Course Guide

IBM FileNet Content Manager 5.2.1: Manage Sweep Jobs

Course code F286 ERC 1.0

IBM Training

September 2016 edition

Notices

This information was developed for products and services offered in the US.

IBM may not offer the products, services, or features discussed in this document in other countries. Consult your local IBM representative for information on the products and services currently available in your area. Any reference to an IBM product, program, or service is not intended to state or imply that only that IBM product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any IBM intellectual property right may be used instead. However, it is the user's responsibility to evaluate and verify the operation of any non-IBM product, program, or service.

IBM may have patents or pending patent applications covering subject matter described in this document. The furnishing of this document does not grant you any license to these patents. You can send license inquiries, in writing, to:

IBM Director of Licensing
IBM Corporation
North Castle Drive, MD-NC119
Armonk, NY 10504-1785
United States of America

INTERNATIONAL BUSINESS MACHINES CORPORATION PROVIDES THIS PUBLICATION "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Some jurisdictions do not allow disclaimer of express or implied warranties in certain transactions, therefore, this statement may not apply to you.

This information could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of the publication. IBM may make improvements and/or changes in the product(s) and/or the program(s) described in this publication at any time without notice.

Any references in this information to non-IBM websites are provided for convenience only and do not in any manner serve as an endorsement of those websites. The materials at those websites are not part of the materials for this IBM product and use of those websites is at your own risk.

IBM may use or distribute any of the information you provide in any way it believes appropriate without incurring any obligation to you.

Information concerning non-IBM products was obtained from the suppliers of those products, their published announcements or other publicly available sources. IBM has not tested those products and cannot confirm the accuracy of performance, compatibility or any other claims related to non-IBM products. Questions on the capabilities of non-IBM products should be addressed to the suppliers of those products.

This information contains examples of data and reports used in daily business operations. To illustrate them as completely as possible, the examples include the names of individuals, companies, brands, and products. All of these names are fictitious and any similarity to actual people or business enterprises is entirely coincidental.

Trademarks

IBM, the IBM logo, and ibm.com are trademarks or registered trademarks of International Business Machines Corp., registered in many jurisdictions worldwide. Other product and service names might be trademarks of IBM or other companies. A current list of IBM trademarks is available on the web at “Copyright and trademark information” at www.ibm.com/legal/copytrade.shtml.

Contents

Trademarks iv

Course description v

Agenda vii

Unit 1. Configure a sweep job 1-1
Why is this lesson important to you? 1-2
Unit objectives 1-3
Sweep Framework 1-4
Sweep framework services 1-5
What is a 'Sweep'? 1-6
Types of sweeps 1-7
Background search sweeps 1-9
Job Sweeps 1-11
Why use a bulk move content job 1-13
Create a bulk move content job 1-14
Properties of bulk move content jobs 1-15
Filter expression property 1-17
Storage policy property 1-19
Define sweep target options 1-21
Schedule sweep runs 1-22
Sweep job monitoring tools 1-24
Instructor demonstration 1-25
Unit summary 1-26
Exercise: Configure a sweep job 1-27
Exercise introduction 1-28

Unit 2. Work with sweep policies 2-1
Why is this lesson important to you? 2-2
Unit objectives 2-3
Sweep policy 2-4
Policy-controlled sweep 2-6
Disposal policy 2-7
Disposal policy examples 2-9
Content migration policy 2-10
Retention update policy 2-12
Define time slots for sweep policies 2-14
Manage sweep records 2-15
Queue sweeps 2-16
Custom sweeps 2-18
Use content migration policies for HSM 2-20
Storage Plan Implementation 2-21
Storage Plan Implementation(2) 2-22
Storage Plan Implementation(3) 2-23
Storage Plan Implementation(4) 2-24
Unit summary 2-25
Exercise: Work with sweep policies 2-26
Exercise introduction 2-27

Trademarks

The reader should recognize that the following terms, which appear in the content of this training document, are official trademarks of IBM or other companies:

IBM, the IBM logo, and ibm.com are trademarks or registered trademarks of International Business Machines Corp., registered in many jurisdictions worldwide.

The following are trademarks of International Business Machines Corporation, registered in many jurisdictions worldwide:

FileNet® Redbooks® Tivoli®
WebSphere®

Windows is a trademark of Microsoft Corporation in the United States, other countries, or both.

Java™ and all Java-based trademarks and logos are trademarks or registered trademarks of Oracle and/or its affiliates.

VMware and the VMware "boxes" logo and design, Virtual SMP and VMotion are registered trademarks or trademarks (the "Marks") of VMware, Inc. in the United States and/or other jurisdictions.

Other product and service names might be trademarks of IBM or other companies.

Course description

IBM FileNet Content Manager 5.2.1: Manage Sweep Jobs

Duration: 2.5 hours

Purpose

The course is designed to teach administrators how to create sweep jobs and sweep policies to run bulk jobs on large numbers of documents. For example, move documents from high-cost storage to low-cost storage based on the document type and specified filtering criteria, or delete documents based on their age or retention expiration.

Audience

This course is intended for system administrators and solution builders who administer IBM FileNet Content Manager environments.

Prerequisites

- F270 – IBM Content Navigator 2.0.3.6: Introduction, or equivalent knowledge
- F280 - IBM FileNet Content Manager 5.2.1: Introduction, or equivalent knowledge
- F282 - IBM FileNet Content Manager 5.2.1: Work with object metadata, or equivalent knowledge
- F283 - IBM FileNet Content Manager 5.2.1: Security, or equivalent knowledge
- P8 terminology, including: Content Platform Engine, IBM Content Navigator, object stores, objects, Content Services, Process Services.
- Using IBM Content Navigator to work with content.
- Configuring desktops in IBM Content Navigator.

Objectives

- Move documents from one storage area to another with a Bulk Move Content Job.
- Configure a disposal policy.
- Configure a content migration policy.

Contents

- Sweep framework
- What is a 'Sweep'?
- Types of sweeps

- Background search sweeps
- Job sweeps
- Bulk move content jobs
- Filter expression property
- Storage policy property
- Define sweep target options
- Schedule sweep runs
- Sweep job monitoring tools
- Sweep policy
- Policy-controlled sweeps
- Disposal policy
- Content migration policy
- Retention update policy
- Define time slots for sweep policies
- Manage sweep records
- Queue sweeps
- Custom sweeps
- Use content migration policies for HSM

Curriculum relationship

To learn about related courses, visit the IBM training and skills website: http://www.ibm.com/services/learning

Agenda

Note

The following unit and exercise durations are estimates, and might not reflect every class experience.

Day 1

(00:15) Course introduction
(00:35) Unit 1. Configure a sweep job
(00:30) Exercise 1. Configure a sweep job
(00:30) Unit 2. Work with sweep policies
(00:40) Exercise 2. Work with sweep policies

Unit 1. Configure a sweep job

Estimated time

00:35

Overview

In this unit, you learn about the sweep management framework and how to configure a sweep job.

How you will check your progress

Successfully complete the unit exercises.

References

IBM Knowledge Center for FileNet P8 Platform 5.2.1

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

Why is this lesson important to you?

- As an Administrator, you manage objects in a FileNet Content Manager repository by monitoring and controlling object activity. For example, you might need to move content for large numbers of documents and annotations from a primary storage area to another storage area. You use a bulk move content job to complete the task.

Figure 1-1. Why is this lesson important to you?

IBM Training

Unit objectives

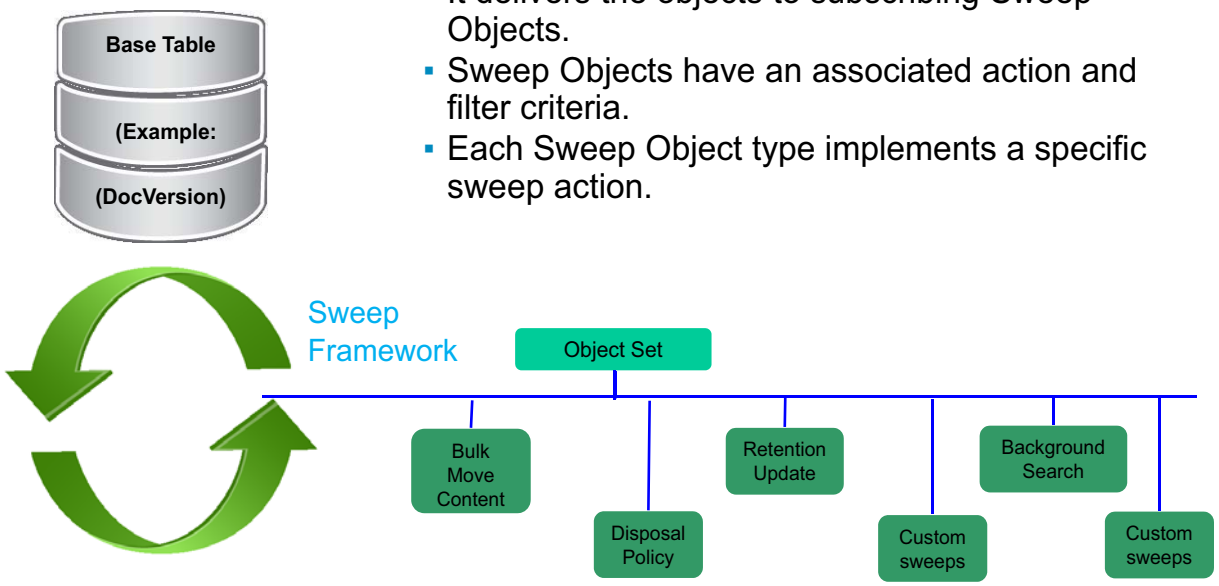
- Move documents from one storage area to another with a Bulk Move Content job.

Figure 1-2. Unit objectives

IBM Training

Sweep Framework

- The Sweep Framework provides a mechanism for examining large sets of objects and applying one or more operations to a user-defined subset.
  - It delivers the objects to subscribing Sweep Objects.
  - Sweep Objects have an associated action and filter criteria.
  - Each Sweep Object type implements a specific sweep action.



Configure a sweep job

Figure 1-3. Sweep Framework

The diagram shows the Sweep Framework.

The Sweep Framework is a Content Platform Engine subsystem that provides a mechanism for efficiently examining large sets of objects and applying one or more operations to a user-defined subset. This process is called 'Sweeping'.

The Sweep Framework delivers batches of objects that are members of some target class to subscribing Sweep Objects.

Sweep Objects have an associated action and filter criteria that is applied to each object in the batch to determine whether the action should be applied.

Each Sweep Object type implements a specific sweep action.

IBM Training

Sweep framework services

- Scalability
  - Horizontal scaling
    - Increase the number of server instances.
  - Vertical scaling
    - Increate the number of worker threads that are dedicated to sweep processing.
- Load management
  - Vary the allocation of server resources to sweeping.
- Scheduling
  - You can schedule Sweeps to run on specific days of the week and at specific times of the day.
- Provides:
  - The ability to halt and resume execution without losing context.
  - Failure recovery
  - Error logging and auditing
  - Performance monitoring

Figure 1-4. Sweep framework services

IBM Training

What is a ‘Sweep’?

- A user initiated background process.
  - Scans/examines (sweeps) a large set of objects once or multiple times.
  - Selects the objects that satisfy a rule/predicate.
  - Applies an action to each matching object.
- The Filter Expression property defines the rule/predicate.
- The action applied can be built in or custom.
  - Built in, system sweeps - the sweep type defines the action.
  - Custom sweeps - have a user defined the action.
- Much like running a query, iterating through the results and acting on each.

Figure 1-5. What is a ‘Sweep’?

Help path

FileNet P8 Platform> FileNet P8 Platform 5.2.1>Administering>Administering Content Platform Engine>Changing objects>Handling bulk processing with sweeps

http://www.ibm.com/support/knowledgecenter/en/SSNW2F_5.2.1/com.ibm.p8.ce.admin.tasks.doc/p8pcc175.htm

A sweep is a process that scans or sweeps through a set of objects (candidate objects) picking out the objects that meet a particular condition then doing something to those objects.

For system sweeps, the sweep type defines the action.

For custom sweeps, the action is user-defined. The custom action requires a Java class or JavaScript.

A sweep is like running a query, iterating through the results, and running an action on each.

IBM Training

Types of sweeps

- Background search sweeps
- Job sweeps
- Sweep policies
- Queue sweeps
- Custom sweeps
  - Sweep Actions

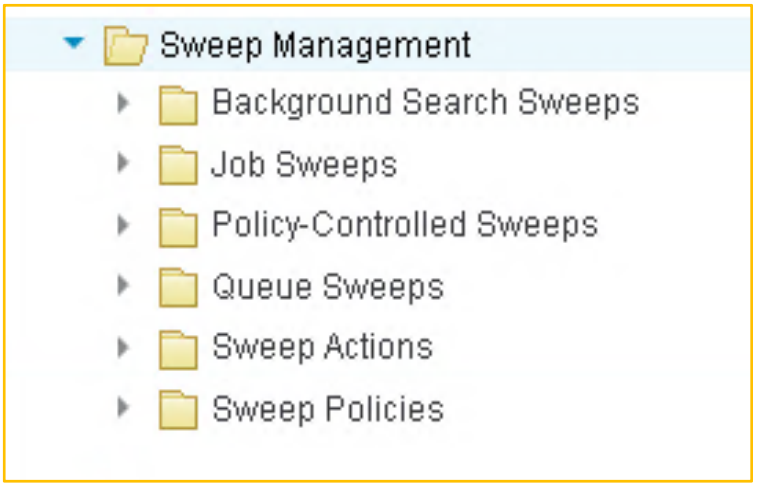


Figure 1-6. Types of sweeps

Help path

FileNet P8 Platform> FileNet P8 Platform 5.2.1>Administering>Administering Content Platform Engine>Changing objects>Handling bulk processing with sweep>Sweep types

http://www.ibm.com/support/knowledgecenter/en/SSNW2F_5.2.1/com.ibm.p8.ce.admin.tasks.doc/p8pcc176.htm

Five types of sweeps:

- Background search sweeps – a background search sweep runs one time to run a query that generates search results.
- Job sweeps – a job sweep runs one time to process instances of a target class.
- Sweep policies – a sweep policy is an object that specifies processing rules for a policy-controlled sweep. A policy-controlled sweep repeatedly visits all instances of a target class that is specified in the policy.
- Queue sweeps – queue sweeps provide a generic queuing service. They are especially useful in controlling the flow of work to a slow or resource-intensive process.
- Custom sweeps – custom sweeps process objects with user-implemented actions.

The screen capture shows the Sweep Management node in the Administration Console for Content Platform Engine.

Sweep Actions, are used to define the actions for custom sweeps.

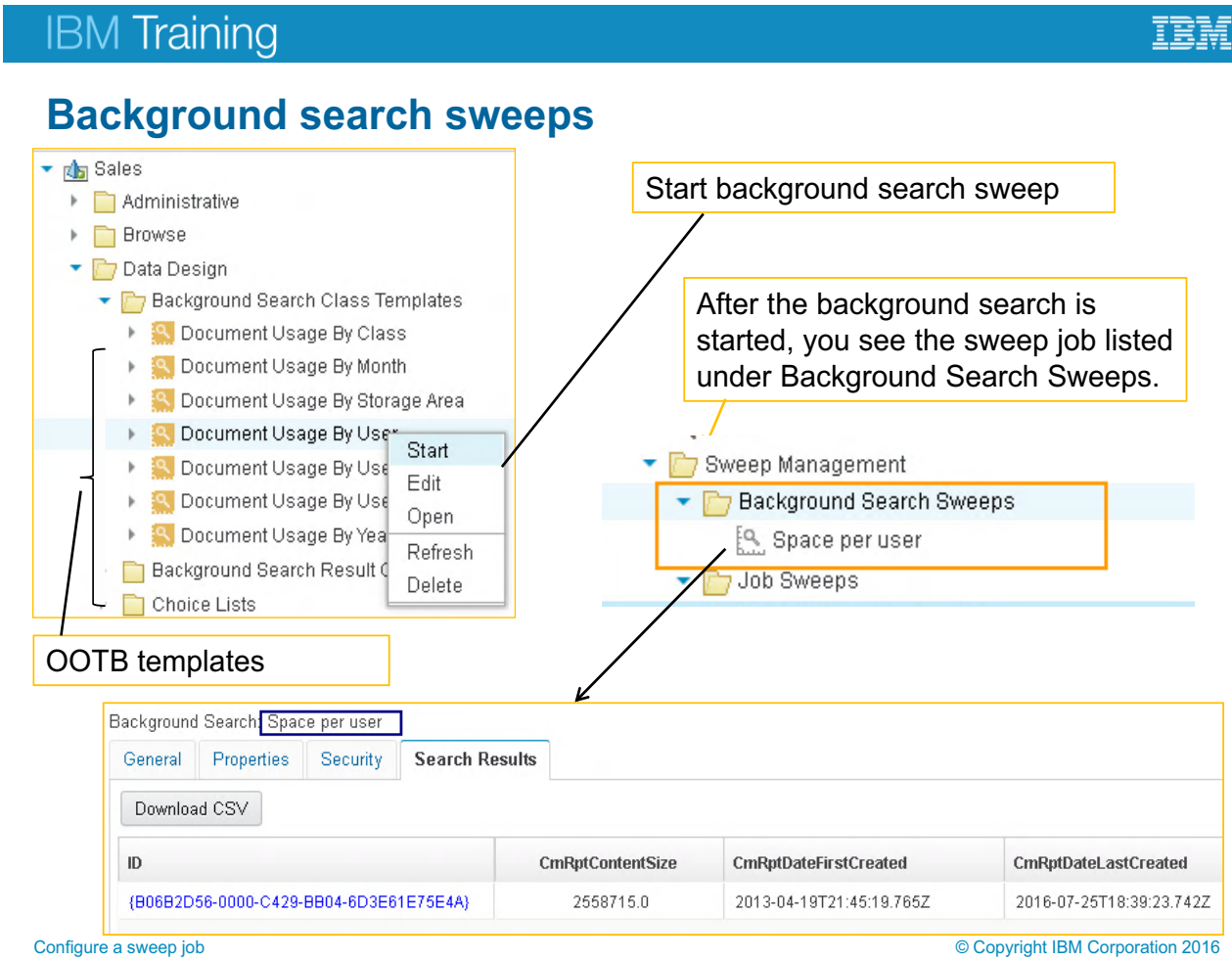


Figure 1-7. Background search sweeps

Help path

FileNet P8 Platform> FileNet P8 Platform 5.2.1>Administering>Administering Content Platform Engine>Changing objects>Handling bulk processing with sweeps>Sweep types>Background search sweeps

http://www.ibm.com/support/knowledgecenter/SSNW2F_5.2.1/com.ibm.p8.ce.admin.tasks.doc/p8pcc457.htm

A background search sweep runs one time and generates search results. Background search sweeps are used for large queries that can take a long time to run. For example, creating reports on system usage. You can proceed with other activities while the background search runs. In addition, background searches are an essential part of the reporting framework that enables processing of search results. The reporting framework can be enhanced by installing the Reporting Enablement Extensions add-on.

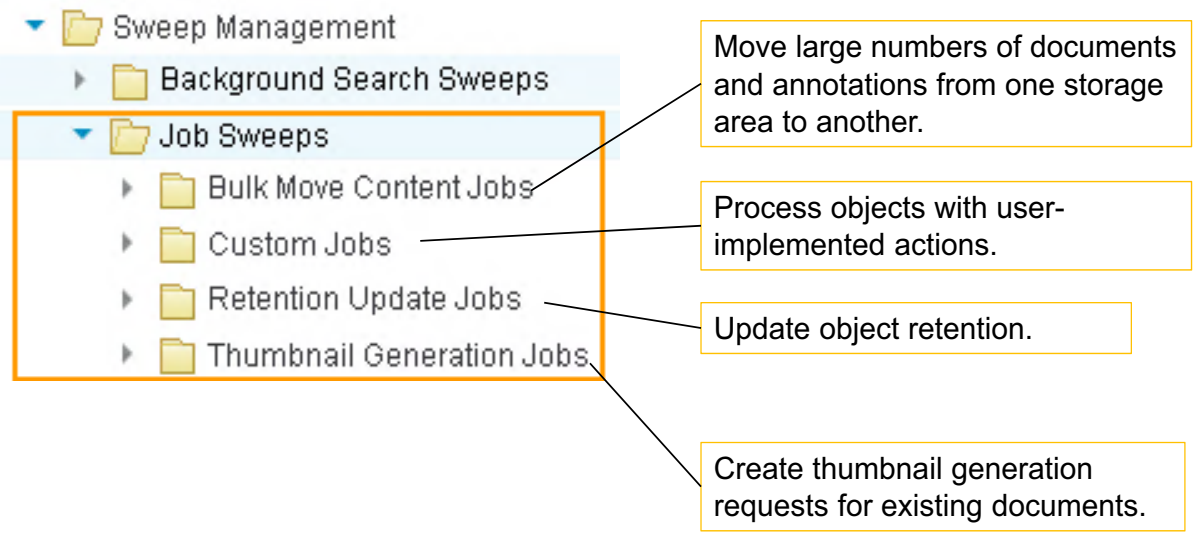
The system provides a set of background search class templates. You can create your own custom search class template.

To start a background search sweep, right-click the template and select Start. (Screen capture on the left).

When you finish the wizard, the background search sweep is listed under the Sweep Management > Background Search Sweeps node (screen capture on the middle right). To view the search results, you open the search sweep, for example, Space per user, and click the Search Results tab (screen capture on the bottom). In addition to background search sweeps, sweep results are collected when the sweep mode is set to preview or when the option to record failures is set.

IBM Training

Job sweeps



Job sweeps are useful for one-time bulk updates of many objects.

Figure 1-8. Job Sweeps

Help paths

FileNet P8 Platform> FileNet P8 Platform 5.2.1>Administering>Administering Content Platform Engine>Changing objects>Handling bulk processing with sweeps>Sweep types>Job Sweeps

http://www.ibm.com/support/knowledgecenter/SSNW2F_5.2.1/com.ibm.p8.ce.admin.tasks.doc/p8pcc430.htm

FileNet P8 Platform 5.2.3 (Main)>Administering>Administering Content Platform Engine>Changing objects>Handling bulk processing with sweeps>Creating sweeps>Moving content

http://www.ibm.com/support/knowledgecenter/SSNW2F_5.2.1/com.ibm.p8.ce.admin.tasks.doc/p8pcc172.htm

FileNet P8 Platform 5.2.3 (Main)>Administering>Administering Content Platform Engine>Changing objects>Handling bulk processing with sweeps>Creating sweeps>Updating object retention

http://www.ibm.com/support/knowledgecenter/SSNW2F_5.2.1/com.ibm.p8.ce.admin.tasks.doc/p8pcc133.htm

FileNet P8 Platform 5.2.3 (Main)>Administering>Administering Content Platform Engine>Changing objects>Handling bulk processing with sweeps>Creating sweeps>Generating thumbnails

http://www.ibm.com/support/knowledgecenter/SSNW2F_5.2.1/com.ibm.p8.ce.admin.tasks.doc/p8pcc186.htm

The Content Platform Engine includes job sweep subclasses with built-in actions.

- Bulk Move Content Jobs – Move large numbers of documents and annotation from one storage area to another.
- Retention Update Jobs – Change the retention period of an object based on the class of an object or the state of its properties.
- Thumbnail Generation Jobs – Create thumbnail generation requests for existing documents. The Content Platform Engine includes a thumbnail generation service, the thumbnail generation sweep job creates requests to the thumbnail generation service to render the thumbnail images.

Custom jobs – Process objects in ways that are not built into the server. Requires that you define a custom action. The action requires a developer to write an action handler.

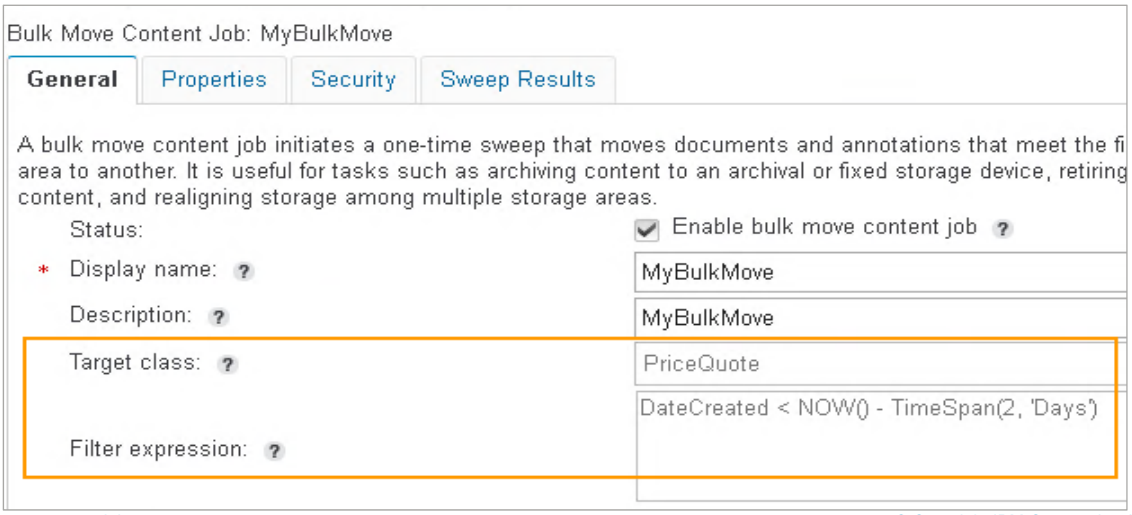
Jobs sweeps have a definite start and end:

- It starts when the first candidate object is examined.
- It ends when each candidate object is examined exactly one time.
- A sweep job cannot be restarted after it ends.
  - You can clone the original instance and run the new instance.

IBM Training

Why use a bulk move content job

- Reasons for bulk move:
  - Retire an obsolete storage device by moving all the content to a replacement device.
  - Archive content by moving it from a primary storage device to an archival device or lower-cost storage.
  - Move content to fixed storage to satisfy regulatory requirements.



Configure a sweep job

Figure 1-9. Why use a bulk move content job

Help path

FileNet P8 Platform> FileNet P8 Platform 5.2.1>Administering>Administering Content Platform Engine>Changing objects>Handling bulk processing with sweeps>Creating sweeps>Moving content

http://www.ibm.com/support/knowledgecenter/SSNW2F_5.2.1/com.ibm.p8.ce.admin.tasks.doc/p8pcc172.htm

The Target Class, and Filter Expression determine the affected documents (or annotations).

Target Class must point to a Document or Annotation class or a subclass of either.

Create a bulk move content job

- Use the Content Platform Engine Administration Console to create sweep jobs.

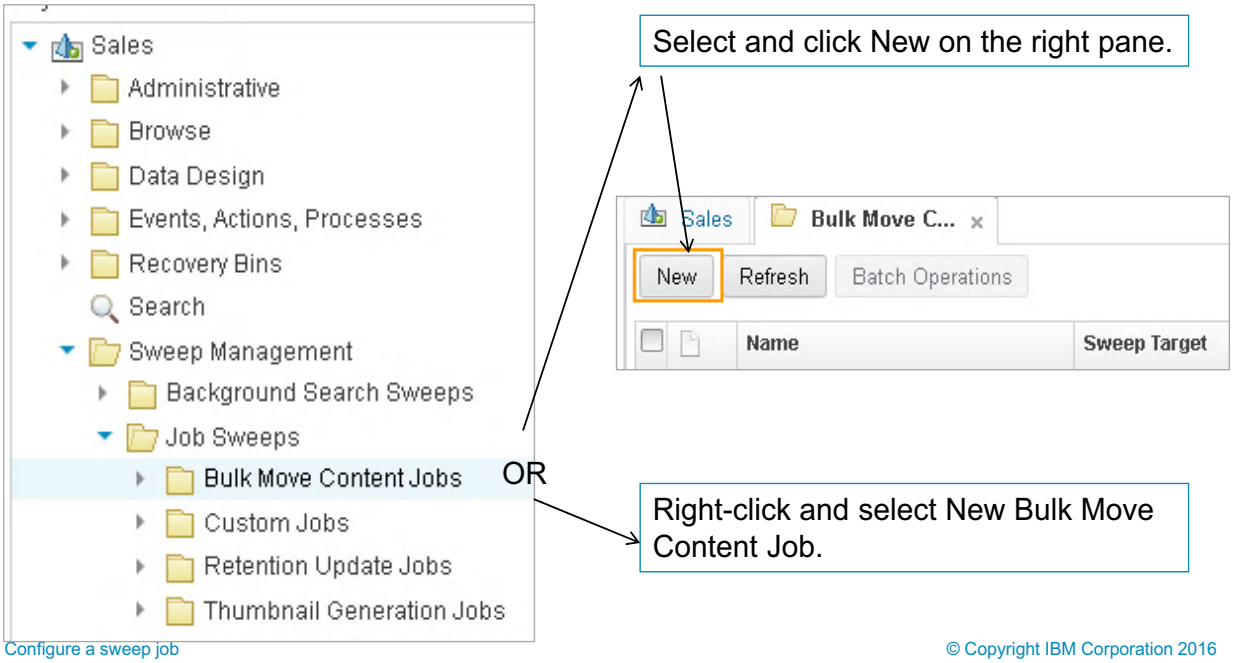


Figure 1-10. Create a bulk move content job

You use the Content Platform Engine Administration Console (ACCE) to create a sweep job. The screen captures show, how to create a Bulk Move Content Job.

The screen capture on the left shows the navigation pain for ACCE, open to the Sales object store.

To create a new sweep job, either:

- Select the sweep job node and click New on the sweep job pane that is displayed on the right, or
- Right-click the sweep job node, and select New *<sweep job type>.*

IBM Training

Properties of bulk move content jobs

- The target class
  - Determines the type of object you want to move.
  - Example: Document class or Annotation class.
- Filter Expression
  - Narrows the scope to include only objects that meet specific criteria.
- Sweep mode
  - Normal
  - Preview
  - Preview counters only
- Storage Policy
- Options
  - Include subclasses
  - End replication after move (Image Services only)
  - Record failures
- Start and end times
  - Effective start – if not set job starts immediately
  - Effective end – Date and time when job must end.

Configure a sweep job

Figure 1-11. Properties of bulk move content jobs

Help path

FileNet P8 Platform 5.2.3 (Main)>Administering>Administering Content Platform Engine>Changing objects>Handling bulk processing with sweeps>Sweep types>Job sweeps

http://www.ibm.com/support/knowledgecenter/SSNW2F_5.2.1/com.ibm.p8.ce.admin.tasks.doc/p8pcc430.htm

Sweep jobs have a set of properties that you configure when you create them. The set of properties for the different types of sweep jobs are similar. The important properties that are listed, are for a Bulk Move Content job.

Before you create a bulk move content job, you must know:

- What objects do you need to move?
- Where do you need to move the objects?
- When do you need to move the objects?

Target Class

- Must be a searchable class.
  - Searchable means that it can be used in a 'FROM' clause of a query.

- The scope can include instances of subclasses.

Filter Expression

IBM Training

Filter expression property

- Criteria to filter the candidate of objects defined by the target class.
- Expression that uses properties and values.
- Syntax similar to Where clause of an SQL query.
- Examples of filter expressions:
  - All superseded documents: `VersionStatus = 4`
  - All documents that were created at least a year ago:
    ```
    DateCreated < NOW() - TimeSpan(365, 'Days')
    ```
  - All content in a specific storage area:
    ```
    StorageArea = OBJECT('{5E2BE09A-F4B1-49E2-A229-77FE32E5FEF1}')
    ```
  - The result of a complex logical expression:
    ```
    VersionStatus = 4 AND DateCreated < NOW() -
     TimeSpan(365,'Days')AND ContentSize >(1024 * 1024 * 500)
    ```

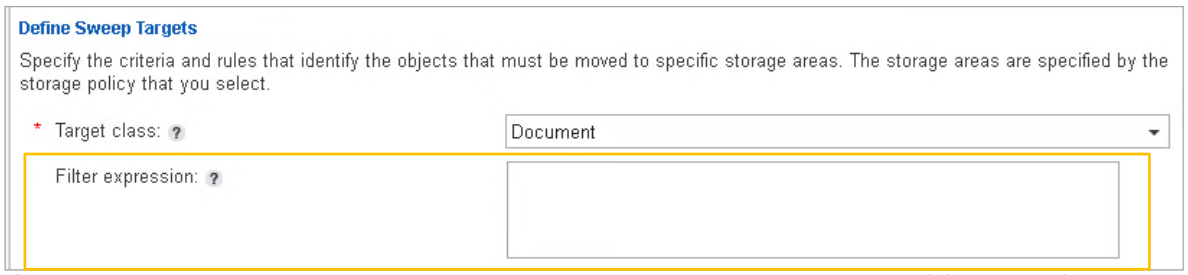


Figure 1-12. Filter expression property

Help path

FileNet P8 Platform> FileNet P8 Platform 5.2.1>Administering>Administering Administering>Administering Content Platform Engine>Changing objects>Handling bulk processing with sweeps>Sweep filter conditions

http://www.ibm.com/support/knowledgecenter/en/SSNW2F_5.2.1/com.ibm.p8.ce.admin.tasks.doc/p8pcc178.htm

FileNet P8 Platform> FileNet P8 Platform 5.2.1>Developing FileNet P8 applications>Content Engine Development>Content Engine Java and .NET Developer's Guide>Reference>SQL Syntax Reference>Query Syntax

http://www.ibm.com/support/knowledgecenter/en/SSNW2F_5.2.1/com.ibm.p8.ce.dev.ce.doc/query_sql_syntax_ref.htm

The filter expression can use any property of the Target Class. For example: If the document has a property that is called color and it has values red and green. You can create a filter expression for this property: color = 'green‘

You can specify a filter expression for all the system sweep jobs.

The slide lists examples of filter expressions that might be used in a Bulk Content Move job.

The screen capture shows a section of the define sweep targets wizard. For a Bulk Move Content Job, the default target class is Document. Notice that the Filter expression is not a required valued.

After the bulk move job is completed, you can use the properties and values, which are used in the filter expression, to run a search and verify that the content is moved. You can check the properties of the objects in the search results to view the current storage area.

The filter expressions are the same as the filter expressions used by subscriptions and audit definitions.

IBM Training

Storage policy property

- Storage policy determines the destination storage for the moved content.
- Storage policy must be predefined.
  - Administrative node of Administration Console

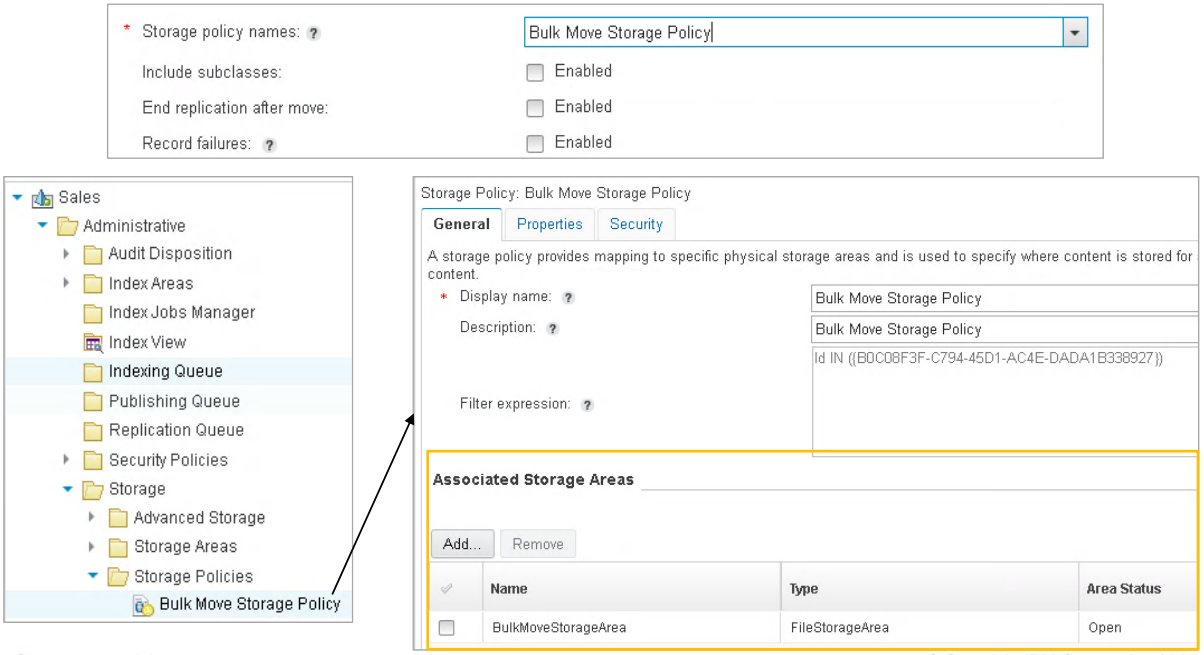


Figure 1-13. Storage policy property

Help path

FileNet P8 Platform> FileNet P8 Platform 5.2.1>Administering>Administering Content Platform Engine>Defining the repository infrastructure>Storing content>Assigning document content to a storage area>Storage policies

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

The storage policy name is selected from a list of predefined storage policies (screen capture on the top).

A storage policy is defined in the Content Platform Engine administration console, under Administrative > Storage > Storage Policies (screen capture on the lower left).

The screen capture on the lower right, shows the general properties for the storage policy, Bulk Move Storage Policy. Note the Associated Storage Areas section. Only one storage area is associated and it is a file storage area.

A storage policy can:

- Include fixed storage areas.
- Control multiple storage areas.

- One open storage area is chosen at random to move the content at the time of the sweep job.
- If content, for an object to be moved, exists in one of the storage areas that are referenced by the storage policy, the content is not moved, and the Processed Object Count property is not incremented.

Define sweep target options

- Include subclasses
  - Enabled – include subclasses of the target class for the source of objects.
- End replication after move
  - Enable/disable replication on a document and its annotations after the content is moved to the destination storage area (Move content jobs only)
- Record failures
  - Enabled – record any failures during the content move.

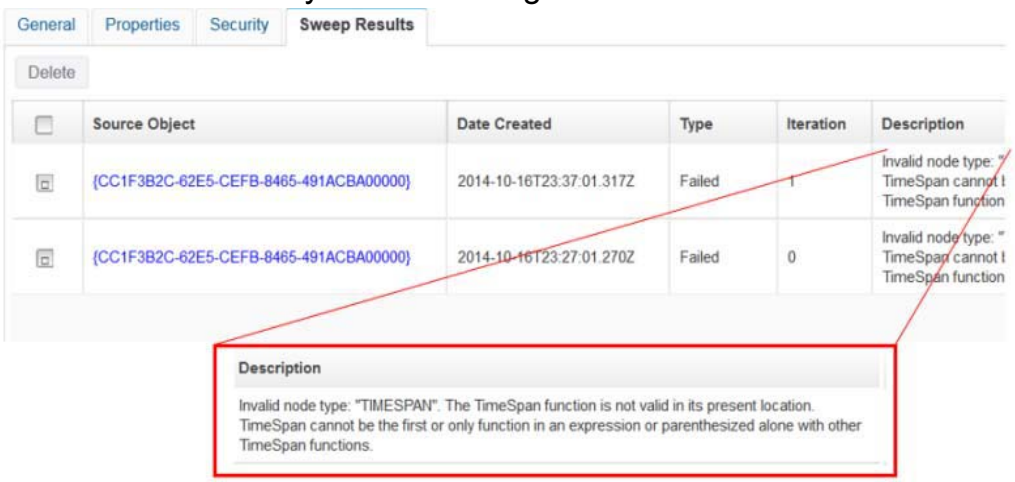


Figure 1-14. Define sweep target options

Options that you can specify for sweep jobs:

- Include subclasses
  - Enabled - target class and subclasses are examined for objects to act upon.
- End replication after move – applies to Bulk Move Content jobs only that are federating content from Image Services and is ignored otherwise.
  - Enabled – End the federation relationship with replicas that are stored in an Image Services repository
- Record failures
  - Enabled - record any failures that occur during execution of the sweep.
  - The failures are displayed in the sweep results as shown in the screen capture. You see the type that is listed as Failed. The details of the cause of the failure are included in the Description column.

Schedule sweep runs

- Schedule a sweep to run within one or more time slots.
- Sweep is paused between time slots.
- Effective way to break up large jobs and run them during non-peak hours.

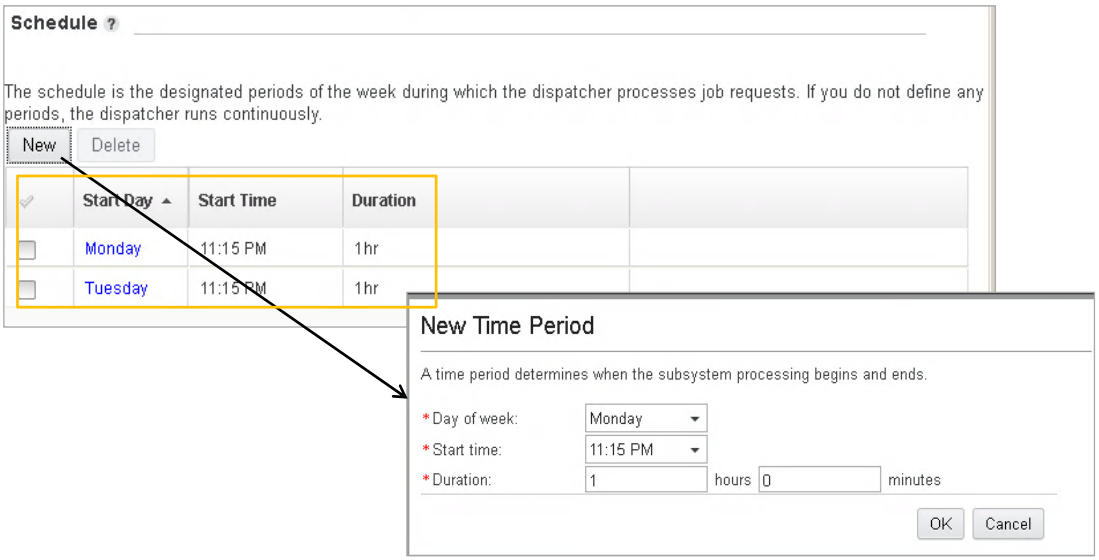


Figure 1-15. Schedule sweep runs

Help path

FileNet P8 Platform> FileNet P8 Platform 5.2.1>Administering>Administering Content Platform Engine>Changing objects>Handling bulk processing with sweeps>Time slot scheduling

http://www.ibm.com/support/knowledgecenter/en/SSNW2F_5.2.1/com.ibm.p8.ce.admin.tasks.doc/p8pcc179.htm

A sweep can be scheduled to run within one or more time slots. A single time slot specifies the day of the week, the start time, and the duration that the sweep runs.

A sweep is effectively paused between time slots.

- For example, suppose that the expiration of the current time slot stops a sweep mid-way through processing a set of items. When the sweep runs in its next time slot, it resumes from where it previously stopped.

For run-once sweep jobs that process small database tables, time slots have marginal utility.

For large jobs, configuring time slots can be beneficial.

- For example, say that you want to update the retention date on a Document subclass that consists of several thousands of instances. You can configure a sweep job to run during

non-peak hours, such as every day of the week between Midnight and 2 AM. The job runs in only those time slots until it completes processing.

You can configure time slots for the sweep subsystem at the server hierarchy level (domain, site, virtual server, or server instance). This global configuration impacts all of the sweeps within that hierarchy. You can also configure time slots for individual sweeps, which override the time slot configuration in the sweep subsystem.

To schedule time slots for a sweep job. First, create the sweep job and specify the effective start date. Edit the sweep job. In the General tab, under the **Schedule** section at the bottom, click New (upper screen capture). The **New Time Period** window displays. The lower screen capture, shows a time slot that is configured for Monday at 11:15 PM, with a 1-hour duration. The orange high-light box in the upper screen capture, shows two time slots configured.

IBM Training

Sweep job monitoring tools

- Other monitoring tools:
  - Standard counters for
    - IBM System Dashboard for Enterprise Content Management
  - Audit logging

Figure 1-16. Sweep job monitoring tools

Sweep jobs include the following monitoring properties:

- Sweep start date – the system date and time when the sweep job started.
- Sweep end date – the system date and time when the sweep job completed.
- Examined object count – The objects examined (objects that belong to the target class).
- Processed object count – The objects processed (objects that satisfy the filter expression).
- Failed object count – the objects that failed to process.

IBM Training

Instructor demonstration

- Configure a background search.

Figure 1-17. Instructor demonstration

Configure background search and create reports and charts to show the results.

Play the prerecorded demonstration. To do a live demonstration, requires many preexisting documents on the system.

http://ibm.biz/BdrgFu

Information

The demonstration is also available on YouTube, https://www.youtube.com/watch?v=OBS7YIBodVo

IBM Training

Unit summary

- Move documents from one storage area to another with a Bulk Move Content job.

Figure 1-18. Unit summary

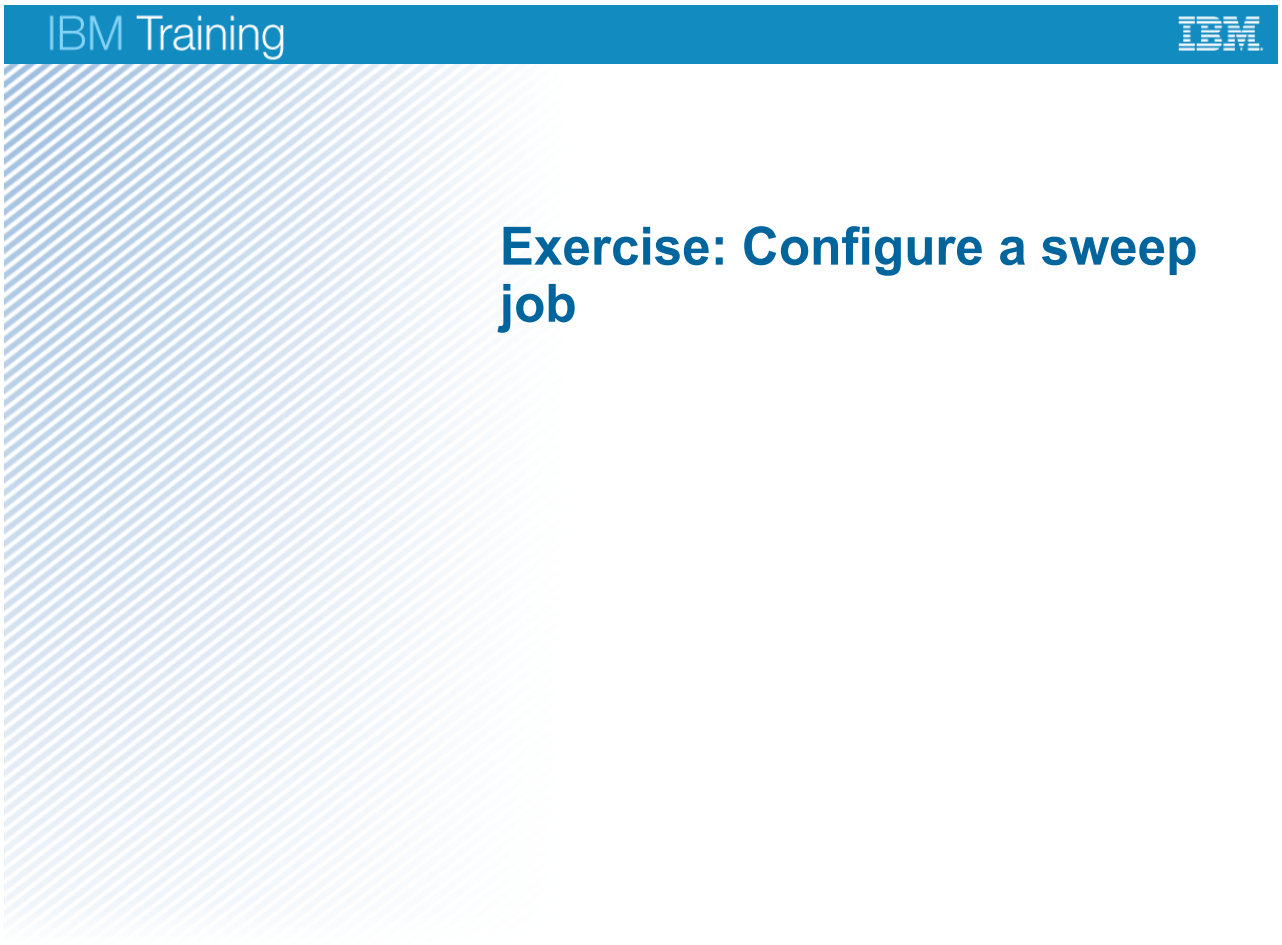
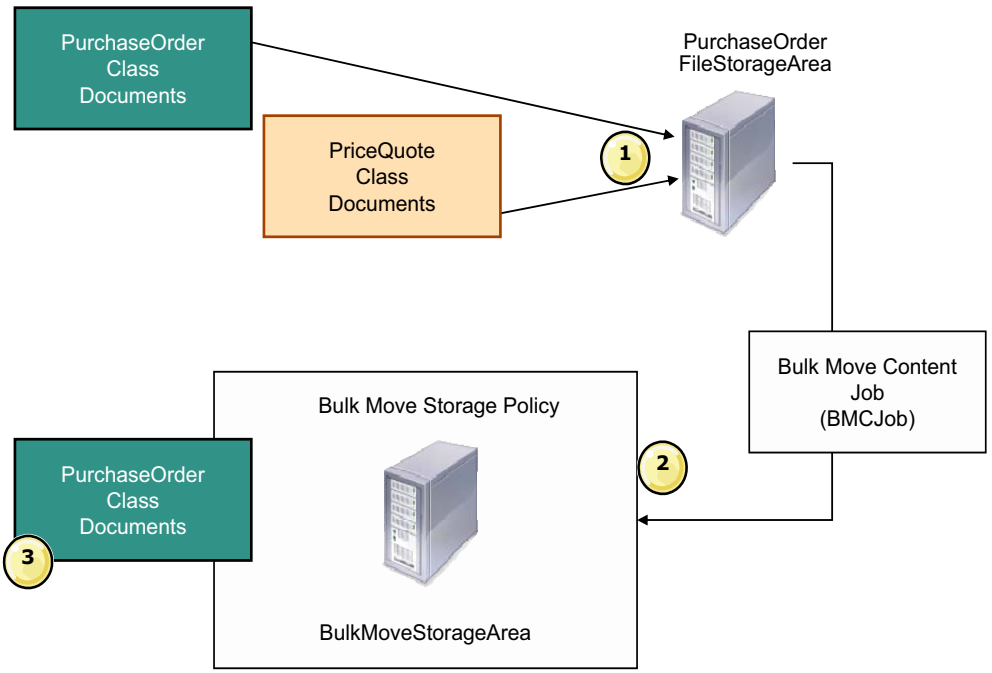


Figure 1-19. Exercise: Configure a sweep job

IBM Training

Exercise introduction

- Move documents from one storage area to another with a Bulk Move Content Job.



Configure a sweep job

Figure 1-20. Exercise introduction

This exercise contains two activities in. Both involve configuring a bulk move content job.

- Activity 1.1, includes step-by-step instructions.
- Activity 1.2, is a challenge with high-level instructions to give the student the opportunity to practice the skills learned.

The diagram shows the different Content Platform Engine objects that are used in the activity, Bulk move content job.

1. The content of documents that belong to the document classes, PurchaseOrder and PriceQuote, are stored in the storage area, PurchaseOrderFileStorageArea.
2. You specify the Bulk Move Storage Policy as the destination for the Bulk Move Content Job.
   a. When the Bulk Move Content Job runs, it moves the content from the source storage area, PurchaseOrderFileStorateArea, to the destination storage area that is defined in the Bulk Move Storage Policy, BulkMoveStorageArea.
3. You define the Target class as PurchaseOrder. Only the documents that belong to the class, PurchaseOrder, are moved, even though the PurchaseOrderFileStorageArea contains two different types of documents.

Unit 2. Work with sweep policies

Estimated time

00:30

Overview

In this unit, you learn about sweep policies and how to create a disposal policy.

How you will check your progress

Successfully complete the unit exercises.

References

IBM Knowledge Center for FileNet P8 Platform 5.2.1

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

IBM Training

Why is this lesson important to you?

- As an administrator, you need to maintain the FileNet Content Manager repositories. You need to configure sweep policies to automatically:
  - Delete documents based on specified criteria.
  - Move content from high-cost storage to low-cost based on specified criteria.

Figure 2-1. Why is this lesson important to you?

IBM Training

Unit objectives

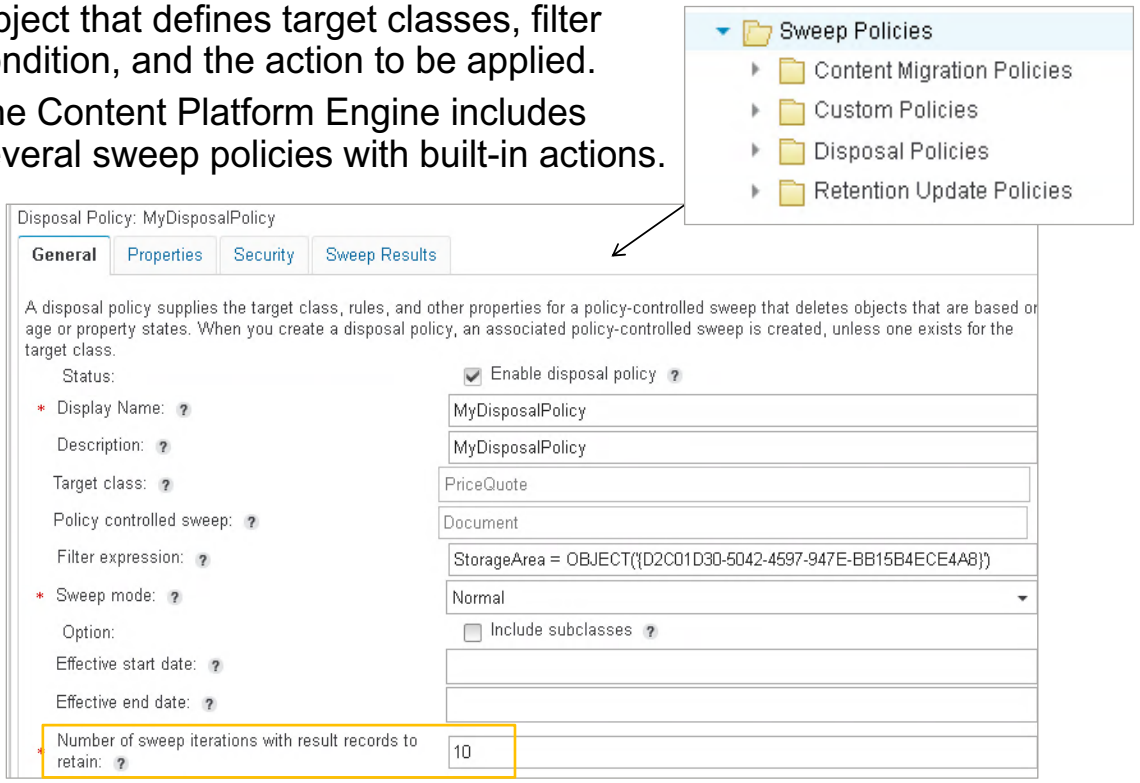
- Create a disposal policy.
- Create a content migration policy.

Figure 2-2. Unit objectives

IBM Training

Sweep policy

- Object that defines target classes, filter condition, and the action to be applied.
- The Content Platform Engine includes several sweep policies with built-in actions.



Work with sweep policies

Figure 2-3. Sweep policy

Help path

FileNet P8 Platform>FileNet P8 Platform 5.2.1>Administering>Administering Content Platform Engine>Changing objects>Handling bulk processing with sweeps>Sweep types>Sweep policies

http://www.ibm.com/support/knowledgecenter/en/SSNW2F_5.2.1/com.ibm.p8.ce.admin.tasks.doc/p8pcc432.htm

A sweep policy object, defines the target classes, the filter condition, and the action to be applied.

The Content Platform Engine includes several sweep policies with built-in actions. The screen capture on the upper right, shows the Sweep Policies node in the Administration Console and the four types of sweep policies:

- Content Migration Policies
- Custom Policies
- Disposal Policies
- Retention Update Policies

The lower screen capture, shows a disposal policy, opened to the General tab.

A sweep policy runs continuously, one iteration after another. A delay period between iterations can be configured and an end time for the sweep to stop running.

Sweep Policy has Sweep Results

Policy-controlled sweeps run multiple iterations. Sweep Policies have a property, Number of sweep iterations with result records to retain that determines how long sweep results are kept until the system automatically deletes them (highlighted orange rectangle in lower screen capture).

IBM Training

Policy-controlled sweep

- Policy-controlled sweep
  - Repeatedly examines all instances of a target class that is specified in the policy.
  - Have a definite start and indefinite completion.
    - Continue to run until they are either disabled or deleted.
  - Related to one or more sweep policies.
  - Indirectly created by creating a sweep policy.
  - Useful for running operations triggered by calendar-based events.
    - Automatically dispose of objects when their retention expires.

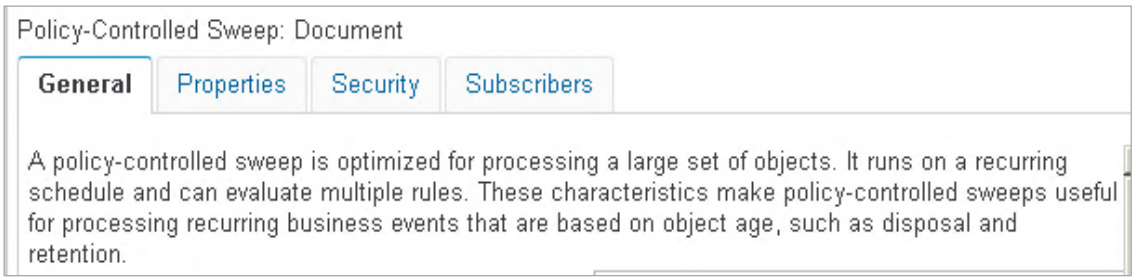


Figure 2-4. Policy-controlled sweep

Help path

FileNet P8 Platform>FileNet P8 Platform 5.2.1>Administering>Administering Content Platform Engine>Changing objects>Handling bulk processing with sweeps>Sweep types>Sweep policies

http://www.ibm.com/support/knowledgecenter/en/SSNW2F_5.2.1/com.ibm.p8.ce.admin.tasks.doc/p8pcc432.htm

The policy-controlled sweep object, is what controls the actual scan and where timeslots for scheduled operation are applied.

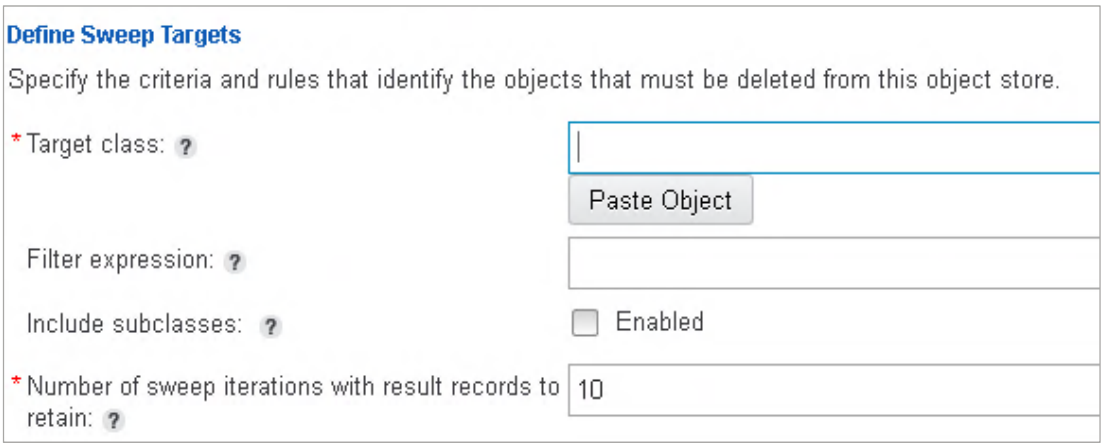
A policy-controlled sweep runs at the start time for which it is configured. If a start time is not set, then the sweep is eligible to start immediately.

A sweep policy and the policy-controlled sweep are two separate objects. A third object, a sweep relationship, defines an association between a sweep policy and a policy-controlled sweep. In the relationship, the sweep policy is a subscriber to the policy-controlled sweep. A single policy-controlled sweep can be subscribed to by more than one sweep policy.

IBM Training

Disposal policy

- Used to delete objects of a specified class that satisfies specified criteria.
  - Criteria can include the state of a property, such as the age of a document.
- Applies security differently than other sweeps.



Work with sweep policies

Figure 2-5. Disposal policy

Help path

FileNet P8 Platform>FileNet P8 Platform 5.2.1>Administering>Administering Content Platform Engine>Changing objects>Handling bulk processing with sweeps>Creating sweeps>Deleting objects with a sweep

http://www.ibm.com/support/knowledgecenter/en/SSNW2F_5.2.1/com.ibm.p8.ce.admin.tasks.doc/p8pcc167.htm

A disposal policy is used to delete objects of a specified class that satisfy the specified criteria. The criteria can include the state of a property, such as the age of a document.

The disposal policy applies security differently than other sweeps.

- The disposal policy creator needs WRITE_ANY_OWNER permission on the object store.

A disposal policy contains the following details:

- Target class (required)
  - Class or type of the objects that you want to delete.
- A filter expression
- Whether to include subclasses of the target class in the list of objects to examine.

- The number of sweep iterations with result records to keep (required). By default 10 sweep iterations are kept.

The screen capture shows, the Define Sweep Targets window of the wizard when you add a disposal policy.

IBM Training

Disposal policy examples

- Example 1: Delete superseded minor versions
  - Target class: Document (or Document subclass)
  - Filter expression: MinorVersionNumber > 0 AND IsCurrentVersion=False AND DateLastModified + TimeSpan(30,'days') < Now()
- Example 2: Delete temporary folders that no longer have any contents
  - Target class: TemporaryFolder
  - Filter expression: Containees IS NULL AND SubFolders IS NULL AND DateCreated + TimeSpan(24,'hours') < Now()

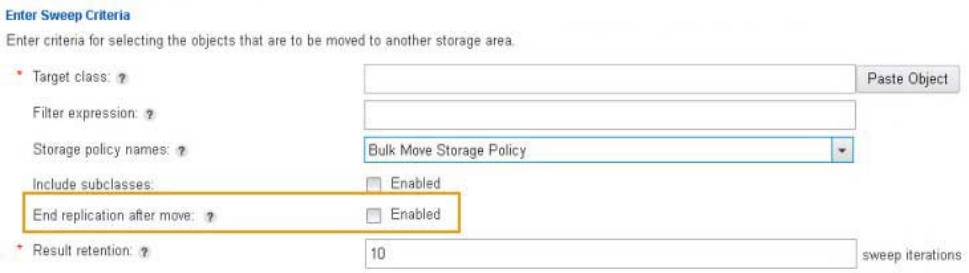
Figure 2-6. Disposal policy examples

Example 1: Delete superseded minor versions after 30 days from last modification, keeping only the latest version, and any older major versions.

Example 2: Imagine an application that creates temporary folders, which are used as transient containers for documents or subfolders that are later moved to a permanent location. This disposal policy removes the temporary folders that are empty after 24 hours.

Content migration policy

- Used to configure an object store to automatically move content from one storage area to another.
  - Based on age, most recent access, or other business criteria.
- Typical use cases:
  - Implement a simple hierarchical storage scheme where content is moved between high-cost and low-cost storage media based on age or frequency of access.
  - Automatically move content to a fixed storage device for regulatory purposes based on business events.
  - Incrementally move federated content from a third-party repository into a FileNet P8 storage area.



Work with sweep policies

Figure 2-7. Content migration policy

Help path

FileNet P8 Platform>FileNet P8 Platform 5.2.1>Administering>Administering Content Platform Engine>Changing objects>Handling bulk processing with sweeps>Creating sweeps>Moving content>Creating a sweep policy

http://www.ibm.com/support/knowledgecenter/en/SSNW2F_5.2.1/com.ibm.p8.ce.admin.tasks.doc/p8pcc185.htm

A content migration policy is used by an administrator to configure an object store to automatically move content from one storage area to another based on age, most recent access, or other business criteria. This feature was introduced in the 5.2.1 release.

Typical use cases for content migration policies:

- Implement simple hierarchical storage scheme where content is moved between high-cost and low-cost storage media based on age or frequency of access.
- Automatically move content to a fixed storage device for regulatory purposes based on business events.
- Incrementally move federated content from a third-party repository into a FileNet P8 storage area.

A content migration policy contains the same properties as a disposal policy plus one option, End replication after move, highlighted in the screen capture.

The option, end replication after move, is a Boolean property that applies when you are federating content from Image Services and is ignored otherwise. When set, it causes to end the federation relationship with replicas that are stored in an Image Service repository.

IBM Training

Retention update policy

- Used to update retention dates
- Can set the retention date to:
  - A specific value
  - Value relative to date-valued property
    - Normally relative to existing Retention Date value or Date Created or Date Last Modified
- Requires MODIFY_RETENTION rights on the object store

- Example use case:
  - Release retention on unimportant documents
    - All incoming documents are given Indefinite retention.
    - Manual “classification” identifies important documents and sets specific retention.
    - After 30 days, any remaining unclassified documents are released from retention.

Figure 2-8. Retention update policy

Help path

FileNet P8 Platform>FileNet P8 Platform 5.2.1>Administering>Administering Content Platform Engine>Changing objects>Handling bulk processing with sweeps>Creating sweeps>Updating object retention

http://www.ibm.com/support/knowledgecenter/en/SSNW2F_5.2.1/com.ibm.p8.ce.admin.tasks.doc/p8pcc133.htm

The Retention Update Policy can cause the retention date on the selected objects to be set to:

- A specific value, including the special Indefinite and Permanent values.
- A value relative to the value of a date-time property on the selected objects.

Creating a retention update sweep, requires that you have MODIFY_RETENTION rights on the object store.

Example use case:

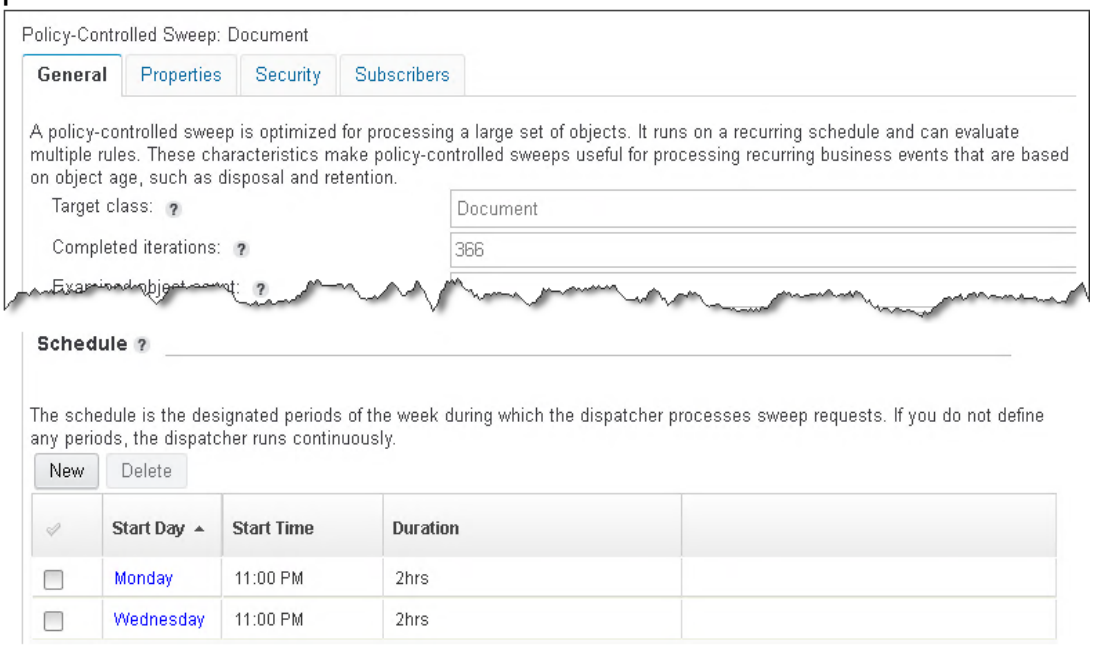
Suppose that by default all incoming documents are given indefinite retention so they cannot be deleted until a determination is made of their importance. The idea is that some manual process classifies the documents. For the documents that matter, set a specific retention period for them.

Documents that are not classified after 30 days (not important), are released from retention by setting the retention date to a value before the current date and time.

IBM Training

Define time slots for sweep policies

- Cannot configure time slots directly on sweep policies.
- Configure time slots in the policy-controlled sweeps to which the sweep policies subscribe.



Work with sweep policies

Figure 2-9. Define time slots for sweep policies

Help path

FileNet P8 Platform>FileNet P8 Platform 5.2.1>Administering>Administering Content Platform Engine>Changing objects>Handling bulk processing with sweeps>Time slot scheduling

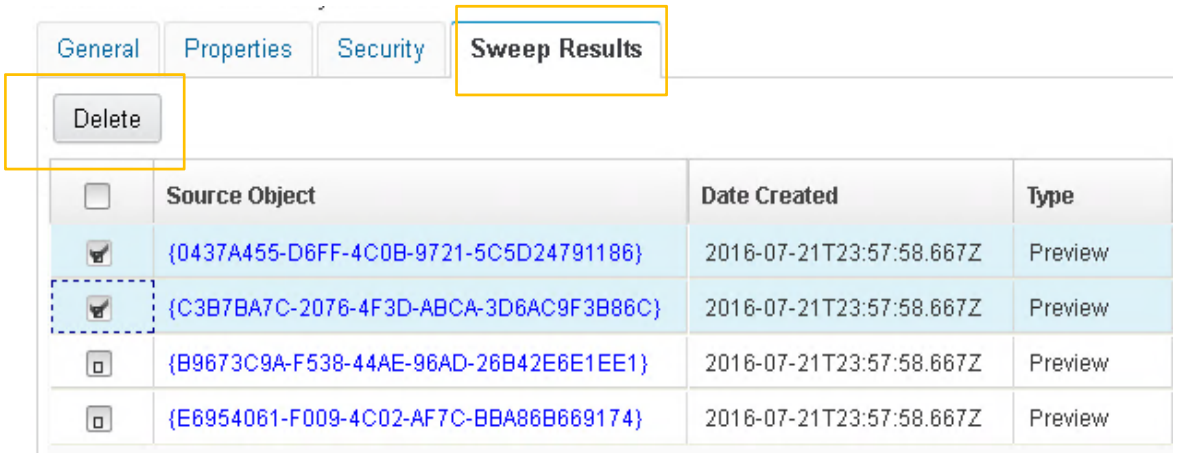
http://www.ibm.com/support/knowledgecenter/en/SSNW2F_5.2.1/com.ibm.p8.ce.admin.tasks.doc/p8pcc179.htm

Defining time slots for sweep policies is almost the same as defining time slots for sweep jobs. The only difference is where you define the time slots. You cannot define time slots directly on the sweep policies. You configure the time slots on the policy-controlled sweep to which the policy subscribes. The screen capture shows the general tab of a Policy-controlled sweep, Disposal. The lower half, shows two time slots configured.

IBM Training

Manage sweep records

- Result records can quickly accumulate.
- Measures to limit the number of sweep records:
  - Set the number of sweep iterations with result records to retain (SweepResultIterationKeepCount).
  - Delete individual result records.
  - Delete the sweep policy to remove all the result records.



Work with sweep policies

Figure 2-10. Manage sweep records

Because policy-controlled sweeps run continuously, result records can quickly accumulate on the server. You can take the following measures to limit the number of sweep records that are stored on the server at any one time.

- Set the SweepResultIterationKeepCount property on the sweep policy. This property specifies the number of policy sweep iterations for which a sweep result record is preserved before it is automatically deleted. For example, if the value is one, result records are kept for the just-completed iteration, plus the in-progress iteration, if any.
- Delete individual result records. You can access result records by going to the Sweep Results tab of the policy. The screen capture, shows the sweep results tab. Two result records are selected. When you click Delete, the records are removed.
- To remove all of the result records at one time, delete the sweep policy itself.
- If many result records exist, and they can't be deleted within the global transaction timeout limit, the deletion of the sweep policy might fail. To resolve this issue, create a disposal policy that targets the sweep result class.

IBM Training

Queue sweeps

- Specialized sweep that repeatedly scans entries of a subclass of Abstract Queue Entry.
  - Processing everything that is finds.
- Ongoing sweep
- Sweep results:
  - Include counters for:
    - The iteration that is running.
    - The cumulative total of all the iterations previously ran.
  - Status values for queue entries that do not process successfully:
    - WAITING – Operation is waiting to start.
    - IN-PROGRESS – Operation is in progress.
    - RETRY-WAIT – Operation fails and is being retried.
    - FAILED – Operation failed.
- Not really a queue in the normal FIFO sense.
  - No specific order in which entries (work items) are processed.
- More for developers than administrators

Figure 2-11. Queue sweeps

Help path

FileNet P8 Platform>FileNet P8 Platform 5.2.1>Administering>Administering>Administering Content Platform Engine>Changing objects>Handling bulk processing with sweeps>Sweep types>Queue sweeps

http://www.ibm.com/support/knowledgecenter/en/SSNW2F_5.2.1/com.ibm.p8.ce.admin.tasks.doc/p8pcc455.htm

The queue sweeps topic, is more of a developer topic, administrators do not need to concern themselves.

A queue sweep is a specialized repeating scan over objects of a particular type, deriving from Abstract Queue Entry.

Each immediate subclass of Abstract Queue Entry represents a different type of work item, instances of which are stored in a separate table and can be the target of at most one queue sweep. So the idea is that an application, or perhaps an event action, creates, and saves one of these objects as a way of requesting a piece of work. The sweep then picks up the object, passes it to the handler, which runs the task and reports either success or failure.

In the sweep subsystem, items to be processed asynchronously are placed in a queue table. These items, referred to as *queue entries*, include the necessary information to allow processing by a queue sweep.

Sweep results

A queue sweep includes properties for counters that reflect the results of the sweep. Properties for the iteration that is running and properties for the cumulative total of all of the iterations that previously ran. The following table lists the properties that reflect the current iteration and the total of all of the iterations.

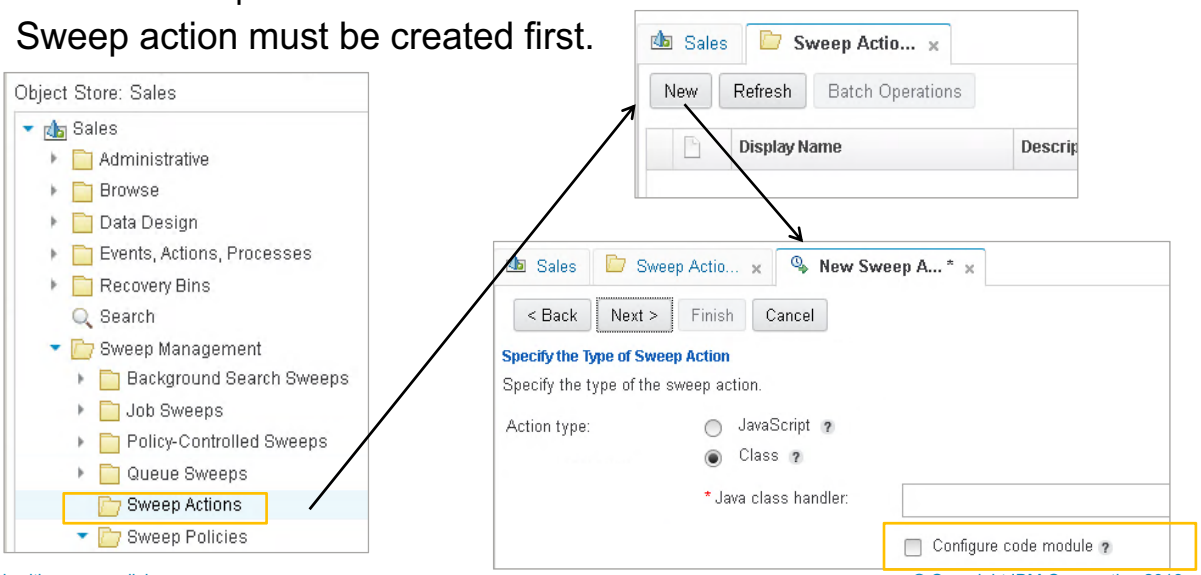
When a queue entry is processed successfully, the item is removed from the queue. Items that do not process successfully are given a status, which is listed on the slide.

The name queue sweep, is a bit misleading. It does not operate in a First-in/First-out (FIFO) fashion. It is a bucket into which work items can be placed. The work items, or entries, are taken out and processed in an unpredictable order. Under conditions of low load, it is close to chronological.

IBM Training

Custom sweeps

- Custom sweeps process objects with user-implemented actions.
- Custom sweep types supported:
  - Sweep jobs
  - Sweep policies
  - Queue sweeps
- Sweep action must be created first.



Work with sweep policies

Figure 2-12. Custom sweeps

Help paths

FileNet P8 Platform>FileNet P8 Platform 5.2.1>Administering>Administering>Administering Content Platform Engine>Changing objects>Handling bulk processing with sweeps>Sweep types>Custom sweeps

http://www.ibm.com/support/knowledgecenter/en/SSNW2F_5.2.1/com.ibm.p8.ce.admin.tasks.doc/p8pcc456.htm

FileNet P8 Platform> FileNet P8 Platform 5.2.1>Administering>Administering>Administering Content Platform Engine>Changing objects>Handling bulk processing with sweeps>Creating sweeps>Creating custom sweeps

http://www.ibm.com/support/knowledgecenter/en/SSNW2F_5.2.1/com.ibm.p8.ce.admin.tasks.doc/p8pcc346.htm

Custom sweeps provide the flexibility to process objects in ways that are not built into the server.

- For example, you can use a custom sweep to change the class of multiple document instances.

You can create custom sweep jobs, custom sweep policies, and custom queue sweeps. You can use the administration console to create custom job sweeps and custom policy sweeps. Custom queue sweeps must be created programmatically.

To create a custom sweep, you must first create a sweep action. The screen capture on the left, shows the Sweep Management > Sweep Actions node.

When you click Sweep Actions, the Sweep Actions tab opens on the upper right. You click New, and enter a name for the custom action and an optional description. The wizard displays the window where you specify the type of sweep action and configure the event action handler (lower right). A developer creates the event action handler. The wizard accepts JavaScript or a Java class. The Configure code module option (highlighted), configures the Java class that you specify as a code module and checks it into the object store.

IBM Training

Use content migration policies for HSM

- Implement hierarchical storage management (HSM) with content migration policies
- HSM scheme for a three-tiered storage plan:
  - Database Storage
  - NAS Storage
  - Fixed Storage
- Storage plan requirements
  1. All content for Invoices and Complaints must be stored in the database initially.
  2. After 30 days, Invoice content must be moved to NAS Storage.
  3. After 30 days, Complaint content must be moved to Fixed Storage.
  4. All NAS content must be moved to Fixed Storage after one year.

Work with sweep policies

Figure 2-13. Use content migration policies for HSM

You can use content migration policies to implement a simple hierarchical storage management scheme.

For example, the slide shows a possible scenario of a hierarchical storage management scheme for a three-tiered storage plan that uses database storage, NAS storage and fixed storage.

The remaining slides cover an example of how this scenario might be implemented. The slides are intended to serve as reference materials, not as explicit instructions.

The storage plan requirements are:

- All content for Invoices and Complaints must be stored in the database initially.
- After 30 days, Invoice content must be moved to NAS Storage.
- After 30 days, Complaint content must be moved to Fixed Storage.
- All NAS content must be moved to Fixed Storage after one year.

IBM Training

Storage Plan Implementation

- Required Objects:
  - Three content migration policies
  - Two new Document classes: Invoice and Complaint
  - One Fixed Storage Device of the required type
  - One Fixed Storage Area pointing to the Fixed Storage Device
  - One Fixed Storage Policy that selects the Fixed Storage Area
  - One or more File Storage Areas pointing to NAS storage
  - One File Storage Policy that selects one of the NAS Storage Areas
  - Default Database Storage Area and Policy (created by default)

Figure 2-14. Storage Plan Implementation

List of the required objects to implement the storage plan.

Storage Plan Implementation(2)

- Requirement # 1:
  - All content for Invoices and Complaints must be stored in the database initially
- Implementation:
  - Set the Default Storage Policy on the Invoice and Complaint classes to the Default Database Storage Policy

- Requirement # 2:
  - Invoices must be moved to NAS storage after 30 days.
- Implementation:
  - Create a Content Migration Policy that moves Invoice content from the Default Database Storage Area to NAS storage after 30 days
    - Set the Sweep Target property to point to the Invoice class definition
    - Set the Storage Policy property to point to the NAS Storage Policy.
    - Set the Filter Expression Property to:

```
DateCreated < NOW() - TimeSpan(30, 'days')
AND StorageArea = {9D5E78BC-AE54-4D1E-844F-903F3175821B}
```

      This filter selects Invoices that were created at least 30 days ago and the content is stored in the Database Storage Area.

Figure 2-15. Storage Plan Implementation(2)

To satisfy requirement # 1: Store all the content for Invoices and Complaints in the database initially.

- Set the Default Storage Policy on the classes, Invoice, and Complaints, to the Default Database Storage Policy.

To satisfy requirement #2: Invoices must be moved to NAS storage after 30 days.

- Create a content migration policy that moves content of target class, Invoice, from the Default Database Storage Area to NAS storage.
  - Set the Filter Expression so Invoices created at least 30 days ago and the storage area is the Default Database Storage Area are moved.

IBM Training

Storage Plan Implementation(3)

- Requirement # 3:
  - Complaints must be moved to Fixed storage after 30 days.
- Implementation:
  - Create a second Content Migration Policy that moves Complaint content from the Default Database Storage Area to Fixed storage after 30 days.
    - Set the Sweep Target property to point to the Complaint class definition.
    - Set the Storage Policy property to point to the Fixed Storage Policy.
    - Set the Filter Condition Property to:

```
DateCreated < NOW() - TimeSpan(30, 'days')
AND StorageArea = {9D5E78BC-AE54-4D1E-844F-903F3175821B}
```

      This filter selects Complaints that were created at least 30 days ago and the content is stored in the Default Database Storage Area.

Figure 2-16. Storage Plan Implementation(3)

To satisfy requirement #3: Complaints must be moved to NAS storage after 30 days.

- Create a second content migration policy that moves content of target class, Complaint, from the Default Database Storage Area to Fixed storage.
  - Set the Filter Expression so Complaints created at least 30 days ago and the storage area is the Database Storage Area are moved.
    - Notice that the filter expression is the same as the one used for requirement #2.

IBM Training

Storage Plan Implementation(4)

- Requirement # 4:
  - All NAS content must be moved to Fixed Storage after one year.
- Implementation:
  - Create a third Content Migration Policy that moves all document content from NAS Storage to Fixed storage after 1 year.
    - Set the Sweep Target property to point to the Document class definition.
    - Set the Include Subclasses property to 'True'
    - Set the Storage Policy property to point to the Fixed Storage Policy.
    - Set the Filter Condition Property to:

```
DateCreated < NOW() - TimeSpan(1, 'year')
AND (StorageArea = {59D2A07F-4117-C3A7-8768-4919CDA00000}OR
  StorageArea= {B276B984-A64E-C1EB-8613-4919CE400000})
AND (ClassDescription={392D70B9-C456-C9ED-849E-4919D2700000} OR
  ClassDescription={7F700DCE-8CDD-C8E2-8642490FC0600000})
```

      This filter selects all Complaints and Invoices that are at least one year old and that the content is stored in one of NAS Storage Areas.

Figure 2-17. Storage Plan Implementation(4)

To satisfy requirement #4: All NAS content must be moved to fixed storage after one year.

- Create a third content migration policy that moves all Complaints and Invoices, from NAS Storage to Fixed storage.
  - Set the Filter Expression so documents that are at least one year old, the storage area is one of the NAS storage areas, and are of class, Complaint, or Invoice, are moved.

IBM Training

Unit summary

- Create a disposal policy.
- Create a content migration policy.

Figure 2-18. Unit summary

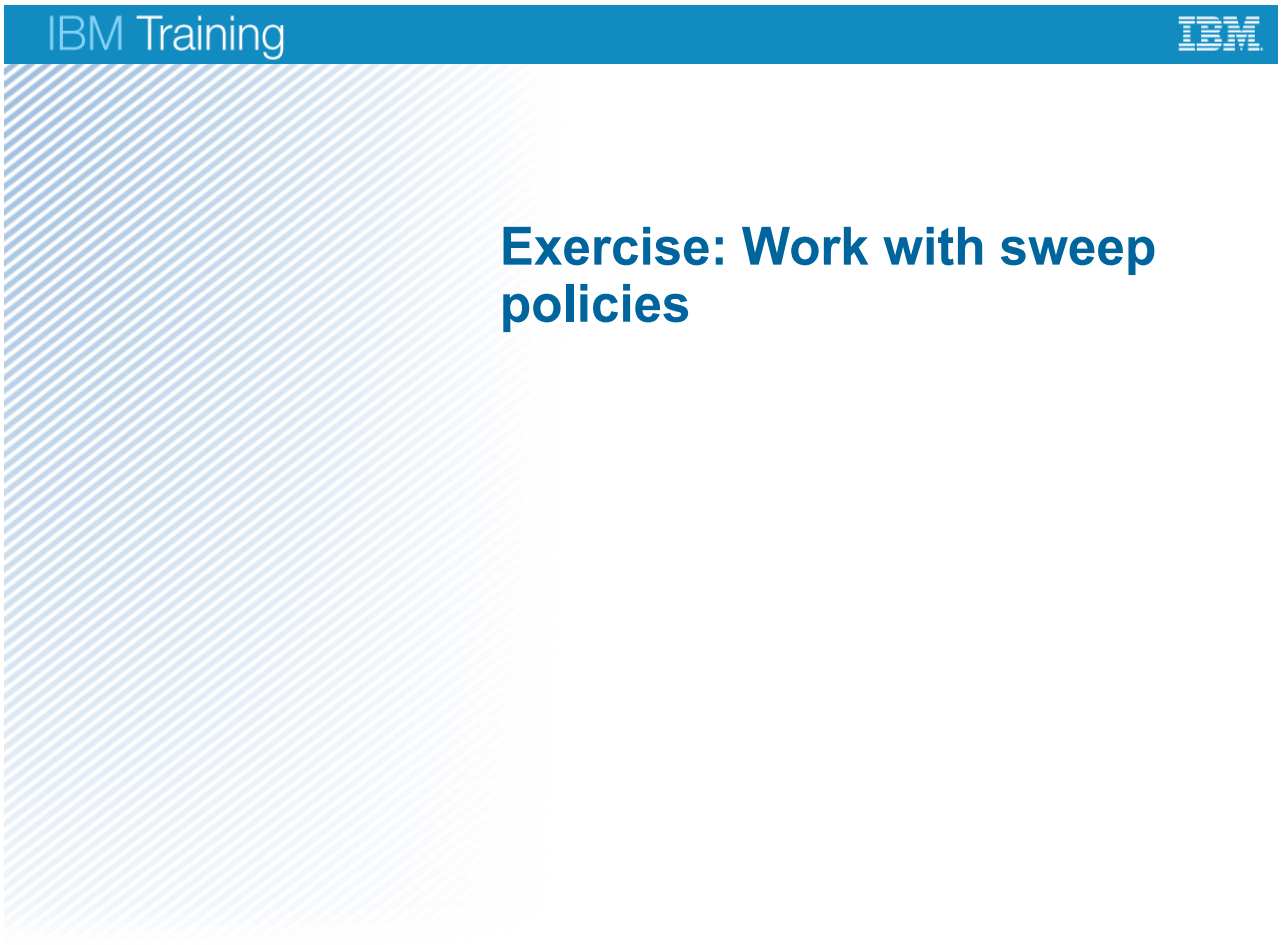


Figure 2-19. Exercise: Work with sweep policies

IBM Training

Exercise introduction

- Create a disposal policy.
- Create a content migration policy.

Figure 2-20. Exercise introduction

This exercise has two activities:

- In Activity 2.1, you create a disposal policy to delete documents of a particular class that belong to a specified storage area.
- In Activity 2.2, you create a content migration policy to preview moving documents of a particular class from one storage area to another.
  - You define a schedule to limit when the sweep policy runs.

IBM Training