects that are created when a new region is initialized



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Figure 1-16. Default isolated region

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Notes:

The diagram shows an isolated region immediately after initialization.

- The user queues (Inbox and Tracker), two component queues, and several system queues are created at initialization.
- Workflow rosters hold location and information about all workflows and work items in a region. DefaultRoster is the roster that is created at initialization.
- An event log is a table that contains a record of system- or workflow-related events. DefaultEventLog is the event log created at initialization.
- An application space in an isolated region is used to contain resources, such as roles and in-baskets. DefaultApplication is the application space that is created at initialization.
- System queues are used by the Process services for processing work.
- Two component queues:
 - CE_Operations, which uses the built-in component that connects to the Content Engine API.

- WSRequest, which enables process orchestration web services (not supported by IBM Content Navigator).

Workflow system concepts

New region objects

- Why create a queue (work or component)?
 - To accommodate design requirements
 - To direct work to a group of users, a machine, or an automated process
- Why create a workflow roster?
 - To enable fast, efficient search for work
 - To distribute the workflow data into logical groups
- Why create an event log?
 - To meet a design requirement to view workflow history reports by workflow or type of work

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Figure 1-17. New region objects

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Notes:

Why create new region objects in addition to the default region objects?

Why create a queue?

- Workflow authors need to accommodate design requirements.
- Workflow authors need to direct work to a specific group of users, a machine, or an automated process.

Why create a roster?

- Enable fast and efficient search for work.
- Distribute the workflow data into logical groups.
- Workflow authors need to create and configure more rosters if the workflow application requires searching for work across a subset of workflows. This type of search can be done efficiently and quickly by users with custom applications and by workflow administrators that use the New Workflow Search feature in the Administration Console for Content Platform Engine.

- If you need to do a general search for work on large systems, the roster search is much more efficient than searching through all the queues for a specific work item.
- The trade-off to more efficient retrieval of roster objects is that you cannot perform work on them, and they contain less information than the actual work item.

Scenario for event logs

A bank associates all loan process workflows with an event log, called LoanLog. This log separates the log data for loan applications from the log data for other internal administrative events. In this way, queries for workflow history of loan applications can run more efficiently.

Workflow system concepts

Isolated region objects

- Objects that you can create and configure

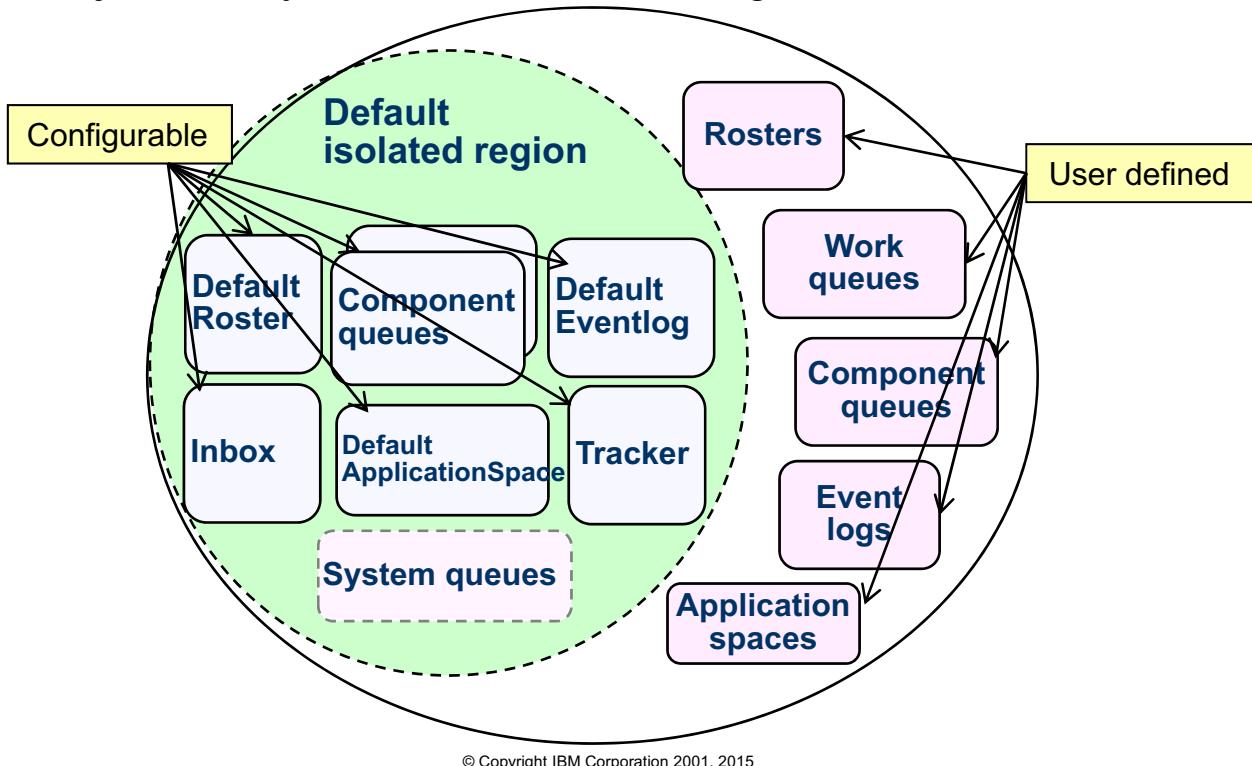


Figure 1-18. Isolated region objects

F2471.0

Notes:

This diagram shows:

- All isolated region objects that are created at initialization, the left circle, highlighted in green with the title Default Isolated region.
- The workflow author or the workflow system administration, can create or configure more isolated region objects. The additional objects are the remaining squares, to the right, pointed to by the callout, User defined.

You can customize the default region objects

You can configure the properties of all the default region objects.

Workflow system concepts

Plan for isolated regions



- Number of isolated regions
 - Server performance might be better with fewer isolated regions.
- Reasons for multiple regions
 - Separate work by line of business
 - Separate work to secure access
- An IBM Content Navigator desktop can connect to only one isolated region at a time.
- Plan for customized isolated region objects
 - As specified by the workflow application design

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Figure 1-19. Plan for isolated regions

F2471.0

Notes:

It is important to plan for isolated regions.

Considerations during planning:

- Too many isolated regions can affect server performance.
- If you define multiple isolated regions, you can:
 - Separate work by line of business.
 - Separate work to secure access.
 - Separate regions provide more secure work separation than configuring security on rosters and queues within a single isolated region.
- Work cannot travel between isolated regions.
- An IBM Content Navigator desktop can connect to only one isolated region at a time.
 - You need a unique desktop for each isolated region or a custom application that recognizes multiple connection points.
- Plan what isolated regions you need for the workflow application.

- Production and development isolated regions cannot coexist on the same workflow system.
 - This configuration is not supported.
- If you want to analyze work across multiple isolated regions in Case Analyzer, some customization of the reports is required.

IBM Case Foundation 5.2.1: Configure the workflow system

Checkpoint: Identify workflow system concepts



1. What is a workflow system?
 - a. A logical structure, which contains isolated regions.
 - b. A database that contains isolated regions.
 - c. A logical structure similar to an object store but used for processing workflows.
 - d. Another name for an isolated region.
2. An object store can have multiple workflow systems.
(T or F)?
3. Which of the following components are contained in an isolated region? (Select all that apply)
 - a. Queues
 - b. Event logs
 - c. Application Spaces
 - d. Connection points

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Figure 1-20. Checkpoint: Identify workflow system concepts

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IBM Case Foundation 5.2.1: Configure the workflow system

Checkpoint: Identify workflow system concepts

- 
4. What is the function of a work queue?
 - a. Stores work items that are waiting to process by more than one user or an automated process.
 - b. Stores work items that are waiting to process by an individual.
 - c. Stores workflows that are waiting to process by more than one user or an automated process.
 - d. Allows the processing of a workflow step by an external entity.
 5. What is the function of a roster? (Select all that apply)
 - a. Keep track of work in progress.
 - b. Provide an efficient way to locate specific active workflows.
 - c. Store work items that are waiting to process by an individual.
 - d. Allows the processing of a workflow step by an external entity.

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Figure 1-21. Checkpoint: Identify workflow system concepts

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IBM Case Foundation 5.2.1: Configure the workflow system

Checkpoint: Identify workflow system concepts



6. When an isolated region is initialized, a number of default region objects are automatically created. (Select all that apply)
- a. DefaultRoster
 - b. DefaultApplication
 - c. DefaultIn-basket
 - d. DefaultQueue

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Figure 1-22. Checkpoint solutions

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Notes:

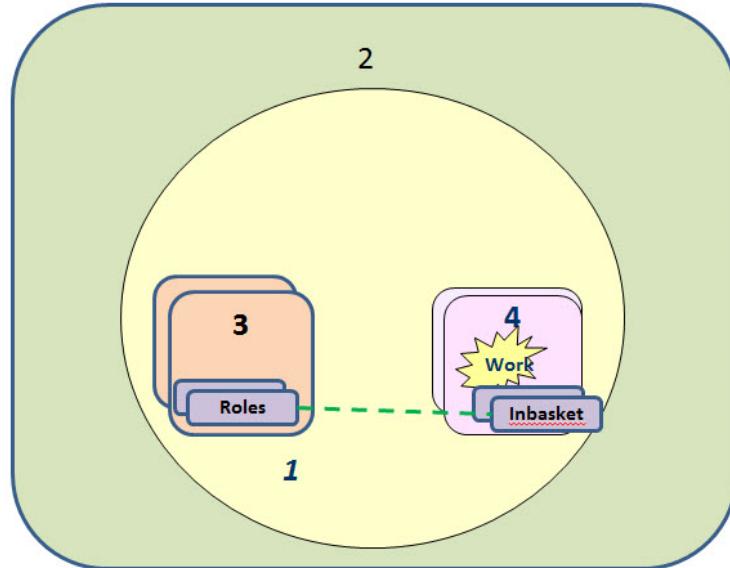
The diagram shows a workflow system, isolated region, application spaces with roles, and queues with in-baskets. The objects are labeled with numbers to allow student to match the numbers to the correct labels.

IBM Case Foundation 5.2.1: Configure the workflow system

Checkpoint: Identify workflow system components

Match the component name in the table to the component in the diagram.

Component Name
Queue
Isolated region
Application space
Workflow system



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Figure 1-23. Checkpoint: Identify workflow system components

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Notes:

The diagram shows a workflow system, isolated region, application spaces with roles, and queues with in-baskets. The objects are labeled with numbers to allow student to match the numbers to the correct labels.

Workflow system concepts

Activities



In your Student Exercises

- Unit: Configure the workflow system
- Lesson: Workflow system concepts
- Activities:
 - Identify workflow system concepts
 - Identify workflow system components

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Figure 1-24. Activities

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Notes:

Use your Student Exercises book to perform the activities that are listed.

Both activities are knowledge checkpoint activities and do not require your student system.

Identify workflow system concepts

Identify workflow system components

Lesson 1.2. Configure a workflow system

Lesson

Configure a workflow system



Why is this lesson important to you?

- As a workflow administrator, you are responsible for defining and configuring the workflow system to run FileNet workflow applications.
- As a workflow author, you design and implement FileNet workflow applications.
- To do these tasks effectively, you need to know how to create and configure a workflow system.

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Figure 1-25. Configure a workflow system

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Configure a workflow system

Activities that you need to complete

- Prepare your system for the student exercises
- Create a workflow system
- Explore and configure the workflow system
- Create a database connection

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Figure 1-26. Activities that you need to complete

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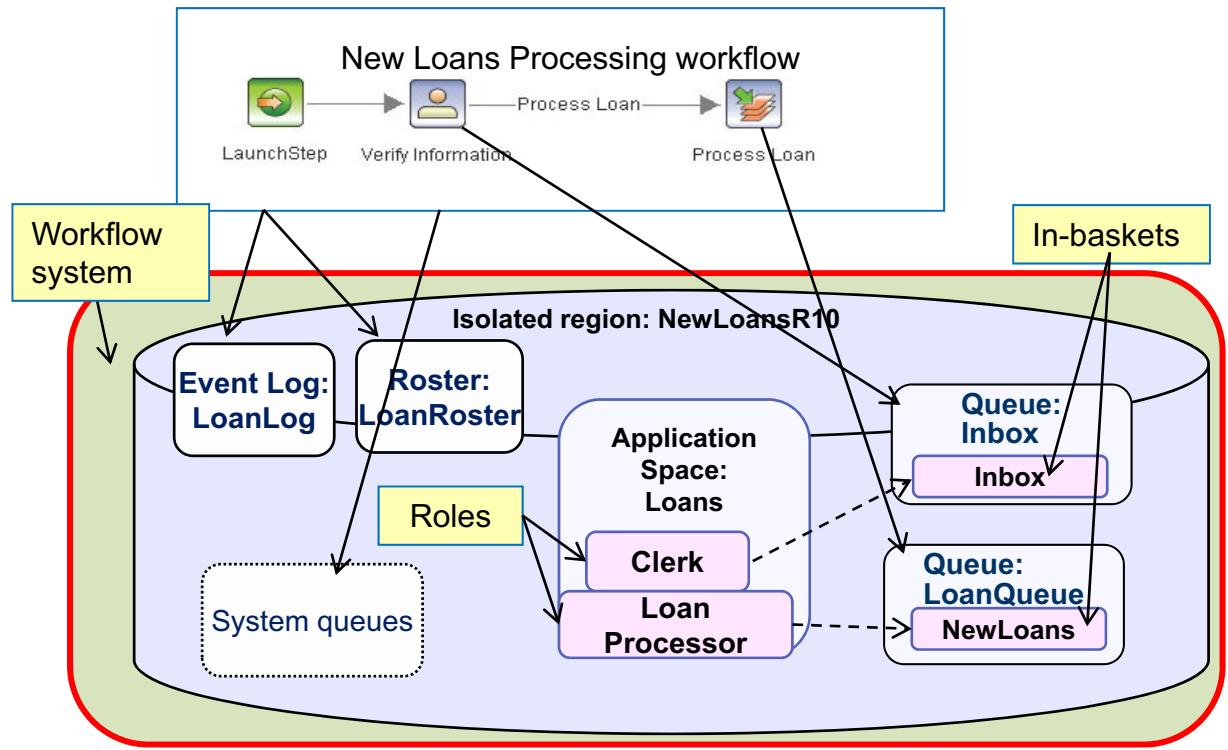
Notes:

Activities that you need to complete in this lesson.

Configure a workflow system

Purpose of the workflow system

- Container for isolated regions.



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Figure 1-27. Purpose of the workflow system

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Notes:

The workflow system is a logical container for isolated regions, which provide the runtime environment for workflow applications.

The diagram has two basic parts:

1. The upper rectangle shows a simple workflow, New Loans Processing workflow, with three steps:
 - LaunchStep
 - Verify Information
 - Process Loan

When you transfer a workflow, a runtime version of the workflow is stored in an isolated region, which is contained in a workflow system. Isolated region objects that the workflow application requires, such as queues, rosters, event logs, need to exist in the isolated region before transferring the workflow.

When you launch the workflow application, the workflow instance and the work items are all stored in the isolated region, within the workflow system.

2. The lower rectangle shows a workflow system with the isolated region, NewLoansR10 and all the isolated region objects used in the New Loans Processing workflow.

In the next lesson, you learn how to create and configure all the isolated region objects that are shown in the diagram.

In this lesson, you create and configure the workflow system, highlighted in red, with a thicker outline.

Configure a workflow system

Plan the workflow system

- Before you create a workflow system, you need to:
 - Know which object store the workflow system is associated with
 - An object store can have only one workflow system
 - Determine the table space name or file group for the isolated region
 - If not specified, it is the same table space as the workflow system
 - For ease of administration, use the same table space
 - Determine the security groups that are granted
 - Administrative privileges
 - Configuration privileges
 - Determine the connection point name
 - Determine the isolated region name and number

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Figure 1-28. Plan the workflow system

F2471.0

Notes:

Help paths

FileNet P8 Platform 5.2.1>Administering>Administering Content Platform Engine>Defining the workflow system>Configuring the workflow system>Creating a workflow system

FileNet P8 Platform 5.2.1>Planning and preparing>Planning and preparing for FileNet P8 installation>Performing the required installation preparation tasks>Security administrator installation tasks>Creating Content Platform Engine directory server accounts>Creating the workflow system administrator

FileNet P8 Platform 5.2.1>Planning and preparing>Planning and preparing for FileNet P8 installation>Performing the required installation preparation tasks>Security administrator installation tasks>Creating Content Platform Engine directory server accounts>Creating workflow system groups

You need to plan the workflow system before you create it.

A workflow system is associated with an object store. If you do not already have an object store, then you need to create one.

Work with your database administrator to decide what table spaces or file groups to use, to store the isolated regions.



Information

Starting with Content Platform Engine 5.2.0 it is better to you use the same table space or file group for the object store and the isolated regions. Having distinct table spaces or file groups makes database administration more complicated.

Determine who has Administrative privileges on the workflow system.

- It is best to use an LDAP administrative group, rather than individual users.

Although it is not required, it is best to specify a Configuration group. If you do not specify a group, then anyone who has access to the workflow system is able to change the configuration.



Information

Workflow system security is covered in another unit.

You must create at least one connection point when you create the workflow system.

- Decide what name you want to use.
- Give the connection point a meaningful name. For example, use the name of the application or department uses the application (it is common to add the isolated region number or name, to the connection point name).

You must create at lease one isolated region when you create the workflow system.

- You need the name for the isolated region and the region number (1 – 999).

Configure a workflow system

Create a workflow system

- Use Administration Console for Content Platform Engine
 - Wizard guides you through the steps that must be completed.
 - Wizard flags errors if required information is not entered.

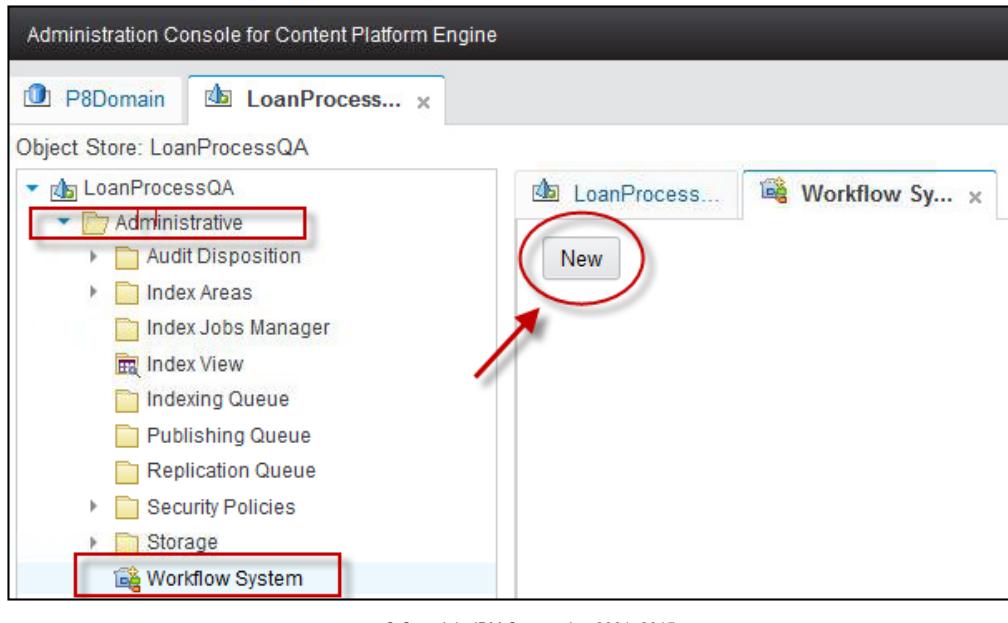


Figure 1-29. Create a workflow system

F2471.0

Notes:

Help path

FileNet P8 Platform 5.2.1>Administering>Administering Content Platform Engine>Defining the workflow system>Configuring the workflow system>Creating a workflow system

You create a workflow system with the Administration Console for Content Platform Engine.

The create a workflow system wizard, guides you through the steps that you must complete.

The screen capture shows the steps to follow to create a workflow system.

The Administration Console for Content Platform Engine is open to the object store, LoanProcessQA. Administrative > Workflow System is selected and **New** is clicked, which launches the create a workflow system wizard.

Configure a workflow system

Create workflow system wizard

- The wizard guides you through a series of screens to configure the new workflow system.
- List of properties that can be configured at creation (the asterisk indicates a required field):
 - * Default Locale: English (United States) default
 - * Date/TimeMask: mm/dd/yy hh:tt am
 - XSL/XSD base directory
 - Table spaces
 - * Data
 - Index
 - Blob
 - Workflow system security groups
 - * Administration group
 - Configuration group

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Figure 1-30. Create workflow system wizard

F2471.0

Notes:

Help path

FileNet P8 Platform 5.2.1>Administering>Administering Content Platform Engine>Defining the workflow system>Configuring the workflow system>Creating a workflow system

The wizard guides you through a series of screens to configure the properties of the workflow system.

Configure a workflow system

Create workflow system wizard (2)

- The wizard guides you through a series of screens that create the new workflow system.

**Red asterisk
Indicates
Required fields**

New Workflow System
When you create a workflow system, you define an isolated region and its connection point. In addition, you can define parameters and configure locale settings. [Learn more...](#)

Default locale: English (United States)
Date/Time mask: mm/dd/yy hh:tt am
 Use legacy date/time mask

XSL/XSD base directory:

Table Spaces

Data: CEDATA_TS
Index:
Blob:

Workflow System Security Groups

Administration group: CEadmins
Configuration group:

Process Orchestration

Broker servlet URL: http://server:###/ibmccepo
Public listener URL: http://server:###/WorkplaceXTOrAEContext

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Figure 1-31. Create workflow system wizard (2)

F2471.0

Notes:**Help paths**

FileNet P8 Platform 5.2.1>Administering>Administering Content Platform Engine>Defining the workflow system>Configuring the workflow system>Creating a workflow system

FileNet P8 Platform 5.2.1>Administering>Administering Content Platform Engine>Defining the workflow system>Maintaining the workflow system>DateTime masks

The screen capture of the first screen the Create workflow system wizard displays. You can see the fields that it prompts you for. The required fields are:

- The default local – English (United States), default.
- The Date/Time mask – mm/dd/yy tt am, default
- Table Space Data – Table space name of where to store the workflow system data. Use the same table space as the object store. The table space must exist, so you need to work closely with the database administrator.
- Administration group - LDAP group or users that have administration privileges on the workflow system.

**Note**

The Next button is bold, indicating that it is enabled. Finish is disabled, indicating that it is not available yet. When you finish entering all the required values, Finish is enabled.

Configure a workflow system

Create workflow system wizard (3)

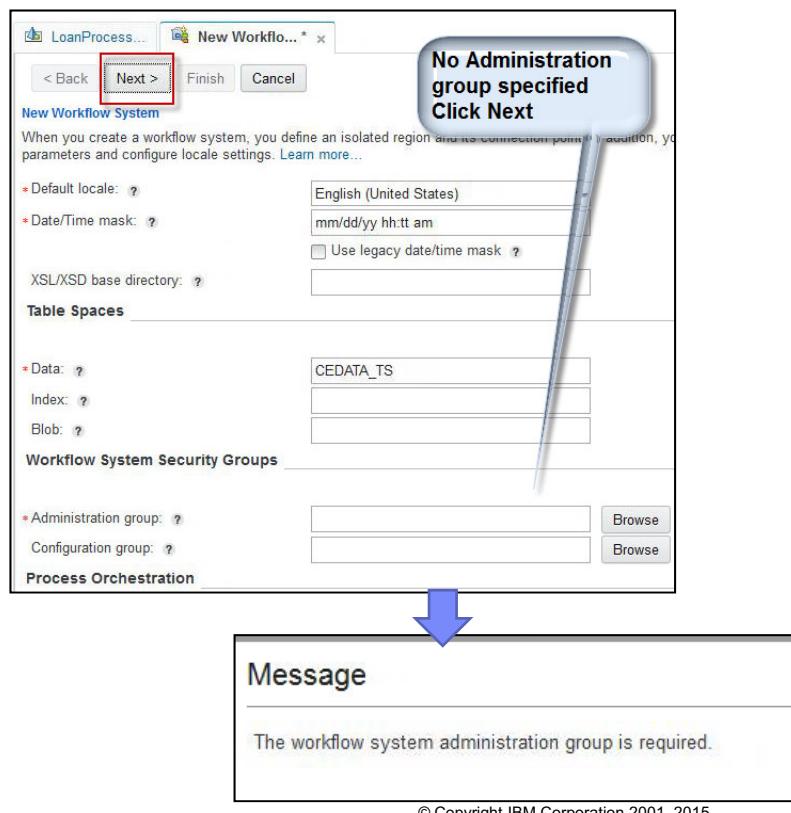


Figure 1-32. Create workflow system wizard (3)

F2471.0

Notes:

When you click **Next**, the wizard does some validation checking on the information you enter. If you missed a required field or entered a value in an incorrect format, an appropriate error is displayed.

The screen capture shows the Create workflow system wizard and a message window, stating that the workflow system administration group is required. **Next**, was clicked before entering the workflow system administration group.

Configure a workflow system

Create workflow system wizard (4)

LoanProcess... New Workflow... *

< Back Next > Finish Cancel

Specify New Connection Point

A connection point identifies and provides access to an isolated region of the workflow isolated region for workflow process functionality such as work items, queues, rosters,

*Connection point name:

Existing connection points:

- P8ConnP2
- P8ConnP5
- P8ConnPt1

Connection point description:

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Figure 1-33. Create workflow system wizard (4)

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Notes:

The screen capture, shows the second screen of the wizard, which prompts for the connection point name, a required field. The connection point name must be unique. The wizard lists the existing connection points to assist you.

The connection point description is optional. After the connection point, you are prompted to create an isolated region to associate it to.

Configure a workflow system

Create workflow system wizard (5)

Name	Value
Connection point name	NewLoansreg10
Connection point description	Connection Point for New Loans
Isolated region name	newLoansReg10
Isolated region number	10
Default locale	English (United States)
Date/Time mask	mm/dd/yy hh:tt am
System default table spaces	pe_data - CEDATA_TS
Administration group	CEadmins

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Figure 1-34. Create workflow system wizard (5)

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Notes:

The screen capture shows the summary screen, which shows all the values entered. Finish and the title of the window are highlighted with a red box.



Finish is now bold, indicating that you can select it, and Next is disabled.

You can click Back or Cancel at any time.

When you click Finish:

- The workflow system is created with the values you specified
- The connection point is created.
- The isolated region is created and initialized.

Configure a workflow system

Configure the workflow system

- Workflow system properties
 - System-wide options for a workflow system
 - Properties are grouped into tabs

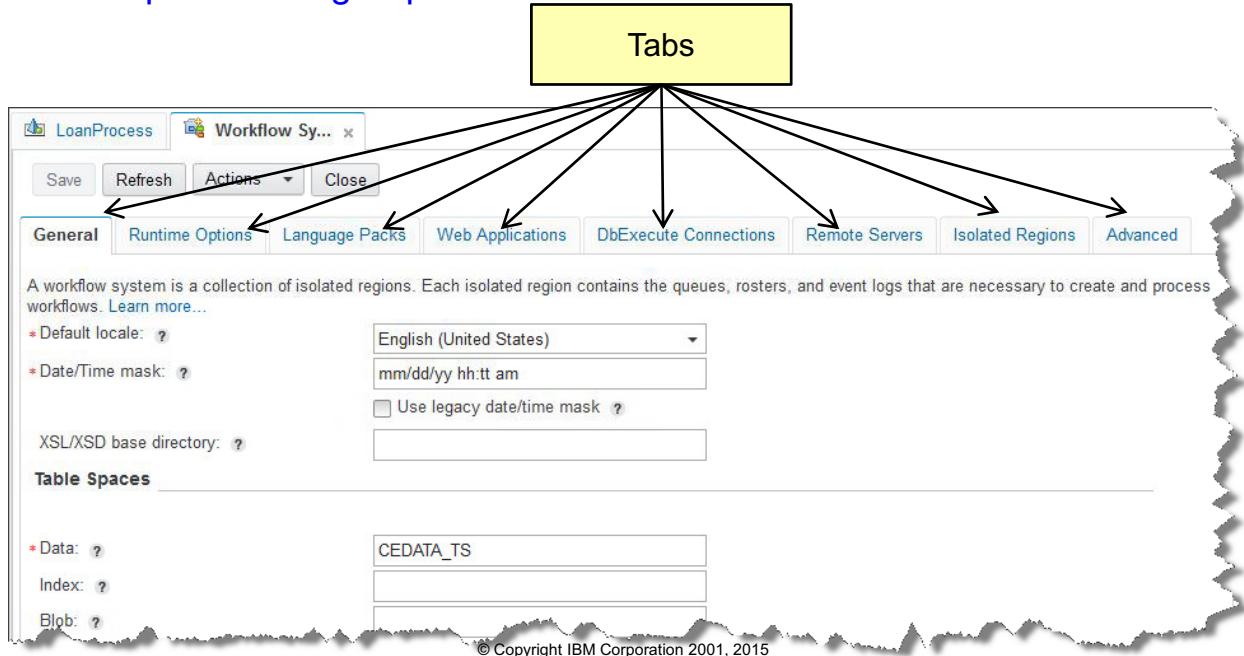


Figure 1-35. Configure the workflow system

F2471.0

Notes:

After you create a workflow system. You can configure many workflow system properties.

You use either the Administration Console for Content Platform Engine or the Process Configuration Console to configure the properties.



Information

The Process Configuration Console is considered the legacy configuration tool. It is still supported in IBM Case Foundation 5.2.1.

The screen captures, which are shown in the next few slides, are using the Administration Console for Content Platform Engine.

The screen capture on this slide, shows the tabs available when you open a workflow system.

The properties are grouped as tabs:

- General

- Runtime Options
- Language Packs
- Web Applications
- DbExecute Connections
- Remote Servers
- Isolated Regions
- Advanced

In the next few slides, you explore each of the tabs.

Configure a workflow system

Workflow system properties: General

- Identical to first Create workflow system wizard screen.
- Use to modify values after creation.

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Figure 1-36. Workflow system properties: General

F2471.0

Notes:

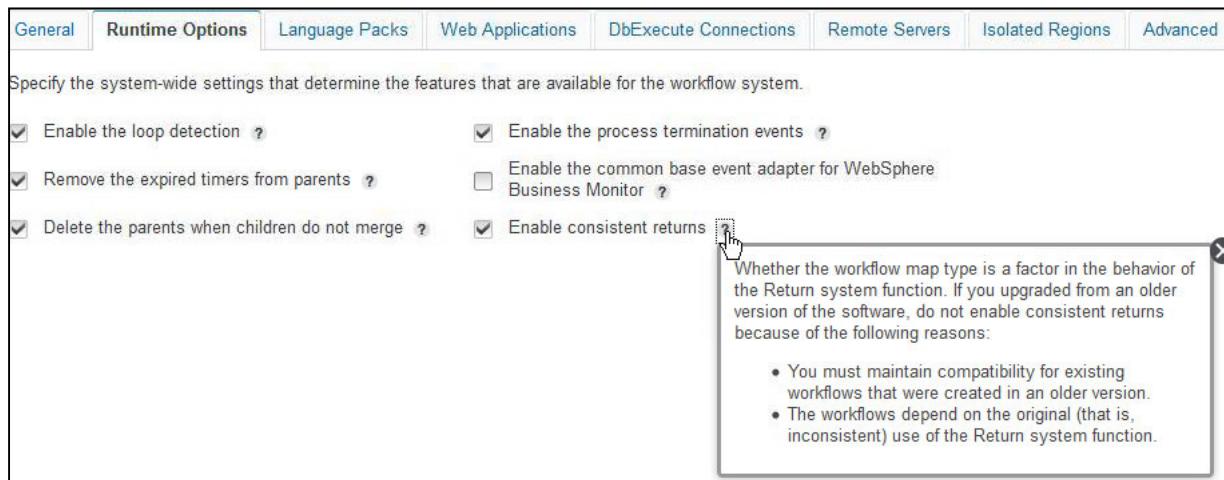
The General tab displays a screen identical to the first screen displayed by the “Create a workflow system” wizard. You can use this screen to modify many of the values or add new values.

The screen capture shows the General tab of the workflow system.

Configure a workflow system

Workflow system properties: Runtime Options

- Set system-wide settings that determine the features available for the workflow system



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Figure 1-37. Workflow system properties: Runtime Options

F2471.0

Notes:

In the Runtime Options tab you can enable or disable, system-wide, workflow system features.

The screen capture shows the Runtime Options tab, of the workflow system, with the default values that are set when you create a workflow system.

You can hover over the question mark, to the right of each item to get more information about the item.

Configure a workflow system

Workflow system properties: Language Packs

- Language packs contain translated templates
 - Used for email notification of workflow activity
- You must have at least one language pack to enable email notification.

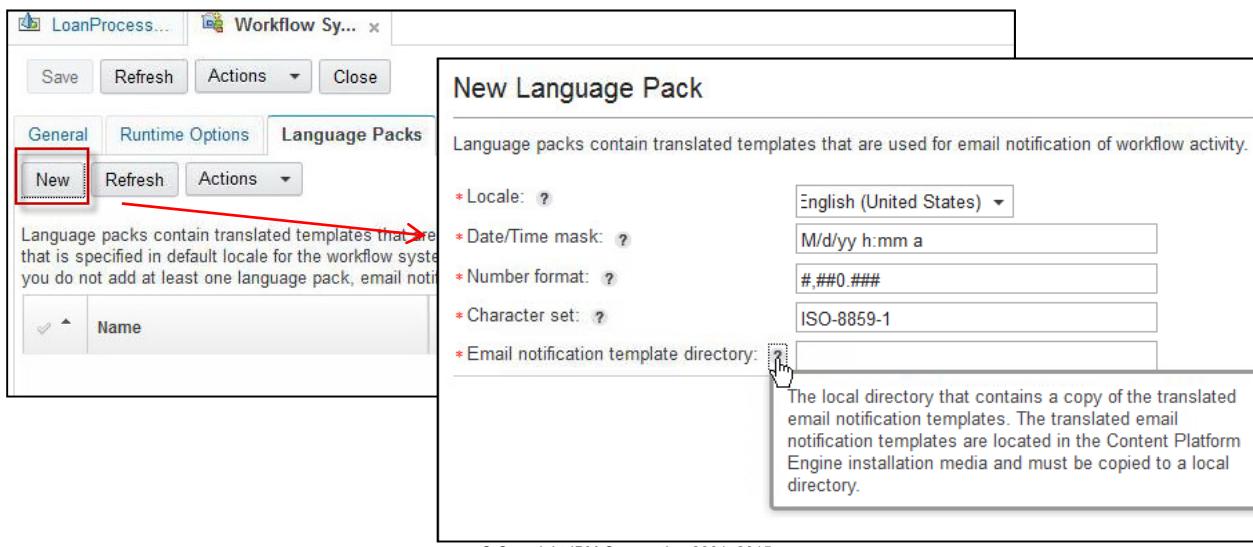


Figure 1-38. Workflow system properties: Language Packs

F2471.0

Notes:

In the Language Packs tab, you can define language packs that contain translated templates for use with email notification.

The screen captures show you the Language Packs tab, on the left, and the screen that displays when you click **New**, on the right, to add a language pack.

The path to the translate email notification templates on the Content Platform Engine installation media:

`<CPE_install_path>\tools\PE\msg\en` supports English (United States)

The directory `<CPE_install_path>\tools\PE\msg` can be copied to a local directory or used from the installation location.

Configure a workflow system

Workflow system properties: Web Applications

- Define the server base URL for web applications that are used in the workflow system

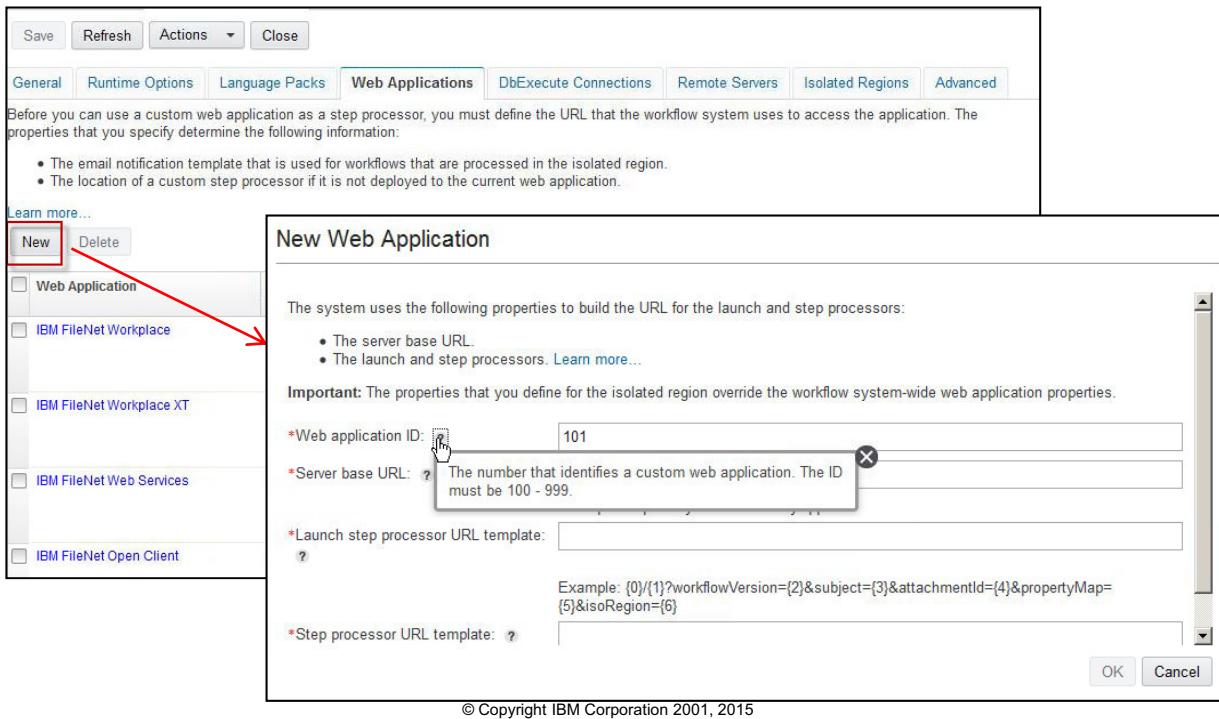


Figure 1-39. Workflow system properties: Web Applications

F2471.0

Notes:

Help path

FileNet P8 Platform 5.2.1>Administering>Administering Content Platform Engine>Defining the workflow system>Configuring the workflow system>Managing the workflow system>Configuring web applications

Before you can use a custom web application as a step processor, you must define the URL that the workflow system uses to access the application.

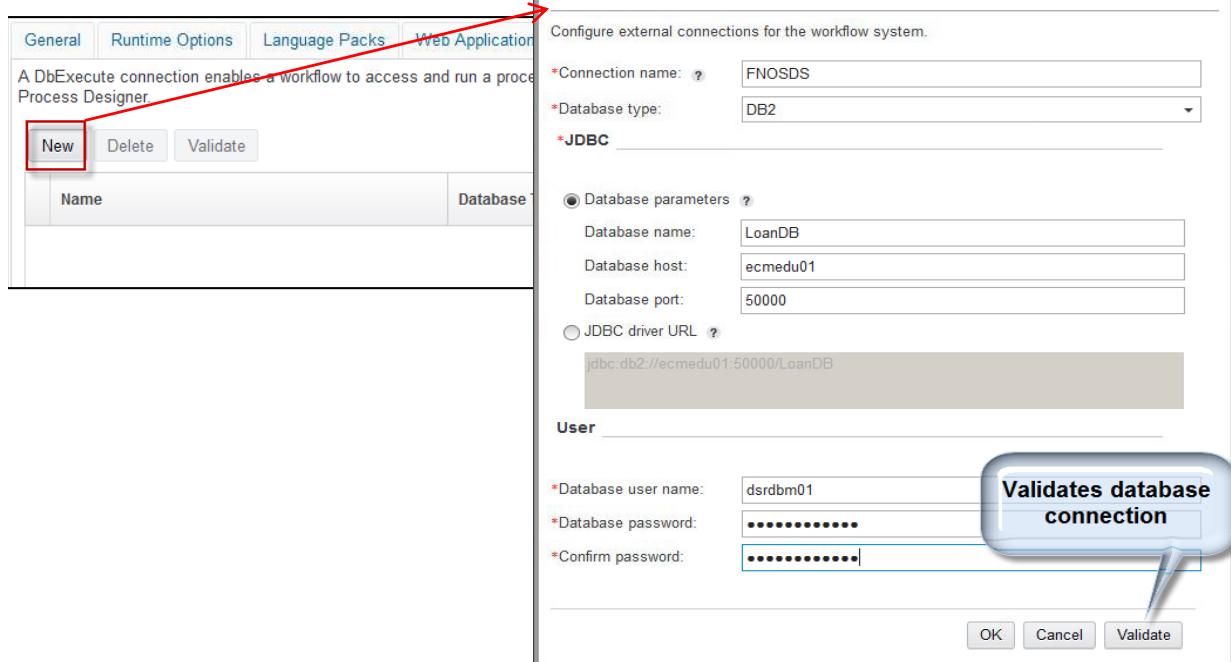
In the Web Applications tab, you can configure new web applications and define the Server base URL.

The screen captures show the Web Applications tab of the workflow system. **New** is clicked, highlighted in a red box, and the New Web Application window is displayed, on the right.

Configure a workflow system

Workflow system properties: DbExecute Connections

- Enable a workflow to access and run a stored procedure in an external database.



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Figure 1-40. Workflow system properties: DbExecute Connections

F2471.0

Notes:

Help path

FileNet P8 Platform 5.2.1>Administering>Administering Content Platform Engine>Defining the workflow system>Configuring the workflow system>Managing the workflow system>Setting DbExecute connections

In the DbExecute Connections tab, you define external database connections.

DbExecute connections allow a workflow to run stored procedures from an external database.

The screen captures show you an example of creating a new DbExecute Connection. Notice the **Validate** button, which validates that the system can connect to the database successfully.



Important

Before you can define a DbExecute connection, you need to ensure that you have the database driver defined in the application server. For example, in WebSphere Application Server, the JDBC provider defines the jdbc driver for the database.

Configure a workflow system

Workflow system properties: Remote Servers

- Configure the email server for email notification
- Configure the email notification settings

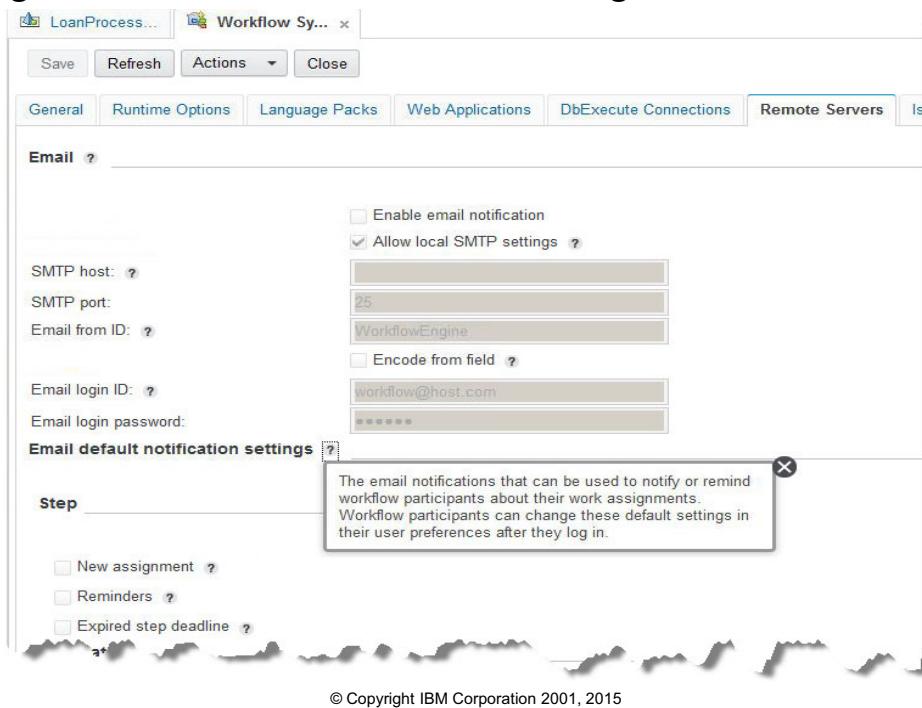


Figure 1-41. Workflow system properties: Remote Servers

F2471.0

Notes:**Help path**

FileNet P8 Platform 5.2.1>Administering>Administering Content Platform Engine>Defining the workflow system>Configuring the workflow system>Enabling email notification for workflow activity

Use the Remote Servers tab to configure remote servers such as:

- Email servers
 - Enable email notification and configure the email server.
 - Configure the SMTP mail server, including login ID and password
 - Set email default notification settings
- Rules Listener
 - Used to configure the Rules Connectivity Framework
- Legacy Component Manager
 - Used to configure Component Managers from IBM Case Foundation releases before 5.2.x.

**Reminder**

You can hover over a question mark, on a specific item, to get more information of the type of information expected.

The screen capture shows the Remote Servers tab of the workflow system.

Configure a workflow system

Workflow system properties: Isolated Regions

- Perform actions on existing isolated regions

Region Number	Created By	Date Created
10	P8Admin	2015-04-14T18:49:26.719Z

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Figure 1-42. Workflow system properties: Isolated Regions

F2471.0

Notes:

Help path

FileNet P8 Platform 5.2.1>Administering>Administering Content Platform Engine>Defining the workflow system>Maintaining the workflow system>Managing isolated regions>Initializing an isolated region

In the Isolated Regions tab, you can perform actions on existing isolated regions

- Lock/Unlock Isolated Region
- Initialize Isolated Region

The screen capture shows the Isolated Regions tab with the Actions menu selected. Two actions are displayed.



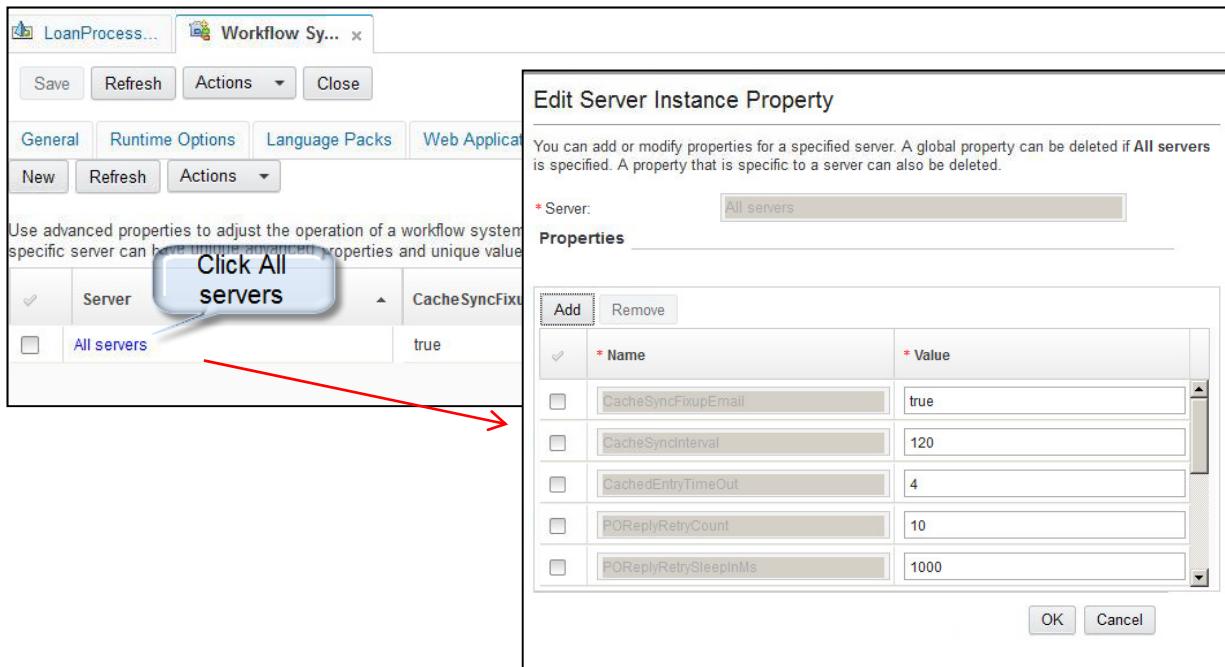
Important

When you create an isolated region, it is automatically initialized.

Configure a workflow system

Workflow system properties: Advanced

- You can fine-tune your workflow system.



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Figure 1-43. Workflow system properties: Advanced

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Notes:

Help path

FileNet P8 Platform 5.2.1>Administering>Administering Content Platform Engine>Defining the workflow system>Maintaining the workflow system>

In the Advanced tab, you can fine-tune your workflow system. You can specify properties that apply to all the servers or specific servers, within a site.

When you click a server entry, a screen displays to add, or edit existing advanced properties.

The screen capture, on the left shows the Advanced tab of the workflow system. The screen capture, on the right, shows the Edit Server Instance Property window, which displays when you click **All servers**.

Refer to the IBM Knowledge Center topic for details on all the advanced properties.

Configure a workflow system

Demonstrations



- Explore a workflow system

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Figure 1-44. Demonstrations

F2471.0

Notes:

Demonstration notes

Demonstration

Start the system components (If possible, do this ahead of time, unless you want to walk students through the system start, takes 15-20 minutes.)

1. Start the student system.
2. Log in as Administrator/passw0rd
3. Start the Windows Task Manager and wait for the system to settle down.
4. Open the **WebSphere Admin** folder on the desktop and launch, **Start Server1.bat**, wait until the command prompt window disappears.

Explore the workflow system demonstration.

1. Launch Administration Console for Content Platform Engine (Log in information:
p8admin/IBMFileNetP8)
 - a. Select LoanProcess > Administrative > Workflow System

2. Select General tab
 - a. Hover over the Default locale question mark.
 - b. Hover over the Workflow System Security Groups question mark. Click the Learn more link.
3. Select Runtime Options
 - a. Point out the settings that are configured by default.
 - b. Pick a couple of the question marks to hover over.
4. Select Language Packs
 - a. Explain that you configure Language packs that contain templates that are used for email notification of workflow activity.
 - b. Click New
 - Locale: English (United States)
 - Email notification template directory: C:\Program Files\IBM\FileNet\ContentEngine\tools\PE\msg\en (Hint: Open a Windows Explorer window, browsing to the path and copy and paste the path into the wizard).
 - c. Click OK.
 - d. Click Save.
5. Select Web Applications
 - a. Scroll through the web applications.
 - b. Explain that you define the Server Base URL for a web application so that a workflow author can use the web application in a step processor.
 - c. Select IBM Content Navigator as the default application.
 - d. Click Save.
6. Select DbExecute Connections
 - a. Click New to show the New DbExecute Connection wizard.
 - Connection name: LoanDB
 - Database type: DB2
 - Database name: LOANDB
 - Database host: ecmedu01
 - Database port: 50000
 - (Point out the JDBC driver URL that is created from the database parameters. Instead of entering each parameter individually, you can select the JDBC driver URL option and enter the URL directly).
 - Database user name: dsrdbm01
 - Database password: IBMFileNetP8
 - b. Click **Validate**

- c. Click **Cancel**
 - d. Explain that you configure a connection to a database to allow a workflow step to run a stored procedure in an external database.
7. Select Remote Servers
- a. You configure an email server to support email notifications of workflow activities.
 - b. You can also configure the email notification settings.
 - c. You configure the Rules Listener for Rules connectivity framework, if your workflows use an external business rules system.
 - d. You configure a Legacy Component Managers here –for FileNet systems before IBM Case Foundation 5.2.0.
8. Select Isolated Regions
- a. Notice that there is one isolated region that is defined, P8Region 5.
 - b. Open the isolated region.
 - All the properties of the isolated region are displayed. The same screen is displayed if you click Workflow System > Isolated Regions > P8Region5
 - Details on the properties of an isolated region are covered in another demonstration.
 - c. Close the P8Region5 window.
9. Select Advanced
- a. Fine-tune the operation of the workflow system.
 - b. Scroll to the right and show the various properties.
 - c. Click All Servers – to show how you would edit the values.
10. Close the Workflow System.

IBM Case Foundation 5.2.1: Configure the workflow system

Exercise introduction



Prepare your system for the student exercises

- In this lab exercise, you will:
 - Start the system components.
 - Verify that the system is functional.

Create a workflow system

- In this lab exercise, you will:
 - Create a workflow system in the LoanProcessQA object store with the Administration Console for Content Platform Engine.
 - Verify the workflow system created.

Explore and configure the workflow system

- Explore the workflow system created.
- Configure the workflow system.

Create a database connection

- Create and test a DbExecute connection.

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Figure 1-45. Exercise introduction

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Notes:

Exercise introduction slide. Review each of the exercises and the objectives.

Configure a workflow system

Activities



In your Student Exercises

- Unit: Configure the workflow system
- Lesson: Configure a workflow system
- Activities:
 - Prepare your system for the student exercises
 - Create a workflow system
 - Explore and configure the workflow system created
 - Create a database connection

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Figure 1-46. Activities

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Notes:

Use your Student Exercises book and your student system to perform the activities that are listed.

Lesson 1.3. Create and configure an isolated region and region objects

Lesson

Configure an isolated region and region objects



Why is this lesson important to you?

- As a workflow administrator, you are responsible for defining and configuring isolated regions to support FileNet workflow applications.
- As a workflow author, you design and implement FileNet workflow applications.
- To do these tasks effectively, you need to know how to create and configure isolated regions and region objects.

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Figure 1-47. Configure an isolated region and region objects

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Create and configure an isolated region and region objects

Activities that you need to complete

- Create a connection point and isolated region
- Create isolated region objects
 - Create a queue
 - Create a roster, an event log, and an application space
 - Explore isolated region objects with vwtool
 - Explore the workflow system database tables

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Figure 1-48. Activities that you need to complete

F2471.0

Notes:

Activities that you need to complete in this lesson.

Create and configure an isolated region and region objects

Purpose of the isolated region

- Provides the runtime environment for workflow applications.

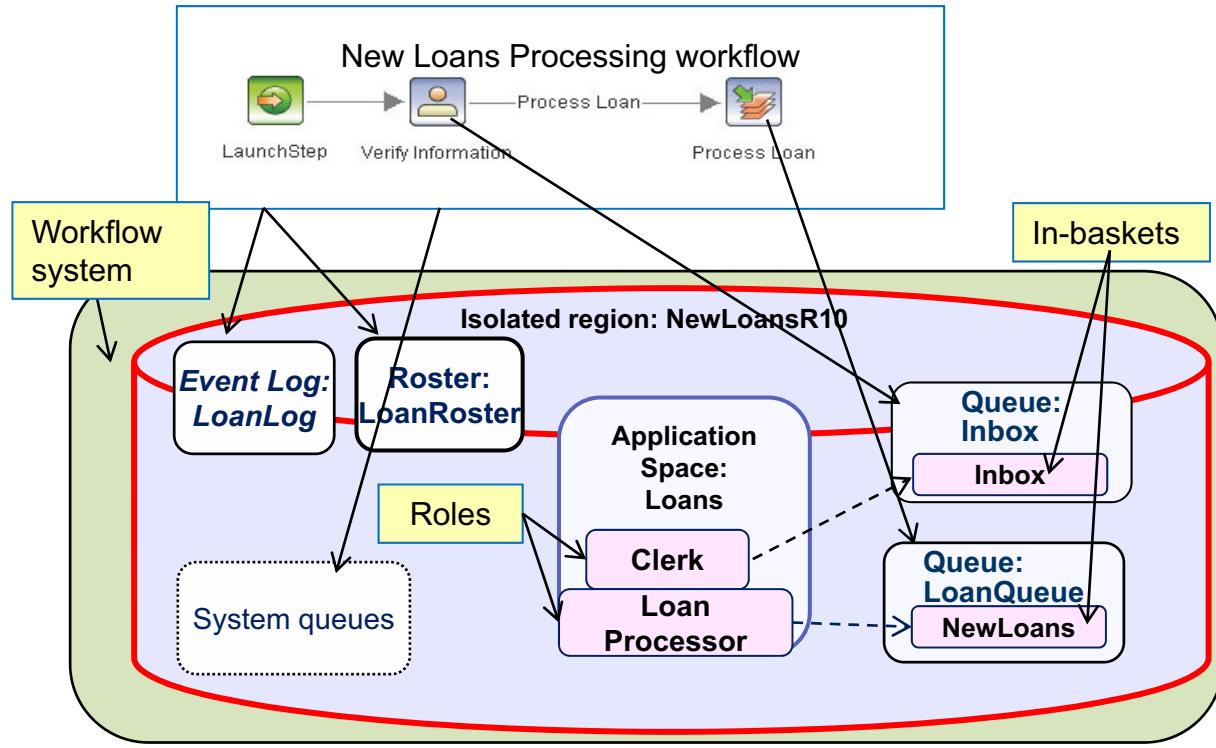


Figure 1-49. Purpose of the isolated region

F2471.0

Notes:

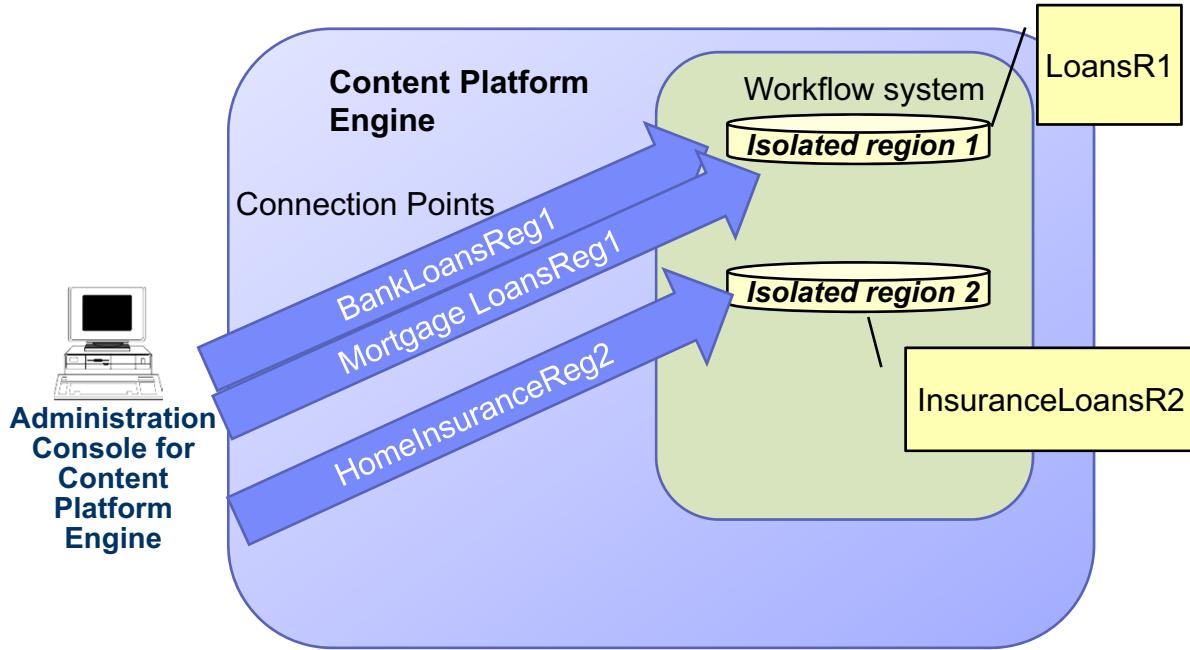
An isolated region provides the runtime environment for a workflow application. When you transfer a workflow definition, the system generates an executable version of the workflow definition and stores it in the isolated region. When you launch the workflow, all the work items are stored in the isolated region, within the appropriate isolated region objects.

The lower diagram shows the isolated region with a red thicker outline. The isolated region is contained in the workflow system.

Create and configure an isolated region and region objects

Create extra connection point and isolated region

- Connection points connect to an isolated region.
- Each isolated region can have one or more connection points.



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Figure 1-50. Create extra connection point and isolated region

F2471.0

Notes:

Help path

Content Foundation 5.2.1>Administering>Administering Content Platform Engine>Defining the workflow system>Configuring the workflow system>Creating extra connection points and isolated regions

Connection points are used by a client application to connect to an isolated region, for example, an IBM Content Navigator desktop. You create a connection point with the Administration Console for Content Platform Engine. Multiple connection points can reference the same isolated region, so you can create aliases or easily remembered names for different business needs or applications.

When you create a connection point, you create an isolated region at the same time.

Client applications, such as the Administration Console for Content Platform Engine or an IBM Content Navigator desktop, connect to an isolated region with the connection point.

The diagram shows the administration console connected to two isolated regions.

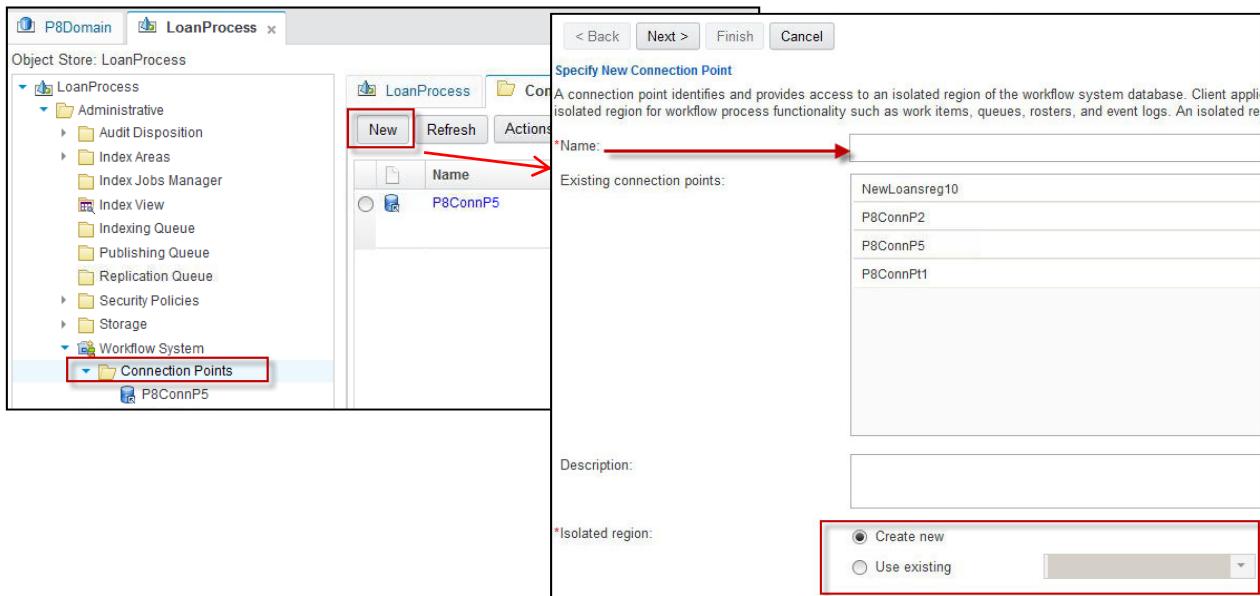
- Isolated region 1, LoansR1, has two connection points, that point to it:

- BankLoansReg1
- MortgageLoansReg1
- Isolated region 2, InsuranceLoansR2, has one connection point, HomeInsuranceReg2.

Create and configure an isolated region and region objects

1. Create new connection point and isolated region

- Create a connection point
 - With Administration Console for Content Platform Engine



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Figure 1-51. 1. Create new connection point and isolated region

F2471.0

Notes:

You create more connection points and isolated regions with the Administration Console for Content Platform Engine.

The screen capture, on the left, shows the administration console with the LoanProcess object store open. The nodes, **Administrative > Workflow System** are expanded and the node, **Connection Points** is selected.

When you click **New**, the screen capture on the right is displayed. You create a connection point, enter the name of the connection point, then either create an isolated region or use an existing isolated region.

Create and configure an isolated region and region objects

Create isolated region objects



- Use Administration Console for Content Platform Engine to create region objects:
 1. Select the appropriate node for the new object under the isolated region node:
 - Application Spaces
 - Event Logs
 - Rosters
 - Work Queues
 2. Click New on the toolbar.
 3. Enter a unique name for the object and an optional description.
 4. Click Next.
 5. Click Finish.

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Figure 1-52. Create isolated region objects

F2471.0

Notes:

Help path

FileNet P8 Platform 5.2.1>Integrating workflow into document management>Configuring the workflow system>Isolated regions

Review: In Lesson 1.1, you learned that an isolated region is a logical subdivision of a workflow system that contains the application spaces, queues, event logs, rosters, and so on.

The workflow author is responsible for planning and defining the isolated region objects, during design and development of the workflow application. The workflow system administrator might be required to create isolated region objects in a non-development environment. It is common to provide an export of the isolated region, that contains all the objects, which can be imported into a new environment.

You follow the same basic steps to create all the isolated region objects.

- a. Select the node for the region object you want to create.
- b. Click New on the toolbar.
- c. Enter a unique name for the region object and an option description.

- d. Click Next.
- e. Click Finish.



Note

The creation of Component Queues is covered in another course.

Create and configure an isolated region and region objects

Configuration options for isolated region objects

	Queues	Rosters	Event logs	Application Spaces
General	X	X	X	X
System Fields	X	X	X	
User Fields	X	X	X	
Indexes	X	X	X	
Security	X	X		X
Operations	X			
In-Baskets	X			
Roles				X
Custom Attributes				X

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Figure 1-53. Configuration options for isolated region objects

F2471.0

Notes:

Help paths

FileNet P8 Platform 5.2.1>Integrating workflow into document management>Configuring the workflow system>Getting started with Process Configuration Console>Queue, roster, and event log properties

FileNet P8 Platform 5.2.1>Administering>Administering Content Platform Engine>Defining the workflow system>Coordinating workflow design>Workflow options>Defining queues>Workflow queues>Defining operations

FileNet P8 Platform 5.2.1>Administering>Administering Content Platform Engine>Defining the workflow system>Coordinating workflow design>Workflow options>In-baskets

FileNet P8 Platform 5.2.1>Administering>Administering Content Platform Engine>Defining the workflow system>Coordinating workflow design>Workflow options>In-baskets>Defining roles

The table shows the configuration options available for each type of isolated region object.

The first column lists the tabs available when you configure an isolated region.

General – Properties that are defined at creation time, for example name and description. For the isolated region objects, only the description can be changed after creation.

System Fields – You can expose system fields available for use in a search filter or index.

User Fields – You can expose workflow data fields for use in a search filter or index.

Indexes – Facilitate and speed-up searches

Security – You can set security levels on queues, rosters, and application spaces. This controls ability to view and process work items. Security is covered in another unit.

Operations – Define an operation and its input and output parameters.

In-Baskets – Filter work items in a queue. Only items that are appropriate for a specific role are displayed.

Roles – Organize users and groups who process different types of activities in an application, by the function they perform. For example, Clerk, Approver.

Custom Attributes – Define metadata for the application space, so client applications can customize the user experience.

In the next few slides, you see how to use the Administration Console for Content Platform Engine to configure the isolated region objects.

Create and configure an isolated region and region objects

Configure user queues and work queues

- Configurable options for queues

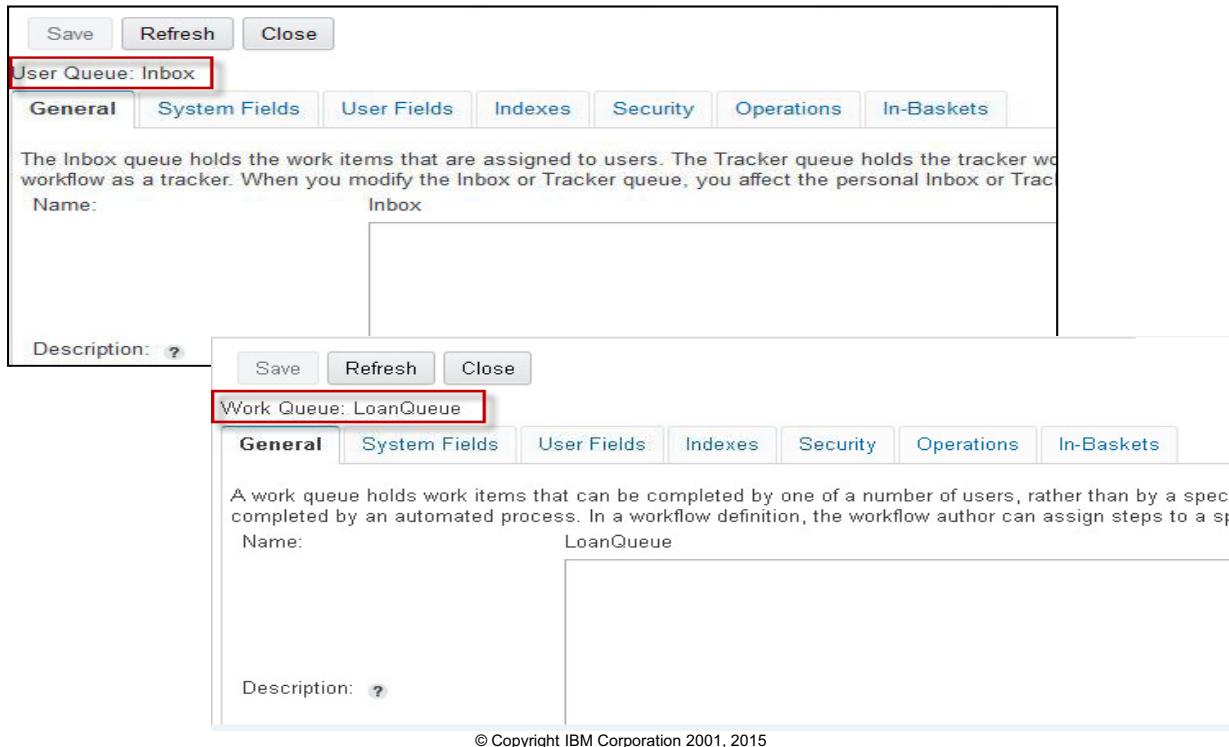


Figure 1-54. Configure user queues and work queues

F2471.0

Notes:

Help path

FileNet P8 Platform 5.2.1>Integrating workflow into document management>Configuring the workflow system>Getting started with Process Configuration Console>Queue, roster, and event log properties

The two screen captures show the configurable options for a user queue, Inbox, upper left, and a work queue, LoanQueue, lower right.

Create and configure an isolated region and region objects

Configure event logs and rosters

- Configurable options for event logs and rosters.

The figure consists of two side-by-side screenshots from the FileNet P8 Platform interface.

Event Log: LoanLog (Left Screenshot):

- Header: Save, Refresh, Close.
- Title: Event Log: LoanLog.
- Tab navigation: General, System Fields, User Fields (highlighted), Indexes.
- Description: The purpose of a user-defined database field is to store the value of a corresponding source field (such as a workflow field) so that database field is part of a workflow structure such as a roster, queue, or event log. The database field and the source field must have the same type (or similar) data type. [Learn more...](#)
- Action buttons: New, Clone, Delete.
- Data table:

	Name	Type
<input type="checkbox"/>	customer_name	String
<input type="checkbox"/>	loan_id	String
<input type="checkbox"/>	loan_amount	Float

Roster: LoanRoster (Right Screenshot):

- Header: Save, Refresh, Close.
- Title: Roster: LoanRoster.
- Tab navigation: General, System Fields, User Fields, Indexes (highlighted), Security.
- Description: You can create an index to facilitate searches for workflow fields. Before you can use a workflow roster, queue, or event log. [Learn more...](#)
- Action buttons: New, Delete.
- Data table:

	Index Name	Index Key
<input type="checkbox"/>	F_WobNum	F_WobNum
<input type="checkbox"/>	F_WobTag	F_Tag;F_WobNum
<input type="checkbox"/>	F_WorkFlowNumber	F_WorkFlowNumber;F_WobNum
<input type="checkbox"/>	LoanID	loan_id;F_WobNum

Figure 1-55. Configure event logs and rosters

F2471.0

Notes:

Help path

FileNet P8 Platform 5.2.1>Administering>Administering Content Platform Engine>Defining the workflow system>Coordinating workflow design>Workflow options>Managing event logs>Configuring event logging options

The two screen captures show the configurable options for the event log, LoanLog, upper left, and the roster, LoanRoster, lower right.

The event log screen capture, on the upper left, has the User Fields tab selected, showing three user fields, customer_name, loan_id and loan_amount.

The roster screen capture, on the lower right, has the Indexes tab selected, showing the default indexes, and an extra index, LoanID, which was configured after the LoanRoster was created.

Create and configure an isolated region and region objects

Configure application spaces

- Configurable options for application spaces

Name	Queue Name	Description
Loan Supervisor	LoanManager	
Inbox	Inbox	
Supervised Loan Status	Tracker	Tracker Queue for Loan Supervisor

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Figure 1-56. Configure application spaces

F2471.0

Notes:

Help path

FileNet P8 Platform 5.2.1>Integrating workflow into document management>Configuring the workflow system>Manage application spaces

The two screen captures show the configurable options for an Application Space.

The screen capture on the left, shows the configurable options for the application space, DefaultApplication. Several roles are added. When you click the Loan Supervisor role, the screen on the right appears, where you can configure the role further. The In-Baskets and Members tab is selected. Notice that the Loan Supervisor in-basket is associated with the LoanManager queue. There is also an Inbox, which is a user queue and Supervised Loan Status, which is a Tracker user queue. The group, Loan Managers, is added as a member to this role. All users that are members of the LDAP group Loan Managers are members of the Loan Supervisor role.

Configuring an application space is covered in more detail in another lesson.

Create and configure an isolated region and region objects

Initialize an isolated region

- Use Administration Console for Content Platform Engine to:
 - Initialize an isolated region

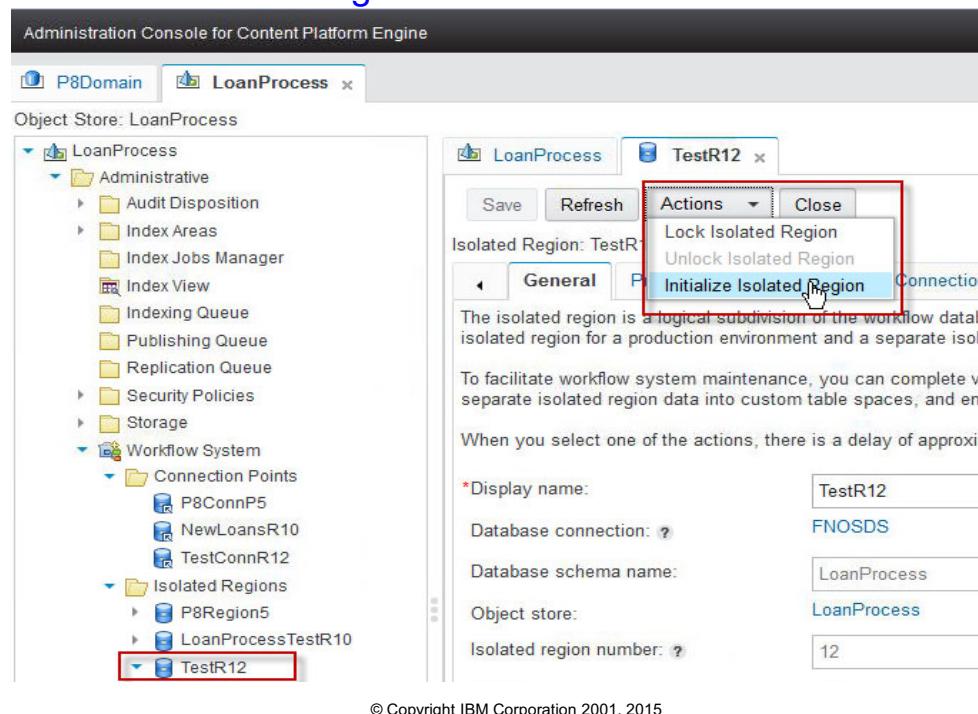


Figure 1-57. Initialize an isolated region

F2471.0

Notes:

Help path

FileNet P8 Platform 5.2.1>Administering>Administering Content Platform Engine>Defining the workflow system>Maintaining the workflow system>Managing isolated regions>Initializing an isolated region

There can be times when you want to clean out all the configuration on an isolated region and start with a clean slate, as if you just created it. This situation is more common in development environments, but can occur in other environments as well.

There are a few isolated region objects, such as queues, which cannot be deleted, the only way to remove them is to initialize the isolated region.

Administration Console for Content Platform Engine provides an easy way to accomplish this task.

1. Open the object store that you want.
2. Expand **Administrative > Workflow System > Isolated Regions**
3. Select the region that you want to initialize.
4. Click **Actions > Initialize Isolated region**.

5. After it is done, click **Refresh**.

The screen capture shows the isolated region, TestR12. Initialize Isolated Region is selected from the Actions menu.



Important

Make sure any tabs, displaying region objects are closed, before initializing the region. If not, it can appear that region objects are left behind when they are not. If you get in this situation, close any open tabs for the region objects and click **Refresh** on the isolated region properties screen.

Create and configure an isolated region and region objects

Delete an isolated region

- Use Administration Console for Content Platform Engine
 - Delete the last connection point to an isolated region.

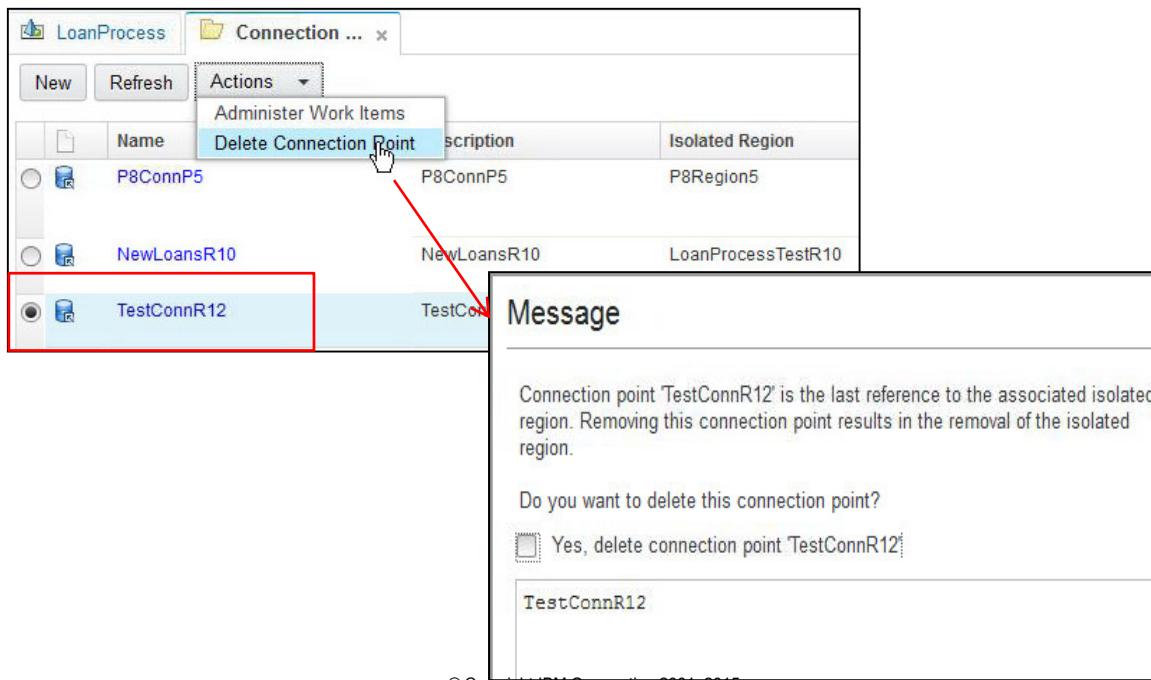


Figure 1-58. Delete an isolated region

F2471.0

Notes:

Help path

FileNet P8 Platform 5.2.1>Administering>Administering Content Platform Engine>Defining the workflow system>Maintaining the workflow system>Managing isolated regions>Deleting an isolated region or workflow system

You use the Administration Console for Content Platform Engine to delete an isolated region or a workflow system. When you delete the last connection point for an isolated region, you are prompted with a message that states that the connection point is the last reference to the associated isolated region. Removing the connection point results in the removal of the isolated region. You must click Yes to complete the deletion.



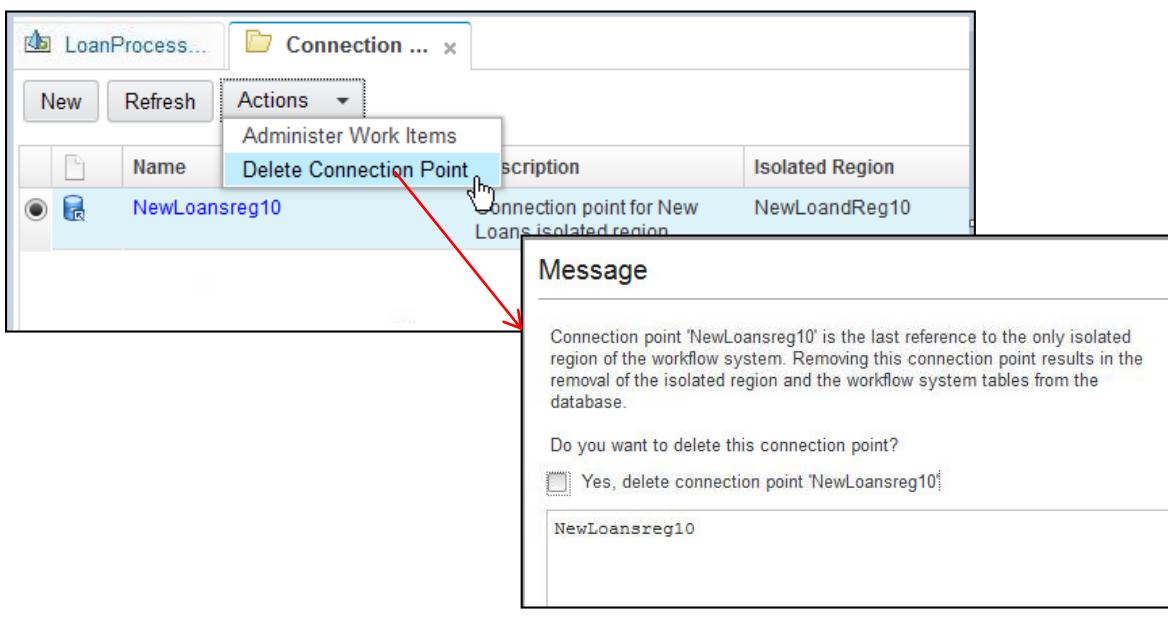
Information

New behavior, introduced in IBM Case Foundation 5.2.0.

Create and configure an isolated region and region objects

Delete a workflow system

- Use Administration Console for Content Platform Engine
 - Delete the last connection point to the last isolated region.



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Figure 1-59. Delete a workflow system

F2471.0

Notes:

Help path

FileNet P8 Platform 5.2.1>Administering>Administering Content Platform Engine>Defining the workflow system>Maintaining the workflow system>Managing isolated regions>Deleting an isolated region or workflow system

When you delete the last connection point to the last isolated region, you get a message that states that the connection point is the last reference to the only isolated region of the workflow system. Removing this connection point results in the removal of the isolated region and the workflow system tables from the database. You must click Yes to complete the deletion.

**Important**

Deleting the workflow system deletes any transferred workflows, processing workflows and work items. It does not delete the workflow definition files and class properties that are defined in the object store. In other words, deleting the workflow system deletes the runtime environment not the workflow definition.

Create and configure an isolated region and region objects

Export an isolated region configuration to XML

- Use the Process Configuration Console to:
 - Export all or specific components of an isolated region
 - Specific queues, rosters, event logs, application spaces
 - Quick method to back up your isolated region settings.

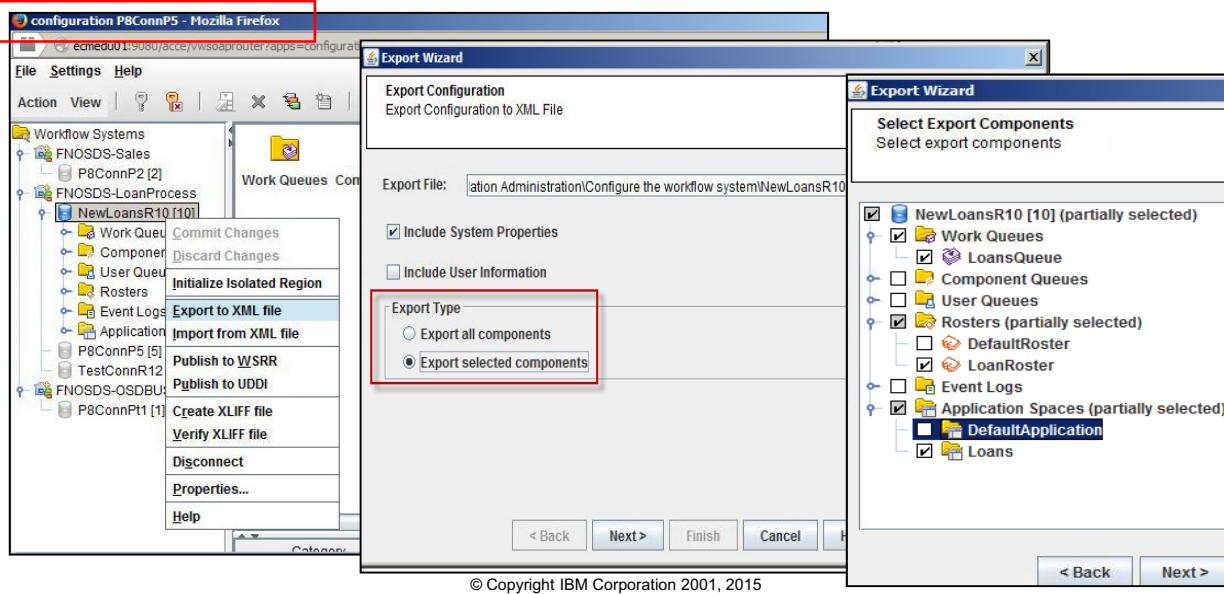


Figure 1-60. Export an isolated region configuration to XML

F2471.0

Notes:

Help path

FileNet P8 Platform 5.2.1>Integrating workflow into document management>Configuring the workflow system>Isolated regions>Exporting the isolated region configuration to XML

The Process Configuration console can export the configuration of an isolated region to an xml file, which provides a quick method to back up your isolated region objects.

The screen captures, from left to right show:

1. The Process Configuration console, which is connected to the connection point P8ConnP5. Right-click the isolated region NewLoansR10 and select Export to XML.
2. The first screen of the Export Wizard, you (middle screen capture):
 - Specify the name of the export file that you want to create.
 - Select if you want to include System Properties and User Information.
 - Select if you want to export all components or selected components.

3. The second screen of the Export Wizard, displays if you selected to export selected components. You select what components to export. In this screen capture, the components that are selected are (right screen capture):
 - The work queue, LoanQueue
 - The roster, LoanRoster
 - The application space, Loans

To complete the export, you click **Next**. At the summary screen, you click **Finish**. The export file is located in the path you specified.



Important

Export is a quick method to save the configuration settings of an isolated region to an xml file for backup purposes or to import into another isolated region. This only works within a single FileNet P8 domain. FileNet Deployment Manager also supports the export and import of isolated region configuration settings, in the context a complete workflow application migration and it can handle importing into a different FileNet P8 domain. FileNet Deployment Manager is the best tool to use for workflow application migration. Migration and deployment of workflow applications is covered in another unit.

Create and configure an isolated region and region objects

Import an isolated region configuration from XML

- Use the Process Configuration Console to:
 - Import all or specific components of an isolated region

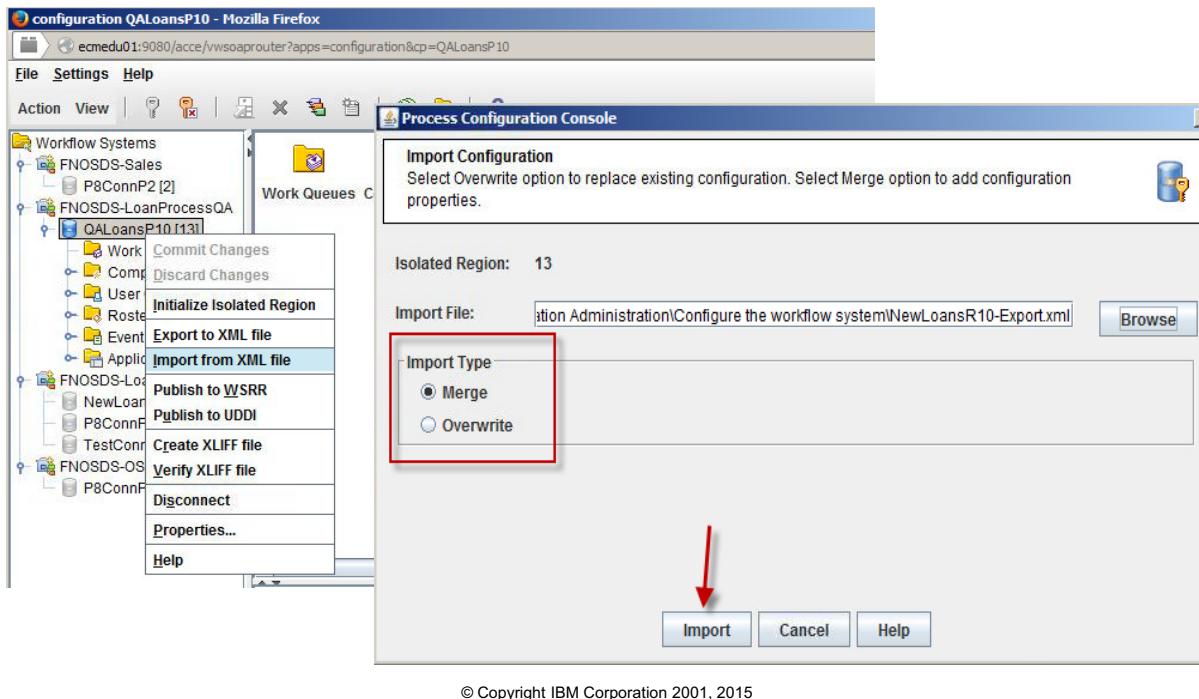


Figure 1-61. Import an isolated region configuration from XML

F2471.0

Notes:

Help path

FileNet P8 Platform 5.2.1>Integrating workflow into document management>Configuring the workflow system>Isolated regions>Import configuration from XML

The Process Configuration console can also import the configuration of an isolated region from an exported xml file. A quick way to create an isolated region and configure it to match or closely match an existing isolated region.

The screen captures show:

1. The Process Configuration console, which is connected to the connection point QALoansP10.
 - Right-click the connection point.
 - Select Import from XML.
2. On the Import Configuration screen:
 - You browse to the XML export file that you want to import.

- You select if you want Merge or Overwrite. (Merge adds only new objects that do not exist. Overwrite replaces any existing objects.)
- You click **Import**.

Create and configure an isolated region and region objects

Isolated region objects in vwtool

- The following vwtool commands display isolated region objects and workflow database tables:
 - config
 - queueconfig
 - logconfig
 - rosterconfig
 - appspace
- Logical object names and physical table names are displayed.
 - The physical table name has the format:
 - *VW<object_type><region #>_ <table #>*
 - *object_type*: Roster, Queue, Log, ...
 - *region #*: The isolated region number
 - *table #*: unique number to uniquely identify the table
 - Examples: [VWRoster5_254](#), [VWQueue5_258](#), [VWLog5_280](#)

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Figure 1-62. Isolated region objects in vwtool

F2471.0

Notes:

Help path

FileNet P8 Platform 5.2.1>Administering>Administering Content Platform Engine>Defining the workflow system>Administrative tools>vwtool>Logical versus physical table names

There is another tool besides the Administration Console for Content Platform Engine that views the isolated region configuration. The command-line tool, vwtool. If you open a call with IBM Support, for a workflow issue, it is likely that the technical support consultant requests that you run vwtool to capture certain configuration information.

Certain queues, rosters, event logs, data fields, and indexes have both a logical name and a physical table name. The logical name is used for user reference only. It is the name that you enter when you create the object. You can use meaningful names, in the context of the application. The system creates unique physical table names that are mapped to the logical name so you do not need to worry about collisions with table names that exist in the database.

Create and configure an isolated region and region objects

Example: Using vwtool config command

- vwtool procedure

- Run the vwtool command:

```
vwtool <connection point> [-v] [-Y] [user]+[password]
<vwtool:#>
```

- To view the isolated region configuration details of the entire region.

- Type config, at the prompt, <vwtool:#>config

- To exit the vwtool:

```
<vwtool:#>quit
```

```
C:\Program Files\IBM\FileNet\ContentEngine\tools\PE>vwtool P8ConnP5
User name: p8admin
Password:
log4j:WARN No appenders could be found for logger (filenet.vw.server).
log4j:WARN Please initialize the log4j system properly.
[Perf Log] perflog.dir=null not found, auditor disabled
[Perf Log] No interval found. Auditor disabled.
Connecting to http://ecmedu01:9080/peengine/api/petoolsapi
jarUrl=jar:file:/C:/Program%20Files/IBM/FileNet/ContentEngine/lib/pe.jar!/
vwtool : ECMEDU01/server1 [Server <DB2 LUW Blob 1 MB> -- {dap521.234} en_US ]
Client Version = dap521.234

Type '?' for help

<vwtool::5>config.
```

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Figure 1-63. Example: Using vwtool config command

F2471.0

Notes:

Help path

FileNet P8 Platform 5.2.1>Administering>Administering Content Platform Engine>Defining the workflow system>Administrative tools>vwtool>Start vwtool

To launch the vwtool command-line tool, you need to specify the connection point to connect to. The “Y” parameter, accepts the administrative username and password to use to connect to the specified connection point. Notice that the parameters are optional, if you include only the connection point, when you launch the tool, you are prompted for the username and password.

The command-line tool, vwtool, is covered in more detail in another unit.

The screen capture shows vwtool connected to the connection point, P8ConnP5. There are prompts for the username and password. At the vwtool prompt, the command, config, is typed.

Create and configure an isolated region and region objects

Demonstrations



- Create a connection point and isolated region
- Create isolated region objects

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Figure 1-64. Demonstrations

F2471.0

Notes:

Demonstration notes

Create a connection point and isolated region

1. Launch the Administration Console for Content Platform Engine and open the LoanProcess object store.
 - a. Expand Administrative > Workflow System
2. Select Connection Points
3. Click **New**
 - a. Data to complete the wizard:
 - Connection Point name: NewLoansR10
 - Isolated Region name: LoanProcessReg10
 - Isolated region number: 10

Create isolated region objects

1. Create a work queue.
 - a. Expand Isolated Regions > LoanProcessReg10
 - b. Select **Work Queues**
 - c. Click **New**
 - d. Data to complete the wizard:
 - Queue name: LoanQueue
 - Description: Queue to hold new loans
2. Create a Roster.
 - a. Select **Rosters**
 - b. Click **New**
 - c. Data to complete the wizard:
 - Roster name: LoanRoster
 - Description: Roster for processing new loans
3. Create an Application Space.
 - a. Select **Application Spaces**
 - b. Click **New**
 - c. Data to complete the wizard:
 - Application space name: Loans
 - Description: Application Space for processing new loans

IBM Case Foundation 5.2.1: Configure the workflow system

Exercise introduction



Create a connection point and isolated region

- In this lab exercise, you will:
 - Create a connection point, which simultaneously creates the associated isolated region.

Create isolated region objects

- In this lab exercise, you will:
 - Create a queue.
 - Create a roster, event log, and application space.
 - Explore the isolated region objects with vwtool.
 - Explore the workflow system database tables.

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Figure 1-65. Exercise introduction

F2471.0

Notes:

Exercise introduction slide. Review each of the exercises and the objectives.

Configure in-baskets and roles

Overview of activities

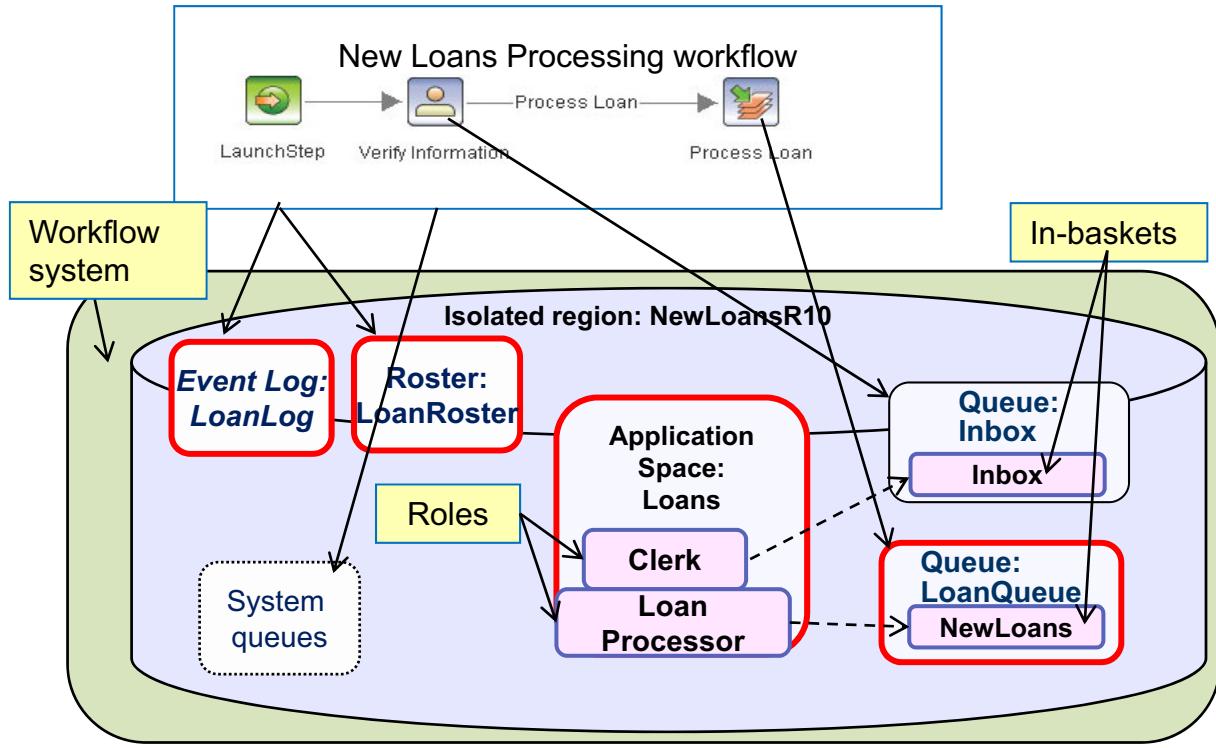


Figure 1-66. Overview of activities

F2471.0

Notes:

You continue to build the isolated region objects that you need to transfer the workflow, New Loans Process workflow.

Here are the diagrams that were introduced in the previous lesson. The New Loans Processing Workflow in the top diagram. The workflow system, isolated region, and region objects that are required to transfer and process the workflow, in the bottom diagram.

In the exercises for this lesson, you create the isolated region objects, which are outlined in red with a thicker line.

- Work Queue: LoanQueue
- Event log: LoanLog
- Roster: LoanRoster
- Application space: Loans

Create and configure an isolated region and region objects

Activities



In your Student Exercises

- Unit: Configure the workflow system
- Lesson: Create and configure an isolated region and region objects
- Activities:
 - Create a connection point and isolated region
 - Create isolated region objects
 - Explore isolated region objects with vwtool
 - Explore the workflow system database tables

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Figure 1-67. Activities

F2471.0

Notes:

Use your Student Exercises book and your student system to perform the activities that are listed.

Lesson 1.4. Expose data fields

Lesson

Expose data fields



Why is this lesson important to you?

- It is common for workflow applications to have user fields, for example, loan_id and customer_name. Some are used for internal processing and some need to be exposed to facilitate searching and tracking changes in the event logs.
- As a workflow author or workflow system administrator, you need to know how to expose user fields in an isolated region.

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Figure 1-68. Expose data fields

F2471.0

Expose data fields

Activities that you need to complete

- Expose data fields

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Figure 1-69. Activities that you need to complete

F2471.0

Notes:

Activities that you need to complete in this lesson.

Expose data fields

Workflow data fields



- Workflow fields
 - All the user fields and system fields in a single workflow
 - Workflow properties usable in one or more workflow steps
- Field values
 - Stored in a binary format inside a work item
 - Not directly readable until opened in a step processor
- When the workflow is running
 - Field values are limited to the current workflow instance.
 - Field values can change as the workflow processes.
 - A field value set at one step is available in subsequent steps that use the same field.

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Figure 1-70. Workflow data fields

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Notes:

Help path

FileNet P8 Platform 5.2.1>Integrating workflow into document management>Process applications concepts>Design and run workflows>Workflow and database fields

Workflow fields are all the user fields and system fields that are contained in a workflow. They are properties usable in one or more workflow steps.

The workflow field values are stored in a binary format, inside a work item, not directly readable until opened in a step processor.

When the workflow is running, the field values:

- Are limited to the current workflow instance
- Can change as the workflow processes.

A field value set at one step is available in subsequent steps that use the same field.

Expose data fields

User data fields

- User fields
 - Designed by the workflow author, and the application developer.
 - Configured in the isolated region by the workflow system administrator and the workflow author.
- User fields hold values that are used as follows:
 - By a participant or automated process at a step.
 - For conditional tests or decisions.
- A data field definition includes:
 - Name, data type, and an initial value.
 - In IBM Case Foundation, five data types are supported:
 - Boolean, Float, Integer, String, Time

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Figure 1-71. User data fields

F2471.0

Notes:

Help path

FileNet P8 Platform 5.2.1>Integrating workflow into document management>Configuring the workflow system>Getting started with Process Configuration Console>Queue, roster, and event log properties>Managing data fields

User fields are defined by the workflow author and the application developer, during the design of the workflow application.

User fields are configured within an isolated region by either the workflow author or the workflow system administrator.



Important

Exposing workflow fields adds to the system overhead, both in space and performance. Add them judiciously.

Expose data fields

System data fields



- System fields
 - Are data fields that the Process Services automatically define.
 - Are data fields that the system uses to process system functions.
 - Are queried and used by applications and administrators.
- Sample system fields
 - F_Subject
 - F_StepName
 - F_Locked
 - F_Overdue
 - F_TimeStamp (logs only)
 - F_WobNum
 - F-Originator
 - F_BoundUser
 - F_Tag
- Table in the IBM Knowledge Center describes all system fields:
 - Field name usage, data type
 - Whether the field must be exposed for system processing

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Figure 1-72. System data fields

F2471.0

Notes:

Help path

FileNet P8 Platform 5.2.1>Integrating workflow into document management>Process applications concepts>Design and run workflows>System fields definitions

By convention, all system field names have the following prefix: F_

These names are reserved.

Expose data fields

Exposed data fields

- Use Administration Console for Content Platform Engine to expose data fields in a queue, roster, or event log.
 - Some system fields are exposed by default.
- When you specify an exposed data field:
 - It can be used in searching and sorting of work items.
 - It adds a column to the physical table of the isolated region object.
 - It becomes accessible outside of a step processor.
- An exposed field
 - Is readable in its native format without opening the work item in a step processor.
 - Is available to use in a search filter to define an index, and to store information in an event log.
 - Is stored in a column of the table that is created for a queue.

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Figure 1-73. Exposed data fields

F2471.0

Notes:

Help paths

FileNet P8 Platform 5.2.1>Integrating workflow into document management>Configuring the workflow system>Getting started with Process Configuration Console>Queue, roster, and event log properties>Managing data fields

FileNet P8 Platform 5.2.1>Integrating workflow into document management>Configuring the workflow system>Getting started with Process Configuration Console>Queue, roster, and event log properties>Managing system fields

You can specify exposed data fields in a queue, roster, or event log. Exposing a data field makes it available for use in a search filter or when defining an index.

Exposing a data field makes it accessible outside of a step processor. Typically, the data field values in a work item are stored in a binary format inside the work item. You need to use a step processor to access the data field values. In contrast, when you specify an exposed data field, the data is stored with the work item outside of its binary container and in its native readable format (string, integer, Boolean). You can access the data field value without opening the work item in a step processor.

The workflow author selects the data fields to be exposed, based on the requirements of the workflow application.



Important

Exposed of data fields add to the system overhead, both in space and performance. Expose only the data fields that you need.

Expose data fields

Purpose of exposed data fields

- To perform system functions.
 - System requires certain exposed system fields.
- Allow use in search filters.
- Allow use in indexes.
 - Track, search, and sort on the field values.
- To allow other IBM Case Foundation components to use the fields.
 - Case Analyzer
 - Rules Connectivity Framework

Use exposed data fields in search criteria in the Administration Console for Content Platform Engine.

The screenshot shows the 'New Workflow Search' interface. It includes sections for 'Search Parameters' (Connection point: NewLoansR10, Search result type: Work Items, Workflow structure: Workflow roster, Workflow structure name: LoanRoster, Selected index: <default>, Page size: 50, Search mode: Read-only, Search filter entry: A loan_id Equal To), and a 'Search Filter: General Criteria' table with one row: Column A, Condition Equal To, Value loan_id.

Figure 1-74. Purpose of exposed data fields

F2471.0

Notes:

Exposed data fields can be used in search filters and indexes. Indexes are presented in the next lesson. IBM Case Foundation components, such as Case Analyzer and the Rules Listener, use exposed field values if they are configured for the system. Case Analyzer can read these values if they are exposed on the Event logs. External Web Services can receive parameters based on field values.

An example scenario for exposing a data field: The ABC Bank has a loan process application. In the ABC Bank customer portal, only a logged-in customer can see their own items, based on the customer ID. The workflow administrator exposes the customer_id data field in the LoanQueue work queue and creates an index for customer_id.

The screen capture on this page illustrates the exposed user field, loan_id, used in specifying the search filter criteria within a workflow search in the Administration Console for Content Platform Engine.

Expose data fields

How to expose system fields

- Use Administration Console for Content Platform Engine:

1. Open the object store.
2. Select the isolated region.
3. Select the queue, roster, or log.
4. In the System Fields tab, add the field name to the selected list.
5. Save the changes.

- Most system fields are exposed by default for process services to function.

- You cannot delete or modify system fields exposed by default.
 - Identified by the System symbol. 

- You can define more, exposed, system fields
 - For queues, workflow rosters, and event logs.

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Figure 1-75. How to expose system fields

F2471.0

Notes:

Help path

FileNet P8 Platform 5.2.1>Integrating workflow into document management>Configuring the workflow system>Getting started with Process Configuration Console>Queue, roster, and event log properties>Managing system fields

The System Fields tab for a queue, roster, or event log, in the Administration Console for Content Platform Engine, displays all the exposed system fields for the queue, roster, or event log. If you click Add in the System Fields tab, you get a list of the system fields that are not already exposed. You can remove any system fields that you add, but you cannot remove the system fields that are exposed by default.

The monitor icon indicates a mandatory, exposed system data field.



Information

Starting with IBM Case Foundation 5.2.1, most of the functions, provided by the Process Configuration Console, were added to the Administration Console for Content Platform Engine. The Process Configuration Console is still supported, for compatibility with earlier versions. The IBM Knowledge Center still has sections that use the Process Configuration Console for isolated region configuration. The configuration of the isolated region objects is similar between the two tools, so you can still use the existing information in the IBM Knowledge Center with the Administration Console for Content Platform Engine.

Expose data fields

How to expose user fields

- Use Administration Console for Content Platform Engine:

1. Open the object store.
2. Select the isolated region.
3. Select the queue, roster, or log.
4. In the User Fields tab, click **New** or **Clone** to add the user field.
5. Save the changes.

- Available for queue, workflow roster, and event log

- You can add, change, or delete exposed user fields.
 - You cannot delete a field that is used by an index.

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Figure 1-76. How to expose user fields

F2471.0

Notes:

Help path

FileNet P8 Platform 5.2.1>Integrating workflow into document management>Configuring the workflow system>Getting started with Process Configuration Console>Queue, roster, and event log properties>Managing data fields

To expose a user field, you use the Administration Console for Content Platform Engine and follow the steps that are listed. The steps are almost identical to the steps you follow to expose system fields.

You can expose user fields to queues, rosters, and event logs.

Expose data fields

Define new user field

- In the User Fields tab, click **New**.
 - Enter the field name and data type.

Work Queue: LoanQueue

The purpose of a user-defined database field is to store the value of a corresponding source field (such as the value becomes searchable. A database field is part of a workflow structure such as a roster, queue, or a field and the source field must have the same name and the same (or similar) data type. [Learn more...](#)

New **Clone** **Delete**

New User Field

*Name: ?	customer_id
*Type: ?	String
Length:	
Source object:	
Source syncing: ?	<input type="checkbox"/> Keep in sync

OK Cancel

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Figure 1-77. Define new user field

F2471.0

Notes:

To add an exposed user field, click **New** in the User Fields tab. In the New User Field screen, enter the name of the field, and the data type. You can also define a length for the field. The **Source object** and **Source syncing** are only used by IBM Case Manager. Leave them blank for workflow applications.

The user field name must match the spelling and case of the workflow property name, as well as the data type. If you define a New user field, each data field is defined uniquely. Even if another object with the same display name exists, the two user fields are two distinct objects.

The screen capture, on the left, shows the LoanQueue with the User Fields tab selected. When you click **New**, the New User Field screen displays, on the right.

Expose data fields

Copy existing user fields

- In the User Fields tab, click **Clone**.
 - Select the data fields from the list.

Work Queue: LoanQueue

General System Fields **User Fields** Indexes Security Operations In-Baskets

The purpose of a user-defined database field is to store the value of a corresponding source field (such as the value becomes searchable. A database field is part of a workflow structure such as a roster, queue, or a field and the source field must have the same name and the same (or similar) data type. [Learn more...](#)

New **Clone** Delete

Clone User Field

Create a database field for this workflow structure by cloning an existing database field. To all other workflow structures.

	Name	Type	Length
<input type="checkbox"/>	loan_id	String	10
<input type="checkbox"/>	loan_date	Time	

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Figure 1-78. Copy existing user fields

F2471.0

Notes:

To copy data fields that are exposed in another queue, roster or event log, click **Clone** in the User Fields tab.

Select the exposed data fields from the list and click OK.

Save your changes.

The screen capture, on the left, shows the LoanQueue with the User Fields tab selected. When you click **Clone**, the Clone User Field window is displayed, on the right, which lists the existing data fields that can be copied.

Expose data fields

Demonstrations



- Expose data fields.

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Figure 1-79. Demonstrations

F2471.0

Notes:

Demonstration notes:

This demonstration shows you how to expose data fields in a queue by using the Administration Console for Content Platform Engine.

1. Launch the Administration Console for Content Platform Engine and open the object store, **LoanProcess**.
2. Select the isolated region, **LoanProcessR10**.
3. In the region hierarchy, select the event log, **LoanLog**, that you previously created.
4. In the User Fields tab, add a data field to the list of Field Names by clicking **New**, and typing the field information in the New User Field window: `customer_name`, String, 50
5. Click **OK**.
6. Save your changes.
7. In the region hierarchy, select the queue, **LoanQueue**, that you previously created.
8. Copy an existing data field by clicking **Clone**.

9. In the Clone User Field window, click customer_name to view the details of the exposed data field and its usage.
10. Click OK or Cancel to close the Exposed Data Field Detail window.
11. Select the customer_name field and click OK to add it to the LoanQueue.
12. Save the changes.

IBM Case Foundation 5.2.1: Configure the workflow system

Exercise introduction



Expose data fields

- In this lab exercise, you will:
 - Expose system fields to the event log, LoanLog.
 - Expose user fields to the queue, LoanQueue.
 - Copy existing user fields to another isolated region object.
 - Verify the exposed user fields with vwtool.
 - Explore the database tables with DB2 Control Center.

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Figure 1-80. Exercise introduction

F2471.0

Notes:

Exercise introduction slide. Review each of the exercises and the objectives.

Expose data fields

Activities



In your Student Exercises

- Unit: Configure the workflow system
- Lesson: Expose data fields
- Activities:
 - Expose data fields.

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Figure 1-81. Activities

F2471.0

Notes:

Use your Student Exercises book and your student system to perform the activities that are listed.

Lesson 1.5. Define indexes

Lesson

Define indexes



Why is this lesson important to you?

- The loan processors are complaining that it is taking a long time to search for work.
- As a workflow administrator, you need to define an index to make searching more efficient.
- As a workflow author, it is important to understand what data fields make good indexes to ensure efficiency in the workflow application.

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Figure 1-82. Define indexes

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Define indexes

Activities that you need to complete

- Define indexes

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Figure 1-83. Activities that you need to complete

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Notes:

Activities that you need to complete in this lesson.

Define indexes

Purpose for indexes

- Indexes facilitate searching.
 - Indexes are helpful when queues and workflow rosters contain large numbers of work items.
 - Indexes determine the order in which work items, which are assigned to users, appear in their inboxes.

Roster: LoanRoster

General System Fields User Fields **Indexes** Security

You can create an index to facilitate searches for workflow fields. Before you can use a workflow corresponding database field to a workflow roster, queue, or event log. [Learn more...](#)

New Delete

Index Name	Index Key
F_WobNum	F_WobNum
F_WobTag	F_Tag;F_WobNum
F_WorkFlowNumber	F_WorkFlowNumber
Loan_Index	loan_id;F_WobNum

Run Count Matches Close

Search: New Workflow Search

Search Parameters

Learn more... Connection point: NewLoansR10

Search result type: Work Items

Workflow structure: Workflow roster

Workflow structure name: LoanRoster

Selected index: **Loan_index (loan_id + F_WobNum)**

2. Loan_index is used to search for work items in ACCE.

1. Loan_index is defined for a roster in ACCE.

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Figure 1-84. Purpose for indexes

F2471.0

Notes:

Help path

Content Foundation 5.2.1>Administering>Administering Content Platform Engine>Defining the workflow system>Coordinating workflow design>Workflow options>Database fields and indexes>Managing workflow indexes

Indexes facilitate efficient searching.

Indexes, created in the Administration Console for Content Platform Engine, are available to use as search criteria in the administration console or the Process Administrator tool. The index facilitates a fast search and is especially helpful when queues and rosters contain large numbers of work items.

The screen capture on the left shows the Administration Console for Content Platform Engine (ACCE), with the Indexes tab selected. The red box, highlights the index that is called Loan_index, which is defined on a roster. After the index is defined, it can be used to search for work. The screen capture on the right shows the index, Loan_index, used to perform a roster search for work items in the New Workflow Search, available in the administration console.

**Important**

An index must not exceed the maximum index key size.

- Some system indexes appear with no index key fields defined. The fields that are indexed are not available for querying and are not displayed in the list.
- A roster index must contain the F_WobNum field. If this field is not included in your indexed fields, it is added.
- An event log index must contain the F_TimeStamp and F_SeqNumber fields. If these fields are not included in your indexed fields, they are added.
- Do not use F_QueueWPClassId as the first or only field for an index on a queue because the system uses this index internally for cases where two queues share a physical table.

Define indexes

How to create an index

- Use Administration Console for Content Platform Engine:
 1. Open the object store.
 2. Select the isolated region.
 3. Select the queue, roster, or log.
 4. In the Indexes tab, click New and enter the index name.
 5. Select the fields for the index (order is significant).
 6. Save the changes to the isolated region.
- System indexes are defined by default.
 - They are required for functioning of process services.
 - Example: PWDefaultOrder - index, on user queues, determines the order that work is displayed (can be modified).
- You can define more indexes.
 - Define them for queues, rosters, and event logs.
 - Use exposed fields as index key fields.

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Figure 1-85. How to create an index

F2471.0

Notes:

Help path

FileNet P8 Platform 5.2.1>Administering>Administering Content Platform Engine>Defining the workflow system>Coordinating workflow design>Workflow options>Database fields and indexes>Managing workflow indexes

You use the Administration Console for Content Platform Engine to create an index. The index name that you specify is a logical name. The Content Platform Engine assigns the physical index name to prevent conflict with existing index names and tables.

System (required) indexes are indicated with a System icon in the first column. System indexes begin with "F_".

User indexes can have any name that the user chooses, within acceptable naming conventions.



Information

The index name must begin with a letter, contain only letters, numbers, or underscores, and be no more than 128 characters in length. Do not use names that start with F_ to avoid conflicts with FileNet P8 reserved names.

You can select a combination of system and user fields to include in an index.

The Inbox and Tracker queues have a special PWDefaultOrder index that sets the order in which work items are displayed in an in-basket. The default index key is F.EnqueueTime and can be modified.

Add only indexes that you need, too many indexes contribute to increased system overhead, both in space and performance.

Define indexes

Simple and composite indexes

- Simple indexes use one exposed field.
 - Search on index is more efficient than search that uses the exposed field.
 - When the index is used to retrieve work, it is presented in order of the data field.
- Composite indexes use more than one exposed field.
 - They have multiple keys.
 - The sequence of fields is important.
 - Most commonly accessed or most selective columns go first.

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Figure 1-86. Simple and composite indexes

F2471.0

Notes:

Help path

FileNet P8 Platform 5.2.1>Integrating workflow into document management>Process applications concepts>Administration and configuration>Restrictions>Maximum index key size

You can have simple or composite indexes. Simple indexes use one exposed field. Composite indexes use more than one exposed field.

Composite indexes can speed retrieval of data for search filters in which the filter conditions reference all or the leading portion of the columns in the composite index.

The sequence of the fields that are used in the composite index is important. Generally, the most commonly accessed data field goes first.

The maximum index size and the number of fields are based on the type of database that the workflow system uses. See the IBM Knowledge Center topic for specific restrictions.

Define indexes

Manage indexes

- Index expressions can be modified.
- Indexes can be deleted.
 - Indexes use system resources.
 - Remove indexes that are not used.
 - Indexes that use a data field must be deleted before the data field can be deleted.
- Exception: mandatory, system-defined indexes
 - Cannot be changed or deleted.
 - Indicated by the System symbol. 

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Figure 1-87. Manage indexes

F2471.0

Notes:

Help path

FileNet P8 Platform 5.2.1>Integrating workflow into document management>Configuring the workflow system>Getting started with Process Configuration Console>Queue, roster, and event log properties>Managing indexes

You can modify or delete indexes. The system defines a number of required system indexes. They are indicated by the monitor icon, which is shown.

Define indexes

Demonstrations



- Define an index for a queue.

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Figure 1-88. Demonstrations

F2471.0

Notes:

Demonstration notes

This demonstration shows you how to define an index for a queue by using Administration Console for Content Platform Engine.

1. Launch The Administration Console for Content Platform Engine, and connect to the isolated region, **LoanProcessR10**, within the LoanProcess object store.
2. In the region hierarchy, select the work queue, **LoanQueue**.
3. Click the **Indexes** tab and view the default indexes for the work queue.
4. Click **New** to create a new index.
5. Type an index name: **Customer_index**
6. Move the fields from the list of **Available Items** to the list of **Selected items**, **loan_id**, **customer_name**, **loan_amount**.
7. Click **OK**.
8. Save your changes.

9. Open vwtool and use the **queueconfig** command to verify the index that you defined.



Information

Make sure that the index keys, for the Customer_index, are listed in the correct order. You can multi-select from the available fields and click the right arrow to move them to the list of Keys. Use the up and down arrows on the right to order them.

IBM Case Foundation 5.2.1: Configure the workflow system

Exercise introduction



Define indexes

- In this lab exercise, you will:
 - Define indexes with exposed user fields.
 - View the indexes with vwtool.
 - Explore the database tables.

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Figure 1-89. Exercise introduction

F2471.0

Notes:

Exercise introduction slide. Review the exercise and the objectives.

Define indexes

Activities

In your Student Exercises

- Unit: Configure the workflow system
- Lesson: Define indexes
- Activities:
 - Define indexes.

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Figure 1-90. Activities

F2471.0

Notes:

Use your Student Exercises book and your student system to perform the activities that are listed.

Lesson 1.6. Configure in-baskets and roles

Lesson

Configure in-baskets and roles



Why is this lesson important to you?

- The client application requires that in-baskets and roles be defined to process a workflow.
- Workflow system administrators and workflow authors need to know how to create in-baskets and roles to allow for processing of workflow applications.

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Figure 1-91. Configure in-baskets and roles

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Configure in-baskets and roles

Activities that you need to complete

- Create and configure in-baskets.
- Create and configure roles.

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Figure 1-92. Activities that you need to complete

F2471.0

Notes:

Activities that you need to complete in this lesson.

Configure in-baskets and roles

Purpose of in-baskets and roles

- In-baskets – filter work items in a queue for a specific role.
- Roles – Determine the specific work items that are assigned to and processed by specific users and groups.

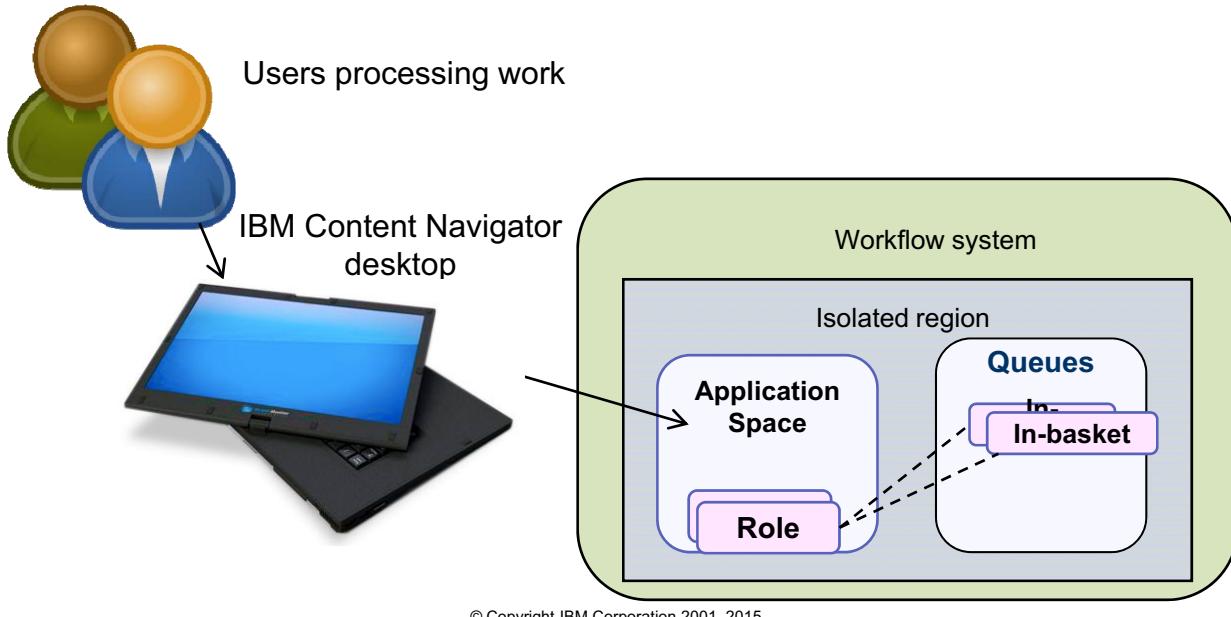


Figure 1-93. Purpose of in-baskets and roles

F2471.0

Notes:

Help path

FileNet P8 Platform 5.2.1>Administering>Administering Content Platform Engine>Defining the workflow system>Coordinating workflow design>Workflow options>In-baskets

In-baskets provide a filtered view of a queue. Only items that are appropriate for a specific role are displayed. In-baskets are created within the context of a queue.

Roles determine the specific work items that are assigned to and processed by specific users and groups. For example, Loan Processor, Clerk. Roles are defined within the context of an application space. When you define a role, you assign:

- LDAP members to the role, either groups or individual users
- In-baskets

**Important**

The client application, IBM Content Navigator requires the use of roles and in-baskets in order to process work.

**Information**

IBM Content Navigator desktops are assigned to application spaces, which contain the roles that are defined. Each role points to associated in-baskets, which must be defined in the isolated region, for the user to be able to view and process work items.

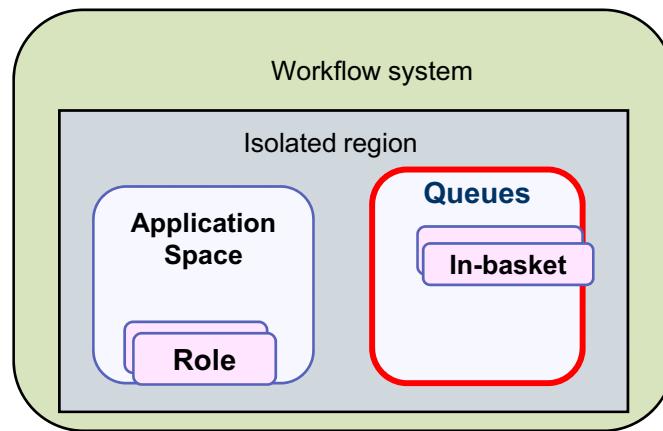
Application spaces are not new, but were required by Workplace and Workplace XT, therefore not heavily used.

Starting with IBM Case Foundation 5.2.0, IBM Content Navigator desktops are the default client application for workflow processing.

Configure in-baskets and roles

How to create in-baskets

- Use Administration Console for Content Platform Engine to:
 - Open the isolated region.
 - Open the queue (user queue or work queue).
 - Select the In-Baskets tab.
- Click New
 - Provide the name and optional description.
 - Configure:
 - * Columns and Labels
 - Optional Filters
 - In-Basket Content
 - Custom Attributes



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Figure 1-94. How to create in-baskets

F2471.0

Notes:

Help path

FileNet P8 Platform 5.2.1>Administering>Administering Content Platform Engine>Defining the workflow system>Coordinating workflow design>Workflow options>In-baskets>Creating in-baskets

You use the Administration Console for Content Platform Engine to create in-baskets. In-baskets are a configurable attribute of a queue.

To create an in-basket you:

- Open the object store > workflow system > isolated region.
- Open the queue.
- Select the In-Baskets tab.
- Click **New**.
 - You must specify the name of the in-basket, an optional description and at least one field to display.
 - The rest of the configuration options can be set after creation.

The diagram shows a workflow system, with an isolated region and a queue, which is outlined in red with a thicker line, containing multiple in-baskets.

Configure in-baskets and roles

Configure in-baskets

• Columns and Labels
– Specify the fields that are displayed.
• System fields
• User fields.

1. In-basket tab of a queue

The 'In-Basket' tab is selected under 'Columns and Labels'. A red arrow points from the 'User fields.' list in the left panel to the 'Add' button in the 'Selected Field' section of the right panel.

2. Add Fields Screen

This screen allows selecting database fields for the in-basket. A red arrow points from the 'Selected Fields' list in the right panel back to the 'Add' button in the 'Selected Field' section of the left panel.

3. Back to first Screen, showing added columns and Labels

The 'Content Order' dropdown menu is open, showing options like <None>, Customer_index, F_Fifo, F_SortRule, and F_WobNum. A red arrow points from this menu back to the 'Content Order' column in the 'Selected Fields' table.

Figure 1-95. Configure in-baskets

F2471.0

Notes:

The **Columns and Labels** tab allows you to add fields to display in the in-basket.

These are the fields and data values that the role, assigned to the in-basket, will see when processing work items.

1. The screen capture on the far left, shows the administration console, open to a an In-Basket, within a queue, with the Columns and Labels tab selected. You click Add.
2. The Add Fields screen is displayed, top right, allowing you to add system and user fields to display in the in-basket. Check the box to the left of the field name, to select the fields you want displayed.



Note

The list of non-system fields are the user fields that have been exposed in the queue.

3. After clicking OK on the Add Fields screen, the screen capture, on the bottom, is displayed, which is the same as the first screen, with the Columns and labels added. You can specify:
 - The Column Label
 - Whether or not the field is sortable
 - The Content order

Configure in-baskets and roles

Configure in-baskets (2)

- Optional Filters

- Filters that users can use to view only certain work items

Name	Field	Operator	Display Name	Tooltip
Find Customer	customer_name (String)	like	Find Customer	customer_name like Find Customer

- In-Basket Content

- Content displayed each time that a user runs a query.

- Display all work items
- Filter work items

- Custom Attributes

- Used to define custom metadata for the in-basket.
- Client applications can use to customize user experience.

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Figure 1-96. Configure in-baskets (2)

F2471.0

Notes:

There are more options for configuring in-baskets.

Optional Filters allow you to specify the filters that users can use to view only certain work items in the in-basket. The filters are displayed to users and they can customize the filters to meet their needs. For example, you can create an in-basket filter to enable the user to choose work items by customer name.

The screen capture shows a filter named, **Find Customer**, with:

- the field, **customer_name**
- The operator, **like**

In-Basket Content allows you to specify the content that is displayed in the in-basket each time a user runs a query. Users cannot change the filters at run time.

Custom Attributes allow you to add custom attributes to define custom metadata for the in-basket. Client applications can use this information to customize the user experience. For example, a client application might use custom attributes to refine what users can do in the in-basket such as the ability to assign work or move work to a personal in-basket.

Configure in-baskets and roles

How to create roles

- Use Administration Console for Content Platform Engine to:
 - Open the isolated region.
 - Open the application space.
 - Select the Roles tab.
- Click New
 - Provide the name, optional description, and URL of the home page.
 - Configure:
 - In-Baskets and Members
 - Custom Attributes

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Figure 1-97. How to create roles

F2471.0

Notes:

Help path

FileNet P8 Platform 5.2.1>Administering>Administering Content Platform Engine>Defining the workflow system>Coordinating workflow design>Workflow options>In-baskets>Defining roles

You use the Administration Console for Content Platform Engine to create roles. Roles are a configurable attribute of an application space.

To create a role you:

- Open the object store > workflow system > isolated region.
- Open the application space.
- Select the Roles tab.
- Click **New**.
 - You must specify the name of the role, an optional description and an optional URL for the home page of the role.
 - Select the **In-Baskets and Members** tab.

Configure in-baskets and roles

Add in-baskets and members to a role

- When you create a role you:
 - Add In-baskets to it.
 - Add Members to each role.

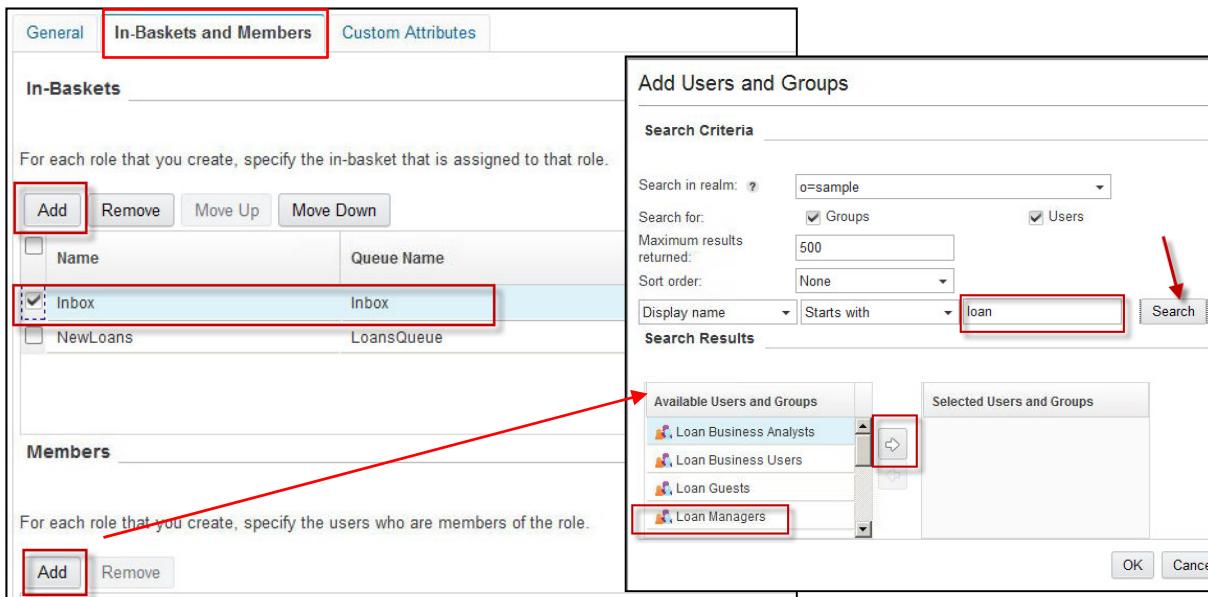


Figure 1-98. Add in-baskets and members to a role

F2471.0

Notes:**In-Baskets and Members tab**

You specify an in-basket to assign to the role. A role can have more than one in-basket.

The screen capture on the left, shows the administration console open to a role, with the In-Baskets and Members tab selected. In the in-baskets section, you click **Add** and add the in-baskets, Inbox and NewLoans.

Under the Members section, you select the LDAP users and groups to be added to the role. When you click **Add**, the **Add Users and Groups** window displays, screen capture on the right.

The Add Users and Groups window, allows you:

- To search your configured LDAP for users and groups.
- Select from the resulting list of **Available Users and Groups** and move them to the **Selected Users and Groups**.

Configure in-baskets and roles

Demonstrations

- Create and configure in-baskets and roles.

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Figure 1-99. Demonstrations

F2471.0

Notes:

Demonstration notes

Create and configure an in-basket

1. Launch Administration Console for Content Platform Engine
 - a. Log in as the P8 Administrator:
 - user name: p8admin
 - password: IBMFileNetP8
2. Open the object store, **LoanProcess**.
3. Expand **Administrative > Workflow System > Isolated Region > LoanProcessR10 > Work Queues**
4. Select **LoanQueue**.
5. Select the **In-Baskets** tab.

6. Create the in-basket, NewLoans.
 - a. Click **New**.
 - b. Name: NewLoans
7. Configure the Columns and labels.
 - a. Select the **Columns and Labels** tab.
 - b. Click Add.
 - c. Create the columns listed:

Selected Fields	Column Label	Sortable	Content Order
customer_name	Customer	yes	F_SortRule(F_Locked + F_SortOrder)
loan_amount	Loan Amount	yes	F_SortRule(F_Locked + F_SortOrder)
loan_id	Loan ID	no	none
loan_date	Loan Date	no	none

8. Select the **Optional Filters** tab.
 - Read the paragraph shown.
9. Select the **In-Basket Content** tab.
 - Accept the default of Display all work items
10. Select the **Custom Attributes** tab.
 - Read the paragraph shown.
11. Click **OK**.
12. Click **Save**.

Create and configure a role

1. Expand **Application Spaces**
2. Select **Loans**.
3. Select the **Roles** tab.
4. Click **New**.
 - Name: Loan Processor
 - In-Baskets and Members tab:
 - In-Baskets: Add
 - NewLoans
 - Members:
 - Loan Processors, p8admins
5. Click **OK**.

6. Repeat Step 5 - 6 with the values listed:

- Name: Clerk
 - In-Basket: Inbox
 - Members: olivia, p8admins

7. Click **Save**.

IBM Case Foundation 5.2.1: Configure the workflow system

Exercise introduction



Create and configure in-baskets

- In this lab exercise, you will:
 - Create and configure an in-basket, **NewLoans**, for the work queue, **LoanQueue**.
 - Create and configure an in-basket, **MyWork**, for the user queue, **Inbox**.
 - Create and configure an in-basket, **Loans Status**, for the user queue, **Tracker**.

Create and configure roles

- In this lab exercise, you will:
 - Create and configure the roles:
 - **Loan Processor**
 - **Clerk**.

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Figure 1-100. Exercise introduction

F2471.0

Notes:

Exercise introduction slide. Review each of the exercises and the objectives.

Configure in-baskets and roles

Overview of activities

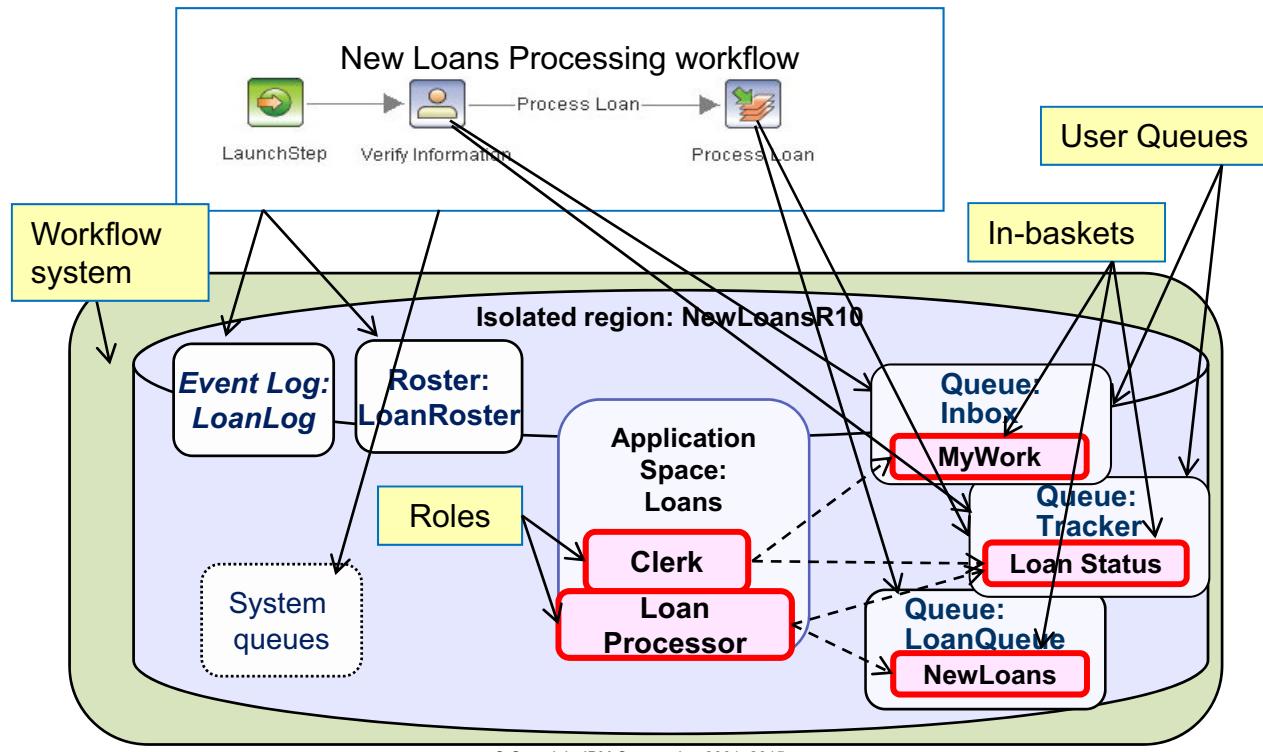


Figure 1-101. Overview of activities

F2471.0

Notes:

The diagram is a review, from Lessons 3 and 4, which shows the workflow, **New Loans Processing Workflow**, in the top diagram, and the workflow system, isolated region and region objects required to transfer and process the workflow in the bottom diagram.

In Lessons 5 and 6, you exposed user fields and defined a few indexes.

In the exercises for this lesson you create and configure the final isolated region objects, in-baskets and roles, outlined in red with a thicker line.

You will create:

- Three in-baskets:
 - MyWork – in-basket for the user queue, Inbox.
 - Loan Status – in-basket for the user queue, Tracker.
 - NewLoans – in-basket for the work queue, LoanQueue.
- Two roles:
 - Loan Processor – points to the NewLoans and Loan Status in-baskets.

- Clerk – points to the MyWork and Loan Status in-baskets.

Configure in-baskets and roles

Activities

In your Student Exercises

- Unit: Configure the workflow system
- Lesson: Configure in-baskets and roles
- Activities:
 - Create and configure in-baskets.
 - Create and configure roles.

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Figure 1-102. Activities

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Notes:

Use your Student Exercises book and your student system to perform the activities listed.

Lesson 1.7. Configure Content Navigator for workflow

Lesson

Configure Content Navigator for workflow



Why is this lesson important to you?

- An IBM Content Navigator desktop needs to be created and configured so users can process the New Loans Processing workflows.
- Workflow system administrators and workflow authors need to know how to create an IBM Content Navigator desktop and configure it so that it can be used as a client application for workflow authoring and processing.

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Figure 1-103. Configure Content Navigator for workflow

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Configure Content Navigator for workflow

Activities that you need to complete

- Create and configure a Content Navigator desktop for workflow
- Configure the desktop to open Process Designer and Process Tracker
- Test the New Loans Processing workflow

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Figure 1-104. Activities that you need to complete

F2471.0

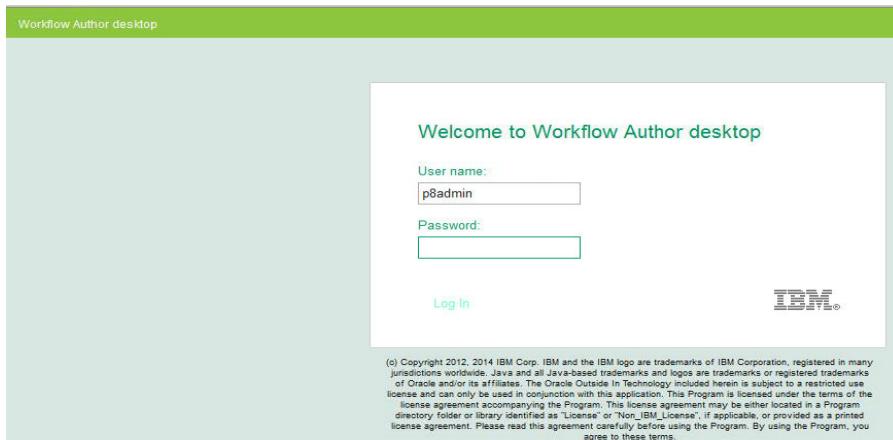
Notes:

These are the activities that you are going to perform in this lesson.

Configure Content Navigator for workflow

Purpose of a Content Navigator desktop

- Web application that provides a user interface
- You can create several desktops
 - Configure each one differently by:
 - Appearance
 - Available features and repositories
 - Connection point



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Figure 1-105. Purpose of a Content Navigator desktop

F2471.0

Notes:

Help path

Content Navigator 2.0.3>Planning, installing, and configuring IBM Content Navigator>Administering IBM Content Navigator components>Configuring the IBM Content Navigator web client>Defining desktops>Desktops

A Content Navigator desktop is an instance of the Content Navigator web application, which provides a user interface for processing work items.

You can configure several desktops and configure each one differently by:

- Appearance
- Available features and repositories
- Connection point

**Note**

This lesson will focus on configuring a desktop for workflow. To learn more about configuring and customizing Content Navigator desktops refer to the IBM Content Navigator courses available or the IBM Content Navigator Knowledge Center.

The screen capture shows an example of an IBM Content Navigator desktop login window, the Workflow Author desktop.

Configure Content Navigator for workflow

Steps to configure a desktop for workflow - overview

- 
1. Point a repository to a connection point
 2. Create a Content Navigator desktop
 3. Configure the desktop for workflow
 4. Register the process applets plug-in - optional
 - Configure desktop to run Process Designer
 - Configure the desktop to run Process Tracker

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Figure 1-106. Steps to configure a desktop for workflow - overview

F2471.0

Notes:

Help path

Content Navigator 2.0.3>Planning, installing, and configuring IBM Content Navigator>Administering IBM Content Navigator components>Integrating IBM FileNet P8 workflows in IBM Content Navigator

There are three main steps required to configure a desktop for workflow:

1. Point an existing repository or new repository to the connection point that references the isolated region.
2. Create a Content Navigator desktop.
3. Configure the desktop for workflow.

Step 4 is an optional step that is only needed if you are creating a desktop that needs the ability to run the Process Designer or the Process Tracker tools.

In the next few slides you will cover each of these steps in more detail.

After completing the three steps, your Content Navigator desktop is ready to process work items in a workflow. It would be very common to create different desktops for specific roles. For example a desktop for:

- Workflow authors and developers (need ability to launch Process Designer and Process Tracker).
- Workflow managers or supervisors who track the progress of a workflow (need ability to launch Process Tracker)
- Clerk (only need ability to view and process work items for their specific role)
- Workflow administrators (need the Administration Console for Content Platform Engine and Content Navigator Administration tool features)

Configure Content Navigator for workflow

Point a repository to a connection point

- Use Content Navigator administration tool.
- Point an existing repository or a new repository to:

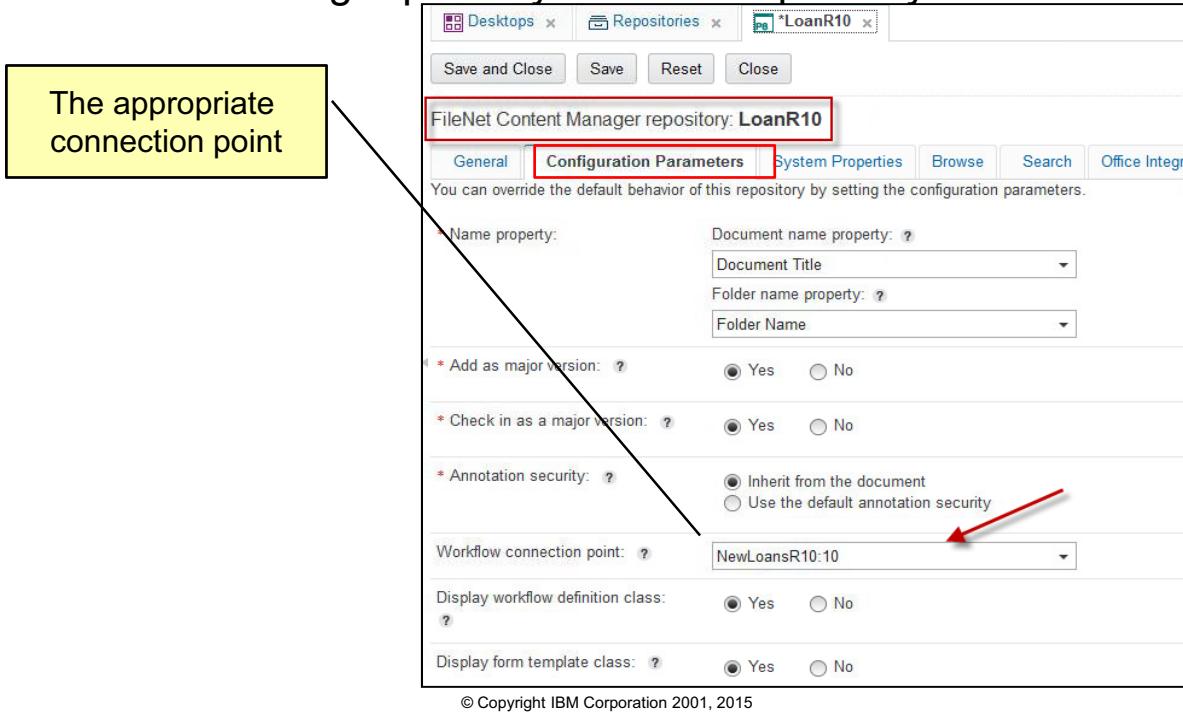


Figure 1-107. Point a repository to a connection point

F2471.0

Notes:

Before you can create a desktop, you need to have a repository that points to the appropriate connection point. You can either use an existing repository or create a new repository. You can have multiple repositories for the same object store, each pointing to a different connection point.

The screen capture shows the IBM Content Navigator administration tool. A repository is being created, LoanR10, top red box, and the Configuration Parameters tab is selected, lower red box. The arrow points to the place where you specify the workflow connection point for the repository.

Configure Content Navigator for workflow

Create a Content Navigator desktop

- Use the Content Navigator administration tool
 - Define the desktop

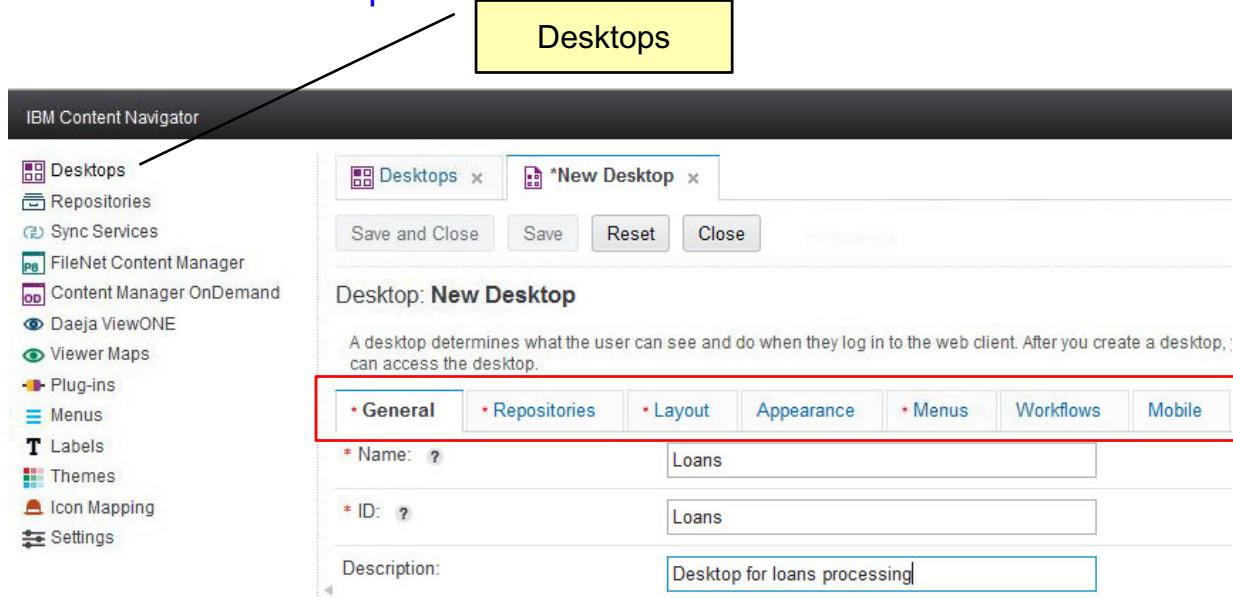


Figure 1-108. Create a Content Navigator desktop

F2471.0

Notes:

Help path

Content Navigator 2.0.3>Planning, installing, and configuring IBM Content Navigator>Administering IBM Content Navigator components>Configuring the IBM Content Navigator web client>Defining desktops

You use the Content Navigator administration tool to define a new desktop.

The screen capture shows the New Desktop wizard. Notice the tabs displayed.

- General tab
 - Configure repository to use to authenticate users
- Repositories tab
 - Specify the repositories users can access
- Layout tab
 - Default features
 - Favorites, Browse and Search

- Add Work feature to support processing work items.
- Appearance tab
 - Customize the application name, theme color, etc.
- Menus tab
 - Specify which menus users have access to and customize the menu actions.
- Workflows tab
 - Specify which Application Spaces are displayed in the desktop.
- Mobile tab
 - Configure the desktop for mobile devices.

Configure Content Navigator for workflow

Configure the desktop for workflow

- Steps that are required to configure the desktop for workflow

1. In the Layout tab:

- Select the default repository for the Browse feature
- Add the Work feature
- Select the default repository

2. In the Workflows tab:

- Select the Application Spaces

Desktop: Process Loans

General Repositories Layout Appearance Menus

Desktop Features

Specify which features users can access from this desktop. Additionally, you can...

* Layout: ?	ecm.widget.layout.NavigatorMainLayout
* Displayed features: ?	Move Up Move Down
	Feature
<input checked="" type="checkbox"/> Home	Home
<input checked="" type="checkbox"/> Browse	Browse
<input checked="" type="checkbox"/> Search	Search
<input checked="" type="checkbox"/> Work	Work

Desktop: Process Loans

General Repositories Layout Appearance Menus Workflows

IBM FileNet P8 systems only: Specify which application spaces are displayed in this desktop. The order of the selected application spaces determines which spaces are displayed in the web client.

Tip: You can change the display name of the application spaces by specifying new names in the Labels section of the administration tool.

Repository ?
LoanR10

Available Application Spaces:
Application Space
DefaultApplication

Selected Application Spaces:

Repository	Application Space
LoanR10	Loans

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Figure 1-109. Configure the desktop for workflow

F2471.0

Notes:

After you create the desktop, you need to configure it for workflow.

1. In the Layout tab you:

- Select the Browse feature and select the default repository for the browse feature. It should be the repository that points to the connection point you want to use to process the workflows.
- Add the Work feature.
- Select the default repository.

The screen capture, on the top right, shows the Layout tab selected. The Browse feature is selected and the Work feature is added. When you select the Browse or Work Feature, a pane displays, on the right (not shown), allowing you to select the default repository to use for the feature.

2. In the Workflows tab:

- Select the Application Spaces to display.

The screen capture, on the lower left, shows the Workflows tab selected and the Application Space, Loans selected.

Configure Content Navigator for workflow

Register the process applets plug-in

- Allows you to add a menu option for:
 - Process Designer & Process Tracker
- Use Content Navigator administration tool
 - Add a new plug-in
 - (JAR file path: http://CPE_server:port/peengine/plugins/CPEAppletsPlugin.jar)

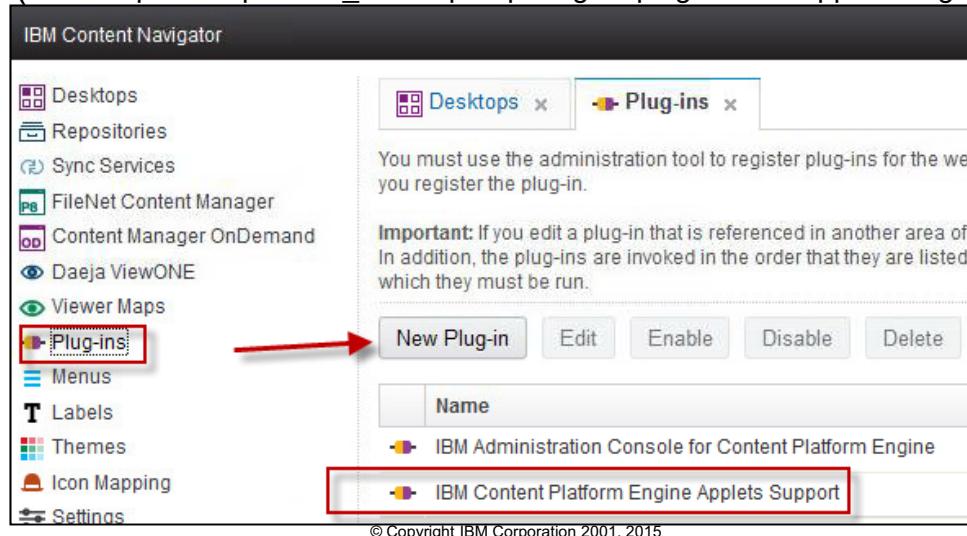


Figure 1-110. Register the process applets plug-in

F2471.0

Notes:

Help path

FileNet P8 Platform 5.2.1>Administering>Administering Content Platform Engine>Defining the workflow system>Coordinating workflow design>Configuring the Process applets to run from IBM Content Navigator

You use the IBM Content Navigator administration tool to register the process applets plug-in, **IBM Content Platform Engine Applets Support**. After the plug-in is registered, you can add a menu option to open Process Designer and Process Tracker.

The screen capture shows, the Content Navigator administration tool, with the Plug-ins icon selected, highlighted with a red box. The Plug-ins tab opens, which shows the plug-ins available for this instance of the IBM Content Navigator application. A new plug-in was added, **IBM Content Platform Engine Applets Support**, highlighted with the red box, on the right.



Information

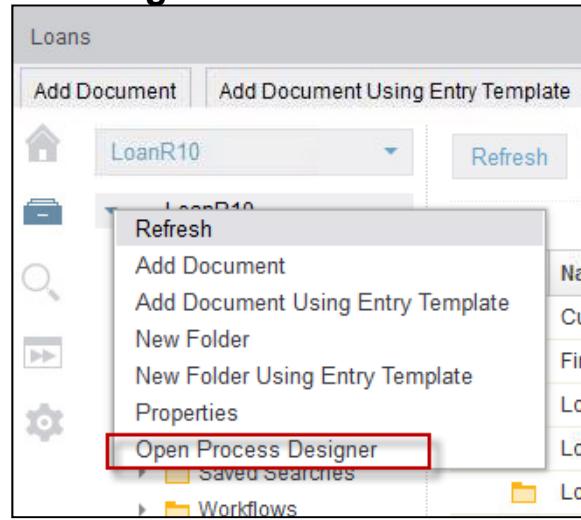
You only need to register the plug-in one time for each IBM Content Navigator instance.

Configure Content Navigator for workflow

Configure desktop to run Process Designer

- Add Process Designer to a menu
 - Under the Menus icon:
 - Copy an existing menu and give it a unique name
 - For example: Default repository folder context menu
 - Add the action, **Open Process Designer** to the Selected list

Add the new menu to the desktop
 Under the Menus tab:
 Set the menu to
 the new menu



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Figure 1-111. Configure desktop to run Process Designer

F2471.0

Notes:

To configure a desktop to be able to launch Process Designer, you first have to define a new menu that adds the **Open Process Designer** action.

1. In the Content Navigator administration tool, you select the Menus node.
 - a. It is easiest to choose an existing menu and copy it to a new name. For example, Copy the **Default repository folder context menu** and save it to a new name like, **Custom repository folder context menu**. Then you add the Open Process Designer action to the selected list for the new menu.
2. After you configure the new menu, you need to add the new menu to the desktop.
 - a. In the Content Navigator administration tool under the desktop > Menus tab, search for the **Default repository folder context menu**.
 - b. Use the dropdown selection arrow to choose the new menu, **Custom repository folder context menu**.

The screen capture shows the results of configuring the new menu. The menu you get when you right-click the default repository from the desktop, shows the new action, **Open Process Designer**.

**Important**

When Process Designer opens it uses the connection point of the default repository defined, for the Browse feature of the desktop.

Configure Content Navigator for workflow

Configure desktop to run Process Tracker

- Add Open Process Tracker to a menu
 - Under the Menus icon:
 - Copy the existing **Default FileNet work list toolbar**
 - Save it with a unique name
 - For example: Enhanced FileNet work list toolbar
 - Add **Open Process Tracker** to the Selected Menu list
- Add the new menu to the desktop

- Under the Menus tab:

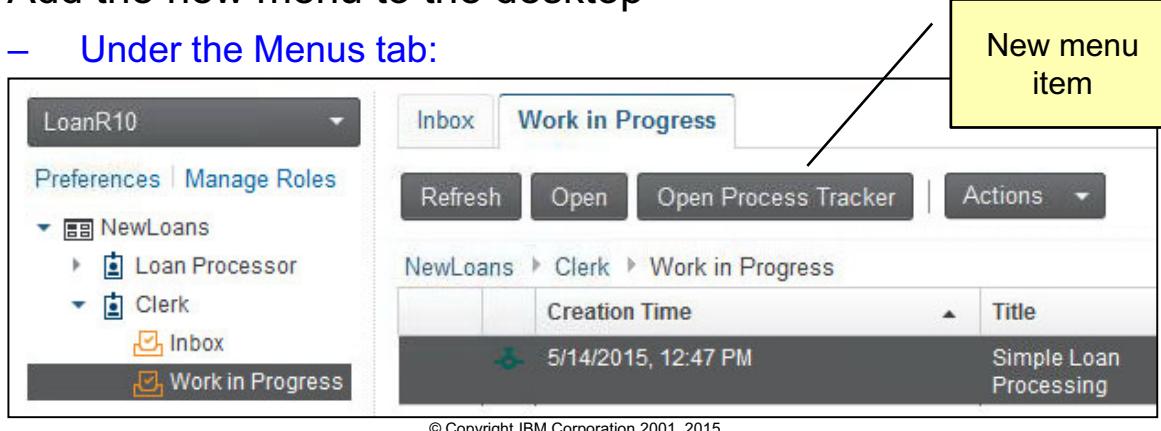


Figure 1-112. Configure desktop to run Process Tracker

F2471.0

Notes:

The steps to configure a desktop to be able to launch Process Tracker are very similar. You first define a new menu that adds the **Open Process Tracker** menu item, then configure the desktop to use the new menu.

The difference is the menu you choose. For example: Copy the **Default FileNet work list toolbar** and save it to a new name like, **Custom FileNet work list toolbar**.

The screen capture shows the results after performing the two steps, outlined in the previous slide. The Work in Progress in-basket is selected, showing one item in the tracker queue. A new button, **Open Process Tracker** is added to the available menu items.

This is just one possible place you can add the option to Open the Process Tracker. IBM Content Navigator makes it very easy to customize your desktop. For example, it might appear a bit redundant to have two Open options for the Process Tracker. The first Open button only displays historical information of the tracker item, Open Process Tracker opens the GUI applet. You could leave the **Default FileNet work list toolbar** and instead customize the Default tracker in-basket menu to add an option to Open the Process Tracker from the Actions menu.

Configure Content Navigator for workflow

Choose a menu

- Use Content Navigator Administration tool
 - Select the Menus node
 - Review the list of menus and read their descriptions

Name	ID	Type	Description
Default FileNet Content Manager teamspace non root folder context menu	DefaultTeamspaceSubFolderContextMenu	FileNet Content Manager Teamspace folder context menu	Displayed when the user right-clicks a non root folder in the search results or list of repository contents.
Default FileNet step processor toolbar	DefaultStepProcessorToolbarP8	FileNet step processor toolbar	Displayed below the step processor content.
Default FileNet work list launch toolbar	DefaultInbasketLaunchToolbarP8	FileNet work list toolbar	Displayed above the list of work items that are in a specific in-basket.
Default FileNet work list toolbar	DefaultInbasketToolbarP8	FileNet work list toolbar	Displayed above the list of work items that are in a specific in-basket.
Enhanced FileNet work list launch toolbar	EnhancedFileNetworkListLaunchToolbar	FileNet work list toolbar	Displayed above the list of work items that are in a specific in-basket.
Enhanced FileNet work list toolbar	EnhancedFileNetworkListToolbar	FileNet work list toolbar	Displayed above the list of work items that are in a specific in-basket.
Custom FileNet work list toolbar	EnahcnedFileNetworkListtoolbar	FileNet work list toolbar	Displayed above the list of work items that are in a specific in-basket.

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Figure 1-113. Choose a menu

F2471.0

Notes:

How do you choose what menu to customize?

The easiest way is to open the Menus node, on the IBM Content Navigator Administration tool, and review the list of menus provided. You can copy and customize any of them. You can filter by a keyword to narrow down the list and read the description to understand how the menu is used.

The screen capture shows the IBM Content Navigator Administration tool, open to the Menus node. The Menus list is filtered by the keyword, FileNet.

The **Custom FileNet work list toolbar** is selected. The Description column is highlighted.

Configure Content Navigator for workflow

Demonstrations



- Create a desktop and configure it for workflow.
- Configure a desktop to run Process Designer and Process Tracker.

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Figure 1-114. Demonstrations

F2471.0

Notes:

Demonstration notes

Create a desktop and configure it for workflow

1. Use the IBM Content Navigator administration tool.
2. Create a new repository, **LoansR10**, and point it to the connection point, **NewLoansR10:10**.
3. Create a new desktop, **Process Loans**.
 - a. In the **Layout** tab:
 - Add the Work feature.
 - Select the default repository (LoansR10).
 - b. In the **Workflow** tab:
 - Select the application space, **Loans**.
4. Launch the new desktop and show the application space and in-baskets:
 - <http://ecmedu01:9080/navigator/?desktop=ProcessLoans>

5. If time permits, launch two instances of the New Loan Processing Workflow and use the Work view in the new desktop to view the work items in the Clerk Inbox.

Configure a desktop to run Process Designer and Process Tracker

Use the IBM Content Navigator administration tool to:

1. Register the process applets plugin.
 - a. Add a new plug-in, IBM Content Platform Engine Applets Support.
 - (JAR file path: http://CPE_server:port/peengine/plugins/CPEAppletsPlugin.jar)
2. Modify an existing menu.
 - 1) Under the Menus icon (left navigation pane)
 - 1) Select an appropriate menu and copy it to a unique name, for example:
 - 1) Default repository folder context menu (Process Designer)
 - 1) Add Open Process Designer to the Selected Menu list, above the separator line
 - 1) Default FileNet work list toolbar (Process Tracker)
 - 1) Add Open Process Tracker to the Selected Menu list, above the separator line.
 - 2) Add the new menus to the desktop.
 - 3) Under the desktop Menus tab:
 - 4) Search for the existing menus and select the new menus you just created.

IBM Case Foundation 5.2.1: Configure the workflow system

Exercise introduction



Create and configure a Content Navigator desktop for workflow

- In this lab exercise, you will:
 - Create a Content Navigator repository.
 - Create a Content Navigator desktop.
 - Configure the desktop for workflow.

Configure the desktop to open Process Designer and Process Tracker

- In this lab exercise, you will:
 - Register the process applets plug-in.
 - Configure menus to open Process Designer and Process Tracker.
 - Configure the desktop to use the menus.

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Figure 1-115. Exercise introduction

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Notes:

Exercise introduction slide. Review each of the exercises and the objectives.

IBM Case Foundation 5.2.1: Configure the workflow system

Exercise introduction(2)



Test the New Loans Processing workflow

- In this lab exercise, you will:
 - Open the Process Designer to validate and transfer the workflow.
 - Start a few instances of the workflow.
 - View and process work items and open the Process Tracker.
 - Customize the desktop to provide multiple options for Process Tracker.

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Figure 1-116. Exercise introduction(2)

F2471.0

Notes:

Exercise introduction slide. Review each of the exercises and the objectives.

Configure Content Navigator for workflow

Activities



In your Student Exercises

- Unit: Unit name
- Lesson: Lesson name
- Activities:
 - Create and configure a Content Navigator desktop for workflow
 - Configure the desktop to open Process Designer and Process Tracker
 - Test the New Loans Processing workflow

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Figure 1-117. Activities

F2471.0

Notes:

Use your Student Exercises book and your student system to perform the activities listed.

Lesson 1.8. Configure a web application and step processor

Lesson

Configure a web application and step processor



Why is this lesson important to you?

- The Information Technology (IT) department requires corporate branding for workflow launch steps in an existing workflow. As the workflow system administrator, you need to configure a custom launch step processor so that the workflow author can use it in the workflow and meet the IT standards.

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Figure 1-118. Configure a web application and step processor

F2471.0

Configure a web application and step processor

Activities that you need to complete

- Deploy and configure a custom launch step processor
- Test the custom step processor in a workflow

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Figure 1-119. Activities that you need to complete

F2471.0

Notes:

These are the activities that you are going to perform in this lesson.

Configure a web application and step processor

What is a web application



- A web application consists of software and files that are deployed on an application server.
 - It defines a user interface that connects to process features and tools.
 - It serves users through a web browser.
- You can develop and define a custom web application for a workflow application.
- Example
 - IT develops a corporate-branded intranet web application.
 - Workflow author configures the server base URL in the workflow system properties and defines it as a custom step processor.
 - Users can process work on the intranet by using the custom web application.

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Figure 1-120. What is a web application

F2471.0

Notes:

Custom web applications are developed by programming teams and deployed to an application server. The workflow author's and workflow system administrator's tasks in this lesson are to:

- Configure the custom web application by entering the web application server URL in the workflow system properties.
- Define the custom step processor.

Configure a web application and step processor

Web applications and isolated regions

- IBM Content Navigator provides the platform for the default web applications for IBM Case Foundation 5.2.0+.
 - Define a Content Navigator desktop and point it to a connection point.
 - A desktop can point to only one connection point at a time.
- Why define a web application?
 - Provide a base URL for creating links to step processors.
 - To customize the user experience and allow users to process work.

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Figure 1-121. Web applications and isolated regions

F2471.0

Notes:

Help path

FileNet P8 Platform 5.2.1>Administering>Administering Content Platform Engine>Defining the workflow system>Configuring the workflow system>Managing the workflow system>Configuring web applications

Starting with IBM Case Foundation 5.2.0, IBM Content Navigator provides the platform for the default web applications. You create a desktop in the Content Navigator administration tool, as you saw in the previous lesson, and point the desktop to a specific connection point, to associate it with an isolated region.

Custom web applications can also be created to connect to a connection point.



Information

Prior to the Case Foundation 5.2.0 release, Workplace XT and Workplace were the default web applications. Workplace XT is still supported but is gradually being phased out.

Configure a web application and step processor

Configure a web application

- You configure a web application in the Administration Console for Content Platform Engine

Web Application	Default Application	Server Base URL
IBM FileNet Workplace	<input type="radio"/>	
IBM FileNet Workplace XT	<input type="radio"/>	
IBM FileNet Web Services	<input type="radio"/>	
IBM FileNet Open Client	<input type="radio"/>	
IBM FileNet Collaboration	<input type="radio"/>	
IBM FileNet WCM	<input type="radio"/>	
IBM FileNet Records Manager	<input type="radio"/>	
IBM ECM Widgets for Lotus Mashups	<input type="radio"/>	
IBM ECM Widgets for Business Space	<input type="radio"/>	
IBM Content Navigator	<input checked="" type="radio"/>	http://ecmedu01:9080/navigator

Figure 1-122. Configure a web application

F2471.0

Notes:

You configure web applications in the Administration Console for Content Platform Engine.

You can configure a web application in two places:

- Workflow system properties > Web Applications tab.
- Isolated region properties > Web Applications tab.

If you configure a web application as a workflow system property, the web application will apply to all the isolated regions in the workflow system. The screen capture on the left, shows the Web Applications tab for the workflow system. Notice that the Server Base URL has not been defined.

If you configure a web application as an isolated region property, it applies to that isolated region only and the value of the property will override the value of the workflow system property. The screen capture on the right, shows the Web Applications tab for the isolated region, **LoanProcessR10**. The Server Base URL is defined and will be the value used for the isolated region, **LoanProcessR10**.

Configure a web application and step processor

What is a step processor

- A step processor is an application which:
 - Provides a user interface for a workflow step.
 - Provides the information and resources to complete the step.
 - Allows users to process and complete work.

Simple Loan Processing

Due date: Not set | Started by: p8admin | Received on: 5/1/2015, 7:04 PM | Step: Process Loan

Verify that all loan information is provided and accurate. Click Complete when you are done.

Properties

customer_name: ? Edward Evans

loan_amount: ? 50000

loan_date: ? 4/28/2015, 11:41 AM

loan_id: ? A01

Comment: ? Enter your comments here.

Data fields

responses

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Get next work item Complete | Reassign Move to In-basket Save Cancel

Figure 1-123. What is a step processor

F2471.0

Notes:

Help path

FileNet P8 Platform 5.2.1>Integrating workflow into document management>Java step processor>About step processors

Companies usually create customized interfaces for performing and launching work.

A step processor is an application that provides the information and resources for a user to complete a step in a workflow. In a workflow definition, the workflow author specifies which step processor to use for each step. When a user opens a work item at run time, the step processor displays the necessary instructions, attachments, field values, response options, and other resources that the user needs to complete the work. A step processor can also accept input from the user.

The screen capture shows a step processor window for the **Simple Loan Processing** workflow. You see data fields that are exposed and the valid responses displayed.

Configure a web application and step processor

Types of step processor



- Step processor languages:
 - [HTML](#)
 - [Java](#)
- IBM Content Navigator provides two types of built-in step processors:
 - [Launch processor](#)
 - Used as the first step in a workflow to start the workflow process.
 - [Step processor](#)
 - Provides a user interface for workflow steps that require user interaction

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Figure 1-124. Types of step processor

F2471.0

Notes:

Help path

FileNet P8 Platform 5.2.1>Integrating workflow into document management>Java step processor>About step processors

Step Processors can be written in HTML or Java.

IBM Content Navigator provides sample general-purpose step processors that are suitable for many workflow applications. In addition to step processors for user steps, there are sample launch processors that contain the resources a user needs to start a workflow.

You can use the step processors provided by Content Navigator as they are or copy them and modify them to create custom step processors. A developer can create custom step processors from scratch, but this is not done often.

Examples:

- Company employee and customer versions of step processors
- Customized launch step processors, such as one with corporate branding

Configure a web application and step processor

Configure a custom step processor

- Two steps required to configure a step processor.

The screenshot shows the Content Navigator interface with two main sections:

1. Deploy a step processor: On the left, a file browser window shows the directory structure under 'navigator.war'. A file named 'stepprocessoredu.jsp' is selected. A red box highlights the 'Step Processors' tab in the navigation bar at the top right of the main panel.

2. Define a step processor: The main panel displays a table of step processors. A red box highlights the last row, which is the newly deployed 'Step Processor EDU'.

Type	Name	Description	Port
Step	NcmLaunchProcessor.jsp.htm	Approval HTML (FileNet)	800
Launch	html/oob/_LaunchApproval.jsp;html/o...	Approval Launch HTML (FileNet)	800
Default Step	stepprocessor.jsp	Navigator Step Processor (default)	1,000
Default Launch	launchprocessor.jsp	Navigator Launch Processor (default)	1,000
Step	steppattern.jsp	Navigator Step Pattern Processor	1,000
Launch	launchpattern.jsp	Navigator Launch Pattern Processor	1,000
Step	stepprocessoredu.jsp	Step Processor EDU	1,200

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Figure 1-125. Configure a custom step processor

F2471.0

Notes:

Help paths

FileNet P8 Platform 5.2.1>Integrating workflow into document management>Process applications concepts>Administration and configuration>Configuring a web application or custom step processor

FileNet P8 Platform 5.2.1>Administering>Administering Content Platform Engine>Defining the workflow system>Maintaining the workflow system>Configuring custom processors

As a workflow system administrator and a workflow author you will, on occasion, need to configure custom step processors.

Two steps are required:

- Deploy/install the step processor on an application server.
 - The screen capture, on the left, shows the Content Navigator deployment location on the WebSphere Application server.
 - The 'stepprocessoredu.jsp' has been copied into the 'navigator.war' folder.

- To deploy the custom step processor, you install it on the application server. The custom step processor can consist of multiple files. A developer generally creates the custom step processor and provides instructions for how to deploy it.
- b. Define the step processor in the isolated region. You define the step processor with the Administration Console for Content Platform Engine, to make it available to use in a workflow step.
 - The screen capture, on the right, shows the administration console open to the **Step Processors** tab, of the isolated region.
 - The Step Processor EDU has been added.

Configure a web application and step processor

Demonstrations



- Deploy a custom step processor
- Configure a custom step processor

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Figure 1-126. Demonstrations

F2471.0

Notes:

Demonstration notes

Deploy the custom step processor

1. Start the **WebSphere Integrated Solutions Console** and stop the **navigator** application.
 - To start the WebSphere Integrated Solutions Console, open the WebSphere Admin folder, on the desktop, and click Administrative console server1.
 - a. Log in as p8admin/IBMFileNetP8.
 - b. Expand Applications > Application Types > WebSphere enterprise applications.
 - c. Select **navigator** and click **Stop**.
 - d. Minimize the WebSphere Integrated Solutions Console.
2. Copy the step processor to the navigator deployment directory.
 - a. Copy **stepprocessoredu.jsp** into the *<navigator deployment>* directory.
 - *<WAS_install_path>\profiles\AppSrv01\installedApps\P8Node01Cell\navigator.ear\navigator.war*

- b. Under the <navigator deployment> directory, create four subfolders: <navigator deployment>\custom\widget\process\templates
 - c. Copy **StepProcessorEDULayout.js** into the **process** directory.
 - d. Copy **StepProcessEDULayout.html** into the **templates** directory.
3. Start the navigator application.
 - a. Maximize the WebSphere Integrated Solutions Console.
 - b. Start the navigator application.
 - c. Log out and close the WebSphere Integrated Solutions Console.
 4. Show the configured Web Applications for the workflow system.
 - a. Launch the Administration Console for Content Platform Engine.
 - b. Open LoanProcess > Administrative, and select Workflow System.
 - c. Open the **Web Applications** tab.
 - d. Point out the IBM Content Navigator web application.
 5. Show the configured Web Applications for the isolated region.
 - a. Select the isolated region, **LoanProcessR10**.
 - b. Open the Web Applications tab.
 - c. Point out the IBM Content Navigator web application, notice the **Server Base URL**.

Register a step processor

1. Launch the Administration Console for Content Platform Engine.
2. Expand > LoanProcess > Administrative > Isolated Regions > LoanProcessR10.
 - 1) Open the isolated region.
 - 2) Select the Step Processors tab and add a new step processor. You will need to provide:
 - 3) Type: Launch
 - 4) Name: StepProcessor EDU (This will be the name listed in Process Designer).
 - 5) Language: HTML
 - 6) Location: stepprocessoredu.jsp
 - 7) Width: 1200 (used only if step processor is designed to open in a window).
 - 8) Height: 800 (used only if step processor is designed to open in a window).
 - 9) Class name – leave blank (used for Java step processors only).
 - d. Click **Save**.

IBM Case Foundation 5.2.1: Configure the workflow system

Exercise introduction:**Deploy and configure a custom launch step processor.**

- In this lab exercise, you will:
 - Verify the required web application.
 - Deploy a custom launch step processor.
 - Configure a custom launch step processor.

Test the custom step processor in a workflow.

- In this lab exercise, you will:
 - Add the workflow definition.
 - Start the workflow to test the launch step processor.

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Figure 1-127. Exercise introduction:

F2471.0

Notes:

Exercise introduction slide. Review each of the exercises and the objectives.

Configure a web application and step processor

Activities



In your Student Exercises

- Unit: Unit name
- Lesson: Lesson name
- Activities:
 - Deploy and configure a custom launch step processor.
 - Test the custom step processor in a workflow.

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Figure 1-128. Activities

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Notes:

Use your Student Exercises book and your student system to perform the activities listed.

IBM Case Foundation 5.2.1: Configure the workflow system

Unit summary

Having completed this unit, you should be able to:

- Create and configure a workflow system to support FileNet workflow applications
- Create an isolated region
- Define isolated region objects to support workflow applications
- Expose data fields to support workflow applications
- Configure indexes to provide efficient search and sorting of work in a workflow system
- Create and configure in-baskets and roles
- Configure Content Navigator for workflow
- Configure a web application and step processor

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Figure 1-129. Unit summary

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Unit 2. Security

What this unit is about

You learn how to configure and administer security for an IBM Case Foundation workflow system.

What you should be able to do

After completing this unit, you should be able to:

- Inspect workflow system security settings.
- Identify and resolve workflow system security-related issues.
- Configure security for a workflow system.

How you will check your progress

- Successfully complete the lesson exercises.

References

IBM Knowledge Connection URL:

http://www.ibm.com/support/knowledgecenter/SSNW2F_5.2.1/com.ibm.p8toc.doc/welcome_p8.htm

Security

Unit objectives



After completing this unit, you should be able to:

- Inspect workflow system security settings.
- Identify and resolve workflow system security-related issues.
- Configure security for a workflow system.

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Figure 2-1. Unit objectives

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Notes:

Security

Unit lessons

This unit contains these lessons:

- Security Overview
- Security Configuration

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Figure 2-2. Unit lessons

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Notes:

This unit includes the following lessons:

Security Overview – In this lesson, you learn about workflow system security settings and how they interact.

Security Configuration – In this lesson, you learn how to configure security to allow selected groups to access workflow.

Lesson 2.1. Security overview

Lesson

Security overview

Why is this lesson important to you?

- You are administering a workflow system. A user is unable to access a work queue in order to complete work. You must identify the security issue and recommend a solution.
- You are building a workflow application. You need to ensure that users are able to access all of their work, and also to prevent unauthorized users from having access.

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Figure 2-3. Security overview

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Notes:

Security overview

Activities that you need to complete

- System start
- Isolated region preparation
- Inspect security settings

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Figure 2-4. Activities that you need to complete

F2471.0

Notes:

You need to complete these activities in this lesson.

Security overview

Overview



- Administrators and workflow authors must understand workflow system security to avoid security conflicts or leaks.
 - Consider the different layers of security and how they interact.
 - Consider the workflow system within the context of an object store, and of an application.
 - Identify how security settings on an object affect the user experience.
 - Formulate an overall security plan that avoids conflicts and performance degradation.

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Figure 2-5. Overview

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Notes:

Help path

Security overview

Layers of security

- A workflow system administrator must coordinate several layers of security.
- Directory service provider
 - Content Platform Engine retrieves security data from a directory service provider.
- Object store
 - The workflow system is part of the object store.
 - Users must have object store access to log on to the system.
- Application (example: IBM Content Navigator)
 - The object store is configured as a repository on the Navigator Desktop.
 - Users must have access to the repository used for authentication.
- Isolated region
 - Users must have access to isolated region objects (queues, rosters).
- Application space
 - Users must belong to a valid role with an in-basket.

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Figure 2-6. Layers of security

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Notes:

Help paths

- FileNet P8 Platform 5.2.1>Security>Directory service providers
 - http://www.ibm.com/support/knowledgecenter/SSNW2F_5.2.1/com.ibm.p8.security.doc/p8psd000.htm
- FileNet P8 Platform 5.2.1>Administering>Administering Content Platform Engine>Defining the FileNet P8 infrastructure>FileNet P8 domains
 - http://www.ibm.com/support/knowledgecenter/SSNW2F_5.2.1/com.ibm.p8.ce.admin.tasks.doc/aboutem/dom_concepts.htm
- FileNet P8 Platform 5.2.1>Security>Authentication>JAVA-based client authentication (JAAS)>Browser-based clients of Java EE application servers
 - http://www.ibm.com/support/knowledgecenter/SSNW2F_5.2.1/com.ibm.p8.security.doc/p8psn007.htm

Directory service provider

Content Platform Engine server does not implement its own authentication module. Instead, it uses a Java Platform Enterprise Edition (Java EE) application server's authentication mechanism. The FileNet P8 domain provides the security context for authenticating applications. A FileNet P8 domain is associated with one or more Java EE security policy domains. The Java EE domain is used to authenticate users and establish their group memberships. Identity and group membership of the user determine which FileNet P8 domain objects the user can access.

Object Store

Each object store has its own access control list (ACL). Each object store can have a different set of administrators. The object store creator adds Administrator and user groups to the object store when the object store is created. By default, administrative users have Full Control, and non-administrative groups have Use Object Store access, which gives certain read and write privileges. Object store security uses an inheritance model, starting from the object store, and working down through object classes. Security can be further configured on object classes, containers, and objects themselves.

Application

Browser-based clients of Java EE-based application servers interact with servlets and JavaServer Pages (JSPs). The two types of browser-based application security exist: Application-managed authentication, and Container-managed authentication. The type authentication is configured during the application installation.

Isolated region

Isolated region objects: queues, rosters, event logs, are independently secured.

Application Space

You define roles in the application space. Roles control access to in-baskets that are associated with user and work queues.

Security overview

Object store security

- Create users and groups in the directory service provider.
 - Example: Tivoli Directory Services
- If possible, use an object store super group.
 - Group that has object store access.
 - Other groups can be nested under this group to provide object store access and also more targeted access.
- Workflow systems are part of the object store.
 - Users must have access to the object store in order to access work.

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Figure 2-7. Object store security

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Notes:

Help path

A super group is an LDAP group that is created specifically to provide access to an object store or group of object stores. You control access to the object store by controlling the membership of the super group.

Security overview

Isolated region security

- Workflow system components are securable.

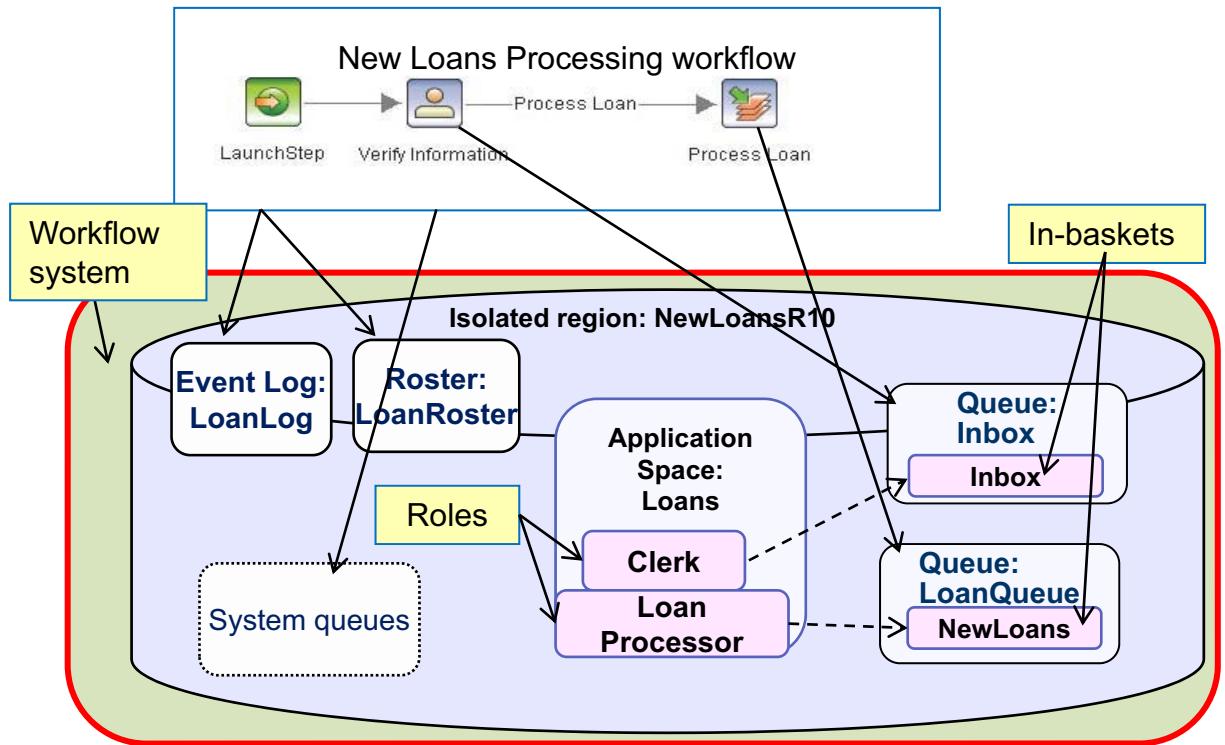


Figure 2-8. Isolated region security

F2471.0

Notes:

The workflow system contains objects that are independently secured. Problems can arise when security is not planned carefully to avoid possible conflicts.

Security overview

Workflow system security groups



- A workflow system has two special security groups:
 - Administration group can open Process Administrator.
 - Configuration group can open Process Configuration Console and access isolated region objects in Administration Console.
- The security groups are defined on the Workflow System page in Administration Console.
 - Only one entry is allowed for each group.

Workflow System Security Groups

*Administration group: ?	<input type="text" value="CEadmins"/>	<input type="button" value="Browse"/>
Configuration group: ?	<input type="text" value="CEadmins"/>	<input type="button" value="Browse"/>

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Figure 2-9. Workflow system security groups

F2471.0

Notes:

Help paths

FileNet P8 Platform 5.2.1>Security>Users and groups required by FileNet P8>Directory server accounts>Workflow system administrator

http://www.ibm.com/support/knowledgecenter/SSNW2F_5.2.1/com.ibm.p8.security.doc/p8psu054.htm

FileNet P8 Platform 5.2.1>Security>Users and groups required by FileNet P8>Directory server accounts>Workflow system administrator group

http://www.ibm.com/support/knowledgecenter/SSNW2F_5.2.1/com.ibm.p8.security.doc/p8psu027.htm

FileNet P8 Platform 5.2.1>Security>Users and groups required by FileNet P8>Directory server accounts>Workflow system configuration group

http://www.ibm.com/support/knowledgecenter/SSNW2F_5.2.1/com.ibm.p8.security.doc/p8psu028.htm

Usually, the Administration Group and the Configuration Group are separate groups.

Administration Group

The Administration Group is a required field when the workflow system is created. The user who is creating the workflow system must be in the Administration Group. Administrator groups can run the configuration tools by default. Only groups that have administration privileges on the FileNet P8 Domain can be added to the Administration Group.

Configuration Group

The Configuration Group allows users to open the Process Configuration Console and Process Designer. If you are in the Configuration Group, you can access the isolated region objects from Administration Console.

The Configuration Group field can be left blank. If you leave the Configuration Group field blank, anyone with access to the object store can create queues, rosters, change security on queues rosters, and even delete the connection point and isolated region. Do not leave this field blank on a production system.

Changing groups

In most scenarios, these groups are added at the beginning of the implementation and remain. Individual users can be added to either group on the directory server. In those rare instances in which you do want to change the Administration Group, you must be a member of the target group, and you must restart the application for the changes to take effect.

Security overview

In-baskets

- In-baskets are used to filter work items in a queue.
 - Only items that are appropriate for a specific role are displayed.
- You assign in-baskets to the roles within the application space.
- You define roles for users, such as a Clerk or Approver, in an application space.
- You must create the in-baskets before you can assign in-baskets to specific roles in an application space.
 - Create in-baskets on the In-baskets tab of the queue.
- To access work:
 - The user must have access the queue.
 - The queue must be associated with an in-basket.
 - The user must belong to a role to which the in-basket is assigned.

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Figure 2-10. In-baskets

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Notes:

Help path

FileNet P8 Platform 5.2.1>Administering>Administering Content Platform Engine>Defining the workflow system>Coordinating workflow design>Workflow options>In-baskets

http://www.ibm.com/support/knowledgecenter/SSNW2F_5.2.1/com.ibm.p8.ce.admin.tasks.doc/p8pcc316.htm

Security overview

Application spaces



- Application spaces organize the resources for custom applications that use workflows.
- Workplace and Workplace XT use roles to control access to workflow functions.
- Other applications, such as IBM Content Navigator are considered custom applications.
 - For custom applications, you must configure application spaces.

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Figure 2-11. Application spaces

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Notes:

Help path

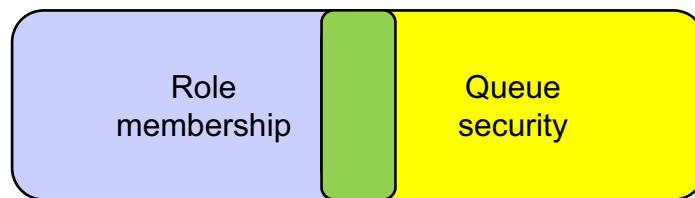
FileNet P8 Platform 5.2.1>Administering>Administering Content Platform Engine>Defining the workflow system>Coordinating workflow design>Workflow options>In-baskets>Creating application spaces

http://www.ibm.com/support/knowledgecenter/SSNW2F_5.2.1/com.ibm.p8.ce.admin.tasks.doc/p8pcc306.htm

Security overview

Roles

- A role determines which users can access specific types of workflows.
- For each role, you can specify:
 - URL of the homepage for that role.
 - Users who are members of that role.
 - In-baskets that are accessible to that role.
- A user must have access to the queue and be a member of a role in order to see work.



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Figure 2-12. Roles

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Notes:

Help path

FileNet P8 Platform 5.2.0>Integrating workflow into document management>Configuring the workflow system>Manage application spaces>Creating roles

http://www.ibm.com/support/knowledgecenter/SSNW2F_5.2.0/com.ibm.p8.pe.configui.doc/bpf085.htm

You add roles to the application space. For each role, you must determine role members and which in-baskets are available to that role. If you leave the queues unsecured, anyone with access to the role would have access to the queues. Do not conclude that you can control security entirely by controlling role membership. A user can use custom API to access the queues, bypassing application security. Control security on the queues first, and then the roles to prevent unauthorized access to workflows.

If you add a user or group to a user or work queue, do not forget to edit the role membership. A user who has access to the queue cannot see the queue without being a member of the role that can access the associated in-basket.

Security overview

Avoid security conflicts



- A user must have access to the queue and to the in-basket in order to see the work queue.
 - Queue security must align with role membership.
- A user must have access to the object store in order to access the work.
 - User must have object store access to log on to the IBM Content Navigator Desktop.

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Figure 2-13. Avoid security conflicts

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Notes:

Help path

Security overview

Activities

In your Student Exercises

- Unit: IBM Case Foundation 5.2.1: Security
- Lesson: Security overview
- Activities:
 - System start
 - Isolated region preparation
 - Inspect security settings

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Figure 2-14. Activities

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Notes:

Use your Student Exercises book to complete the activities.

Lesson 2.2. Security configuration

Lesson

Security configuration



Why is this lesson important to you?

- You are configuring a workflow system to use as a testing environment for a workflow application. You must configure security for the new test system.

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Figure 2-15. Security configuration

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Notes:

Security configuration

Activities that you need to complete

- Summarize the security findings
- Add groups to the workflow system

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Figure 2-16. Activities that you need to complete

F2471.0

Notes:

You need to complete these activities in this lesson.

Security configuration

About isolated region security

- By default, region objects are unsecured.
 - No user or group is specified on the object's Security tab.
 - Everyone has full access.
 - If you add a user or group to the object's ACL, default access is terminated
 - Workflow administration group always has access.
- Workflow author can set security levels on queues and workflow rosters.
 - By default, all users have access to queues and rosters.
 - When security is defined for one security entity, access is denied to all other security groups.
- Why set queue and roster security access?
 - To control participants access to work in queue or roster.

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Figure 2-17. About isolated region security

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Notes:

Help path

FileNet P8 Platform 5.2.0>Integrating workflow into document management>Configuring the workflow system>Getting started with Process Configuration Console>Security considerations for modifying the workflow configuration

http://www.ibm.com/support/knowledgecenter/SSNW2F_5.2.0/com.ibm.p8.pe.configui.doc/bpf046.htm

FileNet P8 Platform 5.2.1>Administering>Administering Content Platform Engine>Defining the workflow system>Configuring the workflow system>Managing the workflow system>Assigning workflow security levels

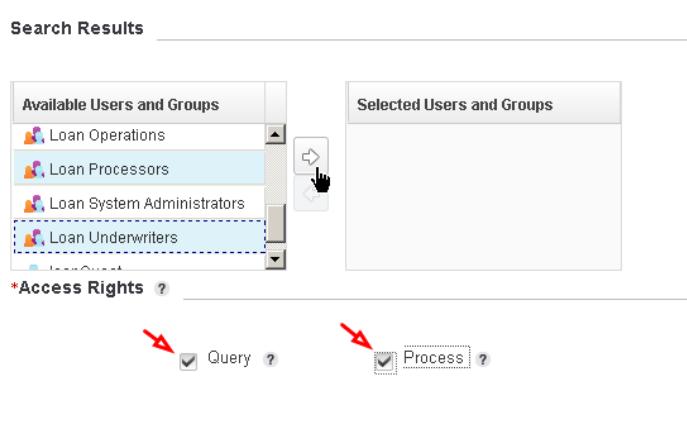
http://www.ibm.com/support/knowledgecenter/SSNW2F_5.2.1/com.ibm.p8.ce.admin.tasks.doc/p8pcc303.htm

By default, roster, queue, and event log access is unrestricted. To secure access, assign at least one user to each possible access right for the roster or queue. For example, to prevent all users from accessing a queue, assign the Query and Process access right to one member of the Process Engine Administrator Group, which already has implicit access to the queue.

Security configuration

Control access to queues

- Queues have the following levels of access:
 - Query [Q]: Search for work and view it.
 - Process [P]: Change property values and complete work.
- Default security settings allow all users [QP].
 - No users are selected in Security tab.
- Members of the Process Engine Administrators security group
 - Have access to all region objects, regardless of object security setting



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Figure 2-18. Control access to queues

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Notes:

Help path

FileNet P8 Platform 5.2.1>Security>Authorization>Object access rights and security>Workflow rosters and queues

http://www.ibm.com/support/knowledgecenter/SSNW2F_5.2.1/com.ibm.p8.security.doc/p8psa012.htm

If a user is a member of the Workflow System Administrator Group, the user automatically has full rights to each roster and queue, even if the user is not explicitly assigned access rights. A user must have query access to a queue in order to be able to process it.

If a user does not have at least Query access to a work queue, the user cannot see the queue.

The combination of queue and roster privileges for a user affects how that user can use process applications.

The screen capture shows an example of the interface that is used to add users and groups to a queue.

Security configuration

Control access to rosters



- Rosters have the following levels of access:
 - Query [Q]: Search for roster summary of work and view it.
 - Create [C]: Launch a workflow.
 - Query/Create [QC]: Both privileges
- Default security settings allow all users [QC].
 - When no users are selected in Security tab
- Create roster privilege is independent of query privileges.
 - A user can launch a workflow, but cannot view its status or process it.
 - This restriction on user access is useful when users do not process work tasks.

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Figure 2-19. Control access to rosters

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Notes:

Help path

Unlike the Process privilege in queues, the Create privilege in rosters is not dependent on query privileges. A user can launch a workflow without permission to view it later. This restriction is useful for cases in which users do not have a role in processing the work. For example, a customer who emails a comment about the loan process might trigger a workflow to handle the comment, but the customer has no role in the workflow and no need to view the workflow.

Security configuration

Control access to rosters: recommended practice

- When using explicit user security:
 - Assign groups with few members (short user lists) to roster security.
 - This assignment minimizes demands on system resources and memory allocation.
- Re-transfer workflow definitions after you change Create privileges on the roster.
 - Create permissions apply only to the most recent transferred version of the workflow.
 - Security changes on create permissions do not take effect until the workflow definition is transferred.

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Figure 2-20. Control access to rosters: recommended practice

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Notes:

When you set explicit user security, do not assign groups with many members or large lists of users to roster security because large assignments make extra demands on system resources and memory allocation.

Determine who needs to access information regarding a particular workflow. The answer is typically administrators and the manager for the work that is being processed.

Several versions of a workflow can run simultaneously. The workflow and the process region configuration are saved at the time that the workflow definition is transferred. The benefit to this model is that you can continue to run prior versions of workflows even after newer versions are transferred. For example, in a development environment, you can complete workflows that were started before the workflow was updated. Without this capability, the older workflows might go into an error state. When you change the Create permission on the roster, you need to retransfer the workflow definition so that the workflow configuration information is updated to reflect the changes.

Security configuration

Roster and queue security settings



- Object access settings with their results

Object	Access setting	Results
Roster	Query	View roster summary of workflow
	Create	Launch a workflow
	Query & Create	Do both of the above
Work queue	Query	View work items
	Query & Process	View, lock, modify, save, complete work items
Inbox	None	View, lock, modify, save, and complete <i>only</i> work items assigned to signed-on user
	Query	View work items
	Query & Process	View, lock, modify, save, complete work items

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Figure 2-21. Roster and queue security settings

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Notes:

Help path

FileNet P8 Platform 5.2.1>Integrating workflow into document management>Process applications concepts>Administration and configuration>Workflow security

http://www.ibm.com/support/knowledgecenter/SSNW2F_5.2.1/com.ibm.p8.pe.user.doc/bpf05.htm

Security configuration

How to configure queue and roster security

- Using Administration Console for Content Platform Engine:
 1. Select the queue, roster, or event log that you want to secure.
 2. Open the Security tab.
 3. Click Add to add users or groups.
 4. Assign users, set privileges.
 5. Save the changes to the isolated region.
- Using Process Configuration Console:
 1. Connect to the region.
 2. Select the queue or roster, and then click Action > Properties.
 3. In the Security tab, set privileges and assign users.
 4. Commit changes to the isolated region.

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Figure 2-22. How to configure queue and roster security

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Notes:

Help path

FileNet P8 Documentation > User Help > Integrating workflow > Workflow applications > Process Configuration Console > Getting Started > Manage properties of queues, rosters, and event logs > Set security levels

http://www.ibm.com/support/knowledgecenter/SSNW2F_5.2.1/com.ibm.p8.pe.configui.doc/bpfco19.htm

Security configuration

Activities



In your Student Exercises

- Unit: IBM Case Foundation 5.2.1: Security
- Lesson: Security configuration
- Activities:
 - Summarize the security findings
 - Add groups to the workflow system

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Figure 2-23. Activities

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Notes:

Use your Student Exercises to complete the activities.

Security

Unit summary

Having completed this unit, you should be able to:

- Inspect workflow system security settings.
- Identify and resolve workflow system security-related issues.
- Configure security for a workflow system.

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Figure 2-24. Unit summary

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Notes:

Unit 3. Maintain the Workflow System

What this unit is about

This Unit provides training on IBM Case Foundation system maintenance tasks. You learn how to monitor, administer, and troubleshoot a, IBM Case Foundation system, performing typical day-to-day maintenance tasks. You work with a virtual IBM Case Foundation system to complete lesson objectives.

What you should be able to do

After completing this unit, you should be able to:

- Identify the Workflow system admin tools and their uses.
- For a scenario, identify the tool that you can use to resolve the problem.
- Use the Process Services Ping page to check component queues.
- Monitor Processes with System Dashboard.
- Monitor processes with vwtool.
- View event logs.
- Maintain event log tables in an isolated region.
- Configure and use system logs to troubleshoot the system.

How you will check your progress

- Successfully complete the lesson exercises.

References

IBM Knowledge Center:

http://www-01.ibm.com/support/knowledgecenter/SSNW2F_5.2.0/com.ibm.p8toc.doc/filenetcontentmanager_5.2.0.htm?lang=en

Maintain the Workflow System

Unit objectives



After completing this unit, you should be able to:

- Identify the Workflow system admin tools and their uses.
- For a scenario, identify the tool that you can use to resolve the problem.
- Use the Process Services Ping page to check component queues.
- Monitor Processes with System Dashboard.
- Monitor processes with vwtool.
- View event logs.
- Maintain event log tables in an isolated region.
- Configure and use system logs to troubleshoot the system.

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Figure 3-1. Unit objectives

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Notes:

Maintain the Workflow System

Unit lessons

This unit contains these lessons:

- Use administrative tools for maintenance
- Monitor with the Process Services Ping page
- Monitor with System Dashboard
- Monitor with vwtool
- Maintain event logs
- Troubleshoot the system

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Figure 3-2. Unit lessons

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Notes:

Do these lessons in the sequence presented.

Use administrative tools for maintenance – This lesson provides an overview of workflow system administration tools and their functions.

Monitor with the Process Services Ping page – This lesson shows how to use the Process Services Ping page to quickly assess the system health.

Monitor with System Dashboard – This lesson shows how to configure and use System Dashboard to monitor system health.

Monitor with vwtool – This lesson shows how to use vwtool to monitor system performance and perform other administration tasks.

Maintain event logs – This lesson shows how to prevent event logs from slowing system performance.

Troubleshoot the system - This lesson shows how to use administrative tools to gather data for troubleshooting.

Lesson 3.1. Use administrative tools for maintenance

Lesson

Use administrative tools for maintenance



Why is this lesson important to you?

- You are administering a workflow system. You can use several Workflow system administration tools. You need to quickly identify which tool to use for any monitoring, troubleshooting, or maintenance task.

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Figure 3-3. Use administrative tools for maintenance

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Notes:

Use administrative tools for maintenance

Activities that you need to complete

- Identify the Workflow system admin tools.

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Figure 3-4. Activities that you need to complete

F2471.0

Notes:

You are going to complete these activities in this lesson.

Use administrative tools for maintenance

Maintaining a workflow system



- The workflow system administrator is responsible for day-to-day operations of a workflow system.
- The following are typical maintenance tasks:
 - Monitoring system performance
 - Monitoring logs
 - Managing log systems
 - Troubleshooting

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Figure 3-5. Maintaining a workflow system

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Notes:

The workflow system administrator is responsible for day-to-day operations of a production workflow system. A workflow system administrator is typically required to do the following functions:

- Help workflow participants to locate work and complete workflows.
- Respond to management decisions that require changes to workflows.
- Gather information about workflow activity to help management make business decisions.

During the production phase, the workflow system administrator manages operation of the workflow application and communicates with workflow participants and managers. In the solution deployment phase, the workflow system administrator coordinates activities with the Workflow Author to plan and control solution implementation into the production environment.

Use administrative tools for maintenance

Administrative tools for the Workflow system

- You must be able to select and use the appropriate administrative tools for a task.
- Administrative tools:
 - Administration Console for Content Platform Engine (ACCE)
 - Process Administrator
 - Process Services Ping Page
 - System Dashboard
 - Vwtool
 - Logging systems

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Figure 3-6. Administrative tools for the Workflow system

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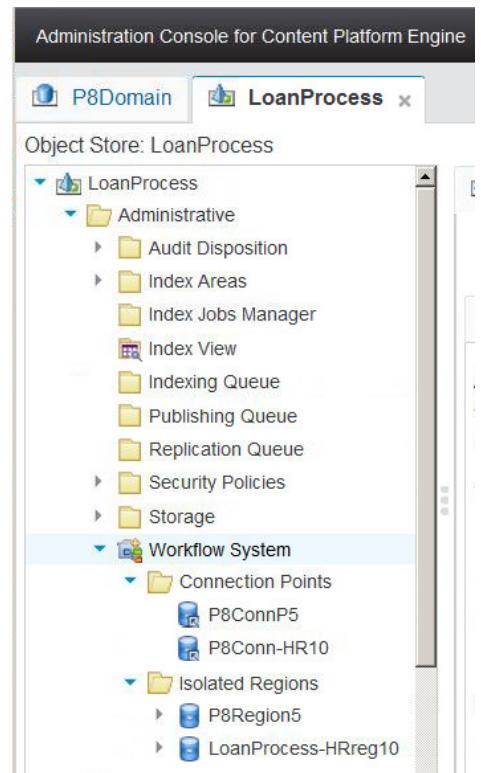
Notes:

This lesson provides a high-level overview of the administration tools that you work with to monitor and maintain a workflow system. For any task that you need to accomplish, you must be able to identify the correct tool to accomplish it. In this unit, you use each of these tools to complete lesson exercises.

Use administrative tools for maintenance

Administration Console for Content Platform Engine

- Use Administration Console for Content Platform Engine to access global system properties.
 - Workflow system properties
 - Connection point properties
 - Isolated region properties
 - Isolated region objects
- ACCE provides access to other administration tools:
 - Process Administrator
 - Process Configuration Console
- New Workflow Search



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Figure 3-7. Administration Console for Content Platform Engine

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Notes:

Administration Console for Content Platform Engine is a new web-based tool for configuring and administering content, workflow, and analysis features in Content Platform Engine. The administration console replaces Enterprise Manager as the primary administration tool for Content Platform Engine.

In Administration Console for Content Platform Engine, you can find information and edit settings. The following list shows some of the functions that you can access from ACCE. The list provides some examples, but is not meant to be comprehensive.

Workflow system

General tab

- Table spaces name where workflow system data is stored. A database administrator can use this information for creating reports or backups.
- Workflow system security groups: specify who can administer and configure the workflow system.
- Process Orchestration: Specify URLs for WebSphere Message Broker servlet and Public listener so that you can use web applications as part of a process.

Isolated Regions tab

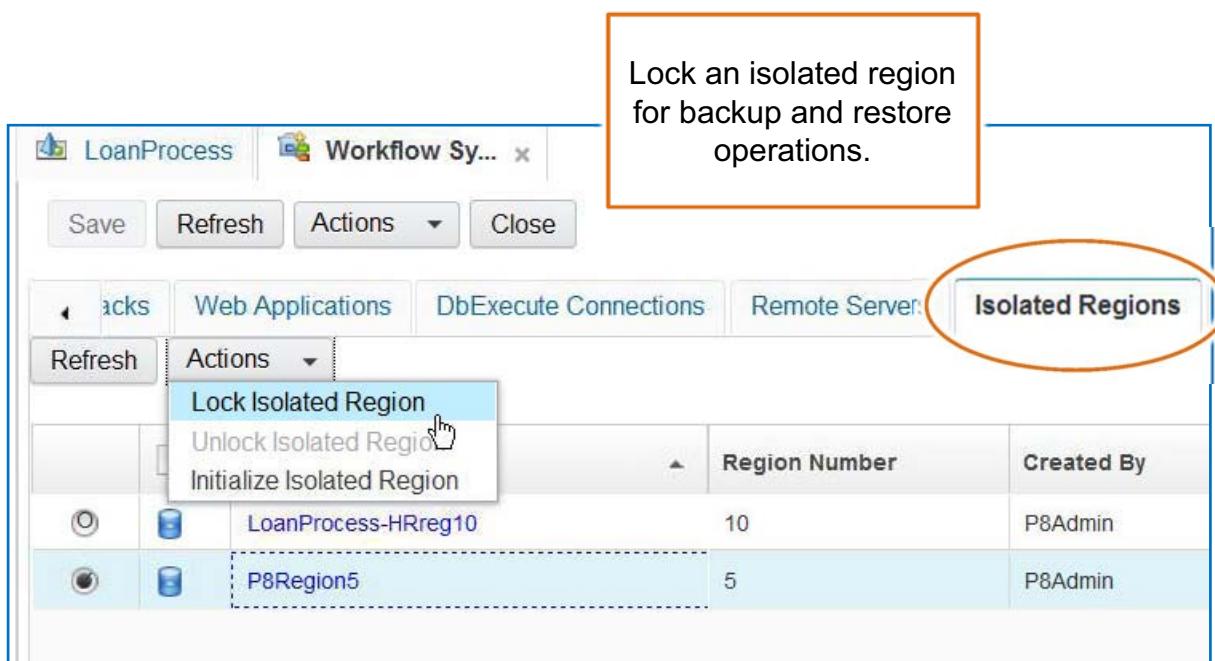
- Lock an isolated region before a system backup or restoration.
- Initialize an isolated region to erase all workflow data and to restore the region to its initial configuration (used mainly in development systems).

New Workflow Search

Administration Console provides a New Workflow Search that you can use to find work items and events. The functions are similar to the functions that are provided by Process Administrator.

Use administrative tools for maintenance

Lock an isolated region



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Figure 3-8. Lock an isolated region

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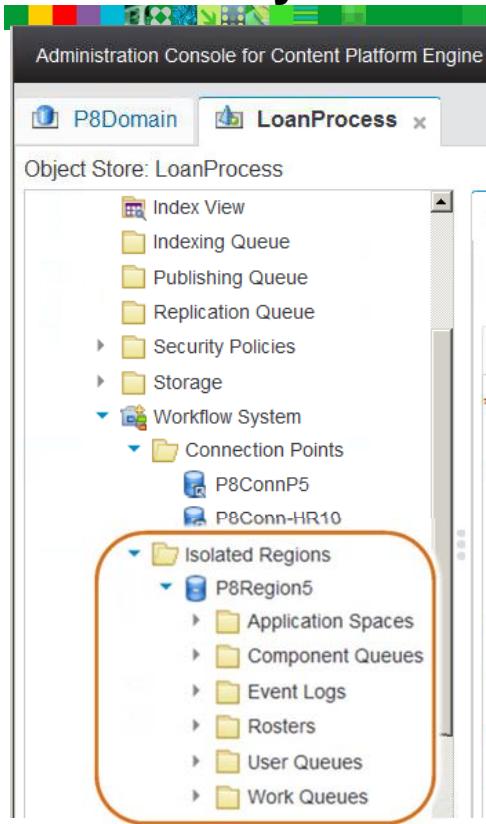
Notes:

To lock an isolated region, use Administration Console for Content Platform Engine > Workflow System > Isolated Regions tab.

You can also initialize an isolated region from this menu.

Use administrative tools for maintenance

Workflow system component administration



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Figure 3-9. Workflow system component administration

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Notes:

Before Case Foundation 5.2.1, administrators used Process Configuration Console to configure workflow system components:

- Isolated regions
- Queues
- Rosters
- Event logs
- Application spaces

In Case Foundation 5.2.1, use ACCE for these configurations. Exception: Configuring custom component queues still requires PCC.

- Components that were formerly configured through Process Configuration Console:
 - Isolated regions
 - Application spaces
 - Queues
 - Event logs
 - Rosters
- Are now administered with Administration Console for Content Platform Engine.

Use administrative tools for maintenance

Process Administrator



- Process Administrator is a Java applet that you use for administering work in progress.
- You can search for the tables:
 - Workflows, work items, events, and statistics
- You can do the following operations:
 - Modify field values, workflow groups, and trackers.
 - Complete work.
 - Delete workflows or work items.
 - Unlock work.
 - Assign or reassign work to users.
 - Open a work item or workflow in Process Tracker

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Figure 3-10. Process Administrator

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Notes:

Help path

IBM Knowledge Center>FileNet P8 Platform 5.2.0>Integrating workflow into document management>Administering work items>About managing workflows

Use Process Administrator to manage work in progress.

User must have security access rights to the queues and rosters.

To assign attachments, user must have access to the object store and documents.

Use administrative tools for maintenance

Start Process Administrator

- Use the Connection Point Action menu to start Process Administrator.

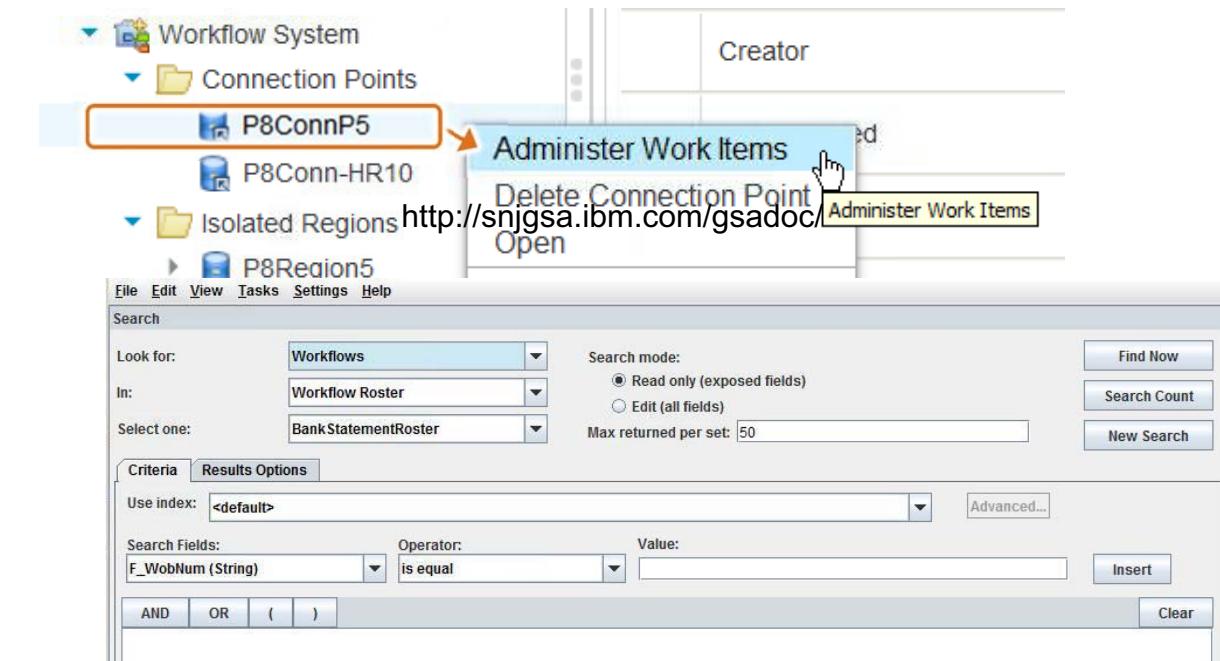


Figure 3-11. Start Process Administrator

F2471.0

Notes:

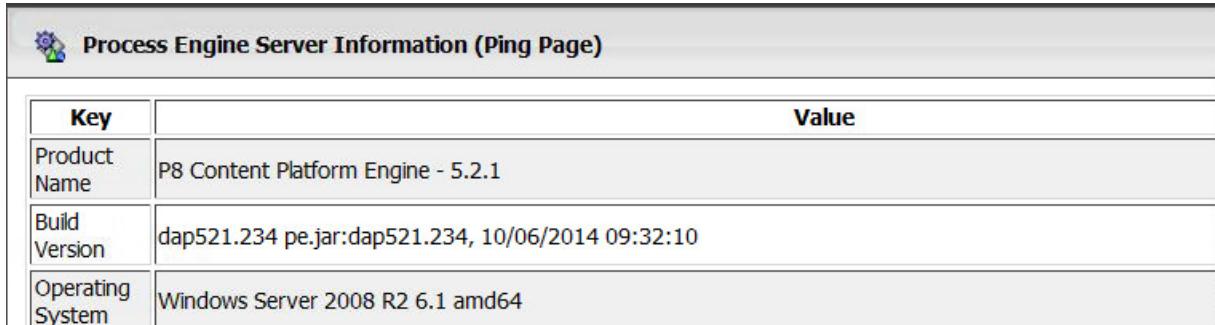
Help path

IBM Knowledge Center>FileNet P8 Platform 5.2.1>Integrating workflow into document management>Administering work items

Use administrative tools for maintenance

Process Services Ping page

- The Process Services Ping page is a web page that displays useful information about the workflow system.
 - Verify that the workflow system is working
 - Verify the build version
 - Find JVM path, class path, location of event logs
 - Component manager logs and statistics



Key	Value
Product Name	P8 Content Platform Engine - 5.2.1
Build Version	dap521.234 pe.jar:dap521.234, 10/06/2014 09:32:10
Operating System	Windows Server 2008 R2 6.1 amd64

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Figure 3-12. Process Services Ping page

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Notes:

Use administrative tools for maintenance

System Dashboard

- IBM System Dashboard for Enterprise Content Management
 - Is a real-time, performance-monitoring dashboard tool.
 - Monitors multiple components of an IBM FileNet P8 system.
 - Displays all information in the same console.
 - Tracks component-specific, environment, and operating system data.
- Components: Dashboard and the listeners.
 - You configure the listeners to monitor the activities that you are interested in.
 - You can watch in real-time or archive listener activity to create reports.
- Use Dashboard to identify and resolve potential performance problems before they occur.
 - Evaluate workload and its effect on system resources.
 - Observe changes and trends in workloads and resource usage.

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Figure 3-13. System Dashboard

F2471.0

Notes:

Help path

IBM Knowledge Center>FileNet P8 Platform 5.2.0>FileNet P8 system overview>FileNet P8 architecture>Administrative components>System Dashboard for Enterprise Content Management

Use administrative tools for maintenance

vwtool



- Vwtool is a command-line tool.
- Can be run on any Content Platform Engine Client
- Typical uses:
 - Set trace options for servers
 - View isolated region configuration information
 - View workflow system configuration information
 - View statistics on the server load
 - View transferred workflows in a region

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Figure 3-14. vwtool

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Notes:

Help path

IBM Knowledge Center>FileNet P8 Platform 5.2.0>Administering FileNet P8>Administering Content Platform Engine>Defining the workflow system>Administrative tools>vwtool

The vwtool is a Content Platform Engine-server-based, command-line-driven, system support and administration program that you can use to analyze and modify various components.

The vwtool utility can run on any client of a Content Platform Engine server. In a workflow system where multiple servers can host client requests for load balancing, a vwtool client request can be directed to any server in the farm. To support vwtool commands that manipulate the memory state of a particular server in a server farm, these vwtool commands display information for all servers or prompt for a server name.

Important: The vwtool is a powerful tool that requires careful and informed use. Misuse of vwtool can lead to work item corruption, compromised data integrity, or loss of data.

Use administrative tools for maintenance

Logging systems

- Event logs
 - A record of specific system or workflow-related events for each isolated region.
 - Exist in the event log database table
 - Accessed with Administration Console for Content Platform Engine
- FileNet P8 logs
 - P8_server_error.log
 - Pesvr_system.log
- Trace logs
 - A text file that record information about application failures.
 - Use Administration Console to select subsystems to trace.

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Figure 3-15. Logging systems

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Notes:

Help paths

IBM Knowledge Center>FileNet P8 Platform 5.2.0>Integrating workflow into document management>Process applications concepts>Events>About event logs

IBM Knowledge Center>FileNet P8 Platform 5.2.0>Administering FileNet P8>Viewing the FileNet P8 log files

IBM Knowledge Center>FileNet P8 Platform 5.2.0>Administering FileNet P8>Administering Content Platform Engine>Troubleshooting>Creating a trace log>Trace logging

The p8_server_error.log file and the pesvr_system.log file contain Content Platform Engine server errors and any embedded exceptions or errors. These log files are the primary troubleshooting tool for Content Platform Engine.

Use administrative tools for maintenance

Activities



In your Student Exercises

- Unit: Maintain the Workflow System
- Lesson: Use administrative tools for maintenance
- Activities:
 - Identify the Workflow system admin tools.

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Figure 3-16. Activities

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Notes:

Use your Student Exercises to complete the activities that are listed.

Lesson 3.2. Monitor with the Process Services Ping page

Lesson

Monitor with the Process Services Ping page



Why is this lesson important to you?

- You are administering a workflow system. As part of your maintenance schedule, you scan the Process Services Ping page to ensure that the workflow system is fully operational.

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Figure 3-17. Monitor with the Process Services Ping page

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Notes:

Monitor with the Process Services Ping page

Activities that you need to complete

- System start
- Use the Process Services Ping page.

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Figure 3-18. Activities that you need to complete

F2471.0

Notes:

You are going to complete these activities in this lesson.

Monitor with the Process Services Ping page

Process Services Ping Page



- The Process Services Ping Page provides information that you can access quickly by going to one URL.
- Typical uses:
 - Find out whether Content Platform Engine is running.
 - Find software build information.
 - Find log files.
 - Find information for support.
 - Find Component queue logs and status

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Figure 3-19. Process Services Ping Page

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Notes:

If the Ping Page fails to open, the Process Services are not running. If the page opens, you can use the information that it provides for support and troubleshooting.

Monitor with the Process Services Ping page

Process Services Ping Page: Overview

- Build Version
- Operating System
- JVM
- Start Time
- Class path
- Log file Location
- Local Host
- Data Directory
- Server Instance
- Ping time
- Database
- FileNet Process Engine Daemons
- Active RPC Threads

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Figure 3-20. Process Services Ping Page: Overview

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Notes:

The top of the Process Services Ping Page provides information that is most useful for support calls.

Build Version: The Content Platform Engine Process Services build version.

Operating System: The operating system of the Content Platform Engine server.

JVM: Details of the JVM version that the Content Platform Engine is using.

Start Time: The most recent start time of the Content Platform Engine. Use this information when reviewing log files.

Class path: The location of the JAR files used by the FileNet P8 Platform.

Log file Location: Content Platform Engine log files, error logs. Use this information to find the log files.

Local Host: The name of the server that is connected.

Data Directory: Location of Process Services subfolder of the Content Platform Engine log files directory and where you can find the WSBroker.properties file.

Server Instance: The web server instance that is running Content Platform Engine.

Ping time: The time that the Ping page accessed the displayed information.

Database: Provides Database Connection, Data Source names, Isolated regions, version information.

PE Daemons: Provides Task name, Region servicing, wait time until active (if delayed)

Based on Thread pools

PE Threads

Primary

Secondary

HeartBeat

EventExporter

DataCollector

DataPublisher

Active RPC Threads: Shows RPC threads that are servicing incoming RPCs.

Monitor with the Process Services Ping page

Process Services Ping Page: URL

- <http://server:port/peengine/IOR/ping>
 - Server: the machine where the Content Platform Engine is deployed
 - Port: the http port for the Content Platform Engine deployment
 - WebSphere default: 9080
 - WebLogic default: 7001
 - JBoss default: 8080
 - Prompts for user name and password.
 - FileNet P8 Admin security required
- HA environment
 - http://virtual_server/peengine/IOR/ping (virtual_server – load balancer virtual name)

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Figure 3-21. Process Services Ping Page: URL

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Notes:

Monitor with the Process Services Ping page

Ping Page: Log file location

Key	Value
Product Name	P8 - 5.2.0.0
Build Version	dap511.466 pe.jar:dap511.466, 02/18/2013 23:38:27
Operating System	Windows Server 2008 R2 6.1 build 7601 Service Pack 1 amd64
JVM	JRE 1.6.0 IBM J9 2.4 Windows Server 2008 R2 amd64-64 jvmwa6460sr10fp1-20120202_101568 (JIT enabled, AOT enabled) J9VM - 20120202_101568 JIT - r9_20111107_21307fx1 GC - 20120202_AA_CMPRSS
Start Time	2013/02/28 14:12:38.775-0800
ClassPath	C:\IBM\WebSphere\AppServer\profiles\AppSrv01\properties;C:\IBM\WebSphere\AppServer\properties;C:\IBM\WebSphere\AppServer\lib\startup.jar;C:\IBM\WebSphere\AppServer\lib\bootstrap.jar;C:\IBM\WebSphere\AppServer\lib\jst-nls.jar;C:\IBM\WebSphere\AppServer\lib\Improxy.jar;C:\IBM\WebSphere\AppServer\lib\urlprotocols.jar;C:\IBM\WebSphere\AppServer\deploytool\itp\batchboot.jar;C:\IBM\WebSphere\lib\deploytool\itp\batch2.jar;C:\IBM\WebSphere\lib\java\lib\tools.jar
Log File Location	C:\IBM\WebSphere\AppServer\profiles\AppSrv01\FileNet\p8node2
Local Host	P852Server
Data Directory	C:\IBM\WebSphere\AppServer\profiles\AppSrv01\FileNet\p8node2\pedata
Server Instance	P852Server/p8node2

Figure 3-22. Ping Page: Log file location

F2471.0

Notes:

Use the Ping Page to get the location of the Content Platform Engine Process Services log files.

Monitor with the Process Services Ping page

Ping page: Helpful links



- Ping Page Helpful Links are typically used for support
 - System
 - Async Tasks
 - Component Manager Logs
 - Component Manager Stats
 - Component Processing Details
 - API statistics

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Figure 3-23. Ping page: Helpful links

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Notes:

System: Thread dump of the current processes (IBM JRE)

Async Tasks: Shows the status of current asynchronous tasks. Process Services asynchronous tasks include peverify, upgrade, and configuration transfer.

Component Manager Logs: Provides the location of the Component Manager log files.

Component Manager Stats: Provides a table that shows Component Manager statistics. Use this table to watch component performance.

Component Processing Details: Typically used by L3 support.

API statistics: After workflow activity, you can check the API statistic page to see statistical information about workflow RPCs.

Monitor with the Process Services Ping page

Sample: API Stats



RPC Timing info - PEEngine-PECMDAPI-EJB (3)

Method	NTimes	Worst	When	Best	When	Avg	Total
pejb_createLaunchStepElement	52	154.0ms	2015.06.02 11:30:37	6.0ms	2015.06.02 11:30:37	27.92ms	1.45sec
pejb_createLiveWorkObject	28	133.0ms	2015.06.02 11:04:29	17.0ms	2015.06.02 11:26:52	38.86ms	1.09sec
pejb_doReassign	6	46.0ms	2015.06.02 11:08:43	34.0ms	2015.06.02 11:30:44	37.5ms	0.22sec
pejb_fetch	419	1540.0ms	2015.06.02 11:08:46	4.0ms	2015.06.02 11:35:03	33.31ms	13.96sec
pejb_fetchMyWorkBaskets	152	49.0ms	2015.06.02 11:07:48	7.0ms	2015.06.02 11:34:56	10.82ms	1.64sec
pejb_fetchRegionDefinitions	2	16.0ms	2015.06.02 11:04:44	12.0ms	2015.06.02 11:23:58	14ms	0.03sec
pejb_fetchRoles	164	4076.0ms	2015.06.02 11:04:50	13.0ms	2015.06.02 11:11:53	107.8ms	17.68sec
pejb_getConfigInfo	499	1.0ms	2015.06.02 11:13:57	0.0ms	2015.06.02 11:35:05	0ms	0sec
pejb_getProcess	4	3.0ms	2015.06.02 11:16:06	0.0ms	2015.06.02 11:35:03	0.75ms	0sec
pejb_getQueueNames	159	20.0ms	2015.06.02 11:06:58	0.0ms	2015.06.02 11:35:05	1.06ms	0.17sec

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Figure 3-24. Sample: API Stats

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Notes:

The API Stats page provides statistics on API calls. This page is typically used for support.

Monitor with the Process Services Ping page

Activities

In your Student Exercises

- Unit: Maintain the Workflow System
- Lesson: Monitor with the Process Services Ping page
- Activities:
 - System start.
 - Use the Process Services Ping page.

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Figure 3-25. Activities

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Notes:

Use your Student Exercises to complete the activities that are listed.

Lesson 3.3. Monitor with System Dashboard

Lesson

Monitor with System Dashboard



Why is this lesson important to you?

- You monitor the workflow system by using Dashboard to ensure continued workflow throughput and system performance. You must configure a Dashboard view to capture information that is relevant to monitoring the workflow system. You want to collect this information to an archive for later analysis.

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Figure 3-26. Monitor with System Dashboard

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Notes:

Monitor with System Dashboard

Activities that you need to complete

- Activity preparation: Launch workflows.
- Monitor with System Dashboard.
- Create Dashboard Archives and Reports.

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Figure 3-27. Activities that you need to complete

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Notes:

You are going to complete these activities in this lesson.

Monitor with System Dashboard

What is System Dashboard?



- IBM System Dashboard for Enterprise Content Management
 - Also referred to as *System Dashboard*
- A real-time, performance-monitoring tool:
 - IBM FileNet P8 system data
 - Application-specific events
 - System environment data
 - Operating system data
- Do not confuse System Dashboard with System Monitor.
- Use System Dashboard to collect and distribute performance data on FileNet products that are installed at a site.
 - System Dashboard comes with many IBM Enterprise Content Manager products.
 - Monitors multiple components on an IBM FileNet system.

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Figure 3-28. What is System Dashboard?

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Notes:

**Reference: IBM System Dashboard for Enterprise Content Management V5.0.0.1
(SC19-3084-04)**

Help paths

- FileNet P8 Platform 5.2.1>Administering>Monitoring FileNet P8>System Dashboard overview
- FileNet P8 Platform 5.2.1>System overview>FileNet P8 architecture>Administrative components>System Dashboard for Enterprise Content Management

IBM System Dashboard for Enterprise Content Management is sometimes referred to as System Dashboard. IBM System Dashboard for Enterprise Content Management was previously called FileNet System Manager, System Manager, or Manager Dashboard.

System Dashboard monitors all components in the same console, a useful feature for sites that use various management consoles.

IBM System Dashboard for Enterprise Content Management runs on the following operating systems: Windows, Solaris, AIX, HPUX (Itanium and PA-RISC), Linux.

Comparison of IBM System Dashboard for Enterprise Content Management and ECM System Monitor

System Dashboard is easily confused with another product named System Monitor. The confusion arises because with System Monitor, you manage the system, but with System Dashboard (formerly known as FileNet System Manager) you can only monitor the system.

IBM System Dashboard for Enterprise Content Management is the standard interface that is used to access performance data from IBM FileNet products.

Although FileNet System Monitor can access the same data that is used by IBM System Dashboard for Enterprise Content Management, FileNet System Monitor is a separately purchased product for proactive monitoring. FileNet System Monitor supports prevention by maintaining a corrective action database. You do not need to install Dashboard if you currently have System Monitor installed.

In addition to providing system information (also provided by System Dashboard), System Monitor does the following tasks:

- System Monitor has a web interface and uses IBM System Dashboard for Enterprise Content Management data.
- Starts and stops components (if directed).
- Notifies support personnel through System Management consoles such as the IBM Tivoli Enterprise Console.
- Reads the log files to report error messages and conditions.
- Provides alerts for critical errors, such as fault detection.

Monitor with System Dashboard

Why use System Dashboard?



- View system metrics in real time:
 - Individual components, the system environment, operating systems
- Gather and archive performance data, and run reports to do these tasks:
 - Generate benchmark data.
 - Evaluate workload and its effect on system resources.
 - Observe changes and trends in workloads and resource usage.
 - Test configuration changes or other tuning efforts.
 - Diagnose problems.
 - Target components or processes for optimization.
- Integrate system metrics with external applications.
- Goal: Use the gathered data to identify and resolve potential performance problems before they occur.

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Figure 3-29. Why use System Dashboard?

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Notes:

The following examples of system metrics are collected by IBM System Dashboard for Enterprise Content Management:

- Component-specific examples: Remote Procedure Calls (RPCs), event times, and custom metrics.
- Environment examples: Configuration, version, patch levels
- Operating system examples: CPU usage, memory usage, disk I/O, network I/O

You can run management and trend reports on current and archived data.

You can use performance data to do benchmarking. You can collect data immediately after initial installation and configuration, and then collect the same information after the system has been running for some time. Compare the initial and current data to check whether the system is maintaining the same performance level.

Monitor with System Dashboard

Dashboard Terms (1)

- System Dashboard
 - Configure data collection with clusters and view data for a cluster.
 - Assign servers and a monitoring frequency to each cluster.
- Cluster
 - A user-defined group of servers that System Dashboard monitors.
 - Not related to active and passive clusters that are used for business continuity
 - A cluster must be defined before monitoring components.
- Listener
 - A component that provides performance data from the monitored component to System Dashboard
 - Optionally accumulates and aggregates that data.
- Container
 - It is a node in System Dashboard that groups containers, events, and meters.

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Figure 3-30. Dashboard Terms (1)

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Notes:

Monitor with System Dashboard

Dashboard Terms (2)



- Event
 - An occurrence that happens in the application that is significant.
 - Examples:
 - Document checkout
 - Database lookup
 - Can have duration
- Meter
 - It is an absolute value of something inside the application software.
- Counter
 - Provides the count of how many events occurred.
- Accumulator
 - Contains the sum of some event-related quantities.
 - Summarizes data from several events (such as averages).
 - Example:
 - Average database lookup duration

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Figure 3-31. Dashboard Terms (2)

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Notes:

Events

Event values and accumulator values both stay the same or increase over time.

Example events: a document creation, a document retrieval

Example meter: the number of entries in a cache, the total memory of the Java virtual machine

Example subevents: "success" and "failure" subevents for an event that counts the number of document creations.

Note: Subevents for an event are usually related to each other.

Example accumulator: the duration of an event

An event and duration accumulator example

Every time a document is added to an object store, the Content Platform Engine increments the Creations Event by 1. The Content Platform Engine also adds to a duration accumulator the time that it takes to complete that operation. During a specified interval, Content Platform Engine creates three documents. For example, the time that it takes to create these documents was 30 milliseconds, 40 milliseconds, and 35 milliseconds. During that collection interval, the Creations

Event increased by 3, and the subordinate duration accumulator increased by 105 ($30 + 40 + 35$). System Dashboard divides 105 by 3 to obtain an average value of 35 milliseconds for each creation operation during that period. System Dashboard displays this average value along with the minimum value (30), maximum value (40), and standard deviation of the duration value over that interval.

Note: This example uses milliseconds for simplicity. The Listeners report durations in nanoseconds, which were divided by 1 million to produce the millisecond values.

Monitor with System Dashboard

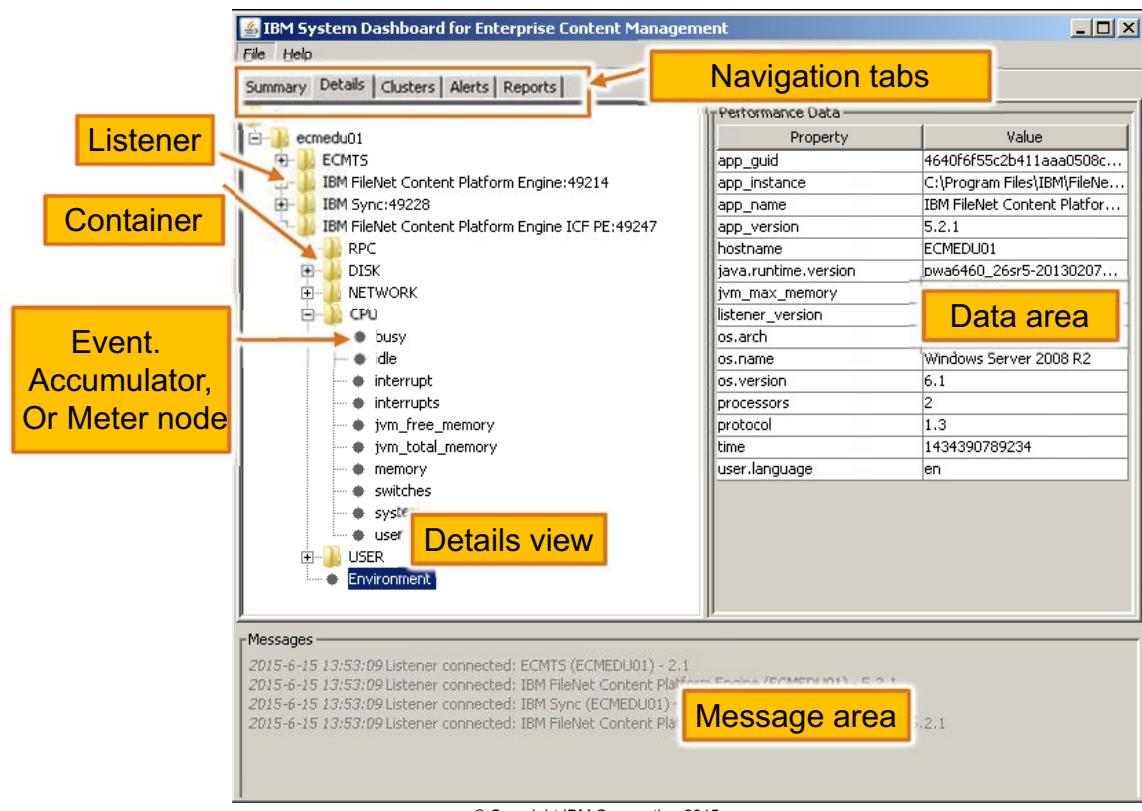
System Dashboard Structure

Figure 3-32. System Dashboard Structure

F2471.0

Notes:

The graphic shows the Details view of System Dashboard.

In the Details view of IBM System Dashboard, the container node in the tree is shown as a folder, and the event and accumulator nodes in the tree are shown as filled circles. Content Platform Engine has a separate container node for each object store under USER. The object store container node provides access to all the counters for that object store.

Monitor with System Dashboard

Create clusters to view data

- You must use a cluster to view listener data.
 - A cluster can contain one or more servers.
 - It normally contains all servers that are related to a particular application.
 - All listeners on the servers in a cluster are discovered automatically.
- You can define any number of clusters.
- To define a cluster:
 1. Name the cluster.
 2. Add the servers.
 3. Specify how often listener data is accumulated.
- Optional steps
 - Override the time span for summary data collection.
 - Override the number of data points.
 - Save the settings in an XML file (so that cluster can be reused).

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Figure 3-33. Create clusters to view data

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Notes:

Help path

IBM Knowledge Center>FileNet P8 Platform 5.2.1>Administering>Monitoring FileNet P8>Dashboard configuration>Adding a cluster

Start Dashboard

To start FileNet Dashboard in Windows, click Start > IBM FileNet P8 Platform > Dashboard. To start FileNet Dashboard in UNIX, start the P8Manager shell script from the directory that contains the required .jar files.

Clusters

A cluster is the grouping of servers that you want to view together. You can create a single cluster that defines all your hosts. Or you can create multiple clusters, one cluster for each service. You view the data to ensure that all the servers are working well, which means that the service is working well. Or you can define a cluster for each service so that you view just the data for the servers and components that support one service rather than simultaneously viewing data for all the hosts.

Example: You define a cluster for a mortgage service and another cluster for a bank accounts service. Each cluster consists of the servers that customers can connect to for information on their mortgage and their bank accounts. The bank cluster consists of Content Navigator and a Content Platform Engine combination.

Each defined cluster is a group of host servers to be monitored. Use the cluster to concurrently monitor the performance metrics of applications that run on the servers included in the cluster. The Dashboard uses an automatic discovery process to find the listeners that run on the specified hosts.

Tip: Use cluster names that describe their functions.

Each cluster definition includes an Interval setting, which defines how frequently data is sampled from the applications within that cluster. If the interval is not defined, Dashboard accepts samples at the listener default sampling rate.

Each cluster definition includes a data points value. This value specifies how many data blocks are saved in memory by Dashboard. The interval setting does not affect the data points value.

Extra optional steps when you define a cluster:

- Edit the Max Data Points value to overwrite the default value (500), which specifies the number of interval details that Dashboard keeps in the display.
- Edit the TCP port numbers (only if necessary).

Monitor with System Dashboard

Use the Dashboard views

- Create and edit clusters in Clusters view.
 - Create, edit, and save clusters.
- View graphs of heartbeat data in Summary view.
 - View average response time for Remote Procedure Calls (RPC).
 - View latest reported average response time and the average CPU utilization of servers within the cluster.
- View data by cluster, server, or listener in Details view.
 - View: RPC, DISK, NETWORK, CPU, USER, Environment
- Select, view, and export captured data to a file in Reports view.
 - Run reports against the data available in the Details view.
- View Info, Warning, Critical, Fatal messages in Alerts view.

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Figure 3-34. Use the Dashboard views

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Notes:

Open the cluster from any view, by using the File menu. After a cluster is opened, it is available until you exit Dashboard. The same cluster is open in all views except Alerts view.

Summary is the default view. After the appropriate parameters are configured, Summary view provides high-level status for the health of the entire FileNet system.

Details view provides real-time data that is updated per the configured interval. Available data includes both system and FileNet metrics.

Alerts view displays Info, Warning, Critical, and Fatal messages.

Reports view shows options to define or modify report templates and run reports against data available in the Details view. The reports are written to comma-separated value (CSV) files, which can easily be imported into other tools, such as spreadsheets, for analysis.

Messages pane

Each Dashboard view, except the Alerts view, includes a Messages pane at the bottom. This pane displays messages that identify the listeners to which the Dashboard connects or to which the connection is lost. The Messages pane also displays urgent messages that are sent to application

log files. Any message with a code higher than INFO is displayed in the Messages pane in bold text and in the Alerts view.

The FileNet P8 Content Engine Java Compatibility Layer provides compatibility with an earlier versions for applications that were developed with the Content Engine Java API library. The listener connection to the FileNet P8 Content Engine Compatibility Layer is reported in Dashboard when an application is active that uses the Content Engine Java API library for FileNet P8. FileNet Workplace, for example, uses Content Engine Java API. The first time that any user signs in to FileNet Workplace, a connection message for Workplace and another connection message for FileNet P8 Content Engine Compatibility Layer are displayed in the Messages pane. Both Workplace and FileNet P8 Content Engine Compatibility Layer are then also listed in the Details view.

Monitor with System Dashboard

Execute options for Listener node and view data

- In Details, right-click a Listener node and click an option.
 - Query for the health status (heartbeat) of its application.
 - Query for the uptime of its application.
 - Save (archive) the data that the Listener gathers.
 - Send a custom message to the Listener.
 - Disconnect a Listener.
 - Request user list (provides a list of all users signed in by name).
- View accumulator data in tables and charts.
 - Select the accumulator node and view data numerically.
 - Or right-click the accumulator node and click a chart option.
- Move and size the graph windows as you like.

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Figure 3-35. Execute options for Listener node and view data

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Notes:

References

Dashboard User's Guide > Accessing listener tasks

Dashboard User's Guide > Viewing data

Notes:

The Request user list option is available only for the Content Engine.

Typically, you disconnect listeners when you are no longer interested in monitoring the components. You must exit Dashboard and start it again to reconnect to a listener.

Monitor with System Dashboard

Archiving Manager

- Archiving Manager is a command-line tool that you can use to create Dashboard archive files.
 - You can use scripts to run Archiver at designated times.
- Example syntax:
 - `java -jar "C:\Program Files (x86)\IBM\FileNet\Dashboard\archiver.jar" -d c:\temp\ -t 1 "C:\Users\Administrator\Documents\C1.xml"`
 - Use quotation marks around paths with spaces.
- Flags
 - Cluster.xml, -d, -h, -l, -m maxtries, -n timespec, -t timespec, -v

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Figure 3-36. Archiving Manager

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Notes:

Reference

Dashboard User's Guide > Archiving Manager

Flag Definition

cluster.xml Specifies the path and name of the cluster definition. Data from all of the Listeners on the hosts that are specified in this file are archived.

-d path Specifies the path of the directory in which the generated archives are saved. Each listener connection results in a separate archive file in this directory. The default value is the current directory.

-h Specifies that the available listener history is included in the generated archive file.

-i seconds Specifies the interval in seconds. If an interval is not defined, the interval remains the same as it was before.

-m MaxTries Specifies the number of times the archiver tries to reconnect to a host in a specified cluster when the connection is lost. The scheduler retries the number of times that are specified,

waiting 5 seconds between each try, before it ends the reconnection. The default value for **MaxTries** is 5.

-n timespec Specifies the amount of time that you want the Archiving Manager to log data to a file. After the **timespec** value is satisfied, a new file is created. The **timespec** can be in the form of hours:minutes or as a real number, such as 3.5. The archiver can gather historical data, data from the current time and going forward for a designated period, or both, depending on which flags you use. The **-n** flag specifies that you want to record some data, starting from NOW (whenever you run the command) for some length of time; **-n 1:00** means from now until 1 hour from now. The default value for **timespec** is 0. The default of **-n 0** means that the archiver does not wait for further data. If you use the default **-n 0**, also use the **-h** flag; otherwise, no data is collected.

-t timespec Specifies the amount of time for which the Archiving Manager collects data, starting at the time of execution. The **timespec** can be in the form of hours: minutes or as a real number, such as 3.5. You can also specify **-t -** to specify you want to continue to collect data until you click Enter. Use this parameter with the **-v** flag for interactive use. The default value for **timespec** is 0.

-v Specifies a verbose mode, where you can indicate when an archiver is receiving data. This setting is useful when you use the Archive Manager interactively and identify when an activity occurs.

The **-t**, **-n**, and **-h** flags are similar but act slightly differently. The **-h** flag collects archive data *backward* from the point at which the command is issued. The **-h** flag works the same as the Archive command from within System Dashboard. The **-t** command collects data in real time going *forward* from the time at which the command is issued. You can use both flags in the same command. The **-n** flag specifies the amount of time to log into a single file before starting a new file. For example, **-t 10 -n 2.5** collects archive data going forward for 10 hours and saves that data in four separate files. You must specify a value for **-h**, **-t**, or both in order to collect data.

Monitor with System Dashboard

Configuration Guidelines

- Data point collection
 - Default interval is 15 minutes (900 seconds).
 - Max data points defaults to 500.
 - 48 hours worth of data, with these defaults, is 192 data points.
- Do not set the interval lower than 120 seconds.
 - Data points are collected stored on the Content Platform Engine Server.
 - Forcing the Content Platform Engine server to collect and store too many data points can affect system performance.
 - Loading too many data points when System Dashboard connects to the cluster can affect network performance.
- Content Platform Engine restart resets the data point collection.

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Figure 3-37. Configuration Guidelines

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Notes:

By default, the Content Platform Engine collects and stores data points at 15-minute intervals (900 seconds). This interval does not significantly affect system performance.

When you change the interval in System Dashboard and then save the changes, System Dashboard commands Content Platform Engine to collect data at a different rate. Content Platform Engine continues to collect data at the new rate until you change it again by using System Dashboard. Additionally, multiple System Dashboard instances can connect to the same Content Platform Engine server. If each System Dashboard session changes the data collection interval, the most recent change persists on the Content Platform Engine until it is changed again.

If you shorten the data collection interval, then the Content Platform Engine must work harder to collect and store these data points. Thousands of data points can cause system performance to slow.

When you first connect to a cluster, System Dashboard downloads all of the data points from the Content Platform Engine server. It then prunes the number of data points to be displayed down to the specified Max number of data points to display. If the interval is set too low, when you load the cluster, System Dashboard downloads thousands of data points at one time. The data import causes network traffic congestion and might overload the memory of the System Dashboard server.

Monitor with System Dashboard

Process counters to watch (examples)

- Database\Transactions Completed
 - Need system-specific baseline
- Database\Statements Failed
 - A small number is normal at start
- Server Counters\Errors\Authentication Errors
 - Need system-specific baseline
- Server Counters\Errors\E-mail Notification Errors
 - Number greater than zero indicates that email notification is failing, which can cause work processing delays.

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Figure 3-38. Process counters to watch (examples)

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Notes:

Help path

IBM Knowledge Center>FileNet P8 Platform 5.2.1>Administering>Monitoring FileNet P8>Counter interpretation>Dashboard counters

Reference

PE_PCH_Counters_checking.pdf

The partial list of counters to watch provides some examples of counters and some guidelines to consider when monitoring them. In some instances, you need to observe the system for a while to establish a baseline against which you can compare activity levels after you alter the system.

Monitor with System Dashboard

Activities



In your Student Exercises

- Unit: Maintain the Workflow System
- Lesson: Monitor with System Dashboard
- Activities:
 - Activity preparation: Launch workflows.
 - Monitor with System Dashboard.
 - Create Dashboard Archives and Reports.

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Figure 3-39. Activities

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Notes:

Use your Student Exercises to complete the activities that are listed.

Lesson 3.4. Monitor with vwtool

Lesson

Monitor with vwtool



Why is this lesson important to you?

- Your workflow system is in production with daily workflow activity. You monitor the system with vwtool to ensure continued workflow throughput and system performance.

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Figure 3-40. Monitor with vwtool

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Notes:

Monitor with vwtool

Activities that you need to complete

- Monitor with vwtool.

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Figure 3-41. Activities that you need to complete

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Notes:

You are going to complete these activities in this lesson.

Monitor with vwtool

Use vwtool to monitor an isolated region

- Vwtool runs in a command window on the Content Platform Engine server.
 - No graphical user interface
 - No remote or Web access
- To use vwtool, you must have access to the server.
 - Login is required.
 - User must belong to the workflow system administration group.
- Vwtool allows access to one region at a time.
- Help for vwtool
 - Glossary of terms
 - Explanation of logical and physical table names

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Figure 3-42. Use vwtool to monitor an isolated region

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Notes:

Help paths

IBM Knowledge Center>FileNet P8 Platform 5.2.0>Administering FileNet P8>Administering Content Platform Engine>Defining the workflow system>Administrative tools>vwtool>Technical terms used in vwtool

IBM Knowledge Center>FileNet P8 Platform 5.2.0>Administering FileNet P8>Administering Content Platform Engine>Defining the workflow system>Administrative tools>vwtool>Command quick reference

Content Foundation 5.2.1>Administering>Administering Content Platform Engine>Defining the workflow system>Administrative tools>vwtool>Startup command-line options

IBM Knowledge Center>FileNet P8 Platform 5.2.0>Administering FileNet P8>Administering Content Platform Engine>Defining the workflow system>Administrative tools>vwtool>Tips for using vwtool

IBM Knowledge Center>FileNet P8 Platform 5.1.0>Administering IBM FileNet P8>Administering Process Engine>Administrative tools>vwtool>Technical terms used in vwtool

FileNet P8 Platform 5.1.0>Administering IBM FileNet P8>Administering Process Engine>Administrative tools>vwtool>Logical vs. physical table names

The vwtool tool is a command-line, system support, and administration program that you can use to monitor and modify various components of the workflow system. In order to run vwtool, you must have access to a Content Platform Engine server and provide a user name and password. The user must be a member of the workflow system administration group.

The vwtool program runs on any Content Platform Engine. In a Service containing multiple servers, you can run vwtool on any server and access the database from all servers. Within a Service, vwtool accesses one isolated region at a time. Most of the information that vwtool returns is specific to an isolated region. However, some commands return Service-wide or local server-specific information (the descriptions of these commands include their scope). Many different commands are available with vwtool. Only some vwtool commands are described in this unit.

Logical versus physical table names

Certain queues, rosters, event logs, data fields, and indexes have both a logical name and a physical name.

The logical name is the name that is displayed in the workflow user interfaces and in user-defined applications such as step processors. An administrator specifies the logical name when creating the queue, roster, event log, field, or index.

The physical name is the actual name that the database uses to identify the table. The physical name is guaranteed to be unique and is system-defined. The physical name is visible only when you use vwtool. Several of the vwtool commands, including the config command, display the physical table name.

The logical table name is more readily accessible and is for user reference only. The system software maps the logical table name to the physical table name at run time. Because the system maintains two names for each table, you can specify table names without worrying about collisions with table names that already exist in the database.

Monitor with vwtool

Start vwtool



- Start vwtool from a command prompt.
- Default Location (windows)
 - C:\Program Files\IBM\FileNet\ContentEngine\tools\PE
- Command syntax
 - `vwtool [connection_point] [-v] [-Y user_name + password]`
 - -v is verbose mode
 - You must belong to the Workflow System Administrators group
- Example
 - `Vwtool P8ConnP5 -v -Y P8Admin+IBMFleNetP8`

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Figure 3-43. Start vwtool

F2471.0

Notes:

Help path

IBM Knowledge Center> FileNet P8 Platform 5.2.0>Administering FileNet P8>Administering Content Platform Engine>Defining the workflow system>Administrative tools>vwtool>Start vwtool

Monitor with vwtool

Obtain status information on workflow system

- Vwtool command: **configdetails**
 - Use for an overview of all regions.
 - Output to text file.
- Vwtool command: **regions**
 - List all isolated regions in the workflow system that are loaded into memory or on disk (**m** or **d**).
- Vwtool command: **config**
 - Returns information about a specific isolated region.
 - Use to view the current configuration of a region.
 - Use also to make a record of changes to region.
- Vwtool command: **views**
 - Summary of views for queues, rosters, event logs.

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Figure 3-44. Obtain status information on workflow system

F2471.0

Notes:

Help paths

IBM Knowledge Center>FileNet P8 Platform 5.2.0>Administering FileNet P8>Administering Content Platform Engine>Defining the workflow system>Administrative tools>vwtool>Command quick reference>regions

IBM Knowledge Center>FileNet P8 Platform 5.2.0>Administering FileNet P8>Administering Content Platform Engine>Defining the workflow system>Administrative tools>vwtool>Command quick reference>config

IBM Knowledge Center>FileNet P8 Platform 5.2.1>Administering>Administering Content Platform Engine>Defining the workflow system>Administrative tools>vwtool>Command quick reference>views

Note: The **configdetails** command is not documented in online help.

The RPC and error counters are initialized each time the Content Platform Engine is restarted.

Error counters show how many times a function must be retried due to an error on the server.

By default, the **loadstatus** command does not count all statistical events.

Monitor with vwtool

Run loadstatus



- Vwtool command: **loadstatus**
 - Returns statistics about server load for all isolated regions.
 - Use command periodically to become familiar with normal system operation.
 - Use when response time is slow to determine whether error counters are increasing.
 - This information is also available from Dashboard.
- Vwtool command: **count *** or **count #**
 - * - Counts the number of all work items in all queues and rosters.
 - # - Counts the number of all work items in all queues and rosters with a nonzero count.

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Figure 3-45. Run loadstatus

F2471.0

Notes:

Help paths

IBM Knowledge Center>FileNet P8 Platform 5.2.0>Administering FileNet P8>Administering Content Platform Engine>Defining the workflow system>Administrative tools>vwtool>Command quick reference>loadstatus>RPC and error counters

IBM Knowledge Center>FileNet P8 Platform 5.2.0>Administering FileNet P8>Administering Content Platform Engine>Defining the workflow system>Administrative tools>vwtool>Command quick reference>count

The vwtool loadstatus command is used to view information about Content Platform Engine server activity in the region.

The vwtool count command is used to count the number of work items in a specific queue or roster. Use it with an asterisk (*) to count all work items in all queues. Use it with a number sign (#) to count all work items in all queues for which the count is nonzero.

Monitor with vwtool

Report memory usage, database usage

- Vwtool command: **dump**

- Has “z” (siZe) option.
- Obtains approximate size for workspace memory.
- Obtains approximate size for class memory.
- Obtains approximate size for instruction sheet memory.

- Vwtool command: **environment**

- You can use this command to reconcile cached and permanent user data environment records on the Content Platform Engine.
- The reconciliation option uses the short name that is supplied by the directory service to identify a user.

- Vwtool command: **pedbrpt**

- Workflow system database report

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Figure 3-46. Report memory usage, database usage

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Notes:

Help paths

IBM Knowledge Center>FileNet P8 Platform 5.1.0>Administering IBM FileNet P8>Administering Process Engine>Administrative tools>vwtool>Command quick reference>dump

IBM Knowledge Center>FileNet P8 Platform 5.1.0>Administering IBM FileNet P8>Administering Process Engine>Administrative tools>vwtool>Command quick reference>environment

Memory size for a workspace, class, or instruction sheet

The administrator can monitor the size of these elements to see how near they are to approaching the maximum size of a BLOB (Binary Large Object).

In IBM FileNet P8, the default BLOB size limit is based on the SQL, Oracle, and DB2 databases. This BLOB size is a default value that is sufficient for most applications. If necessary, this limit can be increased with the assistance of your IBM support representative.

The following conditions increase the amount of data that is stored in the BLOB:

- Many workspaces. This condition is the result of many versions of the same workflow definitions that are transferred to the database tables in one isolated region.

- Many steps on the main workflow map. This condition can be avoided by dividing the workflow into submaps.
- Many data fields.
- Large string data fields.

Environment record reconciliation

- You can use this command to reconcile cached and permanent user data environment records on the Content Platform Engine with the possibly more up-to-date data in the FileNet P8 domain directory service.
- Content Platform Engine duplicates certain parts of the user security information in its own database. Over time, the information in the directory service can be changed or updated.
- When information directory updates happen, the information in workflow system records, whether cached or permanent, can contain old, invalid information about users and groups.

Monitor with vwtool

Report version and system configuration

- Vwtool command: **version**
 - Returns current version information on the process services software.
- Vwtool command: **sysconfig**
 - Returns system-wide properties for a workflow system.
- Vwtool command: **rosterconfig**
 - Returns configuration information for a specified roster.
 - Returns logical and physical table names.
- Vwtool command: **queueconfig**
 - Returns configuration information for a specified queue.
 - Returns queue type, logical and physical table names.

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Figure 3-47. Report version and system configuration

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Notes:

Help paths

IBM Knowledge Center>FileNet P8 Platform 5.2.1>Administering>Administering Content Platform Engine>Defining the workflow system>Administrative tools>vwtool>Command quick reference>version

IBM Knowledge Center>FileNet P8 Platform 5.2.1>Administering>Administering Content Platform Engine>Defining the workflow system>Administrative tools>vwtool>Command quick reference>sysconfig

IBM Knowledge Center>FileNet P8 Platform 5.2.1>Administering>Administering Content Platform Engine>Defining the workflow system>Administrative tools>vwtool>Command quick reference>rosterconfig

IBM Knowledge Center>FileNet P8 Platform 5.2.1>Administering>Administering Content Platform Engine>Defining the workflow system>Administrative tools>vwtool>Command quick reference>queueconfig

The vwtool `version` command displays version information about the workflow system software. This information consists of the following properties:

- Build type (production or debug)
- Database type
- Date and time of compilation

The vwtool sysconfig command displays server configuration properties. It displays system-wide properties for a workflow system and properties for each individual server.

Monitor with vwtool

Activities

In your Student Exercises

- Unit: Maintain the Workflow System
- Lesson: Monitor with vwtool
- Activities:
 - Monitor with vwtool.

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Figure 3-48. Activities

F2471.0

Notes:

Use your Student Exercises to complete the activities that are listed.

Lesson 3.5. Maintain event logs

Lesson

Maintain event logs



Why is this lesson important to you?

- Many event log entries accumulated in the database of your workflow system. You must archive and purge the events logs to free up database space.
- To avoid unnecessary logs from piling up in your database, you can disable some log events. However, you do not want to disable any logs that Process Tracker, Case Analyzer, and Rules need to function.

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Figure 3-49. Maintain event logs

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Notes:

Maintain event logs

Activities that you need to complete

- View event logs by using Administration Console
- View event logs by using Process Administrator
- Disable event categories
- Prune events

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Figure 3-50. Activities that you need to complete

F2471.0

Notes:

You are going to complete these activities in this lesson.

Maintain event logs

Event tools



- Administration Console for Content Platform Engine
 - Search and view event logs.
- Process Administrator
 - Search and view event logs.
 - Write event logs to a file.
- Pelog
 - Purge event log records.
- Custom programs
 - Retrieve events and information about rosters and queues.
- Case Analyzer
 - Monitors and analyzes case and workflow business processes.

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Figure 3-51. Event tools

F2471.0

Notes:

Help paths

IBM Knowledge Center>FileNet P8 Platform 5.2.0>Administering FileNet P8>Administering Content Platform Engine>Defining the workflow system>Analyzing workflows>Workflow analysis tools>Case Analyzer

This page lists the tools that are used to retrieve and view the event logs that are maintained in the workflow system.

You can use either Administration Console for Content Platform Engine or Process Administrator to search event logs. Both tools have similar functions. The Administration Console method is the newer method. However, you must use Process Administrator to write the event logs to a file.

Custom programs that retrieve events and statistical information about rosters and queues can be written by using APIs for process services.

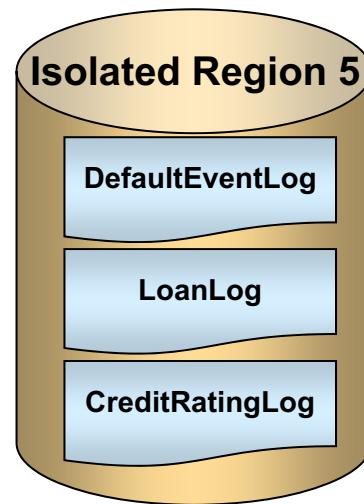
Case Analyzer

Case Analyzer is a FileNet P8 process component that monitors and analyzes case and workflow business processes. Case Analyzer uses event log information to provide real-time and historical reports on workflow activity.

Maintain event logs

Event architecture

- Each isolated region in the workflow system has the following components:
 - At least one event log table, `DefaultEventLog`
 - User-added custom event log tables, `LoanLog`, `CreditRatingLog`
- Event logging collection is optional and can be collected independently in separate log files.
- View event logs by using
 - ACCE
 - Process Administrator
 - `vwtool` commands:
 - `logconfig`
 - `logquery`
 - Case Analyzer
 - Process Tracker



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Figure 3-52. Event architecture

F2471.0

Notes:

Help paths

IBM Knowledge Center>FileNet P8 Platform 5.2.1>Administering>Administering Content Platform Engine>Defining the workflow system>Coordinating workflow design>Workflow options>Managing event logs

IBM Knowledge Center>FileNet P8 Platform 5.2.1>Administering>Administering Content Platform Engine>Defining the workflow system>Coordinating workflow design>Workflow options>Managing event logs>Configuring event logging options

IBM Knowledge Center>FileNet P8 Platform 5.2.1>Administering>Administering Content Platform Engine>Defining the workflow system>Administrative tools>`vwtool`>Command quick reference>`logconfig`

FileNet P8 Platform 5.1.0>Administering IBM FileNet P8>Administering Process Engine>Administrative tools>`vwtool`>Command quick reference>`logquery`

IBM Knowledge Center>FileNet P8 Platform 5.2.1>Administering>Administering Content Platform Engine>Defining the workflow system>Administrative tools>Process Task Manager>Case Analyzer>Case Analyzer event logs

Event logging is optional. It can be useful to log the occurrence of certain system-level events that are related to work item processing. For example, in an order processing application, management might want to see how often a particular product is ordered and how often a credit card payment is rejected.

Event logs are used by other applications, such as Case Analyzer and Process Tracker, so if you plan to use those applications, you must enable at least some event logging options.

For each isolated region on the server, separate log tables are created to collect the information. The graphic on this page shows a sample isolated region, region 5, that contains the default event log and two user created custom event log tables. Logging is displayed in the Process Administrator application. The pelog tool is a server-based, administrative tool that is used to maintain the logging database tables.

The graphic shows isolated region 5 with several event logs, which accumulate events that are collected from different workflows.

Event logging architecture

Event logging is performed on the server when the event occurs and in the same transaction as the update of the work item while it is processed. At least one default log table is created for each isolated region in the workflow system. You can create and manage extra event logs for your application. For example, you might specify one event log for one workflow definition and another event log for a different workflow definition. This arrangement distributes the event data and enables an administrator to find items of interest more easily.

Each event log has a separate physical log table. For example, the physical log table name for DefaultEventLog for isolated region 5 might be VWLog5_101. If you create an event log called LoanLog, the physical table name might be VWLog5_102. The system assigns a unique number that is appended to the region number.

Maintain event logs

About event logging



- An event is a system-level action that occurs during the processing of a workflow.
 - One or more events occur when a workflow is launched.
 - One or more events occur when a step processor begins processing a work item.
- An event log contains information for tracking workflow activity.
 - Example: When a step processor begins processing a work item
 - Use this information to improve a business process.
- Each logged event belongs to an event category and has an associated event number.
 - Example: VW_WFTermination records the completion of all work items in a workflow, event number = 165.

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Figure 3-53. About event logging

F2471.0

Notes:

Help paths

IBM Knowledge Center>FileNet P8 Platform 5.2.1>Integrating workflow into document management>Process applications concepts>Events>About event logs

IBM Knowledge Center>FileNet P8 Platform 5.2.1>Integrating workflow into document management>Process applications concepts>Events>Event logging categories

The workflow system administrator uses the Administration Console for Content Platform Engine to enable or disable logging of each event category. Ten categories and more than 40 events can be logged.

If the work item contains a field that matches an exposed system or data field, the current value of the work item field is automatically stored in the event log record at the time the record is logged.

Use event logging to obtain information about the occurrence of certain events that are related to work item processing, such as when a work item is created or when a step processor begins processing a work item. Use this information to help to improve a business process.

Optional activities

- Locate the event log categories in the IBM Knowledge Center.
- Describe an event category that might be useful for monitoring and tracking workflow activity.

Maintain event logs

View event logs

- Administration Console for Content Platform Engine
 - New Workflow Search
 - Specify Events
 - Specify an event log to search
 - Specify columns to refine your search.
 - View number of events that match search criteria
 - Filter returns
- Process Administrator
 - Specify a specific event log.
 - Example: LoanLog
 - View the number of events in the log.
 - Specify more criteria to refine your search.
 - Search mode (read only, edit) does not apply.
 - Write event logs to a file.

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Figure 3-54. View event logs

F2471.0

Notes:

Help path

IBM Knowledge Center>FileNet P8 Platform 5.2.1>Integrating workflow into document management>Administering work items>About workflow and event searches

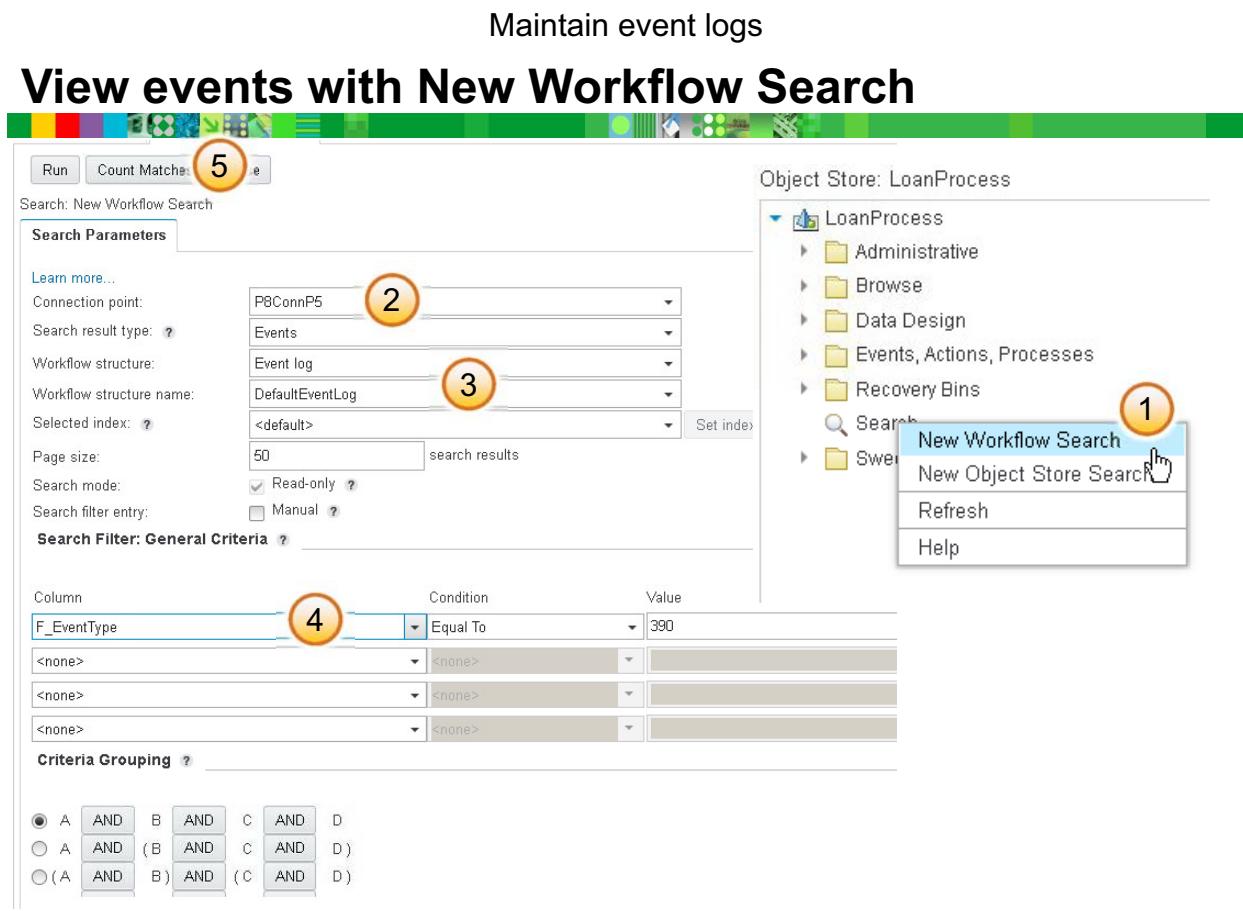


Figure 3-55. View events with New Workflow Search

F2471.0

Notes:

Help path

IBM Knowledge Center>FileNet P8 Platform 5.2.1>Administering>Administering Content Platform Engine>Administering the workflow system>Viewing event logs

You use the same tool to view events as you use for finding work items. In Administration Console for Content Platform Engine:

1. Create a New Workflow Search, by using the Search feature.
2. Specify Events as the Search result type.
3. Specify the Workflow structure name (the event log to query).
4. Specify any conditions to refine your search.
5. Count matches to get a count or Run the search.

Maintain event logs

View events with Process Administrator

- Results pane displays the event logging categories in the F_EventType column.
- If the event log includes exposed fields, a log message record can provide system and custom data field values.

	loan_id	customer...	F_Subject	F_EventType	F_OperationId
1	Loan1	Andy	Maintain Wo...	140 (WOParentCreation)	
2	Loan1	Andy	Maintain Wo...	100 (WOSystemOperation)	
3	Loan1	Andy	Maintain Wo...	100 (WOSystemOperation)	
4	Loan1	Andy	Maintain Wo...	100 (WOSystemOperation)	
5	Loan1	Andy	Maintain Wo...	352 (WPWorkObjectQueued)	
6	Loan1	Andy	Maintain Wo...	500 (WOEmptyStepMsg)	
7	Loan1	Andy	Maintain Wo...	352 (WPWorkObjectQueued)	
8	Loan2	Bob	Maintain Wo...	140 (WOParentCreation)	
9	Loan2	Bob	Maintain Wo...	100 (WOSystemOperation)	20 (While)
10	Loan2	Bob	Maintain Wo...	100 (WOSystemOperation)	20 (While)
11	Loan2	Bob	Maintain Wo...	100 (WOSystemOperation)	4 (Branch)

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Figure 3-56. View events with Process Administrator

F2471.0

Notes:

Help paths

FileNet P8 Platform 5.2.1>Integrating workflow into document management>Administering work items>Events>Viewing event logs

FileNet P8 Platform 5.2.1>Integrating workflow into document management>Process applications concepts>Events>Event logging categories

The screen capture on this page shows sample event information that is displayed in Process Administrator. You can identify event types by their codes:

- 140 (workflow launched)
- 100 (work item end - system operation)
- 352 (Work item is queued)

Maintain event logs

Event log maintenance guidelines



- In a production environment, event logs can grow rapidly.
 - Large event logs can slow system performance.
- Disable unnecessary event log categories.
 - Some event logs are required for Tracker and Case Analyzer.
 - Determine which event categories are required for your application.
 - Meet with workflow authors to determine if they have special event log requirements.
- Prune the event log regularly.
 - Write event logs to a file for archival purposes.
 - Use the PELog tool to prune the event logs.
 - Run PELog when the system is not busy.

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Figure 3-57. Event log maintenance guidelines

F2471.0

Notes:

Maintain event logs

Select event log options

Isolated Region: P8Region5

Event Logging Options

Event logging options determine whether the workflow system generates a message when certain system-level events occur within the isolated region. Each option represents an event category. [Learn more...](#)

System Messages

Work Item Messages	Event logging options	
<input type="checkbox"/> System message ?	<input checked="" type="checkbox"/> Empty / System step completion ?	<input checked="" type="checkbox"/> Termination ?
<input type="checkbox"/> Rules ?	<input type="checkbox"/> Milestones ?	<input checked="" type="checkbox"/> Exception ?
<input checked="" type="checkbox"/> Trace instruction ?	<input checked="" type="checkbox"/> Creation ?	<input checked="" type="checkbox"/> Administration message ?
		<input checked="" type="checkbox"/> Begin operation ?
		<input checked="" type="checkbox"/> End operation ?

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Figure 3-58. Select event log options

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Notes:

Help path

FileNet P8 Platform 5.2.1>Integrating workflow into document management>Process applications concepts>Events>Event logging categories

Review the event logging options, or categories before you decide which to disable. Disabling event logging options can greatly reduce the event log volume. However, some event logs are needed for some applications, such as Tracker and Case Analyzer.

Each event logging option includes several event numbers. Click the question mark next to each option to learn more. For example, the Creation option includes the following event numbers:

130 - VW_WOChildCreationMsg: Records the creation of a "child" work item.

140 - VW_WOParentCreationMsg: Records the creation of a "parent" work item.

550 - VW_CreateWobNumMsg: Records when a unique work object number is reserved for a potential work item before the work item is created. Used for REST API in IBM® Case Manager.

Maintain event logs

PELog



- PELog is a command-line tool that bulk-deletes event log records.
 - Replaces VWlog
 - Prunes obsolete tracker items.
- Usability
 - You can run this tool remotely.
 - You can run this tool by using a Cron job.
- Main parameters
 - Terminated
 - Timeonly
- Other parameters
 - Connection point, -h, -v, -t *event log*, -b, -P, -Y [username+password]

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Figure 3-59. PELog

F2471.0

Notes:

Help path

FileNet P8 Platform 5.2.0>Administering FileNet P8>Administering Content Platform Engine>Defining the workflow system>Administrative tools>PELog

Reference

IBM Support Portal > Using the pelog tool in PE 5.2 technote

Use the PELog tool to prune event log records and tracker work items from the workflow system event logs.

Parameters

Terminated – Prunes event log records of completed workflows and prunes tracker items that are associated with completed workflows.

Timeonly – Prunes all event log records specified by the day range regardless whether the workflows completed or not. It also prunes Tracker items that are associated with completed workflows in the specified day range. To specify event log records to save, indicate the number

of days from the present day to save. When the number of days is specified, pelog calculates the time range by determining the start and end times.

Maintain event logs

Activities



In your Student Exercises

- Unit: Maintain the Workflow System
- Lesson: Maintain event logs
- Activities:
 - View event logs by using Administration Console
 - View event logs by using Process Administrator
 - Disable event categories
 - Prune events

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Figure 3-60. Activities

F2471.0

Notes:

Use your Student Exercises to complete the activities that are listed.

Lesson 3.6. Troubleshoot the workflow system

Lesson

Troubleshoot the workflow system



Why is this lesson important to you?

- You are administering a workflow system. If there is a system failure or a performance problem, you must be able to use the appropriate tools to collect more information about the problem.

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Figure 3-61. Troubleshoot the workflow system

F2471.0

Notes:

Troubleshoot the workflow system

Activities that you need to complete

- Enable fnlog4j
- Enable trace logging
- Enable tracing with vwtool

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Figure 3-62. Activities that you need to complete

F2471.0

Notes:

You are going to complete these activities in this lesson.

Troubleshoot the workflow system

Troubleshooting overview



- Whether you see slow performance, user-complaints, or other types of system errors, you are responsible for finding a solution.
- Sometimes, you can quickly find answers on the internet.
- In other cases, more investigation is needed.
- Tasks:
 - Collect data
 - Review technical resources
 - Contact IBM Support

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Figure 3-63. Troubleshooting overview

F2471.0

Notes:

When a problem arises, it is useful to document the problem and the resolution.

Describe the problem – Provide details about the issue, including what you were trying to do, the behavior that you saw, and any error messages that occurred.

Collect data – Gather data about the problem and about your system, including:

Error logs from the operating system.

Trace logs from Apache java loggers, vwtool tracing.

Technical resources – If others had the same problem that you are seeing, they might have posted the information on a forum, or there might be an official technote. Always investigate these avenues before making a support call. The answers might already be out there.

Contact IBM Support – If you need IBM Support for resolution, be ready with the information that they require to assist you. In most cases, IBM Support requires you to provide log data, which you can collect before you call.

Troubleshoot the workflow system

Support resources



- IBM Electronic support
 - Tools and resources to keep your systems smoothly running.
 - IBM Fix Central: Download fixes and updates
 - IBM Support portal: Find information quickly.
 - IBM Support Assistant: Tools for troubleshooting
- Social Media Channels for ECM Support
 - A community of clients, developers, support personnel
- Enhanced customer data repository
 - Exchange diagnostic data with IBM Support
- IBM developerWorks
 - Tutorials, community, quick answers, development resources
- IBM Redbooks
 - Technical documentation

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Figure 3-64. Support resources

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Notes:

IBM provides many resources for help and support. Be sure to explore each of these options to find solutions.

IBM Electronic support

http://www.ibm.com/support/electronicsupport/?acss=danl_708_web

IBM Fix Central

<http://www-01.ibm.com/support/electronicsupport/download.html#ibm-table-header-1>

IBM Support portal

https://www.ibm.com/support/entry/portal/support?acss=danl_705_web

Social Media Channels for Enterprise Content Management (ECM) Support

http://www.ibm.com/support/docview.wss?uid=swg21673183&acss=danl_705_web

Enhanced customer data repository

<http://www-05.ibm.com/de/support/ecurep/index.html>

IBM developerWorks

<http://www.ibm.com/developerworks/?lnk=msdDS-deve-usen>

IBM Redbooks

<http://www.redbooks.ibm.com/?lnk=msdDS-redb-usen>

Troubleshoot the workflow system

Collecting data

- If you cannot find a solution quickly, you might need more data.
- Collect diagnostic data before you contact IBM Software Support.
- Collect MustGather data before you open a problem management record (PMR).
 - Describing the problem
 - Gathering Operating System Versions, Settings, and Logs
 - Gathering vwtool output
 - Gathering DB version information
 - Gathering Content Engine status
 - Gathering Process Engine status
 - Gathering Logs and Traces
 - Gathering javacores
 - Gathering problem-specific data

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Figure 3-65. Collecting data

F2471.0

Notes:

References

- FileNet P8 Platform 5.2.0>Troubleshooting and support>Troubleshooting Content Platform Engine>Collecting data for Content Platform Engine

MustGather: Read first For IBM FileNet Content Manager 5.2 - Process Engine Component

MustGather: FileNet Content Engine Administrative Console for Content Engine (ACCE)

With this information, Support can determine whether:

Yours is a known problem (rediscovery).

A non-defect problem exists that can be identified and resolved.

Yours is a known defect for which a workaround exists.

A new problem emerged that requires a fix.

Troubleshoot the workflow system

For Process Clients issues: fnlog4j.properties

- Process Clients
 - Applications that use the process client APIs to access the process server.
 - Examples: Process Designer, Process Tracker, Process Administrator
- Examples of Java applet issues:
 - User sees authentication window when starting the applet.
 - Applet hangs with white screen.
 - Applet certification errors.
- Collect information by enabling fnlog4j logging
 - Uses the Apache Log4j logging mechanism, which defines loggers, appenders, and layouts for the logging.

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Figure 3-66. For Process Clients issues: fnlog4j.properties

F2471.0

Notes:

Help path

FileNet P8 Platform 5.2.1>Troubleshooting and support>Troubleshooting Content Platform Engine>Enabling trace logging for process clients

Troubleshoot the workflow system

Fnlog4j concepts

- In the fnlog4j.properties file, you can configure appenders and loggers.
- Loggers
 - Specify the type of information that you want to collect.
 - Specify the log level
 - Log levels: TRACE ,DEBUG, INFO, WARN, ERROR, and FATAL
- Appenders
 - Enable logger data to be written to an output media
 - You can specify the output location.
 - Rolling file appenders log a new file each day.
 - Guideline: Specify only one appender to avoid duplicate log entries.

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Figure 3-67. Fnlog4j concepts

F2471.0

Notes:

Help path

FileNet P8 Platform 5.2.0>Troubleshooting and support>Troubleshooting Content Platform Engine>Enabling trace logging for process clients>fnlog4j.properties loggers

FileNet P8 Platform 5.2.1>Troubleshooting and support>Troubleshooting Content Platform Engine>Enabling trace logging for process clients>fnlog4j.properties appenders

Loggers and appenders are configured in the fnlog4j.properties file.

Loggers specify the type of information that you want to collect. Typically, loggers are named after the class that they report on. You set the log level on each logger that you are interested in. Log levels determine the severity of messages that are logged. The most verbose log level is TRACE, which logs all messages. The INFO level logs INFO, WARN, ERROR, and FATAL.

Appenders specify where the data from the loggers is sent. You can send the data directly to the console screen, or you can send it to a file. In most cases, you are going to send the data to a file, so that you can review the file or send the file to an IBM support technician.

Troubleshoot the workflow system

Enable fnlog4j

- Copy the fnlog4j.properties.sample file to the JRE/lib directory for the application.
- Delete the file extension.
- Configure Loggers and Appenders by editing the file.
 - Locate the loggers that you want to activate
 - Example: `#log4j.logger.filenet.vw.api=DEBUG, TXT`
 - Remove the # to activate the logger.
 - Configure the log level. TRACE is most verbose. FATAL is least.
 - Specify an appender (TXT writes to a text file)
 - Locate the appenders
 - Example: `log4j.appenders.TXT.File=c:\\pe.txt`
 - Configure output file name and location.

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Figure 3-68. Enable fnlog4j

F2471.0

Notes:

Help path

FileNet P8 Platform 5.2.0>Troubleshooting and support>Troubleshooting Content Platform Engine>Enabling trace logging for process clients

The fnlog4j.properties file destination location depends on the application to be monitored:

- For IBM Content Navigator deployed within WebSphere, the JRE/lib location is associated with the WebSphere Java that is being used.
- For process client applets, the JRE/lib location of the plug-in JRE that the browser uses on the client machine.
- For Administration Console for Content Platform Engine and Process Engine Web Services API, the JRE/lib is the one that the application server uses to host Content Platform Engine.
- Other locations are used for components and for custom applications.

You must have a good knowledge of system architecture to correctly select loggers. If you are not sure which loggers to activate, you can activate the root logger, which activates all of them. In many cases, the root logger can identify issues quickly. Though it produces unwanted log entries, the root

logger is the most comprehensive. Use TRACE logging only for a short time until you can reproduce the problem; then search the log files for errors. After you identify which processes are producing errors, you can re-enable a subset of loggers to focus on the issue.

In some instances, you might need to deploy the fnlog4j.properties file on the client PC. The following procedure provides an example. In this example, a user is unable to launch Process Designer.

Deploy fnlog4j.properties file.

1. Copy the fnlog4j.properties.sample from the PE Server

C:\IBM\FileNet\ContentEngine\tools\PE\samples directory to your client PC.

2. On your client PC, place the fnlog4j.properties.sample under the JRE lib folder.

For example: C:\Program Files\Java\jre1.5.0_11\lib

3. Rename the file to fnlog4j.properties.

4. Edit the file by using Notepad.

Specify the logger and appender options.

Specify the output file and location.

Enable java console on the client PC

1. On your client PC, go to Start -> Settings -> Control Panel -> Java

2. In the Java Control Panel window, click the Advanced tab.

3. Under Advanced tab, expand the Settings -> Java Console and enable the "Show Console" option.

4. Click Apply and then OK to close the Java Control Panel Window.

Data Collection

1. Close all IE Browsers on your PC.

2. Clean up / Delete IE Temporary Internet Files (under Tools -> Internet Options -> General Tab)

3. Start a new IE Browser and login to Content Navigator.

4. Try to reproduce the Process Designer issue.

5. Compress the resulting files:

- a. fnlog4j output file (file name and location are specified in the fnlog4j.properties file).

- b. Java console content. For the java console, do a CTRL-A to select the txt, then CTR-C to copy and paste the output to Notepad. Save the file to javaconsole.txt.

Troubleshoot the workflow system

Two trace methods both use log4j

- Configure traceOptions file in the virtual server folder
 - Starts with restart of the Content Platform Engine.
 - Turn off by deleting or renaming traceOptions file and restarting Content Platform Engine.
- Vwtool **trace** command
 - Start and stop tracing without restarting Content Platform Engine.
 - Optionally select trace options from the traceOptions file.
- Default log4j trace file options
 - Trace file size is 200 MB.
 - Three files are created before the first is overwritten.
- Important
 - Turn off tracing when analysis is complete.
 - Monitor to ensure that files are not unintentionally overwritten.

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Figure 3-69. Two trace methods both use log4j

F2471.0

Notes:

Help path

FileNet P8 Platform 5.2.0>Administering FileNet P8>Administering Content Platform Engine>Defining the workflow system>Administrative tools>vwtool>Command quick reference>trace

Vwtool command: **trace**

- Option a - Simultaneously set trace options on all servers.
- Option s - Set trace for local server only.
- Can read tracing options from a file.

When the trace command is run, you are prompted to choose whether to read trace options from the traceOptions file. The ability to read trace options from a file is convenient for support services. Support staff can send a traceOptions file to a customer to collect specific trace data to help resolve support issues.

- TraceOptions file location and name

- The traceOptions.sample file can be found in ..\tools\PE\samples relative to the Content Platform Engine installation directory.
- File name: traceOptions
- Copy the traceOptions file to the user.dir system property:
- Example: C:\Program Files\IBM\WebSphere\AppServer\profiles\AppSrv01\traceOptions
- Trace output file location and names
 - The destination of the trace information is the pesvr_trace.log file. To find the location of this log file, access the Content Platform Engine Startup Context (Ping Page):

Workflow system tracing

Trace options can be configured by reading them from a traceOptions file or they can be entered through the vwtool trace command.

Configure traceOptions file in the virtual server folder

Configure tracing to occur transparently by using this procedure:

1. Log in to the Content Platform Engine server. Any user can create the input parameter files.
2. Copy the sample traceOptions file.
3. Modify the traceOptions file
 - Using a text editor, edit and save the traceOptions file by removing the leading # character for the options you want to activate:
 - Trace output parameters
 - TRACE_BY_LOGFILE
 - TRACE_BY_CONSOLE
 - TRACE_BY_MEMORY

Select only one of the previous options.
 - Trace options
 - TRACE_DBI_MSGS
 - TRACE_DBI_OUT
 - TRACE_TRANSFER

Select any or all of the trace options.
 - Trace log4j default settings


```
# JPETRACEFILE trace file appender
log4j.appender.JPETRACEFILE=org.apache.log4j.RollingFileAppender
log4j.appender.JPETRACEFILE.MaxBackupIndex=3
log4j.appender.JPETRACEFILE.MaxFileSize=200MB
```

(The trace file grows to 200MB, before the appender creates a new file. After three files are created, the previous files are overwritten.)

4. Stop and restart the Content Platform Engine.

Use the vwtool trace command

- The vwtool trace command can be used to activate explicit tracing options through interactive or command-line-provided options. If the vwtool trace command is used to start tracing, be aware that, if the Content Platform Engine is restarted, tracing is reset to the setting that is defined in the traceOptions file.
- The vwtool trace command also provides the option to read the traceOptions file so that preset tracing options can be started with no Content Platform Engine restart.
- The vwtool trace command can also allow tracing to be stopped without restarting the Content Platform Engine. If the vwtool trace command is used to stop tracing, and then Content Platform Engine is restarted, tracing resumes, unless the traceOptions file is edited to disable tracing.

Default log4j trace file options

- The default configuration for the traceOptions file is to append trace events to the trace file until the defined maximum size of 200 MB is reached before starting to fill a new file. This cycle repeats two more times before the trace action rolls over and starts overwriting the first file.

Important

- Turn off tracing when analysis is complete.

If trace options are left active after debugging is complete, serious performance degradation can occur on the system. The more trace options that were activated, the worse the degradation. Use one of these methods to disable tracing:

- Turn off trace options in the traceOptions file
 - Delete the traceOptions file, and then stopping the tracing using the vwtool trace command
 - Stop and restart the Content Platform Engine.
- Monitor tracing to ensure that files are not unintentionally overwritten.

While tracing is active, monitor the trace output files to make sure that they are not growing too rapidly, which might result in rollover and loss of trace data.

Troubleshoot the workflow system

vwtool trace log options

New trace status on server ECMEDU01/server1	
1.	Instr. Sheet Interpreter
2.	Log Manager
3.	Database access
4.	Database outputs
5.	Database transactions
6.	Object Svc RPCs
7.	Component Manager
8.	Email notification
9.	Exceptions
10.	Security calls
11.	Workflow termination
12.	Transfer
13.	J2EE
14.	Step Processor
15.	Rules
16.	Envcache access
17.	XML Parser
18.	Web Services
19.	API RPC
20.	API RPC Input
21.	API RPC Output
22.	API RPC Timing
23.	API RPC Stack
24.	Asynchronous RPC
25.	Asynchronous tools
26.	Farming
27.	Stored Procedure Calls
28.	Expression Parsing
29.	RDB Objects
30.	Application Space
31.	RDB Time
32.	Archiver
33.	Uptime
34.	Heartbeat
35.	Case Analyzer Publishing
36.	Case Analyzer Collection
37.	Case Analyzer Database
38.	Case Analyzer RPC
39.	Case Analyzer Upgrade
40.	Case Analyzer OLAP
41.	Case History Publishing
42.	Case History Collect
43.	Case History Database
44.	Case History RPC
45.	Case History Performance
46.	Case History Upgrade
47.	Event Exporter
48.	Case Synchronization
49.	Dynamic Task
50.	Business Object Update
51.	Debug

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Figure 3-70. vwtool trace log options

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Notes:

When you run the vwtool trace command, you can select the trace options that you want to enable. You select them by the numbers, which are listed in the command window. For example, to enable Archiver logging, you toggle option number 32. To toggle multiple options, you separate each number by a space. After you toggle the option, logging is started. The active logging options are displayed with two asterisks (**).

Selecting logging options

The problem that you are troubleshooting determines which logging options to select. Sometimes, you must enable a combination of tracing options.

Examples

- For a general exception, enable option 9 (Exceptions).
- For work items that fail to move from step to step, enable option 1 (Inst. Sheet Interpreter).
- For Component Manager, enable option 7 (Component Manager).
- For DBexecute, enable option 27 (Stored Procedure Calls).
- For workflow transfer issues, enable option 12 (Transfer).

- For security-related issues, enable option 10 (Security calls).
- For user-caching issues, enable option 16 (Envcache access).
- For any database-related issue, you can enable options 3, 4, 5.

Troubleshoot the workflow system

Activities

In your Student Exercises

- Unit: Maintain the Workflow System
- Lesson: Troubleshoot the workflow system
- Activities:
 - Enable fnlog4j
 - Enable trace logging
 - Enable tracing with vwtool

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Figure 3-71. Activities

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Notes:

Use your Student Exercises to complete the activities that are listed.

Maintain the Workflow System

Unit summary



Having completed this unit, you should be able to:

- Identify the Workflow system admin tools and their uses.
- For a scenario, identify the tool that you can use to resolve the problem.
- Use the Process Services Ping page to check component queues.
- Monitor Processes with System Dashboard.
- Monitor processes with vwtool.
- View event logs.
- Maintain event log tables in an isolated region.
- Configure and use system logs to troubleshoot the system.

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Figure 3-72. Unit summary

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Notes:

Unit 4. IBM Case Foundation: 5.2.1: Manage Work in Progress

What this unit is about

This unit describes how to search for work and use advanced searches. This unit also describes how to modify, process, and manage work, and to manage workflow exceptions.

What you should be able to do

After completing this unit, you should be able to:

- Use Case Foundation tools to search for work with basic and advanced search criteria.
- Modify work items.
- Process and manage work.
- Manage a workflow exception.

How you will check your progress

- Successfully complete the lesson exercises.

References

IBM Knowledge Center:

<http://www.ibm.com/support/knowledgecenter/SSNW2F/welcome>

Manage Work in Progress

Unit lessons

This unit contains these lessons:

- Search for work
- Modify work
- Process and manage work
- Manage workflow exceptions

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Figure 4-1. Unit lessons

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Notes:

Lessons in this unit

This unit has four lessons. After the first lesson, each lesson relies on information and skills taught in the prior lessons. For best results, do these lessons in the sequence presented.

Search for work – In this lesson, you use Process Administrator to search for work with basic and advanced search criteria.

Modify work – In this lesson, you use Process Administrator to modify work items.

Process and manage work – In this lesson, you use Process Administrator to process and manage work.

Manage workflow exceptions – In this lesson, you use Process Administrator to manage a workflow exception.

Lesson 4.1. Search for work

Lesson

Search for work



Why is this lesson important to you?

- A workflow participant tries to locate a work item in a public queue, but cannot find it. The user calls you, the workflow system administrator, for help. You need to search for work in progress.
- ABC Bank received many loan applications. As the workflow administrator, you need to search for workflows and work items with certain loan IDs to resolve issues with those items.

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Figure 4-2. Search for work

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Notes:

Search for work

Activities that you need to complete

- System Start
- Activity Preparation
- Search for work

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Figure 4-3. Activities that you need to complete

F2471.0

Notes:

In this lesson, you complete these activities.

Search for work

Process Administrator



- You can search for the following objects:
 - Workflows, work items, and events.
- You can perform the following operations:
 - Modify field values, workflow groups, and trackers.
 - Complete work.
 - Delete workflows or work items.
 - Unlock work.
 - Assign or reassign work to users.
 - Open a work item or workflow in Process Tracker
- Access is controlled through Administration Console.
 - User must be a member of the Administrator role.
 - User must have security access rights to the queues and rosters.
 - To assign attachments, user must have access to the object store and documents.

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Figure 4-4. Process Administrator

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Notes:

Help path

FileNet P8 Platform 5.2.0>Integrating workflow into document management>Administering work items>Getting started>Security issues for Process Administrator functionality

Administration Console for Content Platform Engine does not currently provide all of the functionality that is found in Process Administrator. This unit focuses on using Process Administrator for searching and managing workflows.

Access to Process Administrator is controlled through the workflow administrator group. To search queues and rosters, the user must have security access rights to the queues and rosters in the isolated region that is being searched. To assign attachments, the user must have access rights to view the specified object store and documents. You must log on as a member of the workflow system administrator group to modify items in an active workflow.

Process Administrator does not update work items in a queue to which you do not have access rights. For example, if you attempt to delete an expense reimbursement workflow that has one work item in the WriteChecks work queue and you do not have access rights to WriteChecks, Process Administrator deletes all work items for the workflow except that one.

Access to Process Administrator

As a workflow administrator, you need access to Process Administrator, to an object store, and to workflow rosters and queues. Security access rights to region objects affect the search results displayed in Process Administrator. This limitation applies to all search target types.

Example

If you have access rights to the workflow roster but not to the queue, expect the following results:

- In Edit mode, Process Administrator does not display the work item.
- In Read only mode, Process Administrator displays the work item.

Access to workflow rosters and queues

The access rights for a workflow roster or queue control the actions of viewing, opening, and modifying work items. The workflow administrator user must have access rights to the queue or roster to be able to see items.

Access to an object store

To assign a document or other object in an object store to an attachment, you must have security access to view the document or file in the object store.

Search mode option does not apply to searches for events. Search for workflow events is described in another unit.

Search for work

Search options



- Search Count
 - Returns an approximate count of objects that meet search criteria.
 - Is a fast operation.
 - Is useful for fine-tuning search parameters.
 - Use Search Count before you search in a high-volume environment.
- *Read only (exposed fields)* mode searches
 - Only exposed system and data fields are displayed.
 - Work cannot be edited.
 - Quicker than the same searches in Edit mode.
- *Edit (all fields)* mode searches
 - Display all workflow data fields.
 - Allow editing of data fields individually or globally.
 - Are resource-intensive and slower than Read only mode.

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Figure 4-5. Search options

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Notes:

Help path

FileNet P8 Platform 5.2.1>Integrating workflow into document management>Administering work items>About workflow and event searches>Counting or searching for workflows

Search Count function

This option returns an approximate count of the objects that meet defined search criteria. This operation is fast and uses the RDBMS layer to give an estimate of how many objects the criteria are likely to return. The Search Count function is useful for fine-tuning search parameters, but might not return the exact number of objects that meet the search criteria. To view the entries that match the specified criteria, click Find Now.

In a high-volume, production environment, a good practice is to use the Search Count option before you run a generalized search (especially in Edit mode). If Search Count reveals that your search is going to return too many items to be useful, refine the search criteria before you run the search.

Search modes

There are two search modes: Read only and Edit. These modes enable and disable different options. In Read only mode, work cannot be modified and only some data displays can be modified.

Read only mode searches run more quickly than the same searches done in Edit mode. Edit mode searches expose all information in the item that can be modified, but takes longer to retrieve the data.

Edit mode gives you more information about the returned items and the ability to edit them.



Search for work

Viewing workflows and work items

- When searching for workflows:
 - Process Administrator displays only the root work item.
 - Root work item is the first work item that is created for the workflow.
- To see the current values of each work item:
 - Search for work items instead of workflows.
- The root work item can complete before other work items that belong to the same workflow.
 - The workflow is no longer displayed in the workflow view.
 - Remaining work items for the workflow are displayed in the work item view.

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Figure 4-6. Viewing workflows and work items

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Notes:

Help paths

FileNet P8 Platform 5.2.1>Integrating workflow into document management>Administering work items>About workflow and event searches>About workflows vs. work items

FileNet P8 Platform 5.2.1>Integrating workflow into document management>Process applications concepts>Design and run workflows>System fields definitions

Each work item is assigned a unique identifier by the system and this value is contained in the F_WobNum system field for an item. The system field F_WorkFlowNumber for a work item contains the F_WobNum of the work item that initiated the workflow, also known as the root work item. In Process Administrator, you can view the value of these system fields for work items.



Search for work

View and customize search results

- Results pane displays information from a search.
- Each row represents a workflow, work item, or event from the event log.
- Each column represents a data field or system field in the workflow, work item, or event that is retrieved.
- After search results are retrieved, you can customize the columns (fields) that are displayed.
 - You can show, hide, and rearrange results columns.
- Results are returned in sets.
 - Set size is configured in the “Max returned per set” field.
 - Click the Next Set of Results button to get the next set of matches.
 - Smaller set sizes save retrieval time for the set that is returned, but multiple sets might have to be returned before the item is found.

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Figure 4-7. View and customize search results

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Notes:

Help paths

FileNet P8 Platform 5.2.0>Integrating workflow into document management>Administering work items>About workflow and event searches>About search results

FileNet P8 Platform 5.2.0>Integrating workflow into document management>Administering work items>About workflow and event searches>Showing, hiding, and rearranging the results columns

FileNet P8 Platform 5.2.0>Integrating workflow into document management>Administering work items>About workflow and event searches>Viewing the next set of results

Results pane

Depending on the options that you selected for your search, Process Administrator returns the results in a table. Each row represents a workflow, work item, or event.

- If you searched for workflows, each row corresponds to one workflow.
- If you searched for work items, each row corresponds to one work item.

Search results are displayed in tabular form in the results pane. Initial results are displayed according to the settings in the Search Pane Results Options tab. The results display can be changed in the results pane and persists until changed or until the next search is run.

Not all fields are common to every row because each work item can contain different user-defined data fields. A field that does not apply to the row has dashes (-----) in the field.

The columns that are displayed in the results pane depend upon which search mode is selected: Edit mode or Read only mode.

Results sets

You can set the number of items to return in a set. To change the number of rows that are retrieved in each set, increase or decrease the “Maximum returned per set” value. This value determines the number of workflows or work items to be retrieved at a time. You can increase this number to take better advantage of the ability to update multiple rows at a time. However, the higher you set the number, the longer the search takes to complete.

Results Options tab

You can select and order which workflow or work item fields are displayed in the results pane. More fields are available in Edit mode than in Read only mode.

Use the Results Options tab before running your search to customize display of search results. Select the columns that you want to see in the results pane. Choose from a list of available columns and order the columns as needed.

You add and remove items from the list. The Available columns list includes all exposed system and data fields. The Selected columns list indicates columns that are selected for display.

Search for work

Ways to refine a search for work

- Enter filter conditions when searching for work.
 - Locate and view information on specific items.
 - Determine the order of results that are displayed by using an index.
 - Especially useful for high-volume systems.
- Limit search to specified users
 - Available only for Inbox and Tracker user queues.
- Set results options
 - Limit the columns that are displayed in the results pane so that finding the item that you want in the search results is easier.

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Figure 4-8. Ways to refine a search for work

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Notes:

Help paths

FileNet P8 Platform 5.2.1>Integrating workflow into document management>Administering work items>About workflow and event searches>Search examples for Process Administrator

Search for work

Use exposed fields in searches

- What are Exposed fields?
 - System and data fields in a roster, queue, or event log.
 - Made available for searches and sorting.
 - Specified in a roster, queue, or event log.
 - User-defined or data fields.
- You use exposed fields in a search filter or when defining an index
- The workflow system uses exposed fields when logging information to the event log

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Figure 4-9. Use exposed fields in searches

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Notes:

Help paths

FileNet P8 Platform 5.2.0>Integrating workflow into document management>Process applications concepts>Design and run workflows>About workflow fields

FileNet P8 Platform 5.2.1>Integrating workflow into document management>Configuring the workflow system>Getting started with Process Configuration Console>Queue, roster, and event log properties>Managing indexes

FileNet P8 Platform 5.2.0>Integrating workflow into document management>Process applications concepts>Design and run workflows>About workflow fields>Choosing from a list of exposed user-defined data fields

- Exposing a field makes it available for use in a search filter, when defining an index, and when logging information to the *event log*. Adding a field to the list of exposed fields does not create the field in a workflow definition. The workflow author does that. Removing a field from the list of exposed fields does not delete the field, but makes the field unavailable for searching.
- Important: Exposing workflow fields adds to the required space and processor usage.

- In Process Configuration Console, you create an exposed field on the Data Fields tab in the Properties dialog for the roster, queue, or event log.
- In Administration Console for Content Platform Engine, you create an exposed field from the User Fields or System Fields tabs of the region object (event log, queue, or roster).

Search for work

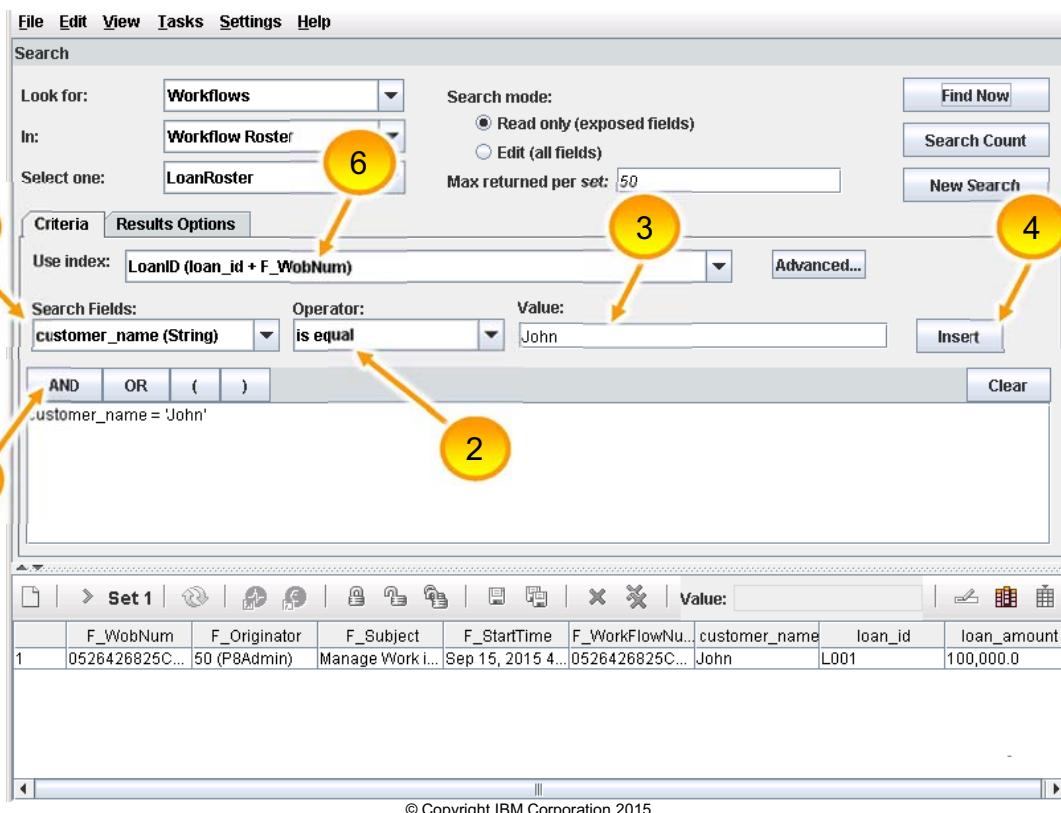
Use the Criteria tab to filter a search

Figure 4-10. Use the Criteria tab to filter a search

F2471.0

Notes:**Help path**

FileNet P8 Platform 5.2.1>Integrating workflow into document management>Administering work items>About workflow and event searches>Specify advanced criteria

Build search criteria expression on the Criteria tab.

- a. Select search field from list of exposed fields.
- b. Select operator.
- c. Enter value.
- d. Click Insert.
- e. Add more criteria
- f. Optionally, select an index to further limit the results and determine the display order.

Criteria tab

Use the Criteria tab in Process Administrator to build search criteria expressions. Enter search criteria by using a valid SQL expression, or use the expression builder to help create searches that use defined fields and functions.

Select a defined index to order the search. This option is available only if an index is defined for the selected object.

You can click Advanced to further restrict the search results by entering minimum and maximum values for the indexed fields.

Search Fields

Select system and data fields that are exposed for the workflow roster, queue, or event log.

Operator

Select the operator to use on the other parts of the expression. Some operators have different meanings based on the data types.

Value

A value can contain a single variable or literal, or a complex combination of variables, literals, operators, or functions. Enter the value or expression that you want to compare to the Search Field that you selected. See IBM Knowledge Center for differences between Oracle and SQL in handling search strings.

Editing field

Build the expression for the search criteria in the editing field by using the following buttons:

- Insert
- AND
- OR
- (
-)

Alternatively, you can type an expression directly in the editing field.

Index

Select from a list of predefined indexes. If an index is used, the search results are ordered according to the indexed property values. If you select an index, you can click Advanced to further restrict the search results by entering minimum and maximum values for the indexed fields.

Determining the integer ID of a user or workflow group

You might need to search for a particular user or workflow group that is associated with a work item. The value of a workflow group search must be an integer. You must determine the number that the workflow system uses to identify that user or group. You can use the environment command in vwtool to display the ID for the user or workflow group.

Search for work

Search user queues

- Limit a search to one or more users in the Users tab.
 - Available only for user queues: Inbox and Tracker.
- Default search returns all users, if no users are specified.

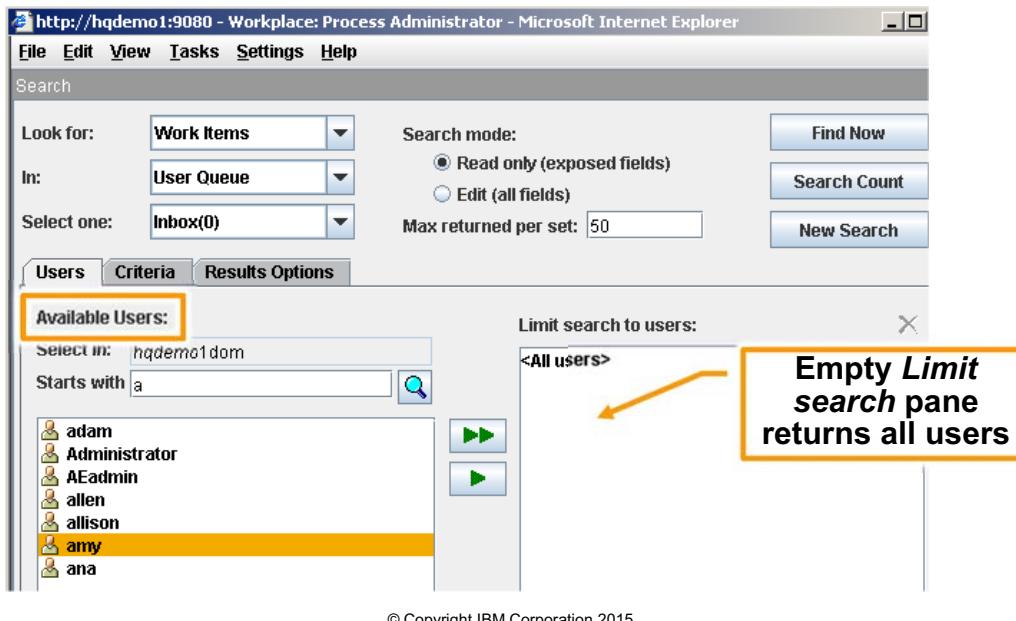


Figure 4-11. Search user queues

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Notes:

Help pathzzz

FileNet P8 Platform 5.2.1>Integrating workflow into document management>Administering work items>About workflow and event searches>Searching for work assigned to specific users

An additional Criteria tab called the Users tab, is available with the Inbox and Tracker queues. Use this tab to make searching for work by user easier.

This screen capture shows that the group of available users is being searched for by the first letter of the user name, and that the selected name is going to be moved into the column, Limit search to users. If the *Limit search to users* column does not list specific users, all users are searched for.

The Users tab limits the search to work belonging to selected users. By default, work belonging to all users is searched if no users are selected and moved to the *Limit search to users* list.

You select users from the list of available users and move them to the list of selected users using the arrow buttons.

Search for work

View workflow history in Process Tracker

- Locate a work item and view workflow history in Process Tracker.
 - Select a work item and click the Open Tracker button.
 - View its process maps and identify the current step in the process.

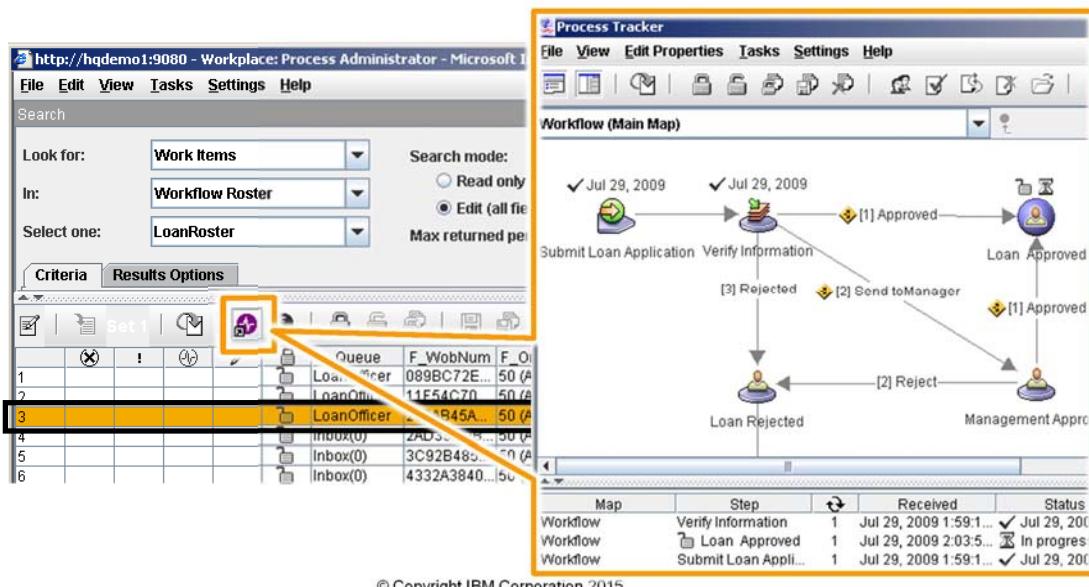


Figure 4-12. View workflow history in Process Tracker

F2471.0

Notes:

Help path

FileNet P8 Platform 5.2.1>Integrating workflow into document management>Administering work items>About managing workflows>Opening work

Process Tracker is often used in combination with Process Administrator to obtain information about a work item. After you have searched for and located a work item or workflow, you can view more information about the work item or workflow using Process Tracker.

As shown in the screen capture, you select the item in the results pane and click the Open Tracker button on the results pane toolbar. A Process Tracker window opens and displays the selected tracker item.

In Process Tracker, you can view workflow history and information about steps and milestones.

From Process Tracker you can complete work, reassign work, open work in a step processor, and terminate work at a step. Methods for modifying and managing work are explained in a later lesson.

Search for work

Demonstrations



- Configure how search results are displayed in Process Administrator.

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Figure 4-13. Demonstrations

F2471.0

Notes:

Demonstration notes:

This demonstration can be performed only after some workflows have been launched (but not completed). This demonstration requires the Activities preparation activity in the Student Exercises guide for this lesson to have been completed.

Configure how search results are displayed

1. Sign in to ACCE as p8admin and start Process Administrator on LoanProcess object store.
2. Create an Edit mode search for workflows in the workflow roster named LoanRoster.
3. Set the number of search items returned per set to 20.
4. Click Find Now to execute the search.
5. In the search results pane, scroll to the right and confirm that, because the Edit search mode was used, more workflow data fields are displayed than with a Read-only mode search.
6. Click the Show/Hide Columns button in the results pane toolbar to open the Column Selection window.

7. Click the red, double left arrow button between the two lists to move all of the property names from the Selected Columns list to the Available Columns list.
8. Configure the Selected Columns list to include only the following data fields, and arrange the items in the order listed.
 - customer_name
 - loan_amount
 - Interest_rate
 - loan_term
 - F_StepName
9. Examine the search results and confirm that only the selected columns are displayed, and are arranged in the order specified.

Search for work

Activities



In your Student Exercises

- Unit: Manage Work in Progress
- Lesson: Search for work
- Activities:
 - System Start
 - Activity Preparation
 - Search for work

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Figure 4-14. Activities

F2471.0

Notes:

Use your Student Exercises to perform the activities listed.

Lesson 4.2. Modify work

Lesson

Modify work



Why is this lesson important to you?

- A customer submitted a loan application and the loan is being processed. He wants to change the loan amount in his application. As the workflow administrator, you need to search for this work item and change the value of the loan amount.

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Figure 4-15. Modify work

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Notes:

Modify work

Activities that you need to complete

- Modify work items.

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Figure 4-16. Activities that you need to complete

F2471.0

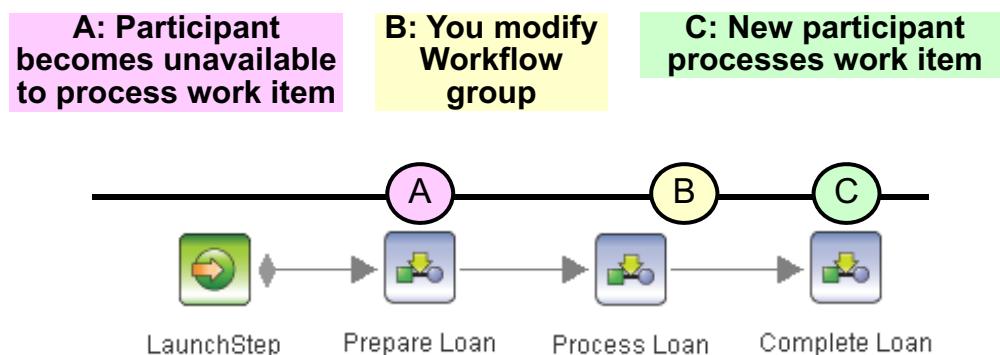
Notes:

These are the activities that you are going to perform in this lesson.

Modify work

Reasons to modify work

- To ensure that work is processed according to business requirements.
- To accommodate situations in the work environment:
 - Unavailable users.
 - User errors.
 - Changing attachment links.
- Example



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Figure 4-17. Reasons to modify work

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Notes:

The diagram on this page shows an example workflow map, which illustrates a business context for modifying work. The context is that a participant becomes unavailable, you add a new member to a workflow group before a work item proceeds to another step, and then the new participant processes the work item.


 Modify work

Tools for modifying work

- This table identifies the tools that are used to do each modification task.
 - And identifies the work objects that are modified in each task with each tool.

To do this task:	Use this tool:	
	Process Administrator	Process Tracker
Lock work	Workflow, work item	Workflow, work item
Modify simple data types	Workflow, work item	Workflow, work item
Modify workflow groups	Workflow, work item	Workflow, work item
View workflow history	—	Workflow, work item
Edit attachment reference	—	Work item

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Figure 4-18. Tools for modifying work

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Notes:

A workflow administrator uses the Process Administrator and Process Tracker tools to modify workflow elements. As this table shows, both tools allow you to lock work, modify simple data types, and modify workflow groups. Process Tracker also allows you to view workflow history and edit attachment references for a work item.

The task menu in each tool makes available the tasks that are applicable for workflows and work items.

Process Administrator does allow a view of a workflow or work item history by viewing event logs. However, this representation of historical information is not as easily viewable as the information that is displayed in the Process Tracker. Typically, an administrator uses Process Tracker to view workflow or work item history.

Modify work

Work item status

- Symbols indicate status of a work item.
 - An hourglass indicates an Active (in progress) step.
 - A check mark indicates a completed step.
 - An unvisited step has no special symbol.
- Work item status affects the ability to edit work items.
- Example from Process Tracker:



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Figure 4-19. Work item status

F2471.0

Notes:**Help paths**

FileNet P8 Platform 5.2.1>Integrating workflow into document management>Tracking work in progress>How Process Tracker is organized

The diagram is an example of the status of the steps in a workflow as shown in Process Tracker. The first two steps have a check mark that indicates completion of these steps. The third step has an hourglass symbol to indicate the step is currently in progress.

Refer to the IBM FileNet P8 Information Center reference to familiarize yourself with the other symbols used in Process Tracker.

Multiparticipant steps can have a combination of active and completed work items.

Because a step can be visited more than one time, a step can have one or more occurrences that are complete as well as an active occurrence. Process Administrator and Process Tracker treat these steps as active steps.

The status of a workflow step affects the ability to edit work items:

- **Active** status means that one or more work items associated with the step are in progress. You can modify fields, attachments, and workflow groups. You can complete or delete work for items not locked by other users.
- **Completed** status means that all work items for the step are completed. Historical information is available in event logs. Step properties cannot be modified.
- An **unvisited** step means that the step has never been reached in the course of the current workflow. Only workflow definition properties are displayed at unvisited steps. Step properties cannot be modified.

Modify work

Locking work

- You must lock an item before you can edit it.
 - Lock an item to prevent other users from processing the item while you are modifying it.
- You can explicitly lock a work item.
 - Or Process Administrator prompts you to lock (or unlock).
- Administrator with appropriate privileges can override a lock.
 - Example: [Unlock work that is locked due to a client failure or other system error.](#)
- Do not lock a work item in the following system queues:
 - Delay.
 - InstructionSheetInterpreter.
 - WSRequest.

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Figure 4-20. Locking work

F2471.0

Notes:

Help path

FileNet P8 Platform 5.2.1>Integrating workflow into document management>Tracking work in progress>About editing a workflow>Locking work items

Work items must be locked before you can modify them. You can request a lock at any time, or Process Administrator prompts you to do so when necessary. When you lock a work item, it remains locked until you explicitly unlock it.

When you request a lock on a workflow, Process Administrator must lock all of the work items that are associated with the workflow. In a complex workflow, multiple work items might be active simultaneously for a given workflow.

If one or more of the work items in a workflow have already been locked by the system or by another user, a participant cannot make modifications to work items in that locked workflow. They must wait until it becomes available.

Do not lock an item in the Delay, InstructionSheetInterpreter, or WSRequest system queues. The system controls these queues. If you lock an item in the Delay queue for example, the item might time out and generate an error.

Modify work

About workflow properties

- Workflow properties that can be modified:
 - Simple data types.
 - Arrays of simple data types.
 - Attachments.
 - Arrays of attachments.
 - Workflow groups.
- Examples
 - Simple data types:
 - customer_name, loan_amount
 - Attachments:
 - loan_document
 - Workflow groups:
 - LoanManagers

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Figure 4-21. About workflow properties

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Notes:

Help path

FileNet P8 Platform 5.2.1>Integrating workflow into document management>Designing workflows>Define workflow properties

Modify work

Modify data field values



- To modify workflow field values:
 - Use Process Administrator to find the work items.
- For simple data types:
 - You can edit field values directly within Process Administrator.
- To edit array data types:
 - Use the Edit Field Values window.
- Most system fields are read-only and you cannot edit them.

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Figure 4-22. Modify data field values

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Notes:

Help path

FileNet P8 Platform 5.2.1>Administering>Administering Content Platform Engine>Administering the workflow system>Editing work items

An array data type is a series of objects, all of which are the same size and type.

Loan application example: bank_statements is an array of attachments data type.

Modify work

Modify workflow groups

- To add or remove users from a workflow group:
 - Use Process Administrator.
 - Tasks > Workflow Groups
- Users that make up the workflow group:
 - Can differ from one work item to another within the selected workflow.
- Users that are not common to all work items are not editable.
- Changes that are made to workflow groups at the workflow level:
 - Affect all work items that are contained in the workflow.

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Figure 4-23. Modify workflow groups

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Notes:

Help path

FileNet P8 Platform 5.2.1>Integrating workflow into document management>Administering work items>About managing workflows>Managing workflow groups

The “Workflow groups” list contains all workflow groups found in the selected work items. This listing does not mean that each workflow group in the list occurs in every work item.

The Selected Users pane lists all of the users assigned to the workflow group that you have selected. Users that are common to all work items containing the workflow group are displayed in normal print. Users that are not common to all work items are not available for selection and are displayed as gray.

Modify work

Open workflow or work item in Process Tracker

- From the Process Administrator search results pane:
 - You can open a workflow or work item to view or modify it.
- In Process Tracker you can view:
 - A graphical representation of the workflow main map and submaps.
 - Workflow properties.
 - Historical information from the event logs.
- You can modify attachments only in Process Tracker.

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Figure 4-24. Open workflow or work item in Process Tracker

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Notes:

When you open an item in Process Tracker, you can see the following elements:

Workflow main map – You can see a graphical representation of the workflow definition that a workflow author created in Process Designer for this item. The graphical representation shows the steps and routes defined for the workflow. The map also shows the current status of the workflow steps that are in progress, steps that have not been visited, and steps that are locked.

Submaps – In addition to the workflow main map, you can view its submaps. A workflow definition can contain one or more submaps. A submap is a call from one workflow map to another map in the same workflow definition. When the running workflow reaches the submap step, the steps on the called submap are processed beginning at the StartStep. At the end of processing for the submap, control returns to the calling submap step where routing conditions determine how the work advances.

Properties pane – This area shows the details of the selected item, which can be a workflow, step, or route.

History pane – This area lists the actions that have occurred for the workflow or for selected steps. Actions are displayed in a tabular format. You can double-click an item on the Milestones, Workflow History, or Work Items tabs to display the map and step.

Modify work

Modify an attachment reference

- An attachment is a reference to an external object (target).
- Each workflow definition specifies attachments and indicates steps at which each attachment is used.
- In Process Tracker, you can:
 - Assign or unassign a target to an attachment at an active step.
 - View attachment properties and security.
- You must have security access to the target in the object store.

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Figure 4-25. Modify an attachment reference

F2471.0

Notes:

Help path

FileNet P8 Platform 5.2.1>Integrating workflow into document management>Process applications concepts>Design and run workflows>Attachments

An attachment is a reference to an external object (target) used by participants to help complete a step in a workflow.

The most common target is a document stored in one of the following locations:

- Content Platform Engine object store
- Image Services (IS) library
- IBM CM8 system
- Fixed-content device

The following are examples of attachments from the Loan Application:

- bank_statements
- loan_document

In order to modify an attachment in Process Tracker, you must have security access that allows you to view the target in the object store or library for any action other than to unassign the target.

Modify work

Considerations for modifying work



- Edit workflows during times of low system activity.
- When modifying a workflow, the changes apply to all work items that make up that workflow.
 - For workflows with many work items, you might not be able to lock all of the work items without conflict.

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Figure 4-26. Considerations for modifying work

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Notes:

Help path

FileNet P8 Platform 5.2.1>Integrating workflow into document management>Administering work items>About workflow and event searches>About workflows vs. work items

Modifying a workflow versus a work item

You can modify a workflow or a work item. When you modify a workflow, Process Administrator applies the changes that you make to all of the work items that make up the workflow. These wholesale changes can be an advantage when you want to make a single change to an entire workflow, but can be a disadvantage when you are working with workflows that have many participants and therefore many work items. As the number of work items increases, the likelihood of being able to lock all of the work items without conflict decreases.

Modify work

Demonstrations

- Modify single and multiple work items.

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Figure 4-27. Demonstrations

F2471.0

Notes:

Demonstration notes:

This demonstration can be performed only after some workflows have been launched (but not completed). This demonstration requires prior completion of the Activities preparation activity for the first lesson in the Student Exercises.

Modify single and multiple work items

1. Sign in to Administration Console as p8admin and start Process Administrator.
2. Create and execute an Edit mode search for work items in the workflow roster LoanRoster that have the value "L005" for the loan_id field.
3. Lock the returned work item and select the loan_amount field.
4. Click the Edit Field Values button and change the value to 400,000.0.
5. Confirm that the loan_amount value in the search results pane has changed.
6. Click the Save Selected Changes button, and then unlock the work item.

7. Sign in to another instance of Workflow Author Desktop as the user mary and verify that the work item in her inbox for loan_id L005 has the new loan_amount value.
8. Create and execute an Edit mode search for work items in the work queue LoanOfficer.
9. Confirm that none of the work items has an Interest_rate value of 4.0.
10. Select the Interest_rate column for all the rows and lock the work items.
11. Click the Edit Field Values button and change the value to 4.0.
12. Confirm that the Interest_rate value in the search results pane has changed.
13. Click the Save Selected Changes button, and then unlock the work items.
14. Sign in to another instance of Workflow Author Desktop as the user Olivia using Internet Explorer.
15. Go to Tasks > Public Inboxes > LoanOfficer and open any of the work items.
16. Confirm that the value in the Interest_rate field has the value that you entered in Process Administrator.

Modify work

Activities

In your Student Exercises

- Unit: Manage Work in Progress
- Lesson: Modify work
- Activities:
 - Modify work items

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Figure 4-28. Activities

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Notes:

Use your Student Exercises to perform the activities listed.

Lesson 4.3. Process and manage work

Lesson

Process and manage work



Why is this lesson important to you?

- A work item is waiting for some missing information. As the workflow administrator, you need to add the information and complete the workflow.
- An employee is out sick. As the workflow administrator, you need to reassign all work items in this employee's Inbox to another employee.

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Figure 4-29. Process and manage work

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Notes:

Process and manage work

Activities that you need to complete

- Use Process Administrator to process and manage work.

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Figure 4-30. Activities that you need to complete

F2471.0

Notes:

These are the activities that you are going to perform in this lesson.

Process and manage work

Tools for processing and managing work



To do this task:	Use this tool:	
	Process Administrator	Process Tracker
Complete work	Work item	Work item
Unlock work	Work item	—
Reassign work	Workflow, work item	Work item
Delete work	Workflow, work item	—
Terminate work	Workflow, work item	Work item
Change user availability status or select substitute	Workflow, work item	—
Add or remove trackers	Workflow	Workflow

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Figure 4-31. Tools for processing and managing work

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Notes:

This table identifies the tools that a workflow administrator uses to do management tasks on particular workflow elements (workflow only, work item only, both workflow and work item, or neither).

A Process Tracker user can also delete tracker items from his Tracker Inbox.

Process and manage work

Ways to complete work items

- From Process Administrator, open the work item in the associated step processor.
 - Perform all the actions required to complete the step.
- From Process Administrator, select the work item and use the Complete Work window.
 - Enter responses and comments.
 - You can complete multiple items at one time.
- From Process Tracker
 - Use the Open Work Item window to open a work item in its associated step processor.

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Figure 4-32. Ways to complete work items

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Notes:

Help path

FileNet P8 Platform 5.2.1>Administering>Administering Content Platform Engine>Administering the workflow system>Controlling work item processing>Finishing work items>Completing work items

During normal processing, work items are locked, modified, and dispatched to the next step. Sometimes, an administrator must complete a work item.

To complete one or more work items from Process Administrator, select the compatible work items, and then click Tasks > Complete Work. Then select the work items in the Selected work pane and perform the actions necessary to complete the work item. If the selected items require responses, the items must be from the same workflow and at the same step. If the work items are at different steps, then you must complete each work item individually.

Process and manage work

Assign or reassign work to participants



- With Process Administrator or Tracker:
 - Assign a work item from a work queue to another user or workflow group.
 - Reassign a work item from one participant to another.
 - Return a work item to the work queue or participant from which it came.
 - Designate how reassigned work is approved.
- Important:
 - Do not assign or reassign work items in any system queue.

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Figure 4-33. Assign or reassign work to participants

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Notes:

Help path

FileNet P8 Platform 5.2.1>Integrating workflow into document management>Administering work items>About managing workflows>Assigning or reassign work

If the *Have the currently assigned participant approve the work* check box is cleared, the work proceeds to the next step after the new participant completes the work. If the check box is selected, the work returns to the original participant's Inbox for review and completion before continuing to the next step. This option is not applicable to work in work queues.

If a user was assigned as a member of a workflow group by mistake, you can remove the invalid user and assign a valid user to the group.

Process and manage work

Terminate work

- When work cannot be completed as expected, do one of the following tasks:
 - Use Process Administrator to terminate workflows and work items.
 - Or, use Process Tracker to terminate a work item.
- Terminating work calls the Terminate system map.
 - Steps on that map are processed.
 - The work item is removed from the system.
- Terminating a workflow versus terminating a work item
 - Terminating a workflow terminates all work items for the workflow.
 - Terminating a work item does not affect other work items in the workflow.

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Figure 4-34. Terminate work

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Notes:

Help paths

FileNet P8 Platform 5.2.1>Integrating workflow into document management>Administering work items>About managing workflows>Terminating work

FileNet P8 Platform 5.2.1>Administering>Administering Content Platform Engine>Administering the workflow system>Controlling work item processing>Finishing work items>Terminating work items

When the Terminate map executes, all active, suspended, or disabled timers for the work item are ended.

When child work items are terminated, they are not routed to a Terminate submap.

The default Terminate submap does not have any additional processing, but a custom Terminate submap can contain steps as defined by the workflow designer.

Process and manage work

Delete work



- Use Process Administrator to delete workflows and work items.
- Delete work in the following situations:
 - A workflow is initiated in error.
 - Errors occur during processing that prevent completion.
- Deleted work is permanently removed from the system with no further processing.
- When you delete a workflow or work item, it cannot be recovered.
- Comparison of deleting a workflow and deleting a work item
 - Deleting a workflow deletes all work items for the workflow.
 - Deleting a work item does not affect other work items in the workflow.

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Figure 4-35. Delete work

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Notes:

Help path

FileNet P8 Platform 5.2.1>Integrating workflow into document management>Administering work items>About managing workflows>Deleting work

Process and manage work

Designate a substitute participant

- Users can designate a substitute by using IBM Content Navigator workflow preferences.
- You can use the Process Administrator Out of Office option to:
 - Modify the availability status of a participant.
 - Specify a substitute participant.
 - Modify the personal Out of Office setting of a participant.
- Changes affect work items that enter the queue after the change.
- A change in the user's availability does not affect work currently in the queue for that user.
 - To reassign queued items, use the Assign/Reassign Work option on the Tasks menu.

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Figure 4-36. Designate a substitute participant

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Notes:

Help path

FileNet P8 Platform 5.2.1>Integrating workflow into document management>Administering work items>About managing workflows>Changing the Out of Office settings for a user

Process and manage work

Unlock work



- A work item is locked when a user opens it in a step processor and is unlocked when the work is completed.
 - Other users cannot work on the work item while it is locked.
- Exception conditions
 - An application failure might cause a work item to remain locked.
 - A participant might leave work unprocessed, which results in locked work in that queue.
- Use Process Administrator to unlock work:
 - Search for, view, and unlock locked workflows.
 - View a list of all of the work items in a selected queue that are locked by selected users.

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Figure 4-37. Unlock work

F2471.0

Notes:

Help path

FileNet P8 Platform 5.2.1>Integrating workflow into document management>Administering work items>About managing workflows>Unlocking work by users or queues

When a user is working on a work item, that work item is locked in order to prevent other users from overwriting their work. Normally, the work is processed, then unlocked when it is completed.

Sometimes workflows are left locked because of an application failure that left the workflow in a locked state or because a user did not complete their pending work.

You must be a member of the workflow system administration group in order to unlock workflows locked by other users.

You can lock the work, overriding the previous user's lock, and then unlock the work.

Process and manage work

Add and remove trackers

- You can add and remove trackers from a workflow.
 - Use Process Administrator or Process Tracker.
- When you add or remove a tracker:
 - The associated work item in the Tracker queue is automatically added or removed.
- If an add tracker operation fails:
 - You might have locked the work items. You need to unlock them.
 - A workflow participant might have locked a work item. Wait until that user unlocks the work item.

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Figure 4-38. Add and remove trackers

F2471.0

Notes:

Help path

FileNet P8 Platform 5.2.1>Integrating workflow into document management>Administering work items>About managing workflows>Managing trackers

A tracker is a participant specified in the workflow definition to track a particular workflow. The tracker participant uses the Process Tracker application to track a particular workflow.

To add a tracker to all the workflows launched in the future, the workflow designer must assign the tracker in the workflow definition.

Process and manage work

Demonstrations



- Use Process Administrator to unlock a work item.

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Figure 4-39. Demonstrations

F2471.0

Notes:

Demonstration notes:

This demonstration can be performed only after some workflows have been launched (but not completed). This demonstration requires prior completion of the Activities preparation activity for the first lesson in the Student Exercises.

Use Process Administrator to unlock a work item.

Preparation: For this demonstration, you need two locked work items, one in a user's inbox, and one in a public queue. You can use the technique suggested in the student exercise instructions to lock the work items. **Note:** The user mary has work items in her inbox, and the user olivia has access to work items in the LoanOfficer queue.

Use this method to unlock the work item in the user mary's inbox.

1. Sign in to Workflow Author Desktop as the user mary and confirm that a locked work item is in the inbox. Leave the window open.
2. In a second browser window, sign in to Administration Console as p8admin and start Process Administrator.

3. Execute an Edit mode search for work items in the user queue Inbox (0) that have a value of F_LockUser not equal to 0 (zero).
4. Select the work item in the search results pane and click the Lock Selection button.
5. Override the lock on the item, and then click the Unlock Selection button.
6. Go back to the Inbox page for the user mary and refresh the list of work items.
7. Confirm that the lock icon has been removed.

Use this method to unlock the work item in the public queue:

1. Sign in to Workflow Author Desktop as p8admin and confirm that a locked work item is in the LoanOfficer public queue.
2. Start Process Administrator and click Tasks > Unlock Work By Users/Queues.
3. Add the user olivia to the Selected Users list.
4. Select all of the queues in the list and click Details to see how many locked work items there are for that user.
5. If you want to leave some work items locked, note the queue names for only the items that you want to unlock. Then reselect only those queue names in the Unlock Work By Users/Queues window and click OK.
6. Confirm that the work item is unlocked by looking at the public inbox from the Tasks page. If necessary, refresh the list of work items by clicking the name of the queue in the Path line near the top of the window.

Process and manage work

Activities



In your Student Exercises

- Unit: Manage Work in Progress
- Lesson: Process and manage work
- Activities:
 - Use Process Administrator to process and manage work.

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Figure 4-40. Activities

F2471.0

Notes:

Use your Student Exercises to perform the activities listed.

Lesson 4.4. Manage workflow exceptions

Lesson

Manage workflow exceptions



Why is this lesson important to you?

- A running workflow encountered a business process exception, and there is a work item in the Conductor queue. As the workflow administrator, you must determine what caused the exception and enable the workflow to be completed.

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Figure 4-41. Manage workflow exceptions

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Notes:

Manage workflow exceptions

Activities that you need to complete

- Use Process Administrator to manage a workflow exception.

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Figure 4-42. Activities that you need to complete

F2471.0

Notes:

These are the activities that you are going to perform in this lesson.

Manage workflow exceptions

About workflow exceptions

- A workflow exception occurs when something goes wrong in a running workflow.
 - The exceptions can be business processing errors or user errors, but not system integrity errors.
 - For example, an invalid user is assigned to a workflow group.
 - The work item is sent to the Malfunction system submap.
 - By default, the Malfunction submap sends the work item to the Conductor queue.
- Generally, the workflow author designs the workflow to handle business processing exceptions.
 - Errors are typically corrected by using specialized error handling submaps and step processors.
 - Work items are then correctly processed rather than being sent to the Conductor queue.

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Figure 4-43. About workflow exceptions

F2471.0

Notes:

Help path

FileNet P8 Platform 5.2.1>Integrating workflow into document management>Process applications concepts>Administration and configuration>Troubleshooting>Displaying workflow exceptions

By default, the Malfunction map moves the work item to the Conductor system queue for review by the administrator.

However, the workflow designer generally makes a provision to handle business processing exceptions in a workflow. Errors can be handled by using a special exception processing submap and by using customized step processors to trap and handle the errors that might occur.

Typically, in a production workflow environment, work items do not appear in the Conductor queue if the workflow design has accounted for exceptional business situations.

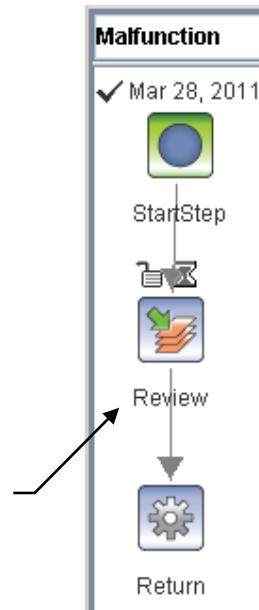
However, if a work item does go to the Conductor queue, the workflow administrator must be able to identify the work item and research the reason for the exception. Corrective actions must be determined by the workflow administrator, workflow solution architect, and solution developer working together.

Manage workflow exceptions

Conductor queue

- A Conductor queue:
 - Is a system queue for work items in an exception state.
 - Is the default queue where a work item goes when a process exception occurs.
- Items in this queue require administrative action.
 - System cannot process these items without intervention.
 - Corrective action is dependent on the application.
 - Work with the solution designer to identify the recommended actions for your site.

Conductor Review step is the default malfunction process, unless overridden by the workflow designer.



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Figure 4-44. Conductor queue

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Notes:

When a problem in an executing workflow occurs, a workflow exception can occur. For example, if an empty workflow group is assigned as the participant for a step, a workflow exception occurs when processing reaches that step. When an exception occurs, the Malfunction submap is executed, and the work item by default goes into the Conductor queue. The diagram shows an example of the default Malfunction submap. As the diagram shows, the Conductor Review step is the default malfunction process, unless overridden by the workflow designer.

Several situations can cause a malfunction and cause the work item to be placed in the Conductor queue. In addition, a software application developer can define a custom step processor or other application to call the Malfunction system map when specific errors occur. The default Malfunction map moves the work item to the Conductor system queue using a Review step.

The workflow designer can choose to override the default behavior in the Malfunction submap. For example, the work item can be sent to an exception handling queue where a specialized step processor handles the error condition or the work item can be sent to a user who corrects the error.

Manage workflow exceptions

Get information about workflow exceptions

- Perform a search for all work items in the Conductor queue.
 - Results show work items in an exception state.
 - Work items are flagged with the exception icon.
- View information about the reason for the exception.
 - Use Process Administrator or Process Tracker.
 - View the information stack and see the error message.
- Example error message
 - **Malfunction: [Err=5C020008] The user, group or device object information could not be found.**
 - Possible causes:
 - User deleted from the directory service.
 - Invalid user assigned to a workflow group.
 - Invalid user assigned to a tracker.
 - Invalid user assigned to a step.

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Figure 4-45. Get information about workflow exceptions

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Notes:

Help path

FileNet P8 Platform 5.2.1>Integrating workflow into document management>Process applications concepts>Administration and configuration>Troubleshooting>Possible problems

Workflow exceptions can be caused by events, such as division by 0 (zero), an invalid date or time mask, or an invalid participant in a workflow group.

Manage workflow exceptions

View the information stack

- In Process Administrator

1. Right-click the work item in the search results pane.
2. Click View Information Stack.
3. Select the item to view the error message.

- In Process Tracker

1. Select the Workflow History tab.
2. Right-click the exception step and click View Information Stack.
3. Select the item to view the error message.

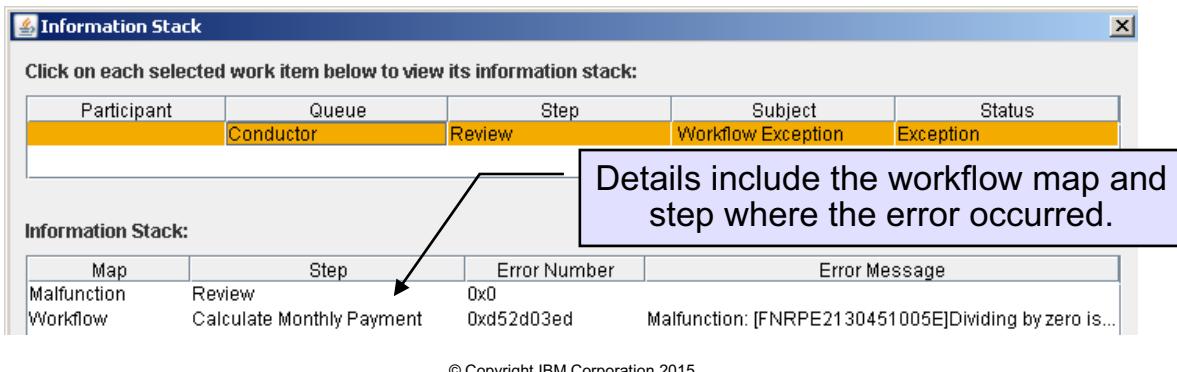


Figure 4-46. View the information stack

F2471.0

Notes:

A workflow administrator can use Process Tracker and Process Administrator to examine a running workflow and determine the location and nature of the error. The screen capture shows an example Information Stack window, and points out that the details include the workflow map and step where the error occurred.

Display information stack in Process Administrator

To display any messages associated with an exception, you can view the information stack.

1. Set up and execute an Edit mode search for work items in the exception state.
2. In the returned list of work items, right-click the item with an Exception symbol and click View Information Stack. Or, from the menu bar, click View > Information Stack.
3. Click the work item in order to display the information stack for that item. The information stack lists the workflow map and step where the error occurred, and displays a message describing the error.

Manage workflow exceptions

Modify workflows and work items



- When a problem is found
 - Take corrective action in Process Administrator.
- Possible actions:
 - Delete or terminate workflows and work items.
 - Modify workflow properties, such as data fields or workflow groups.
 - Open work in Process Tracker or step processors.
 - Complete the work.
 - Reassign the work.

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Figure 4-47. Modify workflows and work items

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Notes:

In some cases, the workflow that generated the exception can be corrected and dispatched to complete normally.

This page summarizes some of the corrective actions that can be performed by the workflow administrator using Process Administrator. These topics are explained in other lessons in this unit.

Manage workflow exceptions

Activities

In your Student Exercises

- Unit: Manage Work in Progress
- Lesson: Manage workflow exceptions
- Activities:
 - Use Process Administrator to manage a workflow exception.

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Figure 4-48. Activities

F2471.0

Notes:

Use your Student Exercises to perform the activities listed.

Unit 5. IBM Case Foundation 5.2.1: Component integration

What this unit is about

This course is for anyone who is responsible for creating, configuring, and maintaining component queues.

What you should be able to do

After completing this unit, you should be able to:

- What is the purpose of component integration in workflow applications?
- Create and configure component queues

How you will check your progress

- Knowledge checkpoint exercise and hands on labs.

References

IBM FileNet P8 Platform V5.2.1 Documentation

http://www.ibm.com/support/knowledgecenter/SSNW2F_5.2.1/com.ibm.p8toc.doc/welcome_p8.htm

Migrating to the IBM FileNet P8 5.2 Component Manager Framework technote

<http://www.ibm.com/support/docview.wss?uid=swg27043131>

How can I help myself when errors occur?

https://www.ibm.com/developerworks/community/blogs/f70916bb-0083-4dee-8297-84c8820ea35a/entry/knowledge_resources_how_can_i_help_myself_when_errors_occur

IBM Case Foundation 5.2.1: Component integration

Unit objectives



After completing this unit, you should be able to:

- Understand the purpose of component integration in workflow applications.
- Create and configure component queues.

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Figure 5-1. Unit objectives

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IBM Case Foundation 5.2.1: Component integration

Unit lessons

This unit contains these lessons:

- Component integration concepts
- Create and configure component queues

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Figure 5-2. Unit lessons

F2471.0

Lesson 5.1. Component integration concepts

Lesson

Component integration concepts



Why is this lesson important to you?

- You are a workflow system administrator responsible for configuring and maintaining component queues in non-development environments. You need to be familiar with the function of component queues and the purpose they provide in FileNet workflow applications.

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Figure 5-3. Component integration concepts

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Component integration concepts

Activities that you need to complete

- Test your knowledge of component integration.
- Prepare your system for the student exercises.

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Figure 5-4. Activities that you need to complete

F2471.0

Notes:

The activities that you are going to perform in this lesson.

Component integration concepts

Purpose of component integration



- Extend business functionality easily without full application development.
- Automate work processing.
- Perform external functions from within a workflow.
- Use existing Java business objects and components.
- Integrate with a Java Message Service (JMS).

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Figure 5-5. Purpose of component integration

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Notes:

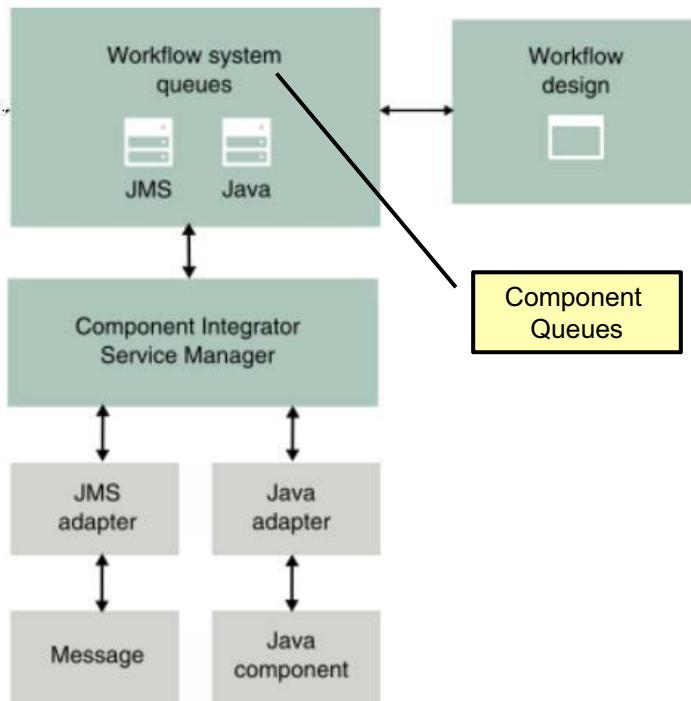
With component integration, you can extend business functionality easily without requiring full application development.

You can perform external functions from within the workflow application, and use existing Java business objects and components or a Java Message Service.

Component integration concepts

Component integrator

- The component integrator architecture



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Figure 5-6. Component integrator

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Notes:**Help path**

FileNet P8 Platform 5.2.1>Developing FileNet P8 applications>Process Development>Process Java Developer's Guide>Developing Process Applications>Developing Work Performers

The Component Integrator is also known as the Component Manager Framework.

The diagram shows the Component integrator architecture.

Component Manager connects a work item that is requesting a component to the appropriate service adapter.

Component Manager communicates with the service adapters. At run time, Component Manager polls component queues, labeled as Workflow system queues, in the diagram, for work items that request Java Message Service (JMS) or processing by Java components.

The JMS adapter places messages on the JMS Queue and dispatches the associated work item. The JMS adapter handles posting of Process events to a message queue. The posting is in the form of an XML event, based on the step element for the operation. For JMS information, see <http://docs.oracle.com/javaee/6/tutorial/doc/bnqdq.html>.

The Java adapter handles process calls to Java objects. The calls are represented to the Content Platform Engine as operations on queues (work items), where each operation is done by a method of the Java class. The Java adapter performs the following sequence of actions:

- Loads the Java component class.
- Runs the interface that is associated with the Java component.
- Waits for a response from the Java component.
- Updates the work item field values.
- Dispatches the work item to the next workflow step.



Note

The diagram on this slide shows only the portion of the architecture that applies to the new component queues.

Component integration concepts

Component Manager Frameworks

- Two Component Manager Frameworks
 - New Component Manager Framework (V2)
 - Old/Legacy Component Manager Framework (V1)
- Both frameworks are fundamentally the same

Facts	New Component Manager framework	Old Component Manager framework
Where the component manager runs	Content Platform Engine (CPE) server	Workplace XT or Application Engine servers
Starting and stopping the component manager	Runs automatically on all CPE nodes. You can disable a specific component queue.	Each instance is started and stopped independently with Process Task Manager.
Location of the JAR files	JAR files are added to an object store as a code module.	JAR files are copied to all appropriate instances of Workplace XT or Application Engine servers.
When changes take effect	When component configuration changes are saved or committed	When Process Task Manager is stopped and restarted

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Figure 5-7. Component Manager Frameworks

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Notes:

Help path

Migrating to the IBM FileNet P8 5.2 Component Manager Framework technote: Section: Comparing the two Component Manager Frameworks

Starting with the IBM Case Foundation 5.2 release, a new component manager framework was introduced which runs within the Content Platform Engine server.

Two frameworks are supported:

- The new Component Manager framework, also called Component Manager V2.
- The old or legacy Component Manager framework, also called Component Manager V1.

Customers can choose to use the following frameworks.

- New component manager framework only.
- Old/legacy component manager framework only.
- A combination of the two frameworks.

The two frameworks are fundamentally the same. Both frameworks use component queues and component manager to connect to external entities. The main difference is where the component manager runs.

The new component manager runs in the Content Platform Engine server. The old component manager requires Workplace XT or Application Engine servers to run.

The table lists some of the major differences. For a complete list, see the technote.

Component integration concepts

Deciding on a Component Manager Framework



- New Component Manager Framework
 - Packaged and deployed with CPE server, runs as a background task.
 - Implements consistent load balancing and High Availability model.
 - Easier to administer and maintain.
 - More performance information and logs available.
 - Does not require Workplace XT or Application Engine servers
- Old/legacy Component Manager Framework
 - More flexibility but more maintenance required. You can:
 - Run different component adapters on different servers.
 - Define multiple component managers per connection point.
 - Assign different priorities to each component queue.
 - Have more control over the class path.

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Figure 5-8. Deciding on a Component Manager Framework

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Notes:

Which Component Manager Framework is right for you?

The new Component Manager Framework:

- Is packaged and deployed with the Content Platform Engine server, and runs as a background task.
- Does not require extra steps to configure it.
- Is easier to administer and maintain.
- Provides more performance information and logs for maintenance and troubleshooting.
- Does not require Workplace XT or Application Engine, which aligns with IBM's strategic plan of using IBM Content Navigator as your application framework.



Note

No enhancements are being made to either Workplace XT or Application Engine.

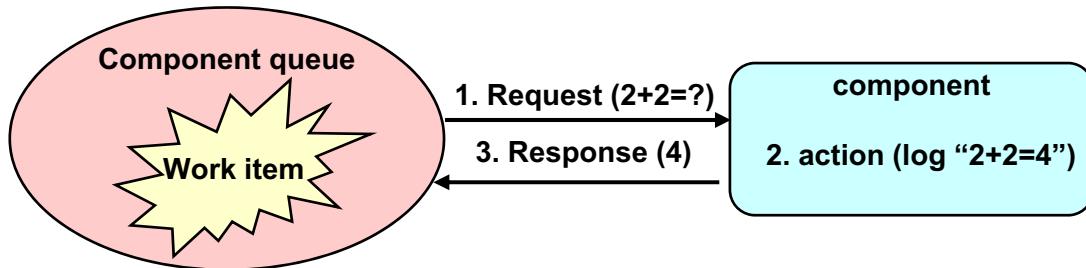
The old or legacy Component Manager Framework:

- Provides more flexibility, you can:
 - Run different component adapters on different Workplace XT or Application Engine servers.
 - Define multiple component managers in each connection point.
 - Assign different priorities to each component queue.
 - Have more control of the class path.

Component integration concepts

Component behavior

- A component is an application that performs an operation in a workflow.
 - It is used to process workflow data.
 - It typically has no user interface.
 - It typically performs automatic operations on work items.
- A work item waits in a component queue for processing.
 - The work item makes a request of a component.
 - The component can perform other actions outside the isolated region.
 - The component can provide a response.



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Figure 5-9. Component behavior

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Notes:

Help path

FileNet P8 Platform 5.2.0>Developing FileNet P8 applications>Process Engine Development>Process Java Developer's Guide>Developing Process Applications>Developing Work Performers

Components typically perform automated functions that do not require human intervention.

The activity initiates the work item, which sends data to the component as a request. The component can return a response from the request if configured to do so, or the component can perform some function outside the isolated region, such as filing a document in an object store. Both behaviors are optional.

For example, if a work item requests the sum of two numbers, the work item can send them to a component that performs addition. The component can send the sum back to the work item, or the component can send the sum (or the original parameters) elsewhere, as the application demands. The diagram illustrates this example.

Other operations associated with workflow steps can include:

- Log in and establishing a Process Services session.

- Polling a user, or system queue (to find operations that are related to a particular workflow step).
- Locking the retrieved object, processing the work (such as performing updates of data or saving), and cycling back to queue polling.

Definition: A component queue is a queue that holds work items that an external entity that interacts with the workflow by using the Component Integrator, can complete.

Component queues reside in an isolated region.

Component integration concepts

Types of components

- Java component
 - Component functionality is provided by a Java archive file.
 - Java classes contain methods and operations to perform the work.
 - Data can move in both directions:
 - From the isolated region to the component
 - From the component to the isolated region
 - Uses a configured Java component adapter.
- JMS component
 - Component functionality sends a message to a specified queue in a JNDI QueueConnectionFactory.
 - Data moves only from the isolated region to the JMS queue.
 - Functionality is contained in the JMS component adapter.

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Figure 5-10. Types of components

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Notes:

Help path

FileNet P8 Platform 5.2.1>Developing FileNet P8 applications>Process Development>Process Java Developer's Guide>Developing Process Applications>Developing Work Performers>Developing Component Integrator-Based Work Performers

Java

Java objects are archived classes or collections of classes that perform a function. IBM Case Foundation provides a Java component named CE_Operations to provide workflow definitions programmatic access to FileNet P8 domain object store objects.

The Java adapter allows the solution builder to expose public methods from a Java class as operations on a queue.

Java Message Service (JMS)

The Java Message Service (JMS) was designed to develop business applications that asynchronously send and receive business data and events.

Component integration concepts

Java adapter



- The Java adapter:
 - Handles Process calls to Java objects.
 - Process calls are represented as operations on queues (work items).
 - Each operation is run by a method of a Java class.
 - The Java adapter performs the following sequence of actions:
 - Runs the interface to the Java component.
 - Automatically waits for a response from the component.
 - Updates the work item.
 - Dispatches the work item to the next workflow step.

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Figure 5-11. Java adapter

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Notes:

Help path

FileNet P8 Platform 5.2.1>Developing FileNet P8 applications>Process Development>Process Java Developer's Guide>Developing Process Applications>Developing Work Performers

The Java adapter handles Process calls to Java objects. The calls are represented as operations on queues (work items), where each operation is run by a method of the Java class.

The Java adapter performs the following sequence of actions:

- Runs the interface to the Java component.
- Automatically waits for a response from the component.
- Updates the work item.
- Dispatches the work item to the next workflow step.

When there are multiple operations, in a component queue, defined in a single step, the operations run serially. For example, if you have op1 and op2 defined on queue X, in the same step, the component manager will:

- Finish the operation, op1.
- Dispatch the work item to queue X again.
- Query and finish operation, op2.

Component integration concepts

Java Message Service (JMS) adapter



- The JMS adapter:
 - Places messages on the JMS component queue.
 - Dispatches the associated work item.
 - Handles posting of Process events to a message queue.
 - Posting is in the form of an XML event.
 - Based on the step element of the operation.

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Figure 5-12. Java Message Service (JMS) adapter

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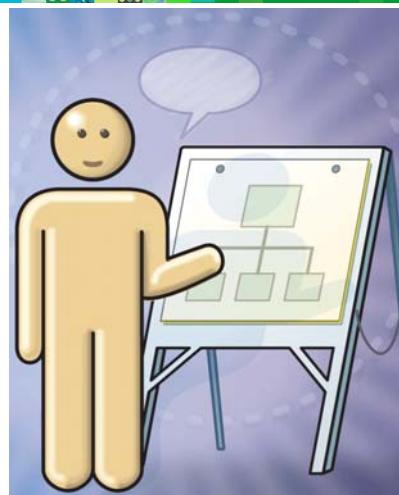
Notes:

The JMS adapter, places messages on the JMS component queue and dispatches the associated work item.

The JMS adapter handles posting of the Process events to a message queue. The posting is in the form of an XML event, based on the step element for the operation.

Component integration concepts

Exercise introduction



Test your knowledge of component integration concepts.

- Checkpoint Quiz

Prepare your student system for the exercises.

- In this exercise, you will:
 - Start the student system components.
 - Check system components.
 - Configure the JAAS credentials for the CE_Operations component queue.

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Figure 5-13. Exercise introduction

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Notes:

The first exercise is a checkpoint quiz. The questions are multiple choice and true and false.

In the second exercise, you prepare your student system for the exercises. You start the student system and verify that the system is functioning properly. In the last procedure you change the JAAS credentials for the CE_Operations component queue. Remember in the new Component Manager Framework, the component queue, CE_Operations, is created a by default.

Component integration concepts

Activities



In your Student Exercises

- Unit: Unit name
- Lesson: Lesson name
- Activities:
 - Test your knowledge of component integration.
 - Prepare your system for the student exercises.

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Figure 5-14. Activities

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Notes:

The first activity is a checkpoint quiz, included in the next three slides.

Use your Student Exercises to perform the second activity.

Component integration concepts

Checkpoint

- 
1. Select the option that is not a purpose of component integration.
 - a. Extend business functionality easily without full application development.
 - b. Use existing Java business objects and components.
 - c. Perform external functions from within a workflow.
 - d. Provide integration for a component step processor.
 2. Starting with the IBM Case Foundation 5.2 release, a new Component Manager Framework was introduced. Where does this framework run?
 - a. Within the Content Platform Engine server.
 - b. Within the Process Task Manager, running on a Workplace XT server.
 - c. As a task within the Administration Console for Content Platform Engine.
 - d. Within the Process Configuration Console.
 3. IBM Case Foundation 5.2 supports Java components only. (T or F)?

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Figure 5-15. Checkpoint

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Component integration concepts

Checkpoint



4. Which of the following statements is not an advantage to using the new Component Manager Framework?
 - a. Easier to administer and maintain.
 - b. More control over the class path.
 - c. More performance information and logs available.
 - d. Does not require Application Engine servers.
5. Which one of the following elements is used in component queues for authentication?
 - a. JNDI
 - b. Active Directory
 - c. JAAS
 - d. Component Manager
6. A component is an operation that waits in a component queue for processing. (T or F)?

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Figure 5-16. Checkpoint

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Component integration concepts

Checkpoint

- 
7. Which of the following component integration elements sends a message to a queue in a JNDI QueueConnectionFactory?
 - a. Process Task Manager
 - b. Java adapter
 - c. CE_Operations
 - d. JMS adapter
 8. The two Component Manager Frameworks, supported since the IBM Case Foundation 5.2 release, are fundamentally the same. (T or F)?

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Figure 5-17. Checkpoint

F2471.0

Lesson 5.2. Create and configure component queues

Lesson

Create and configure component queues



Why is this lesson important to you?

- A Java component that calculates the monthly loan payment amount is deployed on your system by a developer. You need to create and configure a component queue in the isolated region to communicate with the Java component.

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Figure 5-18. Create and configure component queues

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Create and configure component queues

Activities that you need to complete

- Create and configure a Java component queue.
- Verify the component queue.
- Stop and start the component queue.

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Figure 5-19. Activities that you need to complete

F2471.0

Notes:

The activities that you are going to perform in this lesson.

Create and configure component queues

How to create and configure a component queue

- New Component Manager Framework:
 - Use Administration Console for Content Platform Engine or Process Configuration Console.
 - 1. Create a component queue.
 - 2. Complete the adapter configuration.
 - Java or JMS adapter.
 - 3. Import the Operations.
 - 4. Save the changes.
- Old Component Manager Framework:
 - Use Process Configuration Console.
 - 1. Create a component queue.
 - 2. Complete the adapter configuration.
 - Java or JMS adapter.
 - 3. Import the Operations.
 - 4. Commit the changes.
 - 5. Create a Component Manager in Process Task Manager on the Workplace XT or Application Engine servers.

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Figure 5-20. How to create and configure a component queue

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Notes:

Help path

FileNet P8 Platform 5.2.1>Administering>Administering Content Platform Engine>Defining the workflow system>Coordinating workflow design>Workflow options>Defining queues>Component queues>Creating component queues

This slide outlines the steps involved in creating a component queue for both the new and the old Component Manager frameworks.

The steps are similar. The legacy Component Manager framework has one extra step, create a Component Manager with Process Task Manager on the Workplace XT or Application Engine servers.

The labs for this course focus on the new Component Manager Framework, since the image is configured with IBM Content Navigator as the application framework.



Information

For information on the steps required to create and configure legacy component queues, see the IBM Knowledge Center topic,

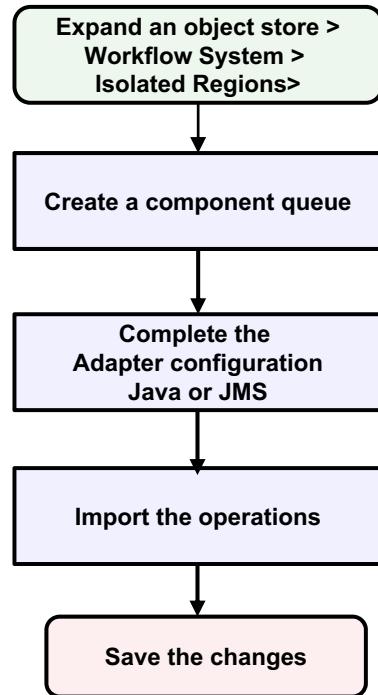
FileNet P8 Platform 5.2.1>Administering>Administering Content Platform Engine>Defining the workflow system>Administrative tools>Process Task Manager>Legacy Component Manager

http://www.ibm.com/support/knowledgecenter/SSNW2F_5.2.1/com.ibm.p8.pe.taskmgrui.doc/cm.htm

Create and configure component queues

Procedure: Create and configure a component queue

- Use Administration Console for Content Platform Engine



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Figure 5-21. Procedure: Create and configure a component queue

F2471.0

Notes:

The diagram outlines the high-level steps that are required to create and configure a component queue.

In the next few slides, you see how to create a Java component queue.

Create and configure component queues

Create a code module

- Prerequisite for new component queues.
- Code module contains:
 - The JAR files with all the items required by the custom component.

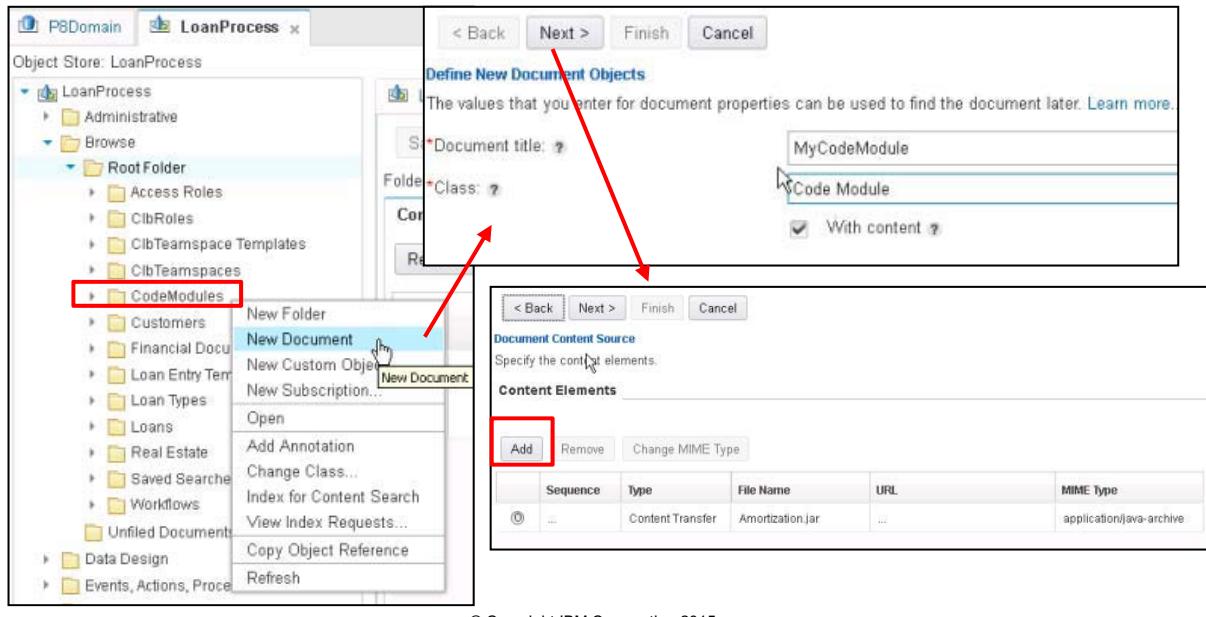


Figure 5-22. Create a code module

F2471.0

Notes:

Help path

FileNet P8 Platform 5.2.0>Administering FileNet P8>Administering Content Platform Engine>Changing objects>Managing code modules>Creating a code module

The new component queues require that the Java JAR file is uploaded as a code module in an object store. The legacy component queues load the Java JAR files and their libraries directly into the adapter.

The screen capture on the left shows the Administration Console for Content Platform Engine, you:

- Open the object store.
- Expand Browse > Root Folder.
- Right-click CodeModules and select New Document.

Enter the document title and select the Class, Code Module. (Screen capture on the upper left).

Add the content element, screen capture on the lower right. You click Add; then, browse to the JAR file.

The JAR file is the only thing that is required for a Java component. You can accept the defaults for the rest of the windows until the Finish is enabled.

- Click the Finish to complete the creation of the code module.



Important

If you modify a code module and check-in a new version of the code module, you need to update the component queue to point to the new version of the code module.

Create and configure component queues

New Component Queue wizard

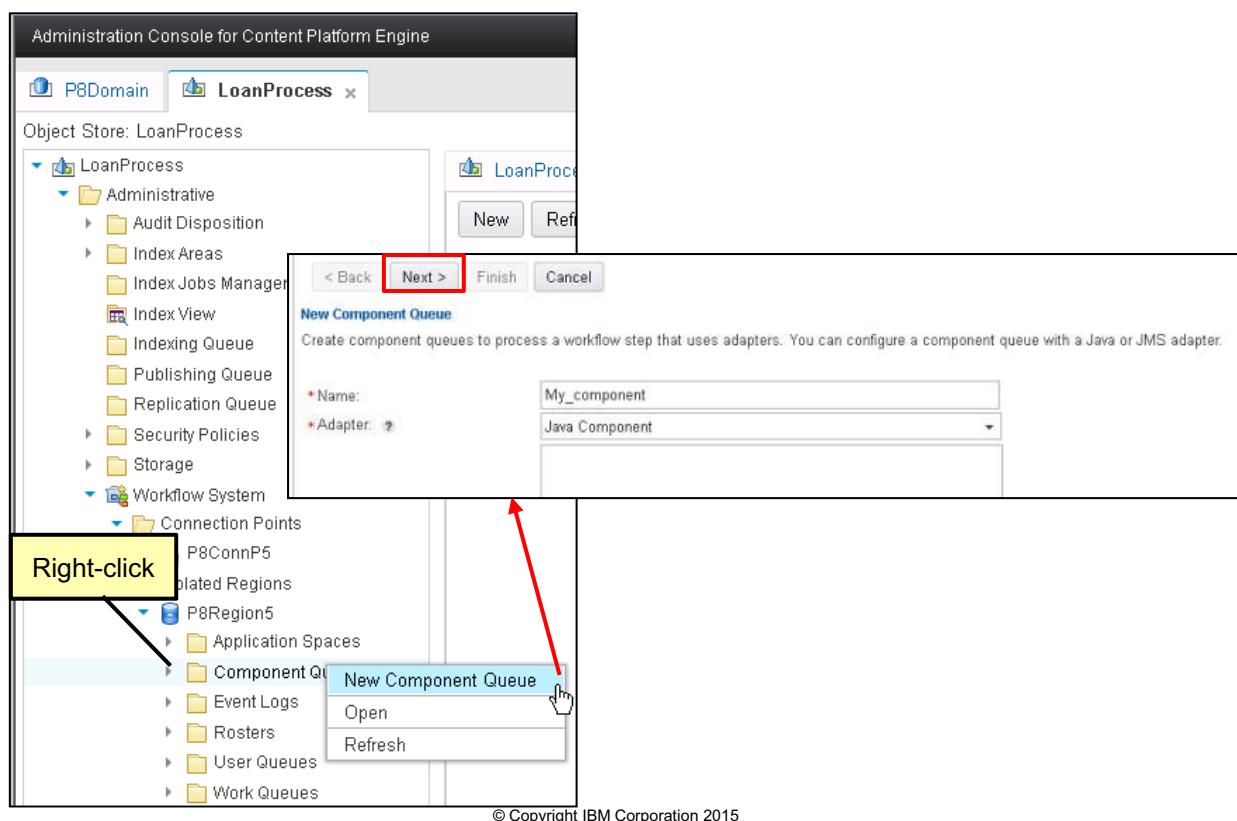


Figure 5-23. New Component Queue wizard

F2471.0

Notes:

The next few slides show the steps to create a Java component queue with the new component queue wizard.

The screen captures show the Administration Console for Content Platform Engine, open to the object store, Loan Process, on the left.

- You expand Administrative > Workflow System > Isolated Regions > the specific region (P8Region5).
- Right-click the node, Component Queues, and select New Component Queue.
- The New Component Queue wizard displays on the right.
- You enter a name and click
 - The name:
 - Must begin with a letter.
 - Must contain only letters, numbers or underscores.
 - Can have a maximum of 128 characters.

- Cannot be a name reserved for Content Platform Engine internal use.
- If you enter an invalid name, you get a message that the name is not valid and the naming requirements.
- You enter the type of component you want to create. In this case, a Java component is selected.
- Click Next.

Create and configure component queues

New Component Queue wizard (2)

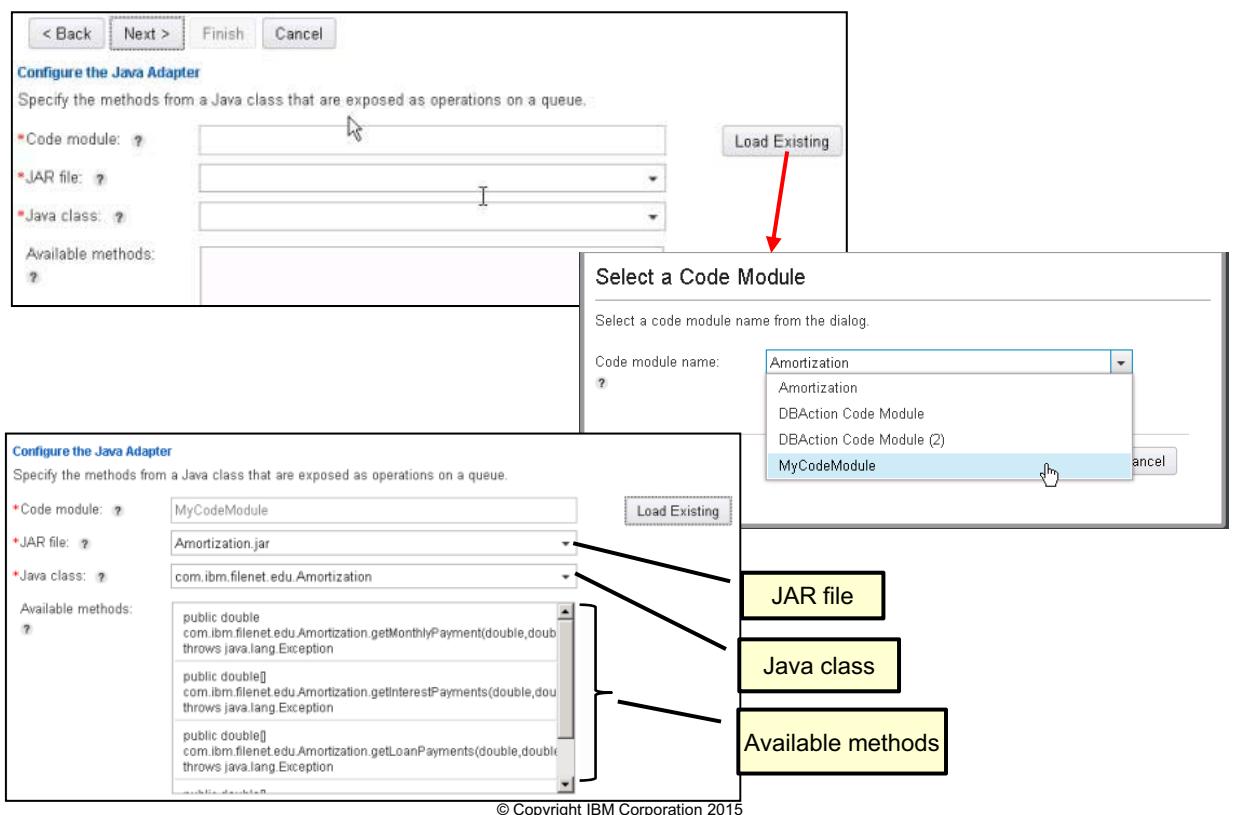


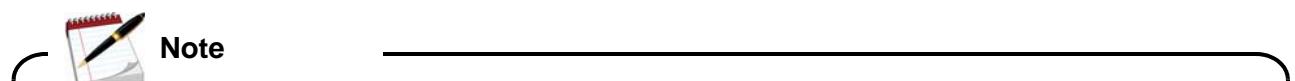
Figure 5-24. New Component Queue wizard (2)

F2471.0

Notes:

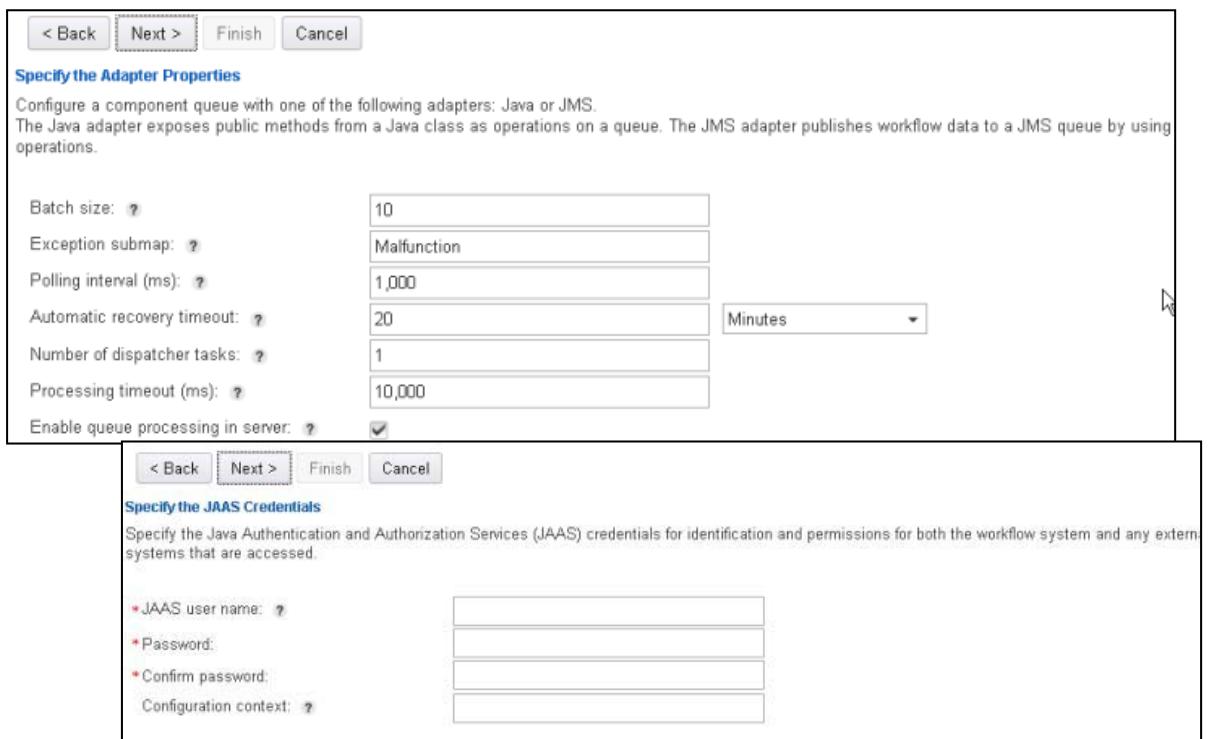
The Configure the Java Adapter window opens, upper left screen capture.

- Click Load Existing, and the Select a Code Module window opens. (Screen capture in the center).
 - Select the code module and click OK.
- The remaining fields for the Java adapter are automatically populated with the information from the code module. (Screen capture on the lower left). The JAR file, the Java class, and the available methods.
- Click Next.



<http://www.ibm.com/support/docview.wss?uid=swg21882893>

Create and configure component queues

New Component Queue wizard (3)

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Figure 5-25. New Component Queue wizard (3)

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Notes:

The last two windows that display are:

- Specify the Adapter Properties, upper screen capture.
- Specify the JAAS Credentials, lower screen capture.

The next couple of slides will cover the adapter properties and the JAAS credentials in more detail.

Create and configure component queues

Adapter properties

- Batch size
- Exception submap
- Polling rate
- Automatic recovery timeout
- Number of dispatch tasks
- Processing timeout
- Enable queue processing in server

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Figure 5-26. Adapter properties

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Notes:

Help paths

FileNet P8 Platform 5.2.1>Integrating workflow into document management>Configuring the workflow system>Configuring workflow queues>Manage component queues>Creating a component queue>Adapter properties

Migrating to the IBM FileNet P8 5.2 Component Manager Framework technote: Section: Managing the new component queues

Batch size – The number of steps to query per batch at run time. The suggested minimum is 10.

Exception submap – submap to use if an exception occurs. The Malfunction submap is the default, which routes work items to the Conductor queue.

Polling rate – The time, in milliseconds, between polls of the component queue to look for work. 1000 is equivalent to polling once per second.

Automatic recovery timeout – Time after which a locked work object is dispatched to the exception submap. This recovery behavior handles work objects that are locked due to server crashes or adapter classes that are not working properly.

Number of dispatch tasks – The maximum # of worker threads that service the component queue.

Processing timeout – The maximum time, in milliseconds, for processing each step in a component method.

Enable queue processing in server – Starts and stops the component queue.

Create and configure component queues

JAAS credentials

Java Authentication and Authorization Services (JAAS)

- JAAS user name and password
 - Valid domain user able to log on to the Content Platform Engine.
 - Use a service user account (suggested).
 - Not used by regular users to log on.
 - Requires [QP] access to the component queue.
- Configuration context:
 - Not needed if:
 - Component code uses PE or CE API only, and
 - External authentication is not required.
 - CLogin can be specified for compatibility of the Java API (3.5 Content Engine Java API).
 - Provided by the Java component developer.

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Figure 5-27. JAAS credentials

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Notes:

Help path

FileNet P8 Platform 5.2.1>Integrating workflow into document management>Configuring the workflow system>Configuring workflow queues>Manage component queues>Creating a component queue>JAAS credentials

All component queues require that you configure the JAAS credentials. (Java and JMS)

The JAAS user name:

- Does not need to be a user with administrative rights.
- Can be any valid domain user that can log on to the Content Platform Engine.
- Is suggested to be a service user account. Not one that users use to log on to prevent the password from getting changed unexpectedly.
- Requires query and process rights to the component queue.

The Configuration context:

- Not required if you are using CELogin and the component code does not have external authentication requirements.
- Provided by the Java component developer and configured according to the J2EE Application Server requirements.

Create and configure component queues

Configure the Java Message Service adapter

- Queue Connection Factory (JNDI)
 - The name of the JMS object that creates the connection from the component queue.
 - Depends on web server application type.
 - Provided by the workflow author or developer.
- Queue Name (JNDI)
 - The name of the JMS object that holds the message.
 - Provided by the workflow author or developer.
- JNDI URL
 - Optional JNDI URL parameter for the queue location.
 - If not specified, assumed to be defined in the workflow system application server.
 - Provided by the workflow author or developer.

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Figure 5-28. Configure the Java Message Service adapter

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Notes:

Help path

FileNet P8 Platform 5.2.1>Integrating workflow into document management>Configuring the workflow system>Configuring workflow queues>Manage component queues>Creating a component queue>Configuring a Java Message Service component adapter

Configuring a JMS component queue, you configure the JMS component adapter. You specify:

- The Queue Connection Factory (JNDI).
- The Queue Name (JNDI).
- An optional JNDI URL.

The information that you need is provided by the workflow author or developer.

Create and configure component queues

What is a queue operation?

- An operation is:
 - Used to process work items in a queue.
 - Specifies input and output for the task (function).
 - Used to validate data based on the requirements for defined type and direction.
- Workflow author/developer:
 - Defines the queue operations.
- Workflow system administrator:
 - Imports the operation into a component queue.

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Figure 5-29. What is a queue operation?

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Notes:

Help path

FileNet P8 Platform 5.2.1>Integrating workflow into document management>Process applications concepts>Design and run workflows>About operations

A queue operation is a queue property used to exchange data between work items and a function in an application that accesses the queue, such as a step processor or automated process. Through its parameters, an operation can accept input from or provide output to a work item or do both.

The purpose of an operation is to assure a set of data that meets defined requirements (data type and data direction, also called data flow).

Typically, operations are defined on queues for work items processed by automated programs. Though less common, operations can also be defined on queues from which participants process work items, including user inbaskets.

More than one operation can be defined for a queue. A defined operation is used only to process a work item if the operation is explicitly designated at a step in the workflow definition.

Each parameter in an operation must have an associated workflow field if a step uses that operation.

Create and configure component queues

Elements of an operation

- An operation includes the following elements:
 - Operation name
 - Operation parameters
 - Optional operation description
- The operation name identifies the operation in these elements:
 - Workflow definition
 - Queue
- The operation parameters:
 - Name
 - Parameter type
 - Data flow for each parameter
 - Optional description

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Figure 5-30. Elements of an operation

F2471.0

Notes:

Help path

FileNet P8 Platform 5.2.1>Integrating workflow into document management>Configuring the workflow system>Configuring workflow queues>Manage component queues>Defining component queue operations

An operation includes the name, parameters, and an optional description.

The operation name is used in the workflow definition and the queue to identify it.

The operation parameters include:

- Name
- Parameter type
- Data flow for each parameter
- Optional description

Create and configure component queues

Operation parameters

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Figure 5-31. Operation parameters

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Notes:

Help path

FileNet P8 Platform 5.2.1>Integrating workflow into document management>Process applications concepts>Design and run workflows>About operations>Operation usage example

The operation parameter types must map to workflow data field types in the step that uses the operation.

Data flow behavior:

- [Read] The operation parameter value is copied to the associated workflow field when the step opens.
 - [Write] The workflow field value is written to the operation parameter when the step is completed.
 - [Read/Write] includes both behaviors.

Create and configure component queues

Import component queue operations

- Define the component queue operations.
 1. Open Process Configuration Console from ACCE.
 2. Connect to the appropriate connection point.
 3. Select the Component Queues node.
 4. Right-click the component queue and select Properties.
 5. On the Operations tab, click the Import icon 
 - a. Open either the:
 - Java select operations window
 - > Select one or more methods.
 - > Rename parameters and enter descriptions [optional].
 - JMS select events window.
 - > Enter an event name.
 - > Select the event name and specify the parameters for the event.
 - > Enter a description for each event and parameter [optional].
 6. Click OK and Commit Changes.

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Figure 5-32. Import component queue operations

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Notes:

Help path

FileNet P8 Platform 5.2.1>Integrating workflow into document management>Configuring the workflow system>Configuring workflow queues>Manage component queues>Defining component queue operations

The next step in configuring the component queue is to import the operations.

At the writing of this course, you must use the Process Configuration Console to import the operations.



Note

A future fix pack includes the ability to import the operations with Administration Console for Content Platform Engine.

Create and configure component queues

Import Java component queue operations

- Component queue Properties > Operations tab

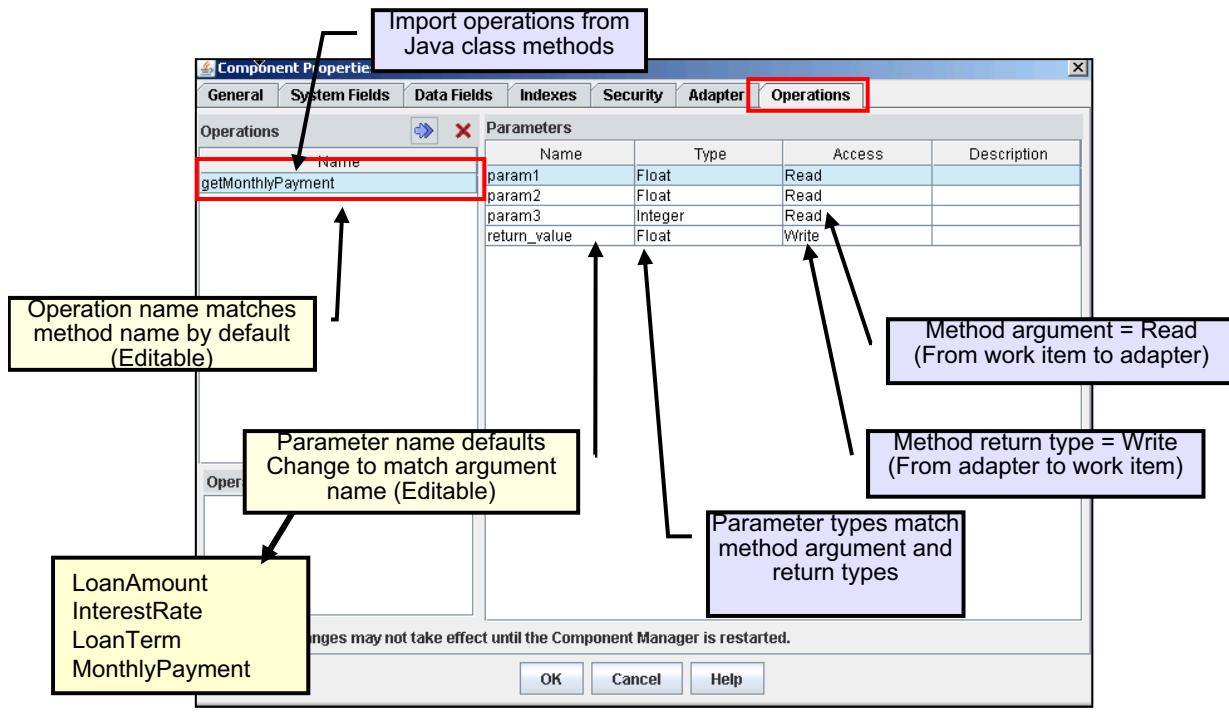


Figure 5-33. Import Java component queue operations

F2471.0

Notes:

Help path

FileNet P8 Platform 5.2.1>Integrating workflow into document management>Configuring the workflow system>Configuring workflow queues>Manage component queues>Defining component queue operations>Java operations window

Screen capture

The screen capture has labels that callout the following information:

- Import operations from Java class methods
- Operation name matches method name by default (Editable)
- Parameter name defaults (Editable). Parameter names are common changes to match the argument names.
- Method argument = Read (From work item to adapter)
- Method return type = Write (From adapter to work item)
- Parameter types match method argument and return types

Example

A component step sends the data to a Java class that uses the data to get the monthly payment, given the loan amount, interest rate, and loan term.

Create and configure component queues

Define JMS component queue operations

- JMS component queue Properties > Operations tab
- Click Import icon in Operations pane.

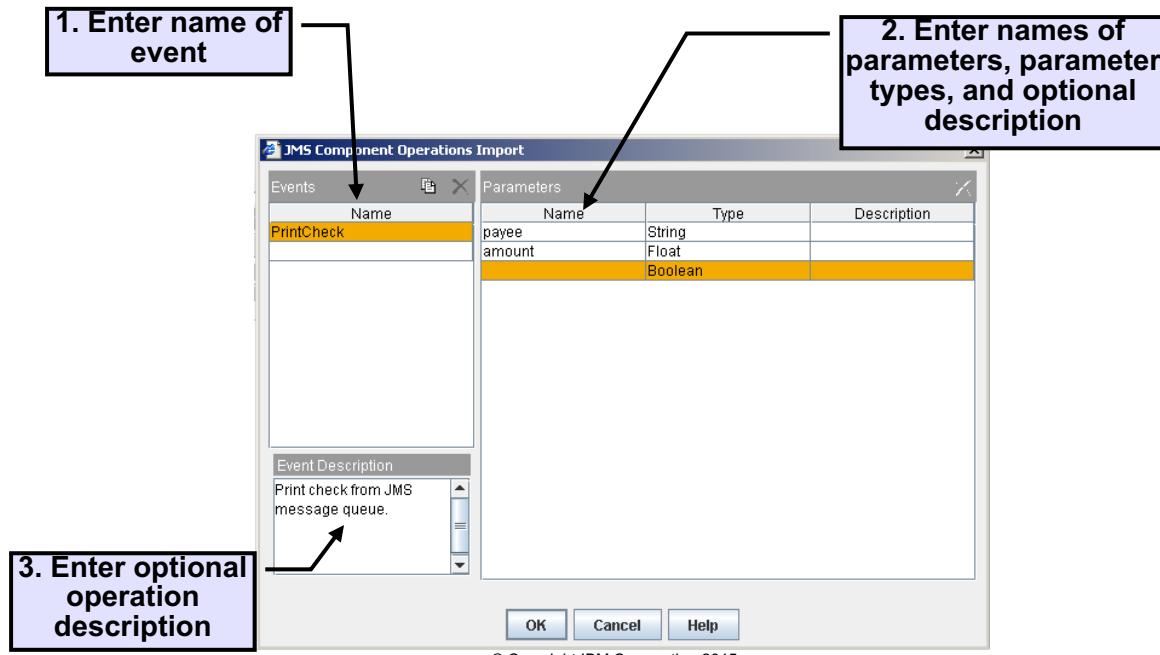


Figure 5-34. Define JSM component queue operations

F2471.0

Notes:

Help path

FileNet P8 Platform 5.2.1>Integrating workflow into document management>Configuring the workflow system>Configuring workflow queues>Manage component queues>Defining component queue operations>Java Message Service operations window

The screen capture shows the fields that are used to define the operations in a JMS component queue. The labels correspond to the following steps:

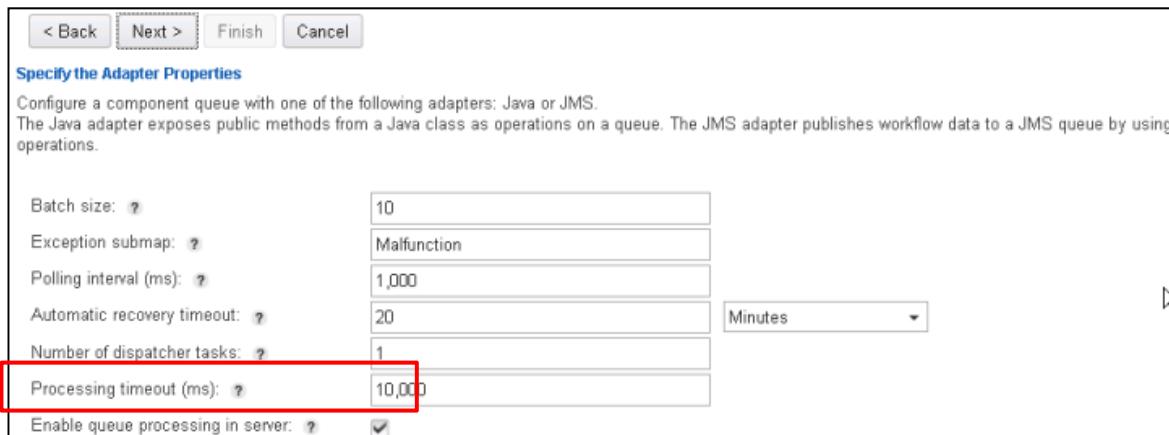
1. Enter the name of the event.
2. Enter names of the parameters, specify the parameter data types, and specify optional descriptions.
3. Type an optional operation description.

The events are converted into operations.

Create and configure component queues

Stopping and starting component queues

- Component queues are started automatically upon creation.
 - Updates are applied as soon as the changes are saved.
- To stop a component queue:
 - Clear the “Enable Queue Processing in Server” check box.
 - Click Save.



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Figure 5-35. Stopping and starting component queues

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Notes:

Help path

Migrating to the IBM FileNet P8 5.2 Component Manager Framework technote: Section: Stopping and Starting a Component Queue

The new component queues are started automatically as soon as they are created. Updates are applied as soon as the changes are saved.

To stop a new component queue:

- a. Open the component queue in the Administration Console for Content Platform Engine.
- b. In the Adapter tab, clear the “Enable queue processing in server” check box.
- c. Save the changes.



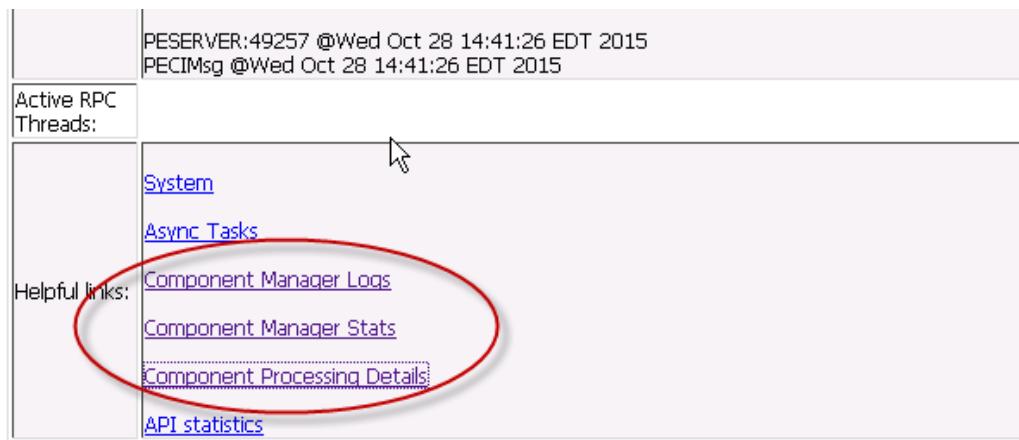
Note

The status of the component queue displays as Terminated, in the Component Manager Logs. The reason that it displays as Terminated, and not Stopped, is that in the new Component Manager Framework, all work on the Content Platform Engine server is classified as tasks that run in threads. To stop the operations from running in a component queue, the corresponding tasks are terminated so that they do not run in the threads. The next few slides cover the Component Manager Logs and the information the logs provide.

Create and configure component queues

Diagnosing Component Manager issues

- Process Services ping page
 - http://<CPE_server>:<port>/peengine/IOR/ping



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Figure 5-36. Diagnosing Component Manager issues

F2471.0

Notes:

Help path

Migrating to the IBM FileNet P8 5.2 Component Manager Framework technote Section: Managing the New Component Queues

The Process Services ping page provides useful information to help you monitor and maintain component queues.

The diagram shows the output of the Process Services ping page. When you scroll to the bottom, three Component Manager links are circled in red.



Information

In a cluster environment, if you use the cluster name in the PE ping URL, then each time you run the PE ping, you might connect to different servers in the cluster. The information returned might be different. You can go to the PE ping page for a specific server.

In the next few slides, you see what each of the links provides.

Create and configure component queues

Component Manager Log

- Running log stored in memory.
- Includes information for a FileNet P8 domain:
 - All the component queues in all the connection points
 - Spans multiple workflow systems

```

P8ConnP2:WSRequest
[Sales.FNOSDS] CMR1.Sales.FNOSDS_2.WSRequest DELAYED until another 1108542ms , Region=2 [0 total processed.]
[Sales.FNOSDS] CMRO.Sales.FNOSDS_2.WSRequest marked as TERMINATED ., Region=2 [0 total processed.]
[Sales.FNOSDS] CMDp.Sales.FNOSDS_2.WSRequest_0 DELAYED until another 24543ms , Region=2 [0 total processed.]

P8ConnP2:CE_Operations
[Sales.FNOSDS] CMR1.Sales.FNOSDS_2.CE_Operations DELAYED until another 1108542ms , Region=2 [0 total processed.]
[Sales.FNOSDS] CMRO.Sales.FNOSDS_2.CE_Operations marked as TERMINATED ., Region=2 [0 total processed.]
[Sales.FNOSDS] CMDp.Sales.FNOSDS_2.CE_Operations_0 DELAYED until another 24543ms , Region=2 [0 total processed.]
  
```

Annotations:

- Object store:** Sales.FNOSDS
- Component queue:** CMR1.Sales.FNOSDS_2
- Connection point:** P8ConnP5
- Security issue:** CMRO.LoanProcess.FNOSDS_5.CE_Operations:1

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Figure 5-37. Component Manager Log

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Notes:

The Component Manager Log, is a running log of the status of the component queues, which are stored in memory.

The log includes, all the connection points and all the component queues defined in the associated isolated region of a FileNet P8 domain. The log can span multiple workflow systems.

The screen captures show a couple of snippets of a sample Component Manager Log.

- The first snippet shows the component queue, WSRequest, in the object store, Sales, with a status of Terminated, which indicates that the component queue is not enabled or configured.
- The second snippet shows a security issue in the component queue, Loan_Operations in the connection point, P8ConnP5. The JAAS user name that is configured for the Java Adapter does not have the required rights to run the operation.

The log includes the following type of information:

- Status of a component queue.
 - Terminated indicates that the component queue is disabled.

- Number of items that are waiting to process in a component queue.
- Execution details of items processed.
- Issues with a component queue, for example a JAAS user not having the proper security rights.

Create and configure component queues

Component Manager Statistics

- Statistical information captured for the component manager.
- Provides:
 - Processing times for each of the component queues

Component Queues Processing Time Information -

Method	NTimes	NGood	NBad	Worst	When	Best	When	Avg	Total
CMDp.LoanProcess.FNOSDS_5.CE_Operations_0	90	90	0	73.0ms	2015.10.27 14:00:23	1.0ms	2015.10.26 22:53:30	3.82ms	0.34sec
CMDp.LoanProcess.FNOSDS_5.Loan_Operations_0	76	76	0	47.0ms	2015.10.27 04:12:55	1.0ms	2015.10.27 14:00:23	2.43ms	0.18sec
CMDp.LoanProcess.FNOSDS_5.WSRequest_0	90	90	0	7.0ms	2015.10.27 14:00:24	1.0ms	2015.10.27 14:05:54	1.89ms	0.17sec
CMDp.OSDBUSER.FNOSDS_1.CE_Operations_0	51	51	0	10.0ms	2015.10.26 19:13:53	1.0ms	2015.10.27 07:16:59	2.51ms	0.13sec

P8ConnP5:CE_Operations.getP8Subject	21	21	0	16.0ms	2015.10.29 19:47:20	3.0ms	2015.10.29 20:25:53	5.29ms	0.11sec
P8ConnP5:CE_Operations.loadfilenet.contenttops.ContentOperations	1	1	0	3.0ms	2015.10.29 19:47:20	3.0ms	2015.10.29 19:47:20	3ms	0sec
P8ConnP5:Loan_Operations.getMonthlyPayment	4	4	0	94.0ms	2015.10.29 20:12:17	7.0ms	2015.10.29 20:12:17	29.75ms	0.12sec
P8ConnP5:Loan_Operations.getMonthlyPayment.core	4	4	0	2.0ms	2015.10.29 20:12:17	0.0ms	2015.10.29 20:12:17	0.5ms	0sec
P8ConnP5:Loan_Operations.getP8Subject	13	13	0	9.0ms	2015.10.29 20:12:17	3.0ms	2015.10.29 20:33:17	3.54ms	0.05sec
P8ConnP5:Loan_Operations.loadcom.ibm.filenet.edu.Amortization	1	1	0	3.0ms	2015.10.29 20:12:17	3.0ms	2015.10.29 20:12:17	3ms	0sec

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Figure 5-38. Component Manager Statistics

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Notes:

The Component Manager Statistics displays the statistical information captured for the component manager.

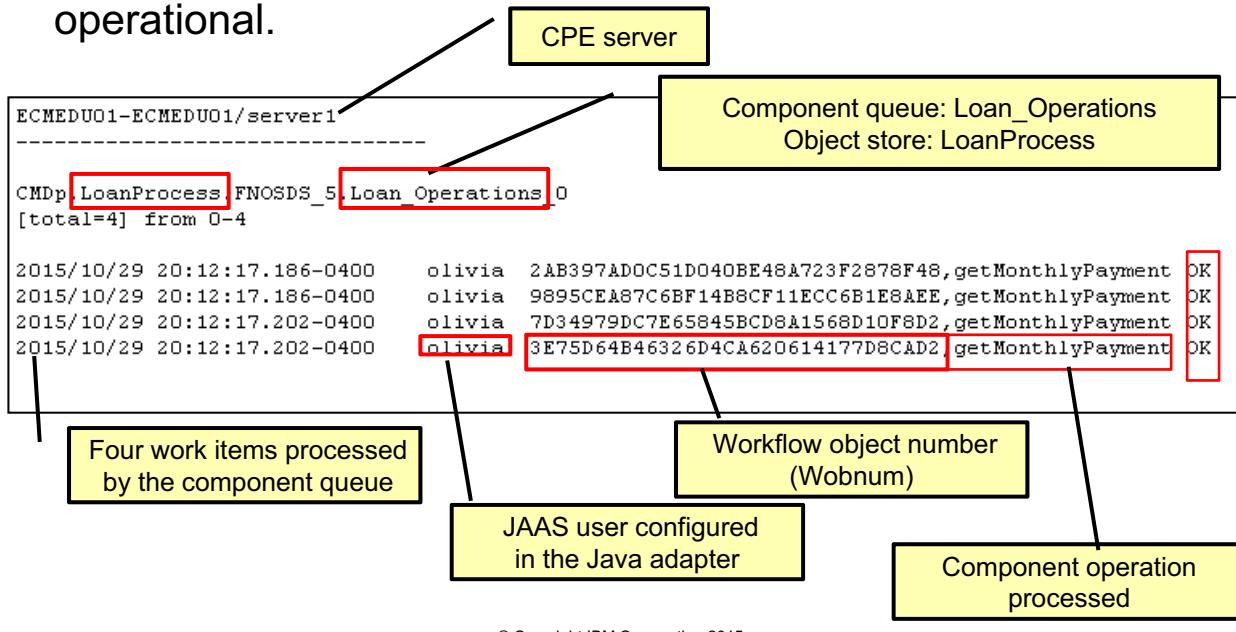
The statistics provide processing times for all the component queues.

- NTimes is the number of times the component queue is called.
- NGood is the number of times the operation completes successfully.
- Nbad is the number of times the operation fails.
- Worst is the longest performance time for the operation to complete.
 - When is the time when the worst performance occurred.
- Best is the shortest performance time for operation to complete.
 - When is the time when the worst performance occurred.
- Avg is the average performance time to complete the all the operations.
- Total is the total performance time for all the operations.

Create and configure component queues

Component processing details

- Shows the information for components that are enabled and processing.
- Quick way to verify the component queues that should be operational.



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Figure 5-39. Component processing details

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Notes:

The Component Processing Details log displays information for only components that are enabled and processing.

This log provides a quick method to verify the component queues that should be operational.

The screen capture shows a sample Component Processing Log.

You see:

- On the top, the Content Platform Engine server
- In the center:
 - The name of the object store, LoanProcess.
 - The name of the component queue, Loan_Operations.
- On the bottom:
 - The component queue processed four work items.
 - The JAAS user name configured on the Java adapter of the component queue, Olivia.

- The workflow object number.
- The operation that was processed, getMonthlyPayment.
- The OK on the far right, indicates that the operation completed successfully.

Create and configure component queues

Demonstrations



- Create and configure a Java component queue.
- Examine the Component Manager logs.

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Figure 5-40. Demonstrations

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Notes:

Demonstration notes

Create and configure a Java component queue.

1. Create a code module for the Java component.
 - a. Use Administration Console for Content Platform Engine.
 - b. Select Object Stores > LoanProcess > Browse > Root Folder > CodeModules
 - c. Actions >New Document
 - Document title: Amortization
 - Class: Code Module
 - d. Click Next.
 - e. Under Content Elements, click Add.
 - Browse to: C:\Labs\Case Foundation 5.2.1 Administration\Component Integration\Amortization.jar

- Click Add Content.
- f. Click Next, until you get the Summary window, then click Finish.
2. Create the Java component queue.
- a. Right-click Component Queues and select New Component Queue.
 - b. Complete the wizard by using the following data:
 - Name: Loan_Operations
 - On the Configure the Java Adapter window: Code Module: Click Load Existing.
 - Select the code module, Amortization.
 - On the Adapter Properties window, change the polling interval to: 60000.
 - On the JAAS Credentials window:
 - Oscar/filenet
 - Leave the Configuration context blank, you do not need it because the component uses CELogin.
 - c. Click Next.
 - d. Review and click Finish.
3. Import the component queue operations.
- a. Open Process Configuration Console: Right-click Workflow System and select Configure Workflow Settings.
 - b. Double-click P8ConnP5.
 - c. Select Component Queues.
 - d. Open the Loan_Operations component queue.
 - e. Select the tab, Operations, and click the Import icon.
 - Select the method, getMonthlyPayment.
 - Click OK.
 - f. Rename the parameters as follows:
 - param1: LoanAmount
 - param2: InterestRate
 - param3: LoanTerm
 - return_value: MonthlyPayment
 - g. Click OK.
 - h. Commit the changes.

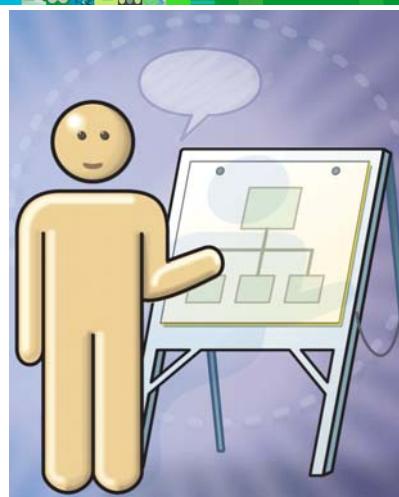
Examine the Component Manager logs.

1. Open the Process Services ping page, <http://ecmedu01:9080/peengine/IOR/ping>.
2. Log in as p8admin/IBMFileNetP8

3. Scroll down to the bottom of the page.
4. Examine the Component Manager logs and select to open the link in a new tab.
 - a. Right-click the link, Component Manager Logs.
 - b. Notice the three components listed, WSRequest, CE_Operations, and the component queue you created, Loan_Operations.
 - c. Need to scroll to the bottom of the screen to compare results after launching the workflow.
5. Examine the Component Manager Statistics.
 - a. Right-click the link, Component Manager Stats and select to open the link in a new tab.
 - b. Select the new tab.
 - c. Examine the row for the component queue Loan_Operations.
6. Examine the Component Processing Details.
 - a. Right-click the link, Component Processing Details and select to open the link in a new tab.
 - b. Select the new tab.
 - c. Examine the row for the component queue Loan_Operations.

Create and configure component queues

Exercise introduction



Create and configure a Java component queue.

- In this exercise, you will:
 - Create a code module for the Java component.
 - Create a Java component queue.
 - Import the component queue operations.
 - Set security on the component queue.

Verify the Java component queue.

- In this exercise, you will:
 - Verify the component queue with the Process Services ping page.
 - Verify the component queue configuration with vwtool.
 - Verify the component queue functionality.
 - Examine the Component Manager logs.

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Figure 5-41. Exercise introduction

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Notes:

There are three exercises that you need to complete for this lesson.

Exercise 1: You learn how to create and configure a Java component queue (New Component Manager Framework).

Exercise 2: You learn about the tools available to verify the component queue that you create in exercise 1. You learn how to read the Component Manager logs to help you monitor and maintain the component queues.

Create and configure component queues

Exercise introduction (2)



Stop the component queue and examine the Component Manager logs.

- In this exercise, you will:
 - Stop the component queue, Loan_Operations.
 - Check the Component Manager logs.
 - Start the component queue and check the Component Manager logs.

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Figure 5-42. Exercise introduction (2)

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Notes:

Exercise 3: You learn how to stop and start the component queue and see the output generated in the Component Manager logs.

Create and configure component queues

Activities

In your Student Exercises

- Unit: Unit name
- Lesson: Lesson name
- Activities:
 - Create and configure a Java component queue.
 - Verify the component queue.
 - Stop and start the component queue.

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Figure 5-43. Activities

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Notes:

Use your Student Exercises to perform the activities listed.

IBM Case Foundation 5.2.1: Component integration

Unit summary



Having completed this unit, you should be able to:

- Understand the purpose of component integration in workflow applications.
- Create and configure component queues.

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Figure 5-44. Unit summary

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