

Digital Business Automation Blue Demos 2018

Lab instructions for 1. ECM sub-scenario

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Table of Content

0	Introduction.....	4
0.1	Audience.....	6
0.2	Prerequisites	6
0.3	Objectives.....	6
0.4	About this Lab.....	7
0.5	A note on the screenshots.....	7
1	Exercise: Getting Started	8
1.1	Getting Started – Introduction.....	8
1.2	Getting Started – Step by Step Instructions	10
1.3	Getting Started – Verification Instructions	21
1.4	Getting Started – Summary	22
2	Exercise: Create Folder for Incoming Mortgage Applications.....	23
2.1	Create Folder for Incoming Mortgage Application Documents – Introduction.	23
2.2	Create Folder for Incoming Mortgage Application Documents – Step by Step Instructions.....	24
2.3	Create Folder for Incoming Mortgage Application Documents – Verification Instructions.....	30
2.4	Create Folder for Incoming Mortgage Application Documents – Summary.....	31
3	Exercise: Create Storage Area	32
3.1	Create Storage Area – Introduction.....	32
3.2	Create Storage Area – Step by Step Instructions	33
3.3	Create Storage Area – Verification Instructions	44
3.4	Create Storage Area – Summary	53
4	Exercise: Deploy Classes	54
4.1	Deploy Classes – Introduction	54
4.2	Deploy Classes – Step by Step Instructions	56
4.2.1	Review Class Definitions and Property Templates	56
4.2.2	Export the Classes and Property templates to a file.....	59
4.2.3	Prepare the Source Environment Half-Maps	63
4.2.4	Define Target Environment and Target Environment Half-Maps	67
4.2.5	Define Source-Target Pair	73
4.2.6	Run the Import	78
4.3	Deploy Classes – Verification Instructions	82
4.4	Deploy Classes – Summary	86
5	Exercise Configure Retention	87
5.1	Configure Retention – Introduction	87
5.2	Configure Retention – Step by Step Instructions	88
5.2.1	Setting Default Retention.....	88
5.2.2	Configuration for Extended Retention.....	89
5.3	Configure Retention – Verification Instructions	93
5.4	Configure Retention – Summary.....	96
6	Exercise: Dynamic Filing of Payslips.....	97
6.1	Dynamic Filing of Payslips – Introduction.....	97
6.2	Dynamic Filing of Payslips – Step by Step Instructions.....	98

6.3	Dynamic Filing of Payslips – Verification Instructions	104
6.4	Dynamic Filing of Payslips – Summary	106
7	Exercise: Alternative Document Upload	107
7.1	Alternative Document Upload – Introduction.....	107
7.2	Alternative Document Upload – Step by Step Instructions	108
7.3	Alternative Document Upload – Verification Instructions	118
7.4	Alternative Document Upload – Summary	121
8	Exercise: Configure ICN Search.....	122
8.1	Configure ICN Search – Introduction	122
8.2	Configure ICN Search – Step by Step Instructions.....	123
8.3	Configure ICN Search – Verification Instructions.....	128
8.4	Configure ICN Search – Summary	129
9	Exercise Troubleshooting a Search.....	130
9.1	Troubleshooting a Search – Introduction	130
9.2	Troubleshooting a Search – Step by Step Instructions.....	131
9.3	Troubleshooting a Search – Verification Instructions.....	138
9.4	Troubleshooting a Search – Summary	139

0 Introduction

One of the core pillars of the Digital Business Automation platform are repository services for capturing, managing, and storing your business-related digital assets. Multiple repositories, called object stores, can be created and managed within a single system to serve your business requirements. Within these object stores, both the process and the case capabilities of the IBM Business Automation Workflow (BAW) offering are storing their digital assets. Knowledge of the IBM FileNet Content Platform Engine (CPE), the key IBM ECM offering, is therefore required to understand, review and maintain other components in the platform.

The exercises in this scenario target at providing an understanding of core principles of the IBM FileNet Content Platform Engine. They also build up the basis for supporting the platform end-to-end scenario. With this respect, the exercises are not designed to introduce the participants to new features of the newest versions of FileNet Enterprise Content Manager.

In the mortgage application end-to-end scenario the [FileNet Content Platform Engine](#) plays a major role. It is used to store the documents received from the client and handled through IBM Datacap, to manage access control, and to perform retention management. Furthermore, the FileNet Content Platform Engine is the foundation of the case capability of BAW that is used to handle the mortgage applications.

In this sub-scenario, the participant will define the required entities for performing the Workflow sub-scenario, therefore it is recommended to start with this sub-scenario before doing the Workflow one. Through the exercises, the participant will be introduced to the administration of the Content Platform Engine. Additionally, they will learn to define required entities that expose an interface to the Content Platform Engine to the end-users, through Content Navigator.

In **Exercise 1**, the participant will be guided to instantiate a copy of a virtual machine containing a pre-installed FileNet Content Platform Engine environment. In that exercise, the so-called Ping Pages are reviewed. They are an important source of configuration information.

In **Exercise 2**, the root folder for the documents for the mortgage application is created. By demonstrating how to set its security, the participants introduce themselves to all the other security management dialogs in FileNet Content Platform Engine, which are all similar in structure and nature.

In FileNet Content Platform Engine, Object stores can be configured to store content in a database, a file system, an OpenStack-conformant cloud storage device, a fixed content device such as IBM® Tivoli® Storage Manager, or a combination of these options. In **Exercise 3** the participant will define a new Advanced Storage Area for storage of the Mortgage Application documents. It will be configured to store documents twice,

redundantly, and the self-healing capabilities of the storage area will be demonstrated within the exercise.

In **Exercise 4**, the Document Classes and Property Templates will be defined for the Mortgage Application documents. The document classes define all the common properties of the documents, such as their default security and retention, among others, and the property templates define the metadata for the documents. These will not be defined by the participant, but migrated from a development environment, thereby introducing a very important tool, the FileNet Deployment Manager (FDM). FDM is essential for being able to test solutions on development environments, before they are used in production.

In **Exercise 5** the retention model for the Mortgage Application will be defined, thereby introducing a very important feature of FileNet Content Platform Engine, the Sweep Framework. It will be used to define different retention deadlines, based on the outcome of the mortgage application request, granting the mortgage or refusing it.

Exercise 6 is the last exercise defining entities in FileNet Content Platform Engine. It is about implementing the requirement for the Mortgage Application Solution, to have the payslips, which are provided by customers as a second step, be filed in a dynamically chosen folder. This folder is the folder belonging to the mortgage application case as it will be created as part of the Workflow sub-scenario. The correct folder is determined by looking up the cases of the chosen customer and filing the payslip in all of these.

In **Exercise 7 and 8**, the participants will define a user interface for the Mortgage Application in the Content Navigator. They will define a desktop with predefined searches, and an entry template for uploading new Mortgage Application documents. As the search templates defined in Exercise 8 are not required in the end-to-end scenario later, this **Exercise 8 is optional** with the respect that it does not need to be completed to run the end-to-end scenario later.

Finally **Exercise 9** introduces troubleshooting a Content Platform Engine environment, highlighting the location of log files, and best practices for capturing and reviewing traces. **Exercise 9 is optional**, meaning it is not required to perform the exercise, in order to successfully work on the remaining sub-scenarios. However, it supplies important insight into trouble-shooting the Content Platform Engine

The duration of working all the 9 exercises is largely dependent on the prior knowledge. We estimate it might need up to approx. 3½ hours to be completed, with little prior knowledge of Content Platform Engine maybe more.

0.1 Audience

Everyone interested in the Digital Business Automation space, especially technical people with IBM Business Process Manager and IBM Case Manager background, but also people without any background but interested in IBM Business Automation Workflow. Especially:

- Case workers
- Solution Designers / Developers / Administrators
- L2/L3 support
- Sales/Tech Sales, GBS/GTS, Business Partners
- IBMers who sell or support ECM P8 products, or BPM Products

0.2 Prerequisites

- Access to <https://bluedemos.com> with your IBM ID.
- Link to the **shared box folder**
<https://ibm.box.com/s/aiwhfcfs7ms9spnrijwg8bzmk7ad6lsf>.

0.3 Objectives

After completing the exercises of this sub-scenario, the participant will:

- Know how to get most important configuration data of a Content Platform Engine (CPE) installation
- Know how to define entities using the Administration Console for Content Engine (ACCE)
- Know how to setup an Advanced Storage Area for redundantly storing documents with the Content Platform Engine
- Know how to use the Deployment Manager for migrating entities between Content Platform Engine environments
- Know how to use the Sweep Framework for assigning document retention based on metadata of the documents
- Know how to file documents in folders, where the correct folder is depending on metadata of the documents
- Know how to define a user interface for FileNet Content Engine in Content Navigator
- Know where to find the log files, and where to enable traces in case of issues with a FileNet Content Platform Engine environment

0.4 About this Lab

This lab is split into multiple exercises. Each exercise consists of the following sections:

1) **Exercise Introduction**

Describes what you will learn & complete in this exercise, but also lists all needed data for the exercise so that experienced attendees can complete the exercise by only using this introduction section.

2) **Step by Step Instructions**

Guides you in easy to understand steps through the whole exercise. To be used by less experienced attendees.

3) **Verification Instructions**

Guides you through how to test & verify your implementation.

4) **Exercise Summary**

Summarizes what you have completed & learned.

0.5 A note on the screenshots

Some exercise screenshots show an Object Store named “Target Object Store” whereas the name of the Object Store used in other screenshots and the textual descriptions of the exercises is simply “Target”. The latter is to be used.

In the exercise screenshots, you might sometimes notice the IP address 10.0.0.2 is used instead of the hostname vm-1.example.com. In fact, both addresses can be used, but the latter is setup with WebSphere Single-Sign on settings, i.e. the session cookie is valid for the domain “example.com”, only.

As it might be that not all exercises of all sub-scenarios work if using the IP address **please always use the hostname vm-1.example.com**. We haven’t updated all the screenshots with this late change.

1 Exercise: Getting Started

Duration approx.: 15 Minutes

1.1 Getting Started – Introduction

In this exercise you will complete the required steps to get started with the ECM sub-scenario. You will

1. Either start working with your existing environment you started with **Template 7**,
or
start working with your new environment based on **Template 1** to perform the exercise.
2. Connect to and start your environment.
3. Get introduced into the UIs and tools needed later in this lab.

High-level steps: (Detailed steps in section 1.2)

You either continue to work with your existing environment based on **Template 7**, or start working with your new environment based on **Template 1 – Implement ECM sub-scenario only** to perform the exercise.

In your environment, start **VM 1 – ECM** only. Make sure to keep the other VMs suspended. You will only work with VM 1 – ECM.

In this Exercise you will get introduced to the UIs and tools needed during the ECM sub-scenario by accessing them in your environment:

In this exercise you will access the following tools / resources (see also the Bookmarks Toolbar of Firefox / Chrome)

Tool	Location / URL
IBM Blue Demos	https://bluedemos.com
Content Platform Engine Ping Page	http://vm-1.example.com:9080/FileNet/Engine
Content Platform Engine Health Page	http://vm-1.example.com:9080/P8CE/Health
Content Platform Engine Automatic Upgrade Status	http://vm-1.example.com:9080/FileNet/AutomaticUpgradeStatus
Content Platform Engine Process Engine Ping Page	http://vm-1.example.com:9080/peengine/IOR/ping
Content Navigator Ping Page	http://vm-1.example.com:9081/navigator/Ping

Note: For your convenience we have prepared bookmarks in Firefox for all of the tools mentioned above.

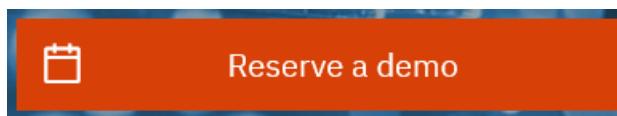
For this, you will require the following IDs and passwords: (0 is a zero)

Tool	User ID	Password
Windows	Administrator	passw0rd
Content Platform Engine Process Engine Ping Page	p8admin	Think4me
Content Navigator Ping Page	p8admin	Think4me

The exercise is completed, when you have successfully accessed all those tools.

1.2 Getting Started – Step by Step Instructions

- 1) If you started with **Template 7**, and want to implement the ECM sub-scenario now, make sure you already have registered for a session based on **Template 7**. Use your existing demo environment and continue with step 11 below.
- 2) To start with **Template 1**, open <https://bluedemos.com> and login with your IBM ID.
- 3) Search for **IBM Digital Business Automation Blue Demos 2018** and select **IBM Digital Business Automation Blue Demos 2018 - Template 1 - Implement ECM sub-scenario only**.
- 4) Click Reserve a demo.



- 5) Provide the necessary information and click **Reserve demo**.

Start date:^{*} 2018-07-26 Start time:^{*} 1:00 pm End date:^{*} 2018-07-27 End time:^{*} 6:00 pm

Timezone:^{*} Europe/Berlin (CEST) Region:^{*} EMEA

User email address:^{*}
Additional email:

Demo purpose:^{*} Practice / Self-Education Customer name:^{*} NONE Sales Connect ID:

Comments:

This demo can be reserved for a maximum of 1500 hours and has an approximate duration of 30+ minutes

Reserve demo **Close**

- 6) After you click **Reserve demo** you'll get two emails, the second one once your reservation is **active** according to the information provided in step 5. This second email does also contain the link and password to access your demo environment.

Reservation Confirmation

IBM Blue Demos

<your_email> (<your_email>)

Demo: IBM Digital Business Automation Blue Demos 2018 - Template 1 - Implement ECM sub-scenario only [EMEA]
07/26/2018 - 07/27/2018 01:00 PM CEST - 06:00 PM CEST

Your reserved demo has started. Use your web browser to access the demo at the following link.

<https://cloud.skytap.com/vms/726cfbf96f785cae502fb4f918669efd/desktops>

Password: <your_password>

- 7) Open the link and enter your password to access your environment. Click **Submit**.

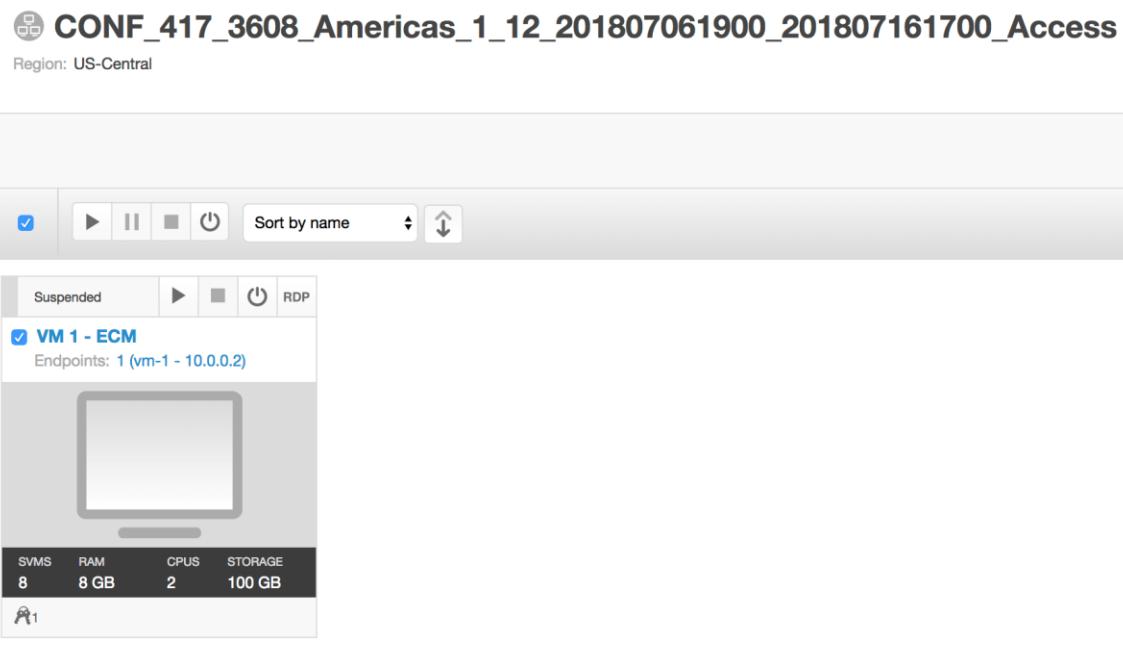
Virtual machine access

Please enter the supplied password to access this virtual machine. If you need the password, contact your session administrator.

Enter password

Submit

- 8) Your demo lab environment opens. It will look similar to the following screen (when using Template 1 there is only one VM, when using Template 7 there are 5 VMs):



9) It consists of **one or five VMs**:

VM 1 – ECM: On this VM an IBM Filenet Content Repository and LDAP are installed. In addition, an IBM Content Navigator is installed (Template 1 and Template 7).

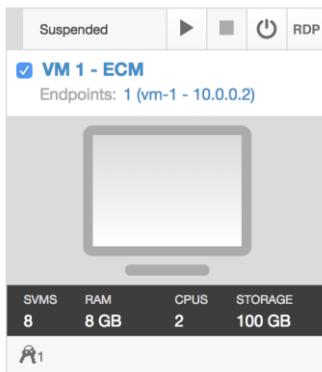
VM 2 – Datacap: Here all Datacap tools are installed (Template 7).

VM 3 – Workflow: This VM hosts IBM Business Automation Workflow (Template 7).

VM4 – RPA: This VM hosts the RPA Bot Designer and RPA Bot Runner (Template 7).

VM 5 – ODM: On this VM ODM is installed (Template 7).

10) At this moment all VMs are in suspended state:

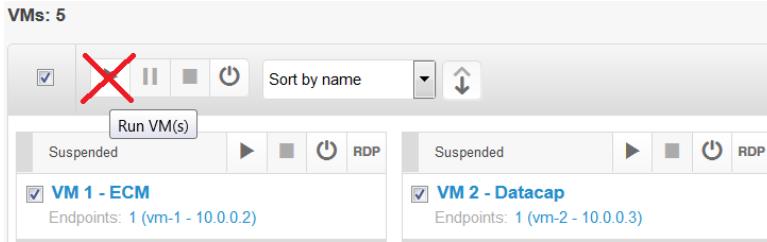


11) For the **ECM sub-scenario**, you require **VM 1 - ECM** running, the other VMs can stay in suspended state.

To start **VM 1 – ECM** only, click the **Run this VM** button besides Suspended:



Important: DO NOT use the Run VM(s) button when using Template 7.



- 12) Wait until **VM 1 - ECM** is started and the VM looks like this (starting should not take longer than 5 minutes):



Hint: If the icons are not shown or resuming / suspending of a VM takes too long, refresh your Browser window.

- 13) To later on **resume or suspend a single VM**, click the **Play** icon or the **Pause** icon next to **Suspended** or **Running** of the mentioned VM, here for example **VM 1 – ECM**.

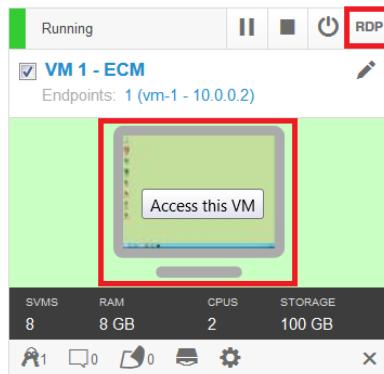


Note: To save resources, we kindly ask you to **suspend your entire environment when you are not using it for a longer period**, for example at the end of your day. If you don't suspend it, it might get shut down automatically after a while.

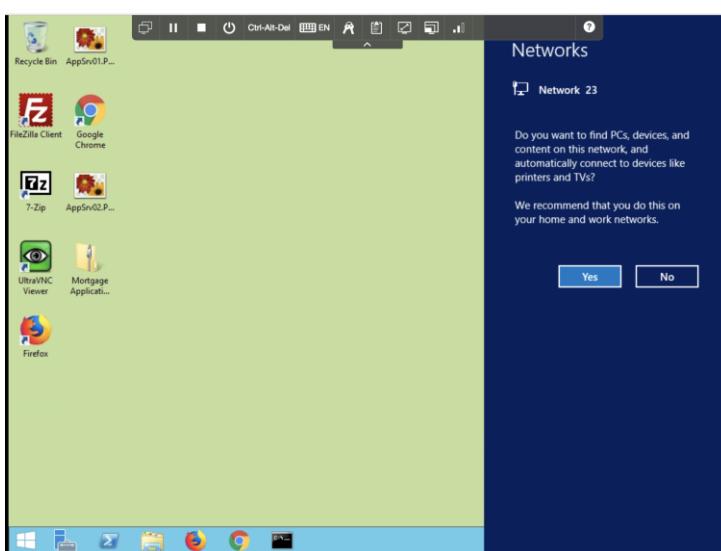
Note: You can also close the Browser tab / window on your local machine and even turn off your computer and **still resume and continue** your demo at a later time.

- 14) After you resume a suspended VM, **always open the VM's Desktop** after it is reported as **Running**. Access the Desktop
- either through the **Browser in the same tab** by clicking the image of the monitor (**Access this VM**),
 - or through the **Browser in a new tab** by right-clicking the image of the monitor and opening the link in a new tab,
 - or by clicking **RDP** to connect to it using a Remote Desktop Connection tool. This downloads a RDP file to your local machine that can be opened directly to view the environment.

Note: Depending on the security settings of your local machine you will be able to use RDP. In case this does not work, use your Browser to access the Desktop.

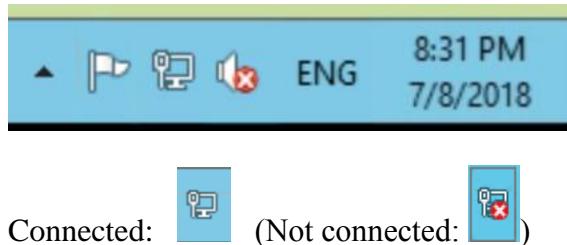


- 15) Access the Desktop of **VM 1 - ECM**.



16) If there is the blue bar on the right-hand side as shown in the screen above, click there **No**.

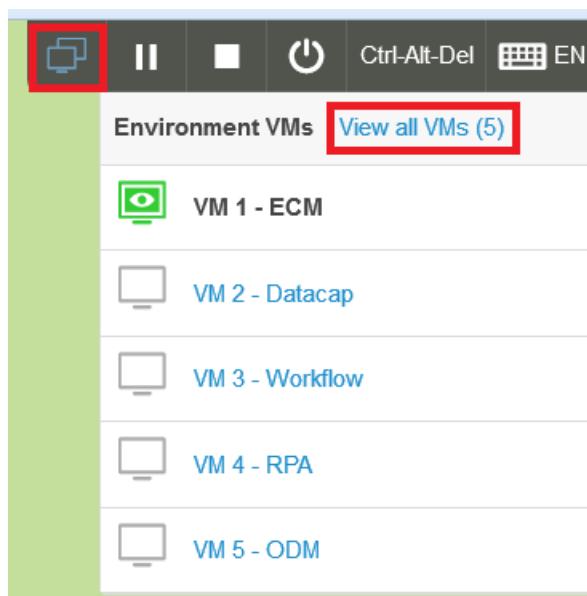
17) Next, make sure the VM is **correctly connected to the network** before you proceed using it or starting any other VM. Check that the network icon at the bottom of the desktop shows connected.



18) To later on **disconnect from VM 1** follow these steps:

When you opened the Desktop

- a. through RDP, simply close the Remote Desktop Connection tool.
- b. through your Browser in a new tab, simply close the new tab.
- c. through your Browser in the same tab, click the **Environment VMs** icon on the top, and select **View all VMs (1 – in case of Template 1, 5 – in case of Template 7)**.

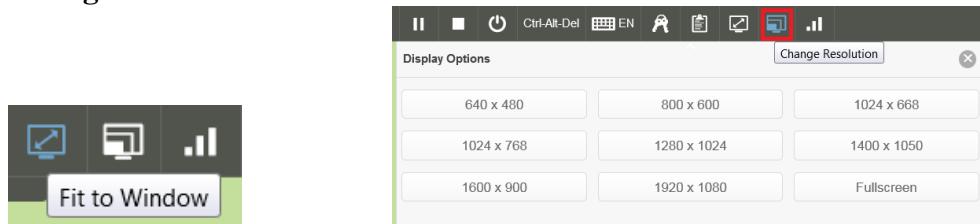


- d. This brings you back to the screen showing your entire environment (see also step 8 above).

19) In this exercise you will only work with **VM 1 – ECM**.

The **Windows username / password** for the environment is **Administrator / passw0rd**. Enter it in case you get prompted for it.

To change the resolution of the **RDP Desktop** to your liking, **right click on the Desktop**, select **Screen resolution** and update the resolution accordingly, or when you accessed the Desktop by Browner, click the **Fit to Window** icon or the **Change Resolution** icon.



To change the keyboard to your liking, click the **ENG** icon at the bottom of the desktop and select your preferred keyboard.



You are now ready to run through a quick walk through of the UIs you will require during this entire sub-scenario. This will also introduce you to some of the ECM specific terms.

20) During testing of the environments we observed database connection problems in rare cases, after suspending and restarting the environments. If you experience that, these can typically be resolved by restarting the WebSphere Servers. You find the Links on the Start Menu / Page. Press them in the indicated order, and await completion of each before clicking the next



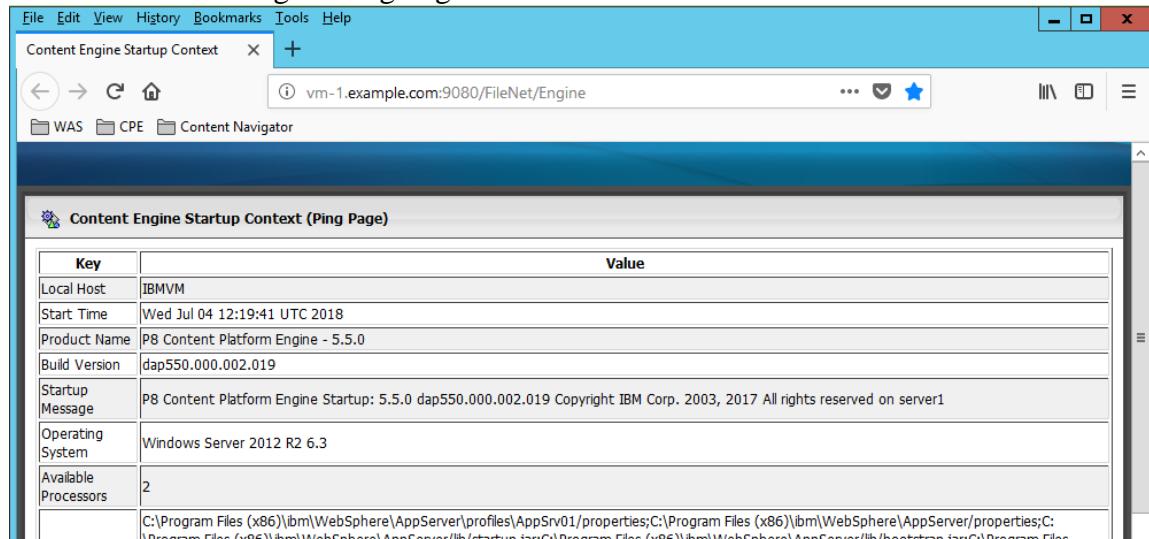
- 21) Open Firefox and click the links from the introduction. You will find the links in the bookmarks toolbar, for your convenience.

Using the pages from the introduction section, it is suggested to try and identify following configuration values

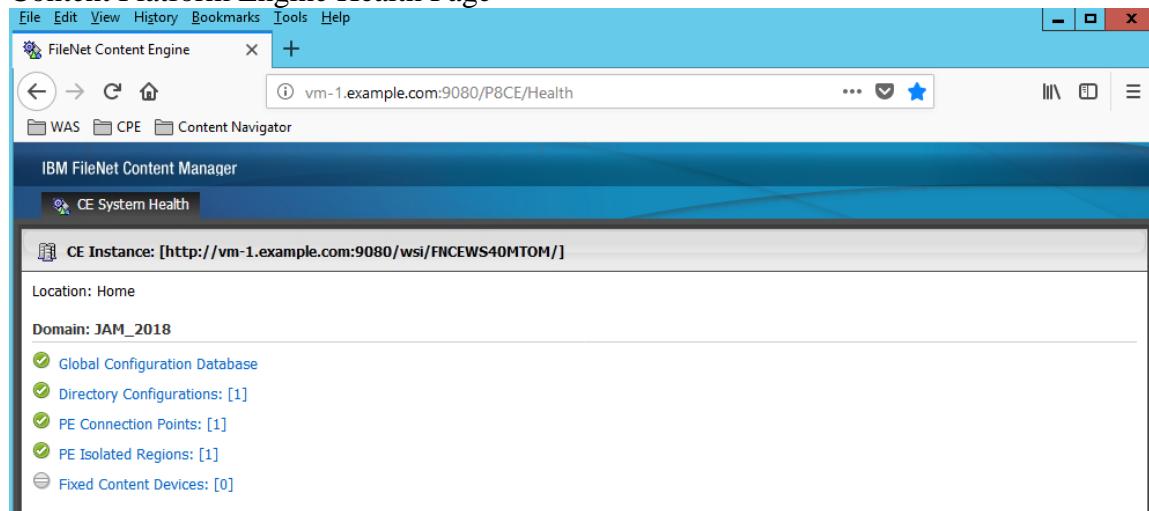
Tool	Setting	Value
Content Platform Engine Ping Page	Build Version	
	P8 Domain Name	
	Log File Location	
Content Platform Engine Health Page	Number and Names of Object Stores	
	PE Connection Point Name	
Content Platform Engine Automatic Upgrade Status	Database Schema Version of Object stores	
Content Navigator Ping Page	DaeJa ViewOne Professional Server Version	
	CE Client Build version	

In the following screenshots, the Tools / Resources are shown.

Content Platform Engine Ping Page



Content Platform Engine Health Page



Clicking on the “Object Stores” Link

The screenshot shows the IBM FileNet Content Manager interface. The title bar says "FileNet Content Engine". The address bar shows "vm-1.example.com:9080/P8CE/Health/OS". The left navigation bar has links for "WAS", "CPE", and "Content Navigator". The main content area is titled "IBM FileNet Content Manager" and "CE System Health". A sub-header says "CE Instance: [http://vm-1.example.com:9080/wsi/FNCEWS40MTOM/]". Below it, the location is "Home > Object Stores". A "Details" section lists checked items: "BPM Attachments", "Development", "Design", and "Target". The bottom right corner has the "IBM" logo.

Automatic Upgrade Status Page

The screenshot shows the "Content Engine Automatic Upgrade" status page. The title bar says "Content Engine Automatic Upgrade". The address bar shows "vm-1.example.com:9080/FileNet/AutomaticUpgradeStatus". The left navigation bar has links for "WAS", "CPE", and "Content Navigator". The main content area is titled "Content Engine Automatic Upgrade Status". It includes a link "Startup context (Ping Page)". Below it, it says "Status for P8 domain JAM_2018: Ready". A section titled "Status for object store(s):" contains a table:

Object Store	Schema Revision	Upgrade Status
BPM Attachments	22.1.4	Ready
Design	22.1.4	Ready
Development	22.1.4	Ready
Target	22.1.4	Ready

The bottom right corner has the "IBM" logo.

FileNet Content Platform Engine Process Engine Ping Page

The screenshot shows a web browser window titled "PE Server-IBMVM". The address bar contains "vm-1.example.com:9080/peengine/IOR/ping". Below the address bar, there are tabs for "WAS", "CPE", and "Content Navigator". The main content area is titled "Process Engine Server Information (Ping Page)" and contains a table with the following data:

Key	Value
Product Name	P8 Content Platform Engine - 5.5.0
Build Version	dap550.000.002.019 pe.jar:dap550.000.002.019, 02/13/2018 14:49:26
Operating System	Windows Server 2012 R2 6.3 amd64
JVM	JRE 1.8.0 Windows Server 2012 R2 amd64-64 Compressed References 20160713_311397 (JIT enabled, AOT enabled) J9VM - R28_Java8_SR3_20160713_0915_B311397 JIT - tr.r14.java.green_20160329_114288 GC - R28_Java8_SR3_20160713_0915_B311397_CMPRSS J9CL - 20160713_311397
Start Time	2018/07/04 12:19:51.400+0000
ClassPath	C:\Program Files (x86)\ibm\WebSphere\AppServer\profiles\AppSrv01\properties;C:\Program Files (x86)\ibm\WebSphere\AppServer\properties;C:\Program Files (x86)\ibm\WebSphere\AppServer\lib\startup.jar;C:\Program Files (x86)\ibm\WebSphere\AppServer\lib\bootstrap.jar;C:\Program Files (x86)\ibm\WebSphere\AppServer\lib\jsf-nls.jar;C:\Program Files (x86)\ibm\WebSphere\AppServer\lib\Improxy.jar;C:\Program Files (x86)\ibm\WebSphere\AppServer\lib\urlprotocols.jar;C:\Program Files (x86)\ibm\WebSphere\AppServer\deploytool\itp\batchboot.jar;C:\Program Files (x86)\ibm\WebSphere\AppServer\deploytool\itp\batch2.jar;C:\Program Files (x86)\ibm\WebSphere\AppServer\java_1.8_64\lib\tools.jar

Content Navigator Ping Page

The screenshot shows a web browser window titled "vm-1.example.com:9081/navig". The address bar contains "vm-1.example.com:9081/navigator/ping.jsp". Below the address bar, there are tabs for "WAS", "CPE", and "Content Navigator". The main content area is titled "IBM Content Navigator Ping Page" and contains a table with the following data:

Key	Value
Product Name	IBM Content Navigator
Build Level	icn303.002.025 (201803082238)
Version	3.0.3
Daeja ViewONE Professional	Client 4.1.5 FP 2 iFix 3 (9269) Server 4.1.5 FP 2 iFix 3 (Packaged from 5.0.3 iFix 4) (9269)
Daeja ViewONE Virtual	5.0.3 iFix 4 (9269)
Operating System	Windows Server 2012 R2 6.3
JVM	java.vm.vendor IBM Corporation java.vm.name IBM J9 VM

1.3 Getting Started – Verification Instructions

To verify successful completion of this exercise, verify that you have been able to open the following UIs / tools without any issues and have found the respective information:

- 1) Content Platform Engine Ping Page
- 2) Content Platform Engine Health Page
- 3) Content Platform Engine Automatic Upgrade Status
- 4) Content Platform Engine Process Engine Ping Page
- 5) Content Navigator Ping Page

1.4 Getting Started – Summary

In this exercise you have:

- 1) Created your environment for the ECM sub-scenario
- 2) Resumed and accessed it
- 3) Learned which tools to use to retrieve important configuration information

Especially you have learned where the log files for Content Platform Engine (CPE) are located.

2 Exercise: Create Folder for Incoming Mortgage Applications

Duration approx.: 10 Minutes

2.1 *Create Folder for Incoming Mortgage Application Documents – Introduction*

In a FileNet Content Platform Engine environment, documents and other entities are stored in Object Stores. The Object Stores required for this demo have been pre-defined. You have listed them in the last exercise. For some background reading on Object Stores, please refer to the documentation

https://www.ibm.com/support/knowledgecenter/SSNW2F_5.5.0/com.ibm.p8.ce.dev.ce.doc/objectstore_conceptsIntro.htm.

To be able to find the documents belonging to the Mortgage Applications easily, one commonly used technique is to file the documents in a Folder. In this exercise, you will create the folder, into which the Datacap solution will later store all Mortgage Application documents that it receives.

You will:

- Log-on to Content Platform Engine Administrative Console (ACCE),
- create a folder named "Incoming Mortgage Application Documents" in the root folder of the object store "Target",
- and configure security so that the group "P8Admins" has "Full Control" to the folder, and users of the group "testers" have "read access".

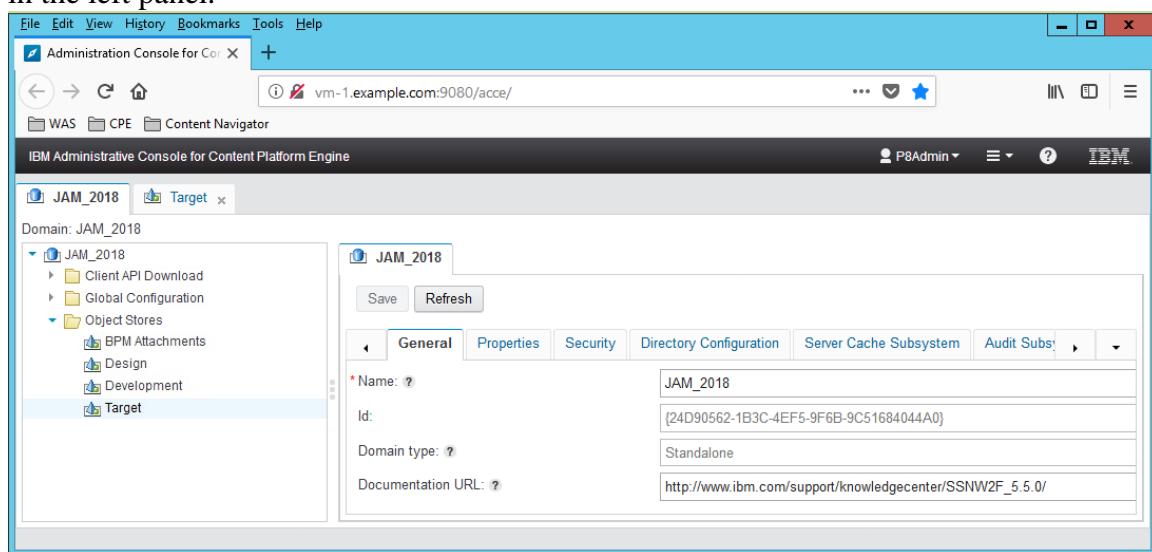
In this exercise you will access the following tools / resources

Tool	Location / URL
Content Platform Engine Administrative Console (ACCE)	http://vm-1.example.com:9080/acce

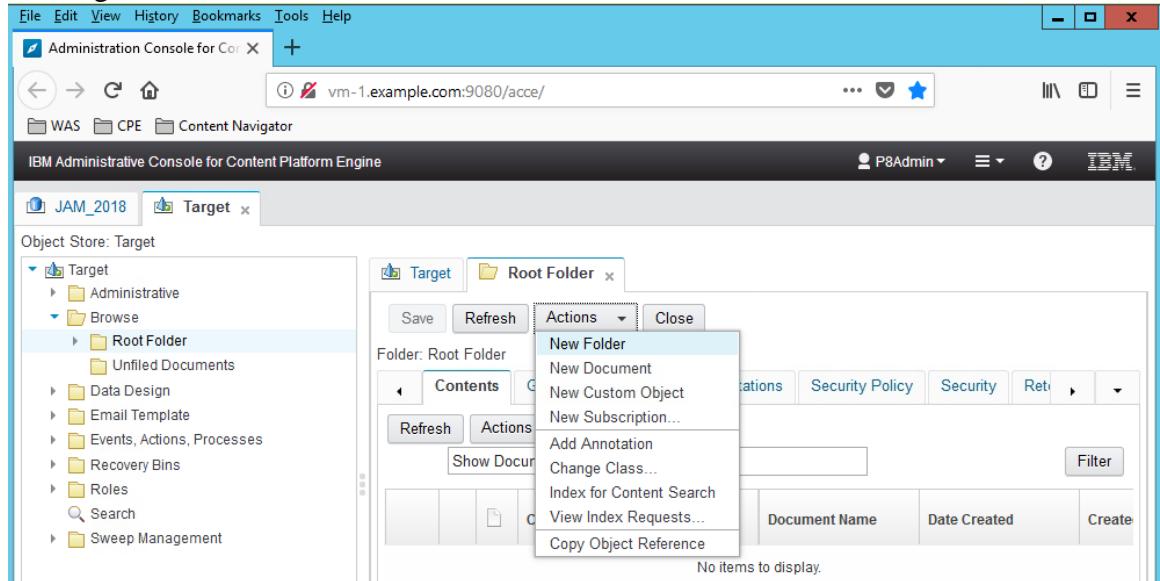
2.2 Create Folder for Incoming Mortgage Application Documents – Step by Step Instructions

To get started with this exercise, execute the following steps:

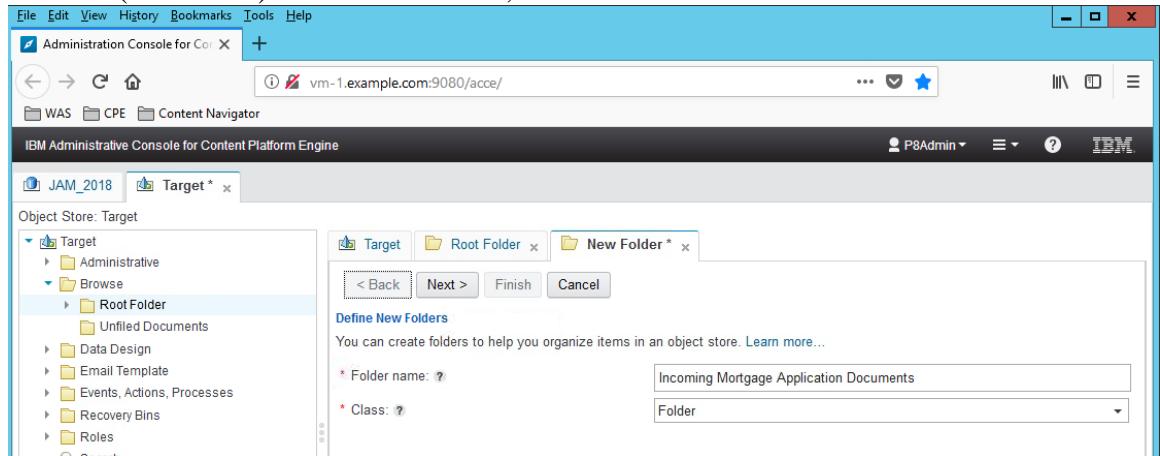
- 1) Log in to Content Platform Engine Administrative Console (<http://vm-1.example.com:9080/acce>). When prompted for user ID and password, use **P8Admin / Think4me**.
- 2) Open the object store "Target" by clicking "JAM_2018 > Object Stores > Target" in the left panel.



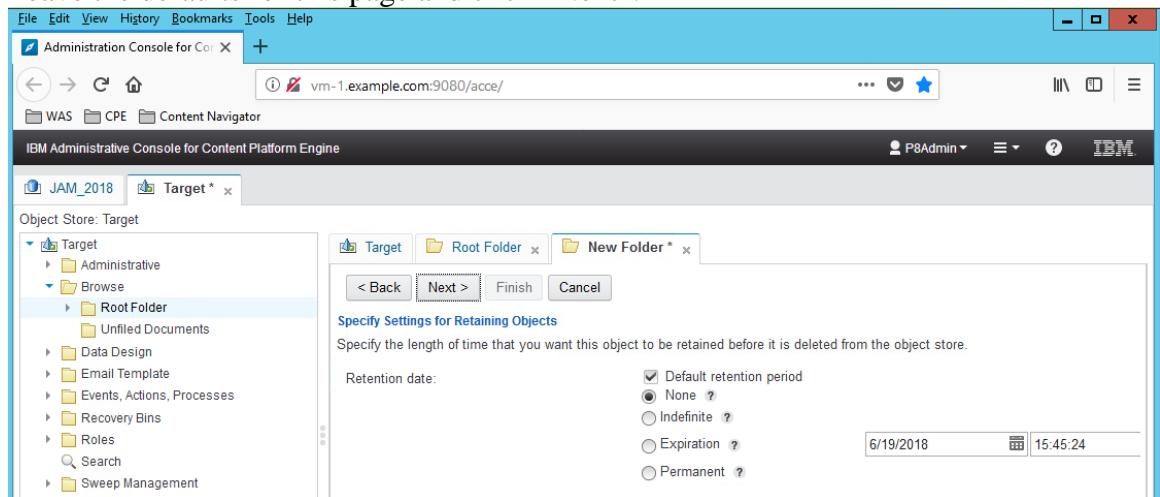
- 3) Open the "Root Folder" tab of the "Target" object store by clicking "Target > Browse > Root Folder" in the left panel, and then open the "New Folder" tab by clicking "Actions > New Folder" in the "Root Folder" tab.



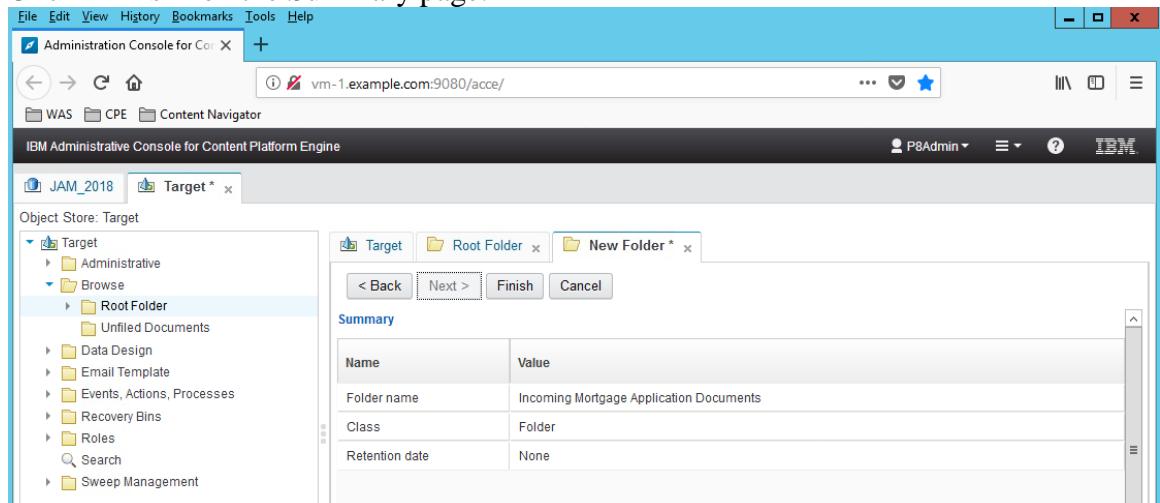
- 4) Enter "Incoming Mortgage Application Documents" as Folder name, leave defaults (i.e. Folder) for the Class field, and click "Next".



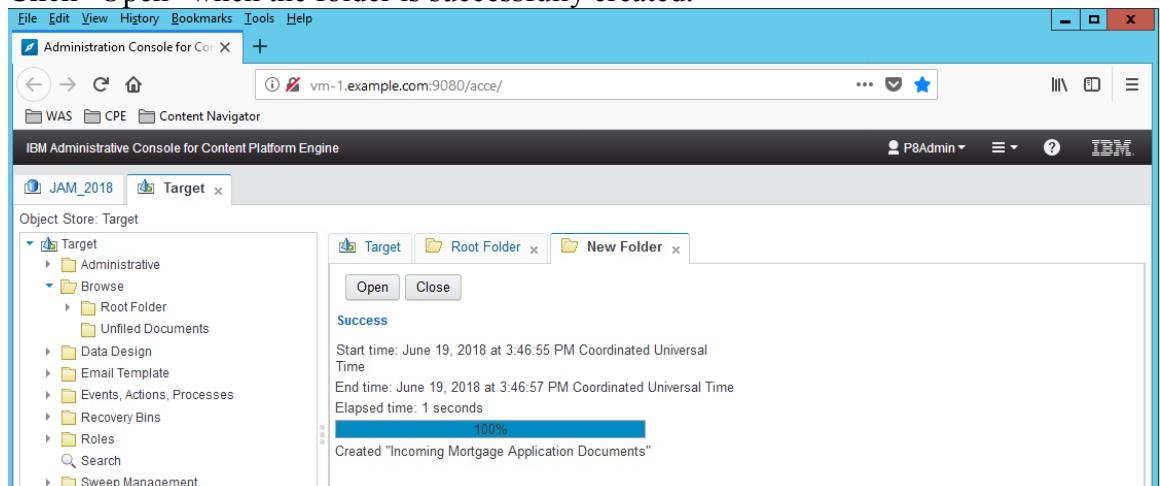
- 5) Leave the defaults for this page and click “Next”.



- 6) Click “Finish” on the Summary page.



- 7) Click “Open” when the folder is successfully created.



- 8) Click on the “Security” sub-tab in the "Incoming Mortgage Application Documents" tab.

Name	Source	Permission Type	Permission Group	Apply To
#AUTHENTICATED-USERS	Default	Allow	View properties <Default>	This object only
P8Admins	Default	Allow	Full Control	This object only
P8Admin	Default	Allow	Full Control	This object only

- 9) Delete access for group “#AUTHENTICATED-USERS” and user “P8Admin”:
Select “#AUTHENTICATED-USERS” and “P8Admin” in the table and click “Remove”.

Name	Source	Permission Type	Permission Group	Apply To
P8Admins	Default	Allow	Full Control	This object only

- 10) Add “View Properties”-access for the "testers" group:

- Click "Add User/Group Permission", and you will see the "Add Users and Groups" dialog.
- Enter “test” in the "Search by" field and click “Search”.

- c. Select "testers" in "Available Users and Groups" and move it to "Selected Users and Groups".

Add Users and Groups

You can search for the user and group accounts to whom you want to allow or deny access. The accounts that you select are added to the access control list of the object and assigned default permissions. You can view and modify these permissions.

Search Criteria

Search in realm: TivoliDirectoryServer (dc=ibm,dc=com)
 Search for: Groups, Users, Special accounts
 Maximum results returned: 500
 Sort order: None
 Search by: Short name, Starts with: test, Search

Search Results

Available Users and Groups	Selected Users and Groups
#AUTENTICATED-USERS	testers
#CREATOR-OWNER	
#REALM-USERS(TivoliDirectoryServer)	
tester	

- d. Scroll down, select "View Properties <Default>" in the "Permission group" field, and click "OK".

Add Users and Groups

Permissions

Permission type: Allow
 Apply to: This object only
 Permission group: View properties <Default>

<input checked="" type="checkbox"/> View all properties	<input type="checkbox"/> Modify all properties
<input type="checkbox"/> Reserved12 (Deploy is deprecated)	<input type="checkbox"/> Reserved13 (Archive is deprecated)
<input type="checkbox"/> File in folder / Annotate	<input type="checkbox"/> Unfile from folder
<input type="checkbox"/> Create instance	<input type="checkbox"/> Create subfolder
<input type="checkbox"/> Delete	<input checked="" type="checkbox"/> Read permissions
<input type="checkbox"/> Modify permissions	<input type="checkbox"/> Modify owner
<input type="checkbox"/> Delegate access	<input type="checkbox"/> Minor versioning (Inherit Only)
<input type="checkbox"/> Major versioning (Inherit Only)	<input type="checkbox"/> View content (Inherit Only)
<input type="checkbox"/> Change state (Inherit Only)	<input type="checkbox"/> Publish (Inherit Only)

OK Cancel

- e. Click "Save" in the "Incoming Mortgage Application Documents" tab.

The screenshot shows a software interface for managing folder permissions. At the top, there are tabs for 'Target Obj...', 'Root Folder', and 'Incoming Mo...'. Below these are buttons for 'Save', 'Refresh', 'Actions', and 'Close'. The main title is 'Folder: Incoming Mortgage Application Documents'. A navigation bar includes 'Contents', 'General', 'Properties', 'Annotations', 'Security Policy', **Security**, 'Retention', 'Tasks', 'Subscriptions', and 'Audit History'. A note below the navigation bar states: 'You can allow or deny permissions to a user or group. Each permission group contains one or more access rights.' Another note explains: 'Predefined permissions are collections of access rights that grant varying degrees of access to the object. When you select a predefined permission group, the access rights that are included in the permission group are selected. You can customize a predefined permission as needed. [Learn more...](#)'.

Access Permissions					
	Name	Source	Permission Type	Permission Group	Apply To
<input type="checkbox"/>	P8Admins	Direct	Allow	Full Control	This object only
<input type="checkbox"/>	testers	Direct	Allow	View properties <Default>	This object only

You finished to create and configure access to a folder named "Incoming Mortgage Application Documents". This is where the documents relevant for the mortgage application will be placed in.

2.3 Create Folder for Incoming Mortgage Application Documents – Verification Instructions

You will verify this exercise as part of exercise 3.

2.4 Create Folder for Incoming Mortgage Application Documents – Summary

In this exercise you have:

- 1) Created a folder named "Incoming Mortgage Application Documents" in the root folder of the object store "Target".
- 2) Configured security so that only the group "P8Admins" has "Full Control" to the folder, and the group "testers" has "Read" access rights. Access rights for all other groups/users has been removed.

3 Exercise: Create Storage Area

Duration approx: 20 minutes

3.1 Create Storage Area – *Introduction*

A Storage Area is a place where Content Platform Engine stores content. You can create one or more Storage Areas in an Object Store. For some background reading on Storage Areas, please refer to the documentation

https://www.ibm.com/support/knowledgecenter/SSNW2F_5.5.0/com.ibm.p8.ce.admin.task.doc/p8pcb026.htm.

In this exercise, you will create an Advanced Storage Area with two Advanced Storage Area Devices and one Storage Policy, into which all incoming Mortgage Application documents will be stored.

You will:

- Log-on to Content Platform Engine Administrative Console (ACCE),
- create two Advanced Storage Area Devices on different local directories: ADVSD1 & ADVSD2,
- create an Advanced Storage Area that stores content encrypted on these two devices: ADV_SA,
- create a Storage Policy for the Advanced Storage Area "ADV_SA": Mortgage Application Storage Policy,
- upload a document to the folder "Incoming Mortgage Application Documents", where its content is automatically stored in the Advanced Storage Area "ADV_SA".

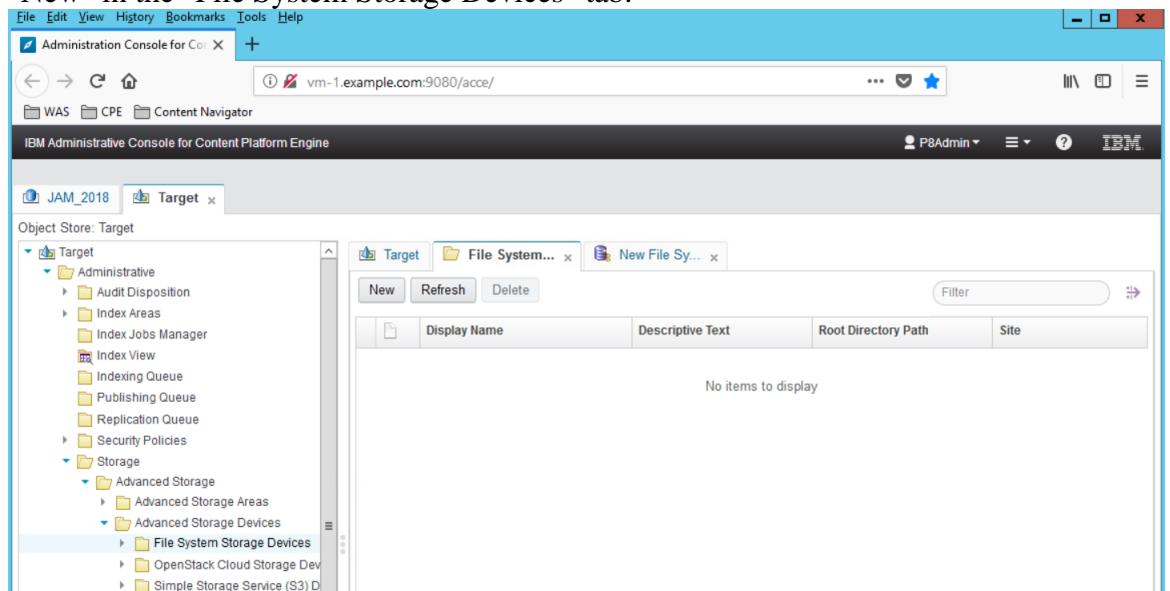
In this exercise you will access the following tools / resources

Tool	Location / URL
Content Platform Engine Administrative Console (ACCE)	http://vm-1.example.com:9080/acce

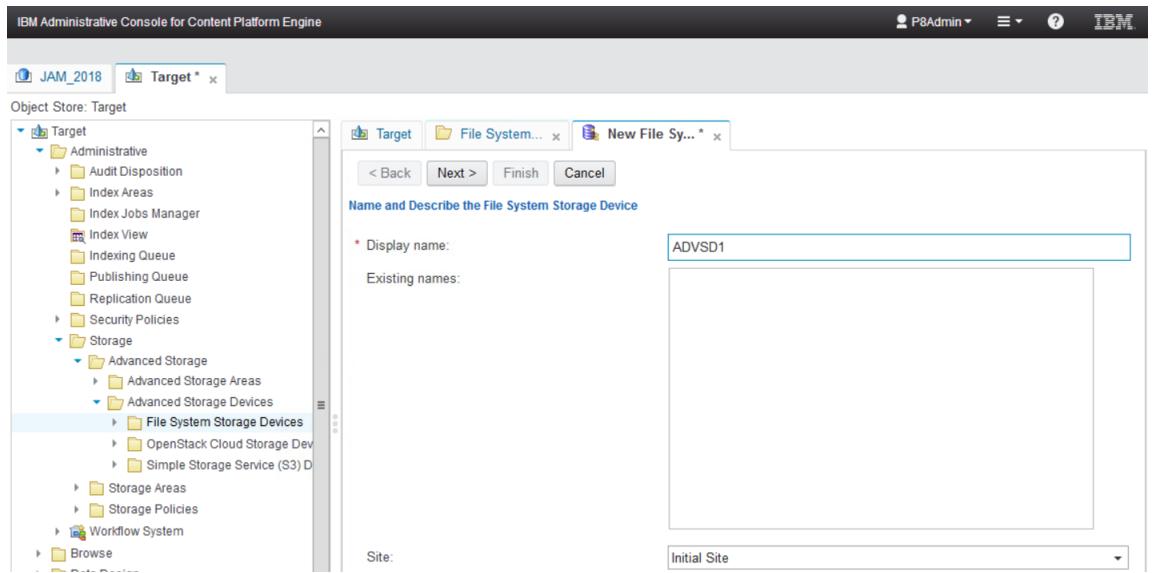
3.2 Create Storage Area – Step by Step Instructions

To get started with this exercise, execute the following steps:

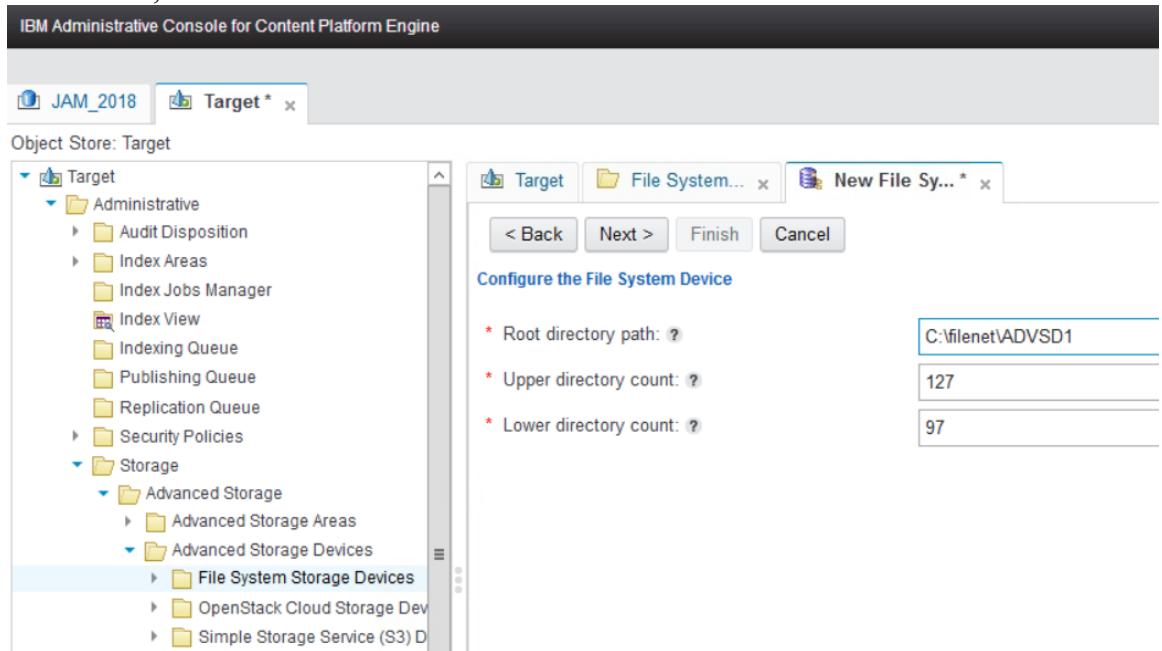
- 1) Log in to Content Platform Engine Administrative Console (<http://vm-1.example.com:9080/acce>). When prompted for user ID and password, use **P8Admin / Think4me**.
- 2) Open the object store "Target" tab by clicking "JAM_2018 > Object Stores > Target" in the left panel.
- 3) Create two Advanced Storage Area Devices using two different local directories:
 - a. In Windows, create the following folders (the folders need to exist otherwise the creation of the Advanced Storage Area Devices will fail):
 - C:\filenet\ADVSD1
 - C:\filenet\ADVSD2
 - b. Open the "File System Storage Devices" tab of the "Target" object store by clicking "Target > Administrative > Storage > Advanced Storage > Advanced Storage Devices > File System Storage Devices" in the left panel. Then open the "New File System Storage Device" tab by clicking "New" in the "File System Storage Devices" tab.



- c. Enter "ADVSD1" as Display name, leave defaults for other fields, and click "Next".



- d. Enter " C:\filenet\ADVSD1" as Root directory path, leave defaults for other fields, and click "Next".



- e. Click “Finish” on the Summary page and click “Close” on the Success page after the Advanced Storage Device has been created successfully.

The screenshot shows the 'Object Store: Target' interface. On the left, a tree view shows the 'Target' node expanded, with 'Administrative', 'Storage', and 'Advanced Storage' nodes. Under 'Advanced Storage', 'File System Storage Devices' is selected. On the right, a 'Summary' table displays the following information:

Name	Value
Display name	ADVSD1
Site	Initial Site
Description	ADVSD1
Root directory path	C:\filenet\ADVSD1
Upper directory count	127
Lower directory count	97

- f. Click “Refresh” on the "File System Storage Devices" tab, and you will see that a new File System Storage Device named “ADVSD1” is listed.

The screenshot shows the 'Object Store: Target' interface. The 'File System Storage Devices' tab is selected. A table lists the storage devices:

	Display Name	Descriptive Text	Root Directory Path	Site
	ADVSD1	ADVSD1	C:\filenet\ADVSD1	Initial Site

- g. Repeat the steps b ~ f steps to create the second File System Storage Device:

- Name: ADVSD2
- Root directory path: C:\filenet\ADVSD2

The screenshot shows the 'Object Store: Target' interface. On the left, a tree view under 'Target' shows 'Administrative' and 'Storage' nodes, with 'Advanced Storage' expanded to show 'Advanced Storage Areas' and 'Advanced Storage Devices'. Under 'Advanced Storage Devices', 'File System Storage Devices' is selected. On the right, a table lists existing storage devices. A new row is being added with the following data:

	Display Name	Descriptive Text	Root Directory Path	Site
New	ADVSD1	ADVSD1	C:\filenet\ADVSD1	Initial Site
New	ADVSD2	ADVSD2	C:\filenet\ADVSD2	Initial Site

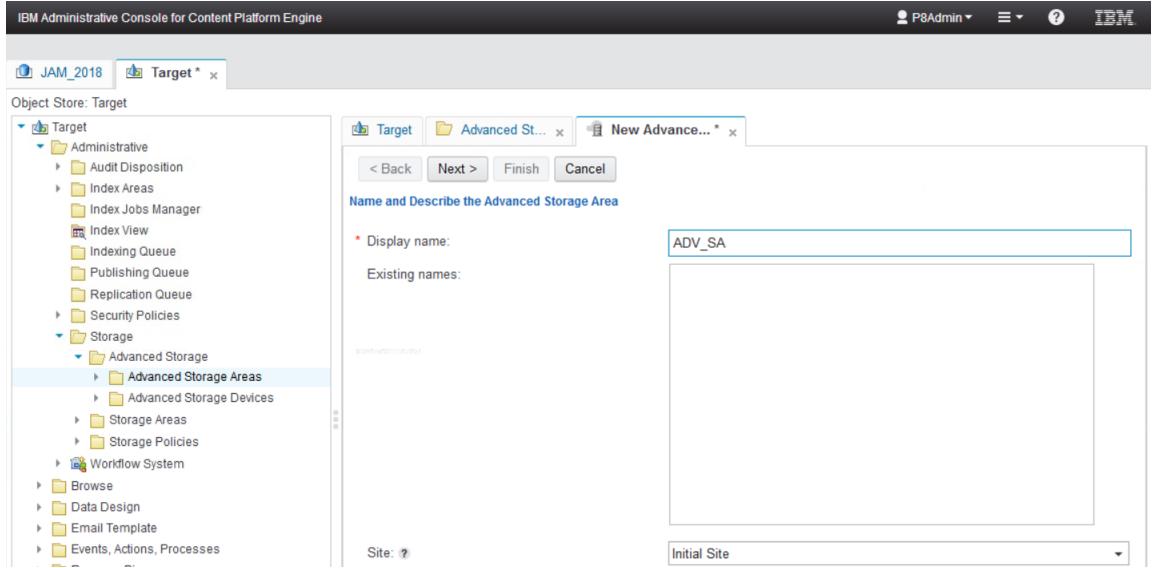
- 4) Create an Advanced Storage Area that stores content encrypted on these two devices:

- a. Open the "Advanced Storage Areas" tab of the "Target" by clicking "Target > Administrative > Storage > Advanced Storage > Advanced Storage Areas" in the left panel, and then open the "New Advanced Storage Area" tab by clicking "New" in the "Advanced Storage Areas" tab.

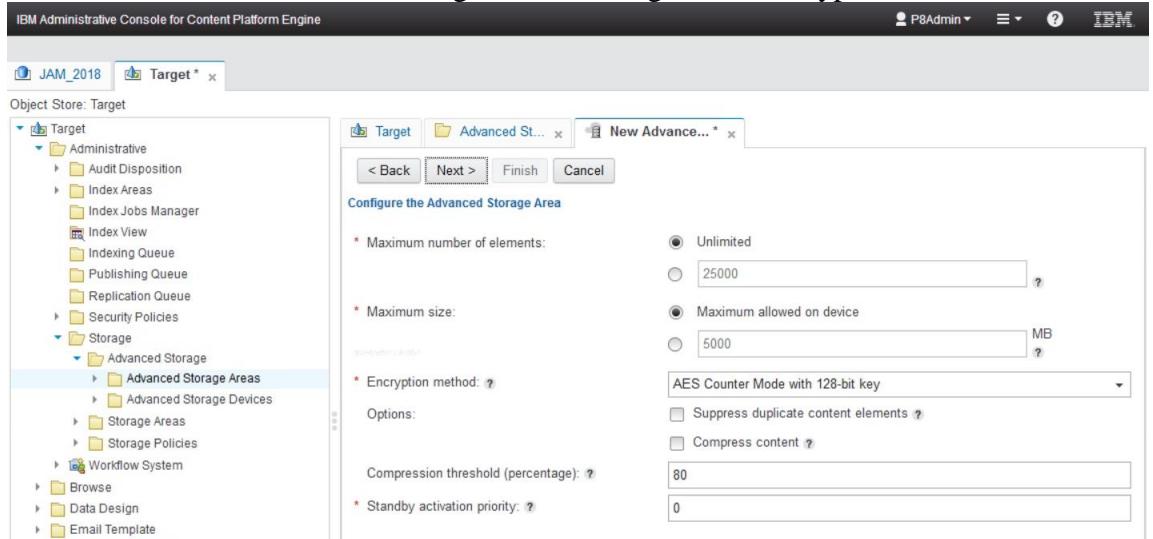
The screenshot shows the 'Object Store: Target' interface. On the left, the tree view under 'Target' shows 'Administrative' and 'Storage' nodes, with 'Advanced Storage' expanded to show 'Advanced Storage Areas' and 'Advanced Storage Devices'. Under 'Advanced Storage Areas', 'Storage Areas' is selected. On the right, a table lists existing storage areas. A new row is being added with the following data:

	Display Name	Status	Total Files	Total File Size	Delete Method	Synchronous Replicas Required	Synchronous Replicas Desired	Site
New								No items to display

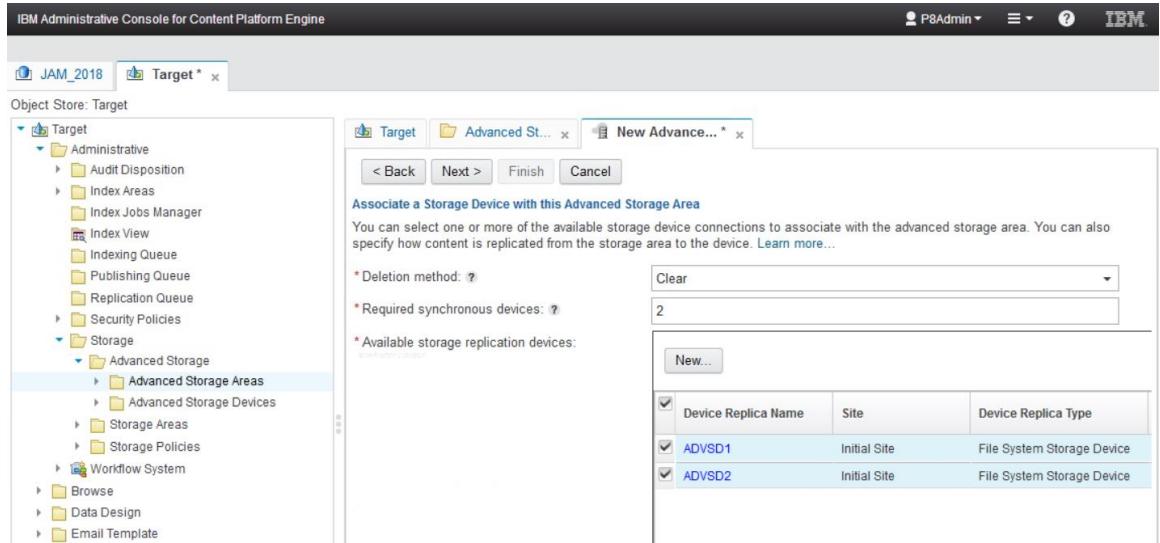
- b. Enter "ADV_SA" as Display name, leave defaults for other fields, and click "Next".



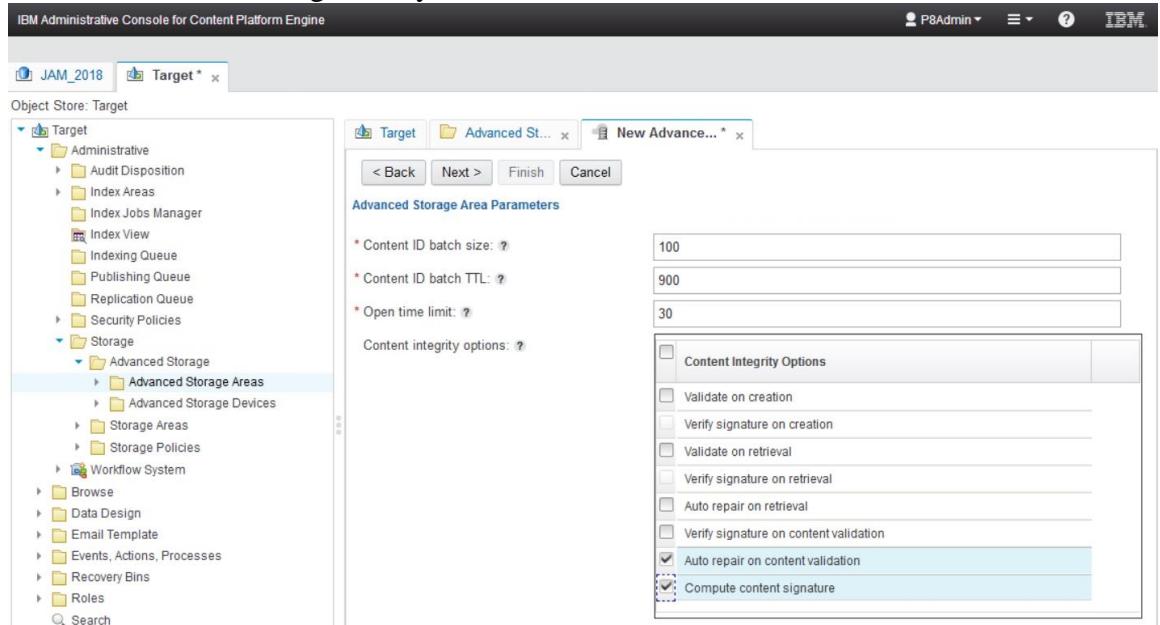
- c. Leave defaults for all fields and click "Next". Note: you can see "Encryption method" is set as "AES Counter Mode with 128-bit key" by default, which means that the storage area is configured as encrypted.



- d. Enter "2" as Required synchronous devices, and select both devices in Available storage replication devices, leave defaults for other fields, and click "Next".

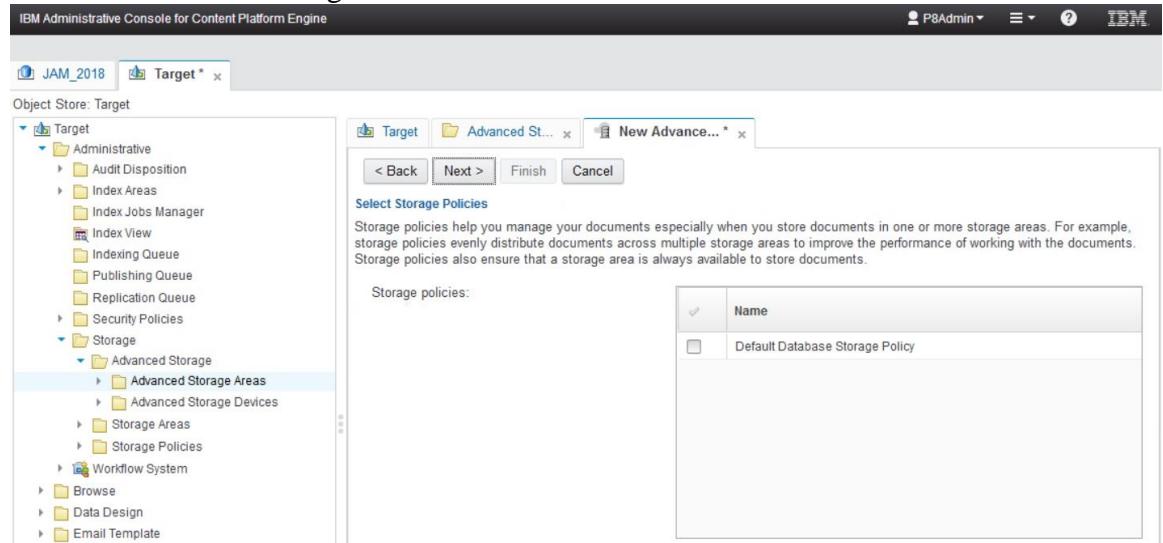


- e. Select "Compute content signature" in "Content integrity options" and click "Next". This will additionally compute and store a checksum, which can be used for checking validity of the documents.

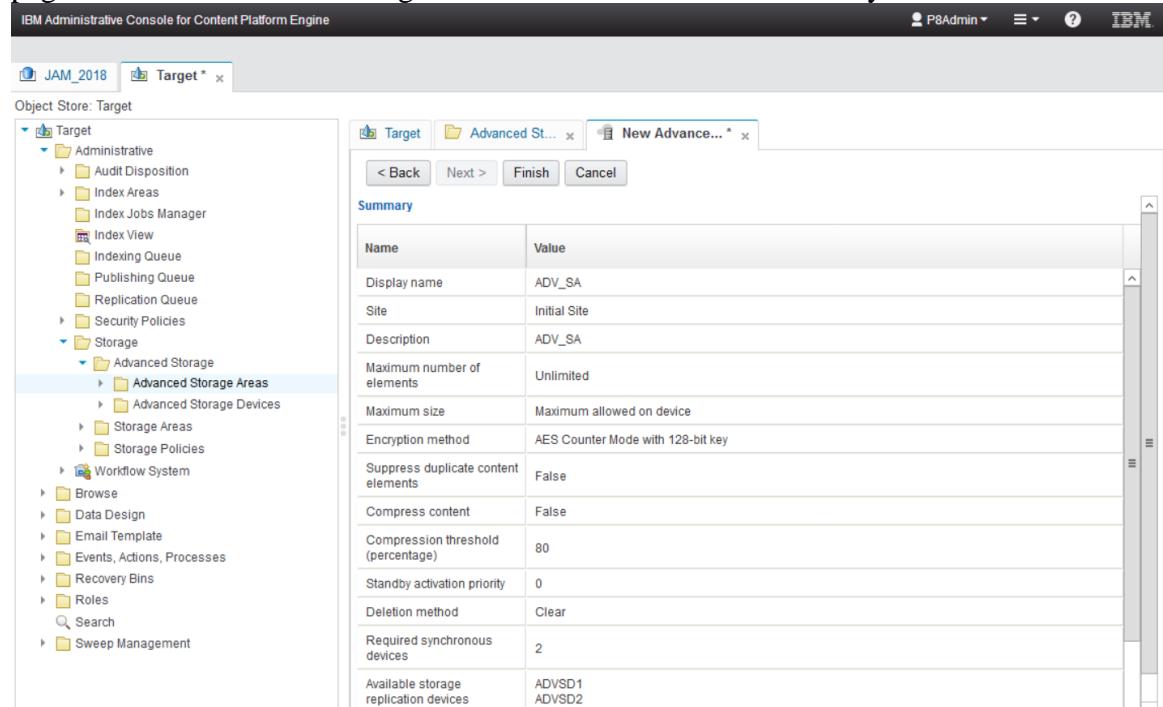


- f. Leave Storage policies as empty, click “Next”, and click “OK” on the popup dialog.

Note: you will create a new Storage Policy later which will be associated with the Advanced Storage Area.



- g. Click “Finish” on the Summary page, and click “Close” on the Success page after the Advanced Storage Area has been created successfully.



- h. Click "Refresh" on the "Advanced Storage Areas" tab, and you will see that a new Advanced Storage Area named "ADV_SA" is listed.

The screenshot shows the 'Advanced Storage Areas' list in the 'Target' object store. The table has columns: Display Name, Status, Total Files, Total File Size, Delete Method, Synchronous Replicas Required, Synchronous Replicas Desired, and Site. The entry 'ADV_SA' is listed with a status of 'Open', 0 files, 0.0 KB size, and delete method 'Clear'. It has 2 required and 2 desired synchronous replicas, and is located at the 'Initial Site'.

Display Name	Status	Total Files	Total File Size	Delete Method	Synchronous Replicas Required	Synchronous Replicas Desired	Site
ADV_SA	Open	0	0.0 KB	Clear	2	2	Initial Site

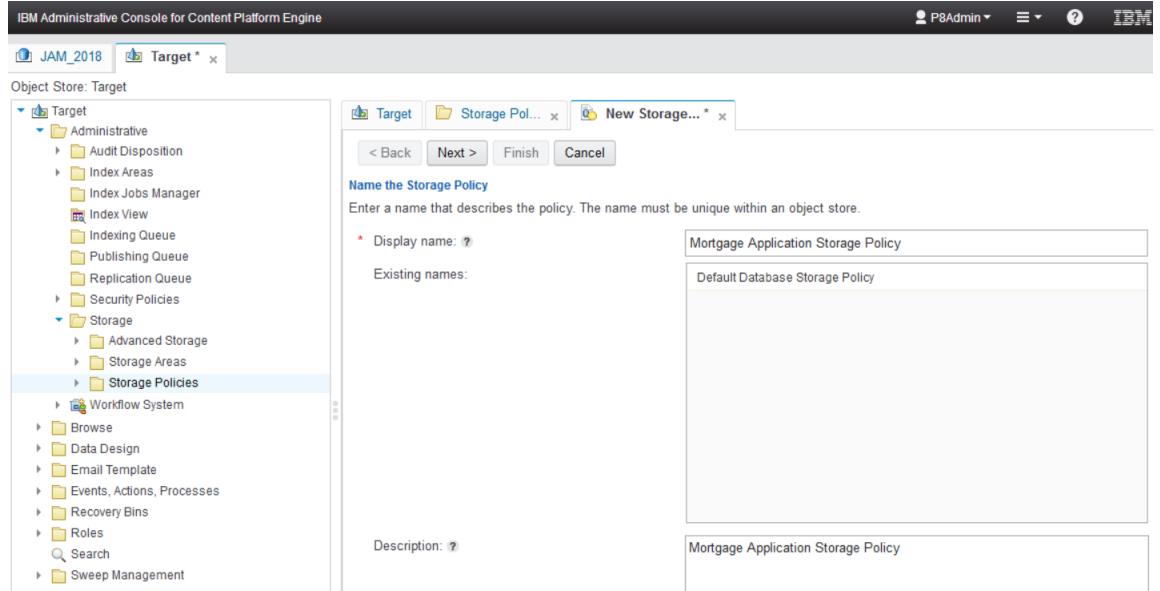
- 5) Create a Storage Policy "Mortgage Application Storage Policy" for the Advanced Storage Area "ADV_SA":

- a. Open the "Storage Policies" tab of the "Target" object store by clicking "Target > Administrative > Storage > Storage Policies" in the left panel. Next open the "New Storage Policy" tab by clicking "New" in the "Storage Policies" tab.

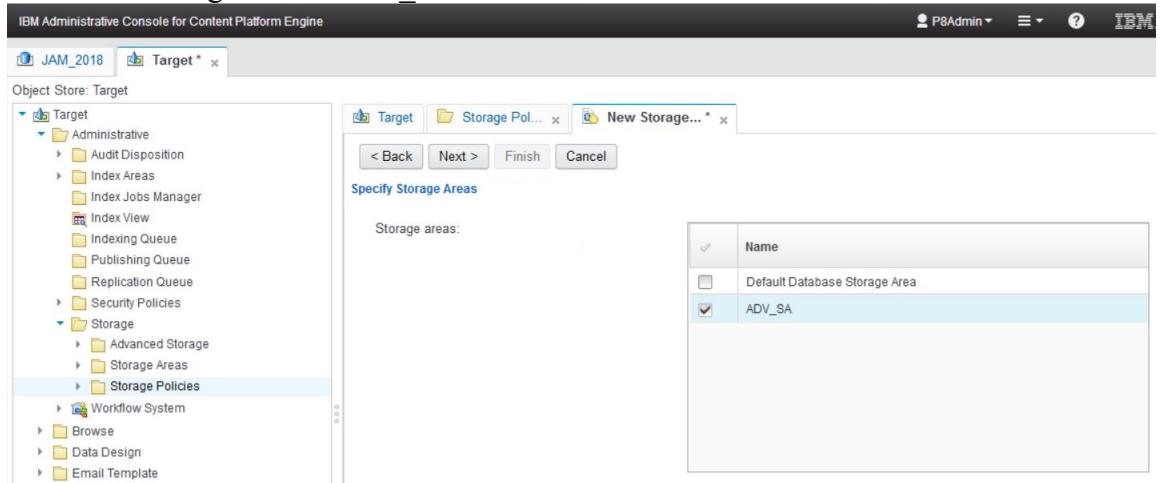
The screenshot shows the 'Storage Policies' list in the 'Target' object store. The table has columns: Display Name, Description, Creator, and Date Created. The entry 'Default Database Storage Policy' is listed with a description of 'Default Database Storage Policy' and was created on June 18, 2018 at 5:52:46 PM Coordinated Universal Time.

Display Name	Description	Creator	Date Created
Default Database Storage Policy	Default Database Storage Policy		June 18, 2018 at 5:52:46 PM Coordinated Universal Time

- b. Enter "Mortgage Application Storage Policy" as Display name, leave defaults for other fields, and click "Next".



- c. Click "Next" on the "Select Content Storage Method" page.
d. Select the Storage Area "ADV_SA" and click "Next".



- e. Click “Finish” on the Summary page and click “Close” on the Success page after the Storage Policy has been created successfully.

The screenshot shows the 'Object Store: Target' interface. On the left, a tree view shows 'Target' expanded, with 'Storage Policies' selected. On the right, a 'Summary' tab is active, displaying the following table:

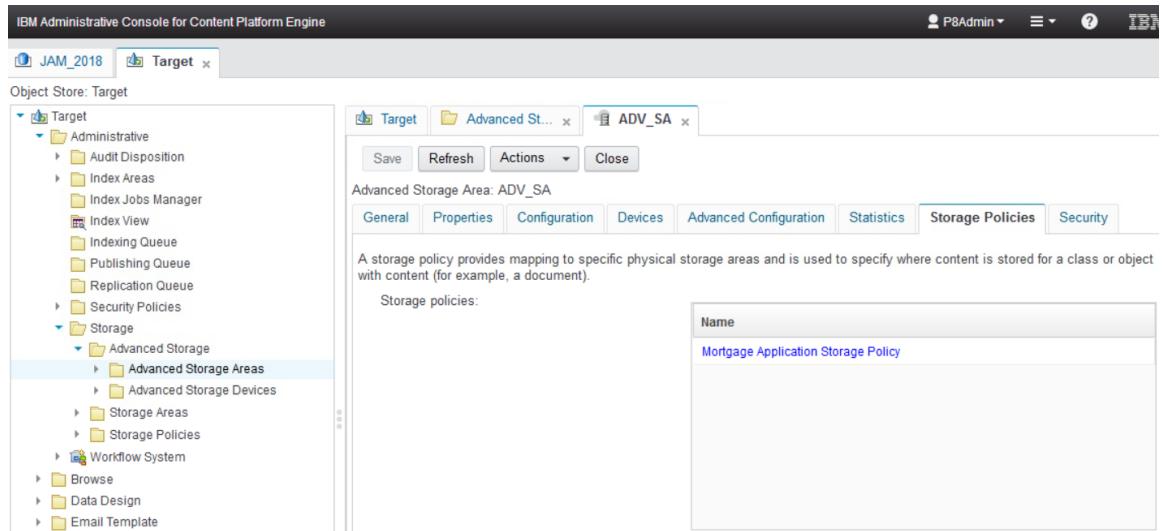
Name	Value
Display name	Mortgage Application Storage Policy
Description	Mortgage Application Storage Policy
Select the content storage method	Select the storage area from a list
Storage areas	ADV_SA

- f. Click “Refresh” on the "Storage Policies" tab, and you will see that a new Storage Policy named “Mortgage Application Storage Policy” is listed.

The screenshot shows the 'Object Store: Target' interface with the 'Storage Policies' tab selected. A table lists the storage policies:

Display Name	Description	Creator	Date Created
Default Database Storage Policy	Default Database Storage Policy		June 18, 2018 at 5:52:46 PM Coordinated Universal Time
Mortgage Application Storage Policy	Mortgage Application Storage Policy	P8Admin	June 28, 2018 at 6:10:28 AM Coordinated Universal Time

- g. Open the Advanced Storage Area “ADV_SA” tab, click the “Storage Policies” sub-tab, and verify that “Mortgage Application Storage Policy” is listed there.

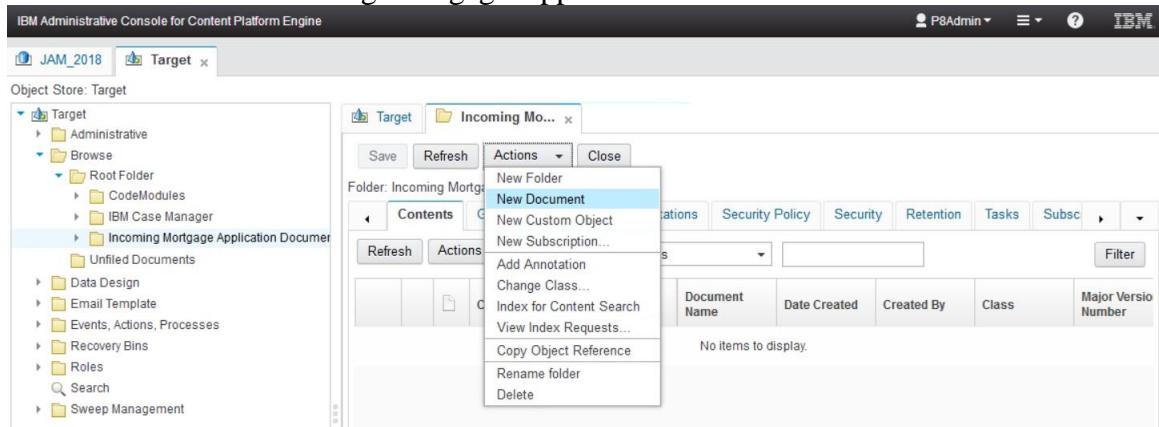


You finished creating an Advanced Storage Area with two Advanced Storage Area Devices and one Storage Policy. The incoming Mortgage Application documents will be stored in this Advanced Storage Area.

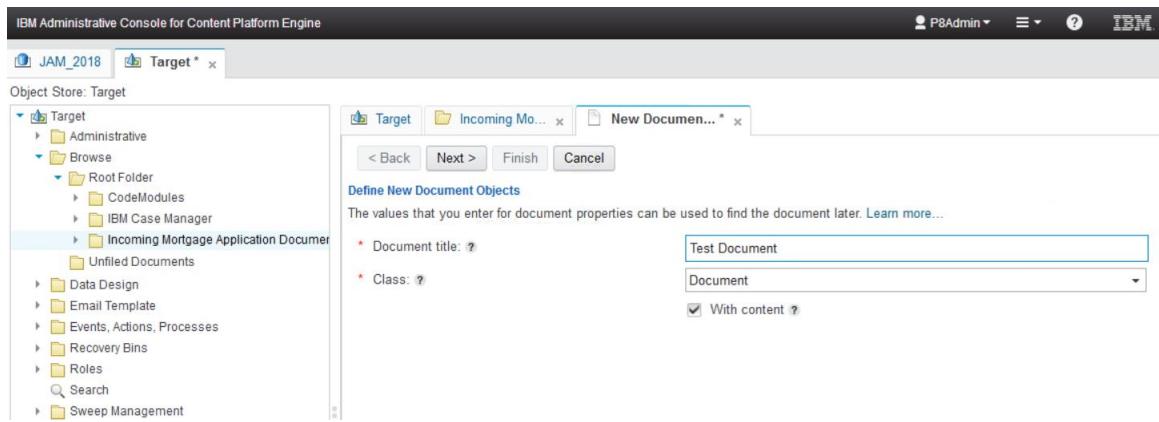
3.3 Create Storage Area – Verification Instructions

To verify successful completion of this exercise, you will first upload a document with document class “Document” to the Advanced Storage Area “ADV_SA” and into the folder “Incoming Mortgage Application Documents” which was created in Exercise 2. Second you will then find it on the local hard disk, forcefully delete one instance to then repair the inconsistency using the FileNet Content Consistency Checker tool.

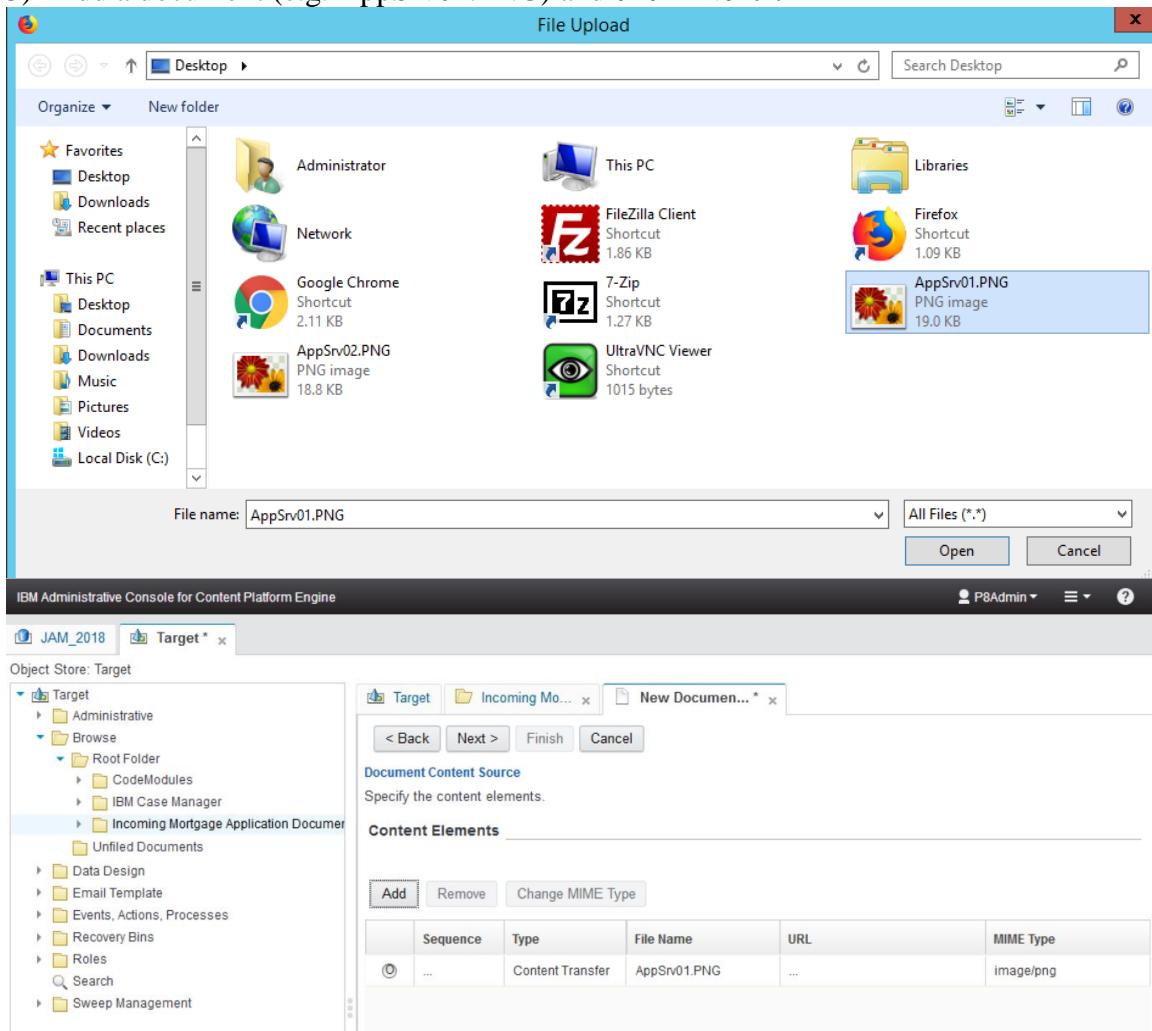
- 1) Open the folder “Incoming Mortgage Application Documents” by clicking “Target > Browse > Root Folder > Incoming Mortgage Application Documents” in the left panel. Next open the "New Document" tab by clicking "Actions > New Document" in the "Incoming Mortgage Application Documents" tab.



- 2) Enter "Test Document" as Display name, leave defaults for other fields, and click "Next".



- 3) Add a document (e.g. AppSrv01.PNG) and click “Next”.



- 4) Leave defaults for all fields on the next 3 pages (i.e. Object Properties, Document Content and Version, Specify Settings for Retaining Objects), and click “Next” each time.

- 5) Select “Mortgage Application Storage Policy” as Storage policy on the “Advanced Features” page and click “Next”.

Advanced Features

Specify additional options that you can assign to the document you are adding to the object store.

Storage area: ?	
Storage policy: ?	Mortgage Application Storage Policy
Security policy: ?	
Lifecycle policy: ?	
Replication group: ?	

- 6) Click “Finish” on the Summary page and click “Close” on the Success page after the document was successfully added.

Name	Value
Document title	Test Document
Class	Document
With content	True
Save as reservation	False
Create minor version	False
Create as compound document	False
Retention date	None
Storage policy	Mortgage Application Storage Policy
Content elements	AppSrv01.PNG
MIME type	image/png
Classify document	false

- 7) Open the folder “Incoming Mortgage Application Documents”, choose the “Contents” tab, click “Refresh” and verify that “Test Document” is listed there.

Object Store: Target

Folder: Incoming Mortgage Application Documents

	Containment Name	Document Name	Date Created	Created By	Class	Major Version Number
	Test Document	Test Document	June 28, 2018 at 6:25:27 AM Coordinated Universal Time	P8Admin	Document	1

- 8) Open the Advanced Storage Area “ADV_SA” tab, click the “Statistics” sub-tab, and verify that “Total files” is 1. (It might be necessary to click “Refresh” if you did not previously close the tab.)

Object Store: Target

Advanced Storage Area: ADV_SA

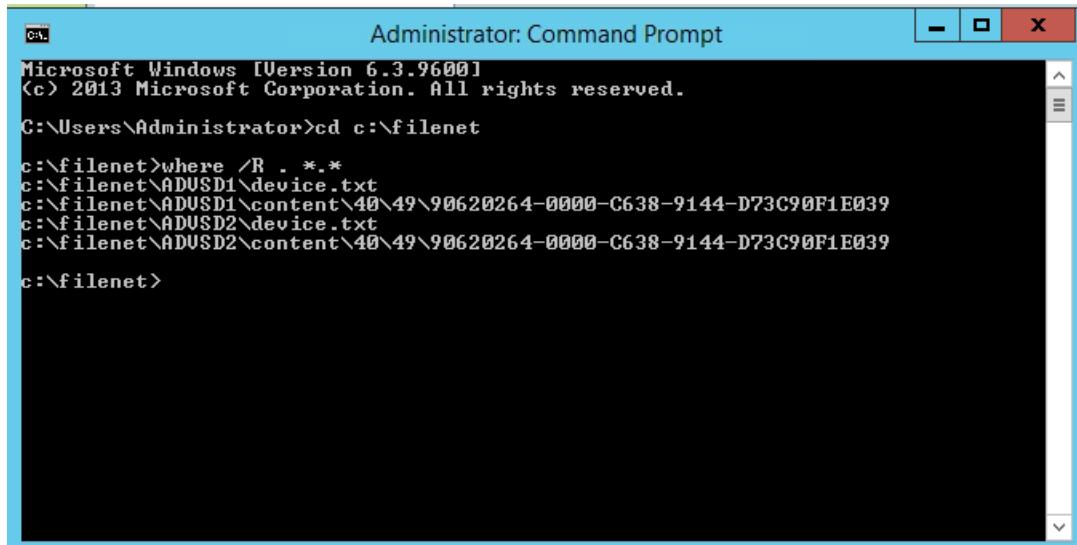
General Properties Configuration Devices Advanced Configuration Statistics Storage Policies Security

Set parameters to define the capacity of the storage area. You can also view when the storage area was last modified.

Total files:	1
Total file size:	0 MB
Last modified:	June 28, 2018 at 6:05:32 AM Coordinated Universal Time UTC
Files created:	1
Files deleted:	0

Storage Area Maximums

- 9) Open Command Prompt and change to directory “c:\filenet”. Next run the command “where /R . *.*”. You will see 1 file except for the device.txt file on both ADVSD1 and ADVSD2, which is the stored content of the uploaded “Test Document”.

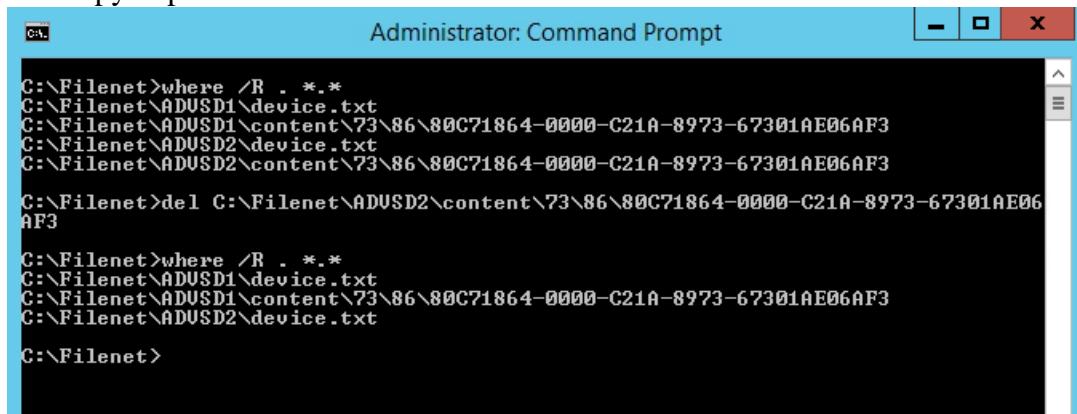


Administrator: Command Prompt

```
Microsoft Windows [Version 6.3.9600]
(c) 2013 Microsoft Corporation. All rights reserved.

C:\Users\Administrator>cd c:\filenet
c:\filenet>where /R . *.*
c:\filenet\ADUSD1\device.txt
c:\filenet\ADUSD1\content\40\49\90620264-0000-C638-9144-D73C90F1E039
c:\filenet\ADUSD2\device.txt
c:\filenet\ADUSD2\content\40\49\90620264-0000-C638-9144-D73C90F1E039
c:\filenet>
```

- 10) Remove one of the content files, not the “device.txt” file, using the del command.
Use copy & paste for the name.



Administrator: Command Prompt

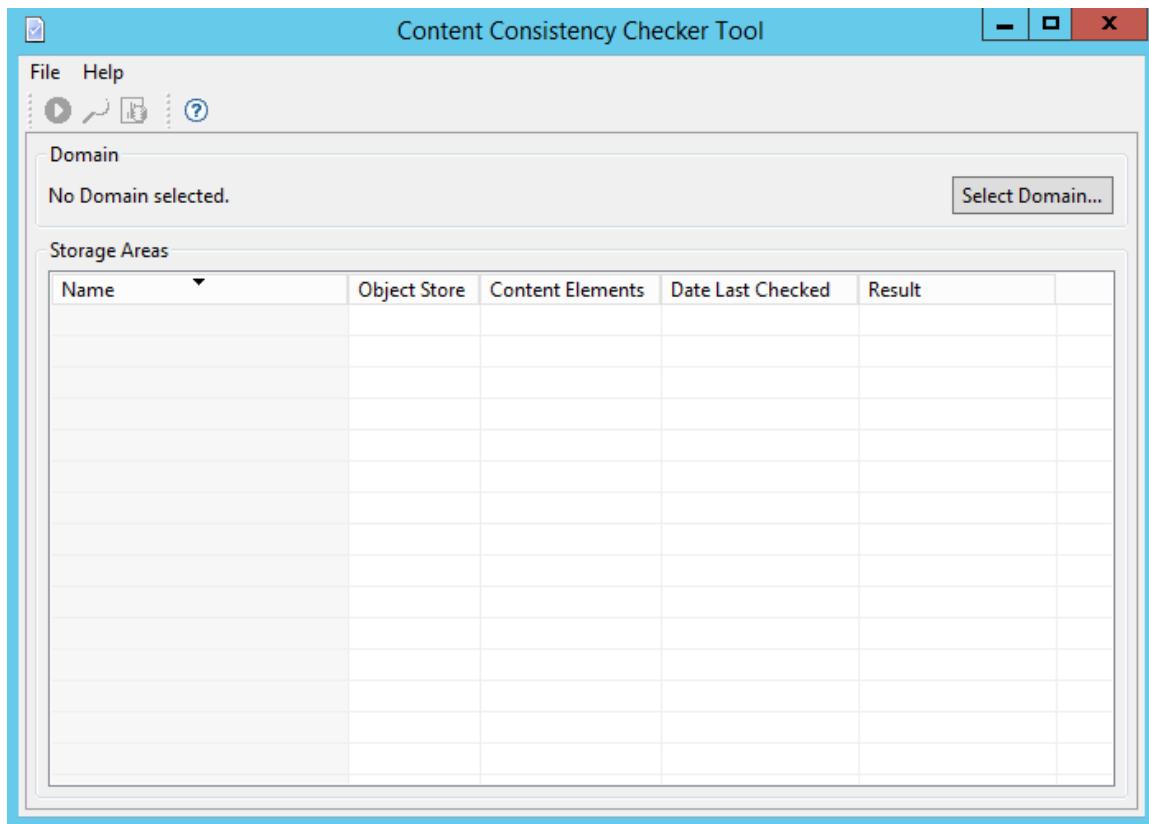
```
C:\Filenet>where /R . *.*
C:\Filenet\ADUSD1\device.txt
C:\Filenet\ADUSD1\content\73\86\80C71864-0000-C21A-8973-67301AE06AF3
C:\Filenet\ADUSD2\device.txt
C:\Filenet\ADUSD2\content\73\86\80C71864-0000-C21A-8973-67301AE06AF3

C:\Filenet>del C:\Filenet\ADUSD2\content\73\86\80C71864-0000-C21A-8973-67301AE06AF3

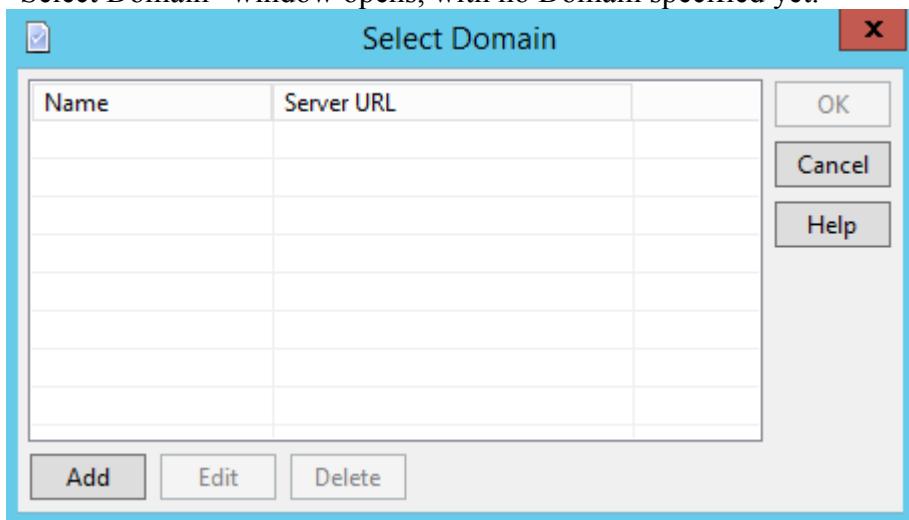
C:\Filenet>where /R . *.*
C:\Filenet\ADUSD1\device.txt
C:\Filenet\ADUSD1\content\73\86\80C71864-0000-C21A-8973-67301AE06AF3
C:\Filenet\ADUSD2\device.txt

C:\Filenet>
```

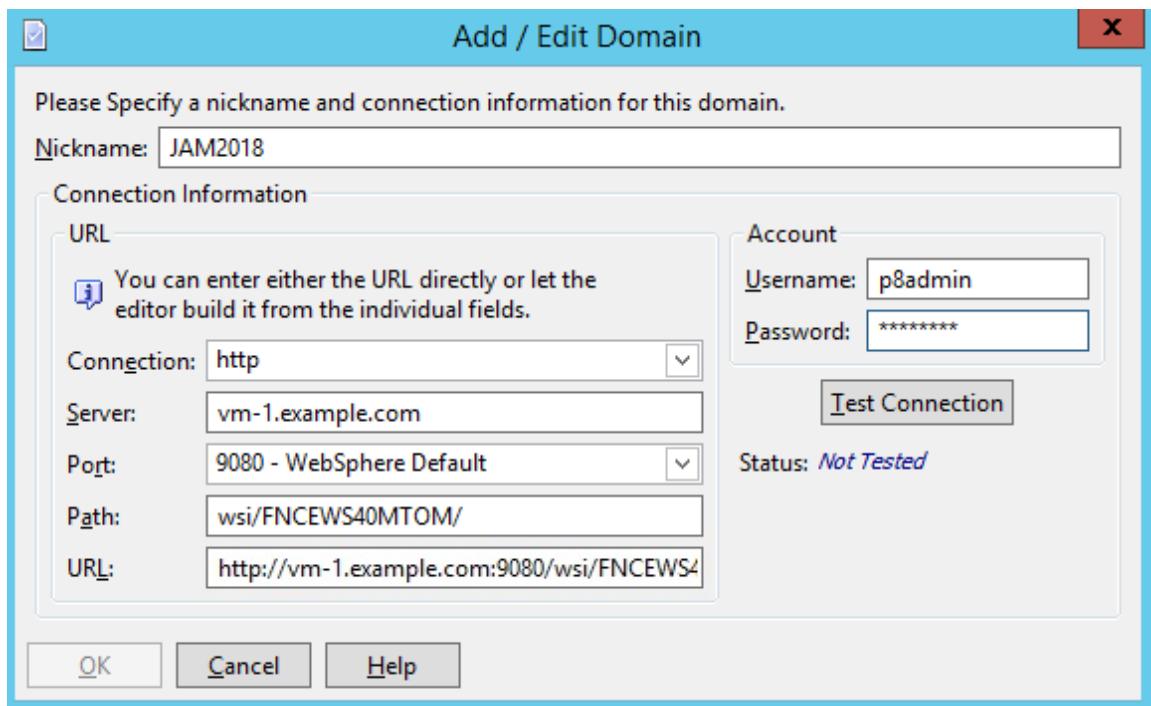
- 11) From the Start Menu / Start Page, invoke the FileNet Content Consistency Checker tool from the FileNet / ICN Group.



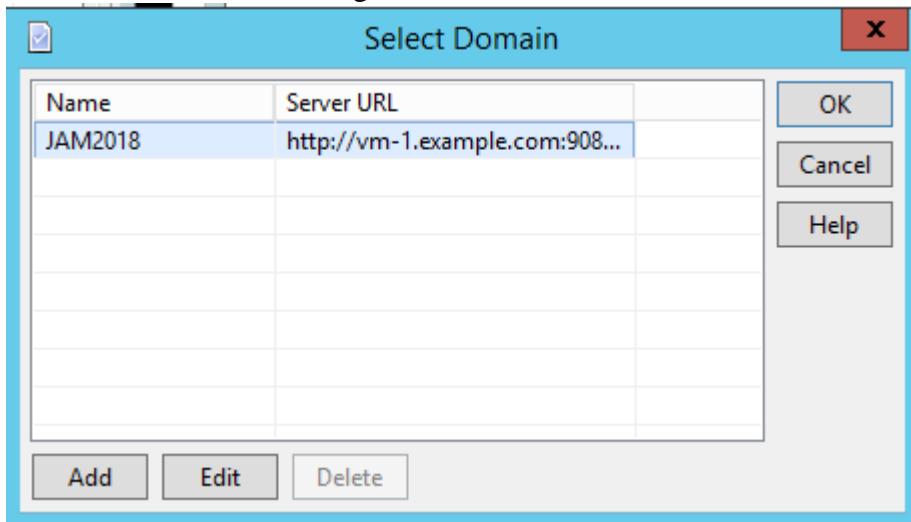
- 12) Click “Select Domain” to choose the FileNet Content Engine Domain to use. The “Select Domain” window opens, with no Domain specified yet.



- 13) Click “Add” and enter the connection details for the JAM2018 domain:
Nickname: JAM2018
Server: vm-1.example.com
Username: p8admin
Password: Think4me



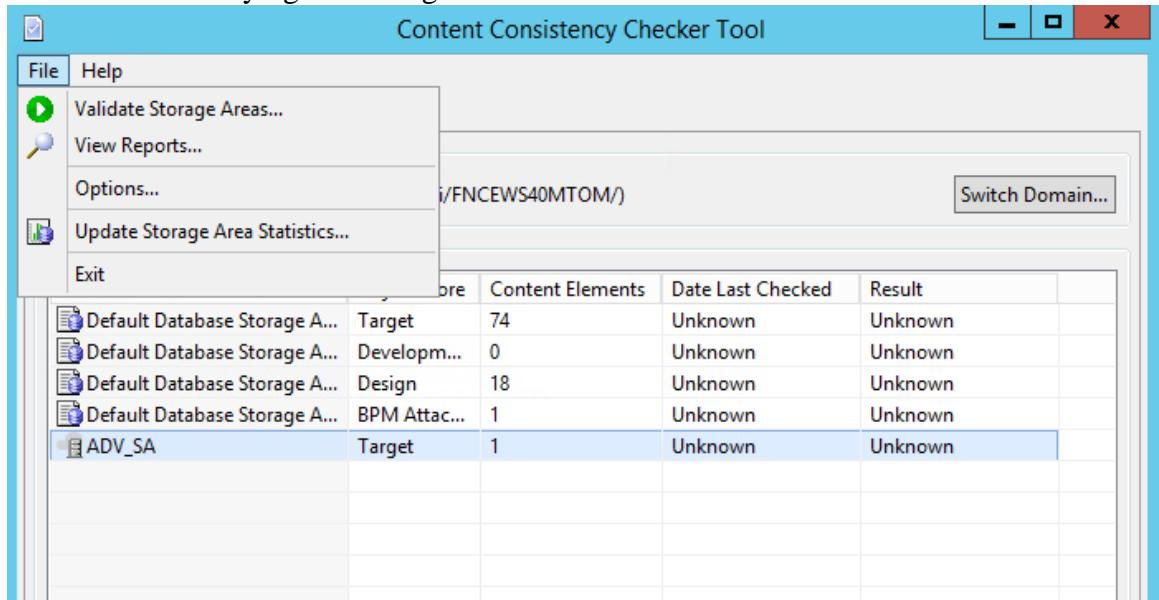
- 14) Click “Test Connection” and confirm that the login succeeds. Click “OK” in the “Add / Edit Domain”-dialog. Select the Domain and click “OK”.



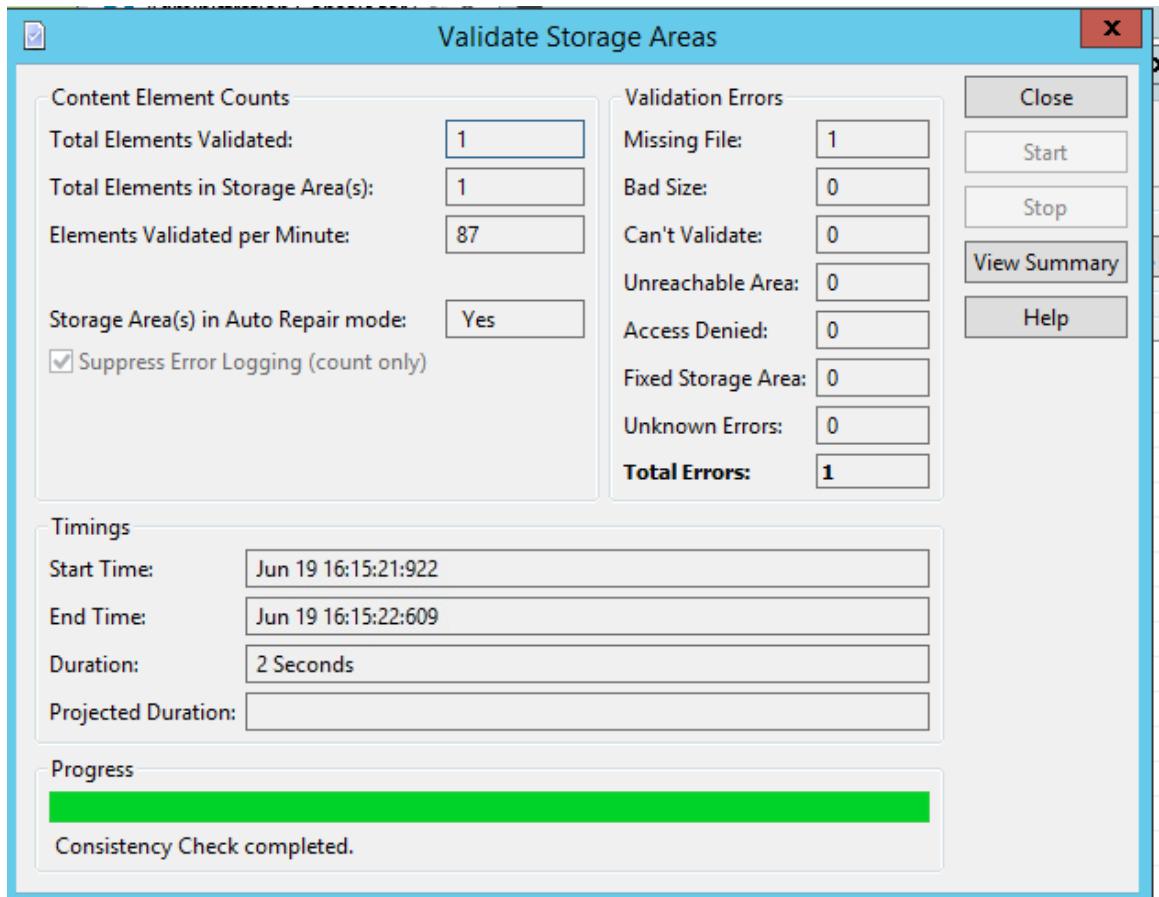
Before running Consistency checker in a production system, you might need to review which part of the documents to review, and might need to create indexes on the database to enhance consistency checker performance, read more about it in the documentation https://www.ibm.com/support/knowledgecenter/SSNW2F_5.5.0/com.ibm.p8.performance.doc/p8ppt329.htm.

In the options, you can also assign the directory where the consistency checker report will be generated. However, in this case we don't need this report.

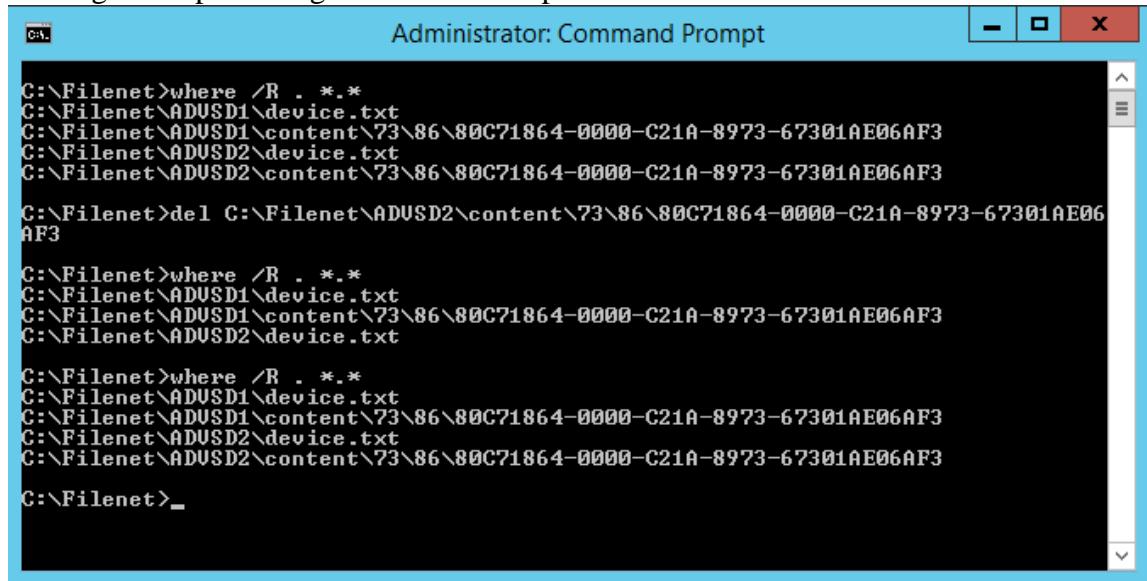
- 15) In the Content Consistency Checker Tool main window, select the Advanced Storage Area “ADV_SA” and select “Validate Storage Areas...” from the main menu to start verifying the Storage Area.



- 16) Leave the default values for all options and click “Start” to run the validation. Notice one error will be found:



- 17) When the check completed, check the storage areas again. You will see that the missing file is present again and the corruption is fixed.



```
Administrator: Command Prompt
C:\Filenet>where /R . *.*
C:\Filenet\ADUSD1\device.txt
C:\Filenet\ADUSD1\content\73\86\80C71864-0000-C21A-8973-67301AE06AF3
C:\Filenet\ADUSD2\device.txt
C:\Filenet\ADUSD2\content\73\86\80C71864-0000-C21A-8973-67301AE06AF3

C:\Filenet>del C:\Filenet\ADUSD2\content\73\86\80C71864-0000-C21A-8973-67301AE06AF3

C:\Filenet>where /R . *.*
C:\Filenet\ADUSD1\device.txt
C:\Filenet\ADUSD1\content\73\86\80C71864-0000-C21A-8973-67301AE06AF3
C:\Filenet\ADUSD2\device.txt

C:\Filenet>where /R . *.*
C:\Filenet\ADUSD1\device.txt
C:\Filenet\ADUSD1\content\73\86\80C71864-0000-C21A-8973-67301AE06AF3
C:\Filenet\ADUSD2\device.txt
C:\Filenet\ADUSD2\content\73\86\80C71864-0000-C21A-8973-67301AE06AF3

C:\Filenet>_
```

3.4 Create Storage Area – Summary

In this exercise you have:

- 1) Created two Advanced Storage Area Devices for different local directories: ADVSD1 & ADVSD2.
- 2) Created an Advanced Storage Area that stores content encrypted on these two devices: ADV_SA.
- 3) Created a Storage Policy for the Advanced Storage Area "ADV_SA": Mortgage Application Storage Policy.
- 4) Uploaded a document to the folder "Incoming Mortgage Application Documents", which got stored in the Advanced Storage Area "ADV_SA".
- 5) Forcefully deleted one of the files in a Storage Area Device so that running the FileNet Content Consistency Checker tool could repair the corruption.

4 Exercise: Deploy Classes

Duration approx.: 45 minutes

4.1 Deploy Classes – Introduction

Documents and other entities in FileNet Content Platform Engine are referred to as Objects. Documents, or more generally all Objects have common properties, e.g. default security settings, default Storage Area and Storage Policy for defining where the content should be stored, common metadata, i.e. properties, and the like. The common properties are defined in a special object in FileNet Content Platform, the class “Definition”. For details on the class “Definitions”, please refer the documentation

https://www.ibm.com/support/knowledgecenter/SSNW2F_5.5.0/com.ibm.p8.ce.dev.ce.doc/class_concepts.htm.

The class “Definition” refers to other entities, the Property Templates, which define details about the properties, that are allowed in the instances of the classes. This is where it is for example defined, that the customer name property has a specific name, is of type String, and may only have a specific maximum string length. For more details on Property Templates please see the documentation

https://www.ibm.com/support/knowledgecenter/SSNW2F_5.5.0/com.ibm.p8.ce.dev.ce.doc/property_concepts.htm#property_concepts_property_templates.

In the exercise, you will review the class definitions, and the property templates. The scenario assumes that these class definitions have been defined in a development environment (modelled here by another Object Store). They need to be deployed into the “Target” object store, which will be used later for storing the Mortgage Application documents. For this deployment, the FileNet Deployment Manager will be used. Its concepts are described in the documentation

https://www.ibm.com/support/knowledgecenter/SSNW2F_5.5.0/com.ibm.p8.common.deploy.doc/p8pdb023.htm as well as its usage

https://www.ibm.com/support/knowledgecenter/SSNW2F_5.5.0/com.ibm.p8.common.deploy.doc/p8pdb020.htm.

Additionally to the above explanations, it is also possible to automate FileNet Deployment Manager by using its command line interface. The command line interface is described below:

https://www.ibm.com/support/knowledgecenter/SSNW2F_5.5.0/com.ibm.p8.common.deploy.doc/usethecommandlineutilities.htm

The exercise consists of the following parts:

1. Review Class Definitions and Property Templates

You do that by using the Administrative Console for Content Engine (ACCE). You can find Class Definitions and Property Templates in the “Development” Object Store under “Data Design”.

2. Export the Classes and Property templates to a file

You do that by using a separate tool, the “FileNet Deployment Manager” (FDM), which can be started from the Start Menu / Start Page. In the FDM, you create a Source environment, then add the classes to a so-called “Export Manifest” and export this export manifest to a file.

3. Prepare the Source Environment Half-Maps

In general, data structures between source and target environment of a deployment are rarely the same: The environments might use different LDAP servers, different user or group names, different Storage Areas, et cetera. For preparing the import, the data in the export file needs to be mapped to match the import environment. This mapping step is auto-generated from so-called “Half-Map” Information. Information that is extracted from the Source and later from the Target environment of a deployment.

In this step, you will export the object store Half-Map Information and the Security Half-Map Information from the export file itself.

4. Define Target Environment and Target Environment Half-Maps

Here you first create the target environment. For the Half-Maps, though, there is no data to export them from. You have to export the required data directly from the target environment.

5. Define Source-Target Pair

The deployment continues by defining a Source-Target Pairing for the Development and the Target environment. By doing so, from the half-maps the mapping is automatically constructed. Then the mapping can be applied by converting the deployment dataset file, so that it suits the import environment. This part finishes by running a simulated import which will generate an Impact Analysis document for the import.

6. Run the Import

Lastly you can import the data, and get back to the ACCE to verify, that the Class Definitions and Property Templates are now available on the “Target” Object Store as well, with the same Object Ids which are used in the Source environment.

In this exercise you will access the following tools / resources

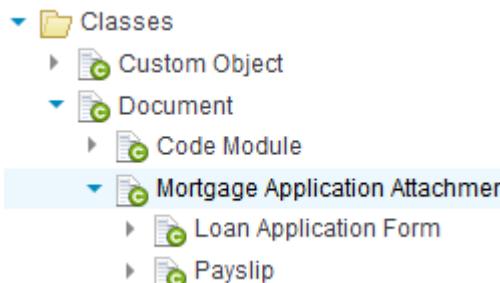
Tool	Location / URL
Content Platform Engine Administrative Console (ACCE)	http://vm-1.example.com:9080/acce
FileNet Deployment Manager	Find Shortcut on Start Page in the FileNet / ICN group

4.2 Deploy Classes – Step by Step Instructions

4.2.1 Review Class Definitions and Property Templates

To get started with this exercise, execute the following steps:

- 1) Log in to Content Platform Engine Administrative Console (<http://vm-1.example.com:9080/acce>). When prompted for user ID and password, use **P8Admin / Think4me**.
- 2) In the navigation pane (left side), click on “Development” Object Store.
- 3) In the navigation pane of the “Development” object store, open “Data Design > Classes > Document”. Click on “Mortgage Application Attachment”.



- 4) The class opens on the right side. Please check the “Property Definitions” tab. It should show some of the properties, which are common for all Mortgage Application documents.

IBM Administrative Console for Content Platform Engine

JAM_2018 Development

Object Store: Development

Development

Mortgage Ap... x

Save Refresh Actions Close

Class Definition: Mortgage Application Attachment

General Properties Property Definitions Default Instance Security

Add Remove Propagate

Display inherited properties
Display system properties

	Property	Data Type	Is Name	Is Inherited
	Extended Retention Required	Boolean		
	Customer Name	String		

- 5) Review the “Properties” tab and find the Property named “Id”. This is the internal ID of the class by which it might be referenced by other applications.

Development Mortgage Ap... x

Save Refresh Actions ▾ Close

Class Definition: Mortgage Application Attachment

	General	Properties	Property Definitions	Default Instance Security	Security Policy	Secu
Learn more...						
*	Property Name	Property Value				
	ID	{1040DF63-0000-C61E-AA8D-11DE1F4AC453}				<input type="button" value="▼"/>
	Name	Mortgage Application Attachment				<input type="button" value="▼"/>

- 6) In the navigation pane (left side), you see that the “Mortgage Application Attachment” class has two subclasses, “Loan Application Form” and “Payslip”. Review their “Property Definitions” tabs.

Development Mortgage Ap... x Loan Appli... x

Save Refresh Actions ▾ Close

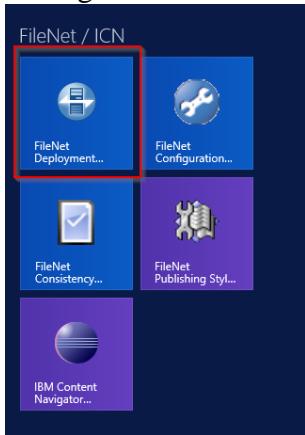
Class Definition: Loan Application Form

	General	Properties	Property Definitions	Default Instance Securi
Add Remove Propagate				
<input type="checkbox"/> Display inherited properties <input type="checkbox"/> Display system properties				
	Property	Data Type	Is Name	Is Inheri
<input type="checkbox"/>	Date of Birth	Date Time		
<input type="checkbox"/>	Loan Amount	Float		
<input type="checkbox"/>	Property Address	String		
<input type="checkbox"/>	Purchasing Price	Float		

- 7) Click on the “Payment Date” to find out more about the Property Definition. Here you can find the Symbolic Name of the property as well. The Symbolic Name is the other form of accessing an Object, from other applications, when not using the Id.

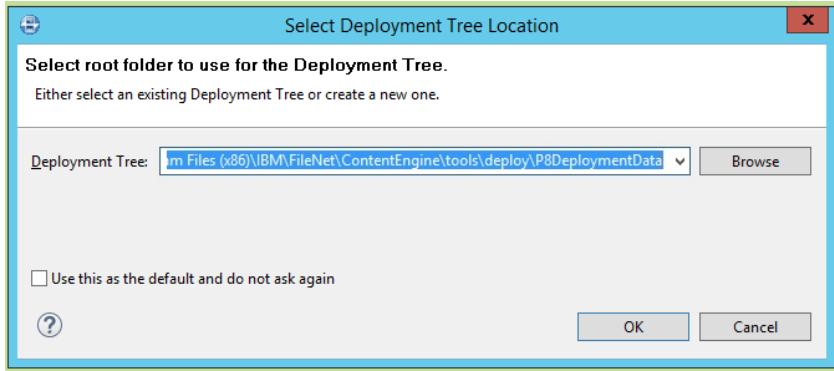
4.2.2 Export the Classes and Property templates to a file

This part of the exercise will be performed in the FileNet Deployment Manager (FDM). Start it by selecting windows “Start Menu / Start Page”, and clicking Deployment Manager.

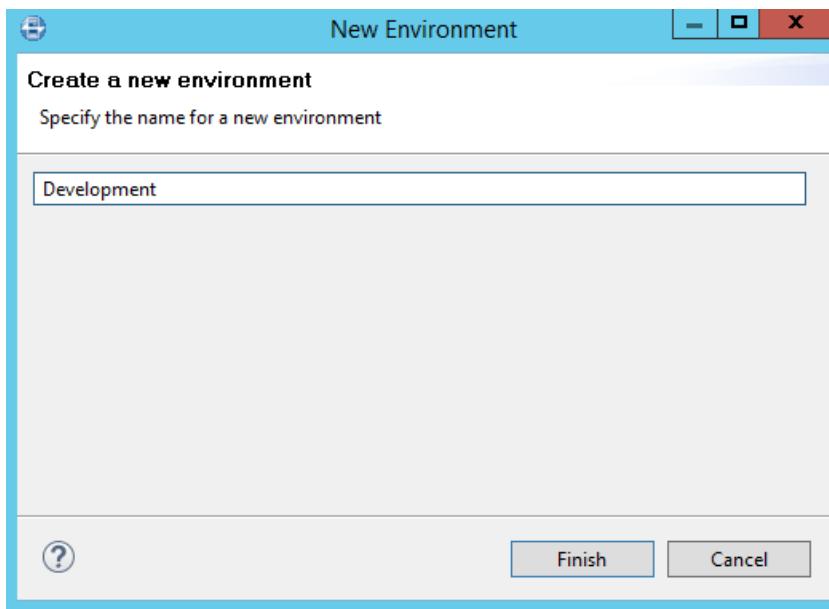


Then run following steps:

- 1) Click “OK” when asked for the Deployment Tree, leaving the default path value.



- 2) Close the Welcome Page.
- 3) Right-Click on “Environments” and select “New -> Environment”. Name it “Development”, click “OK”.



- 4) Double-click the new Environment and select the “CPE Connection” tab. Fill out the details:

Server: vm-1.example.com
Port: 9080
Path: wsi/FNCEWS40MTOM
Username: p8admin

Content Platform Engine Connection Information

URL

Connection: http

Application Server: WebSphere

Server: 10.0.0.2

Port: 9080 - WebSphere Default

Path: wsi/FNCEWS40MTOM

URL: http://10.0.0.2:9080/wsi/FNCEWS40MTOM

Account

Username: p8admin

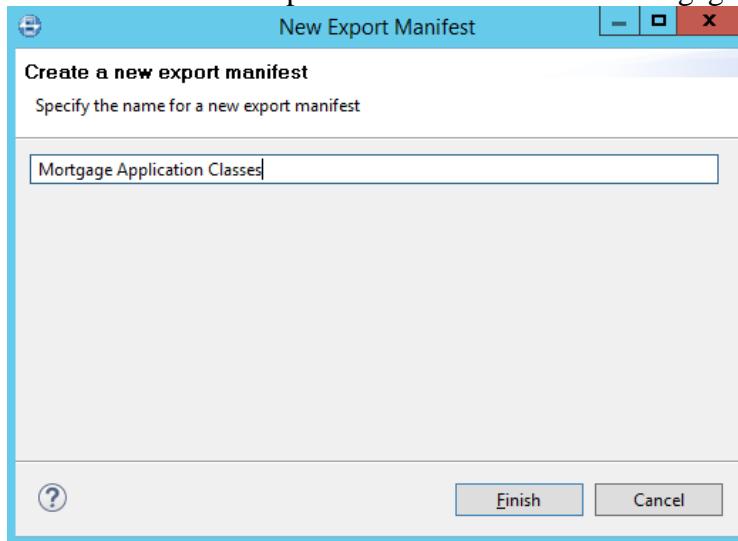
Password:

Save the password

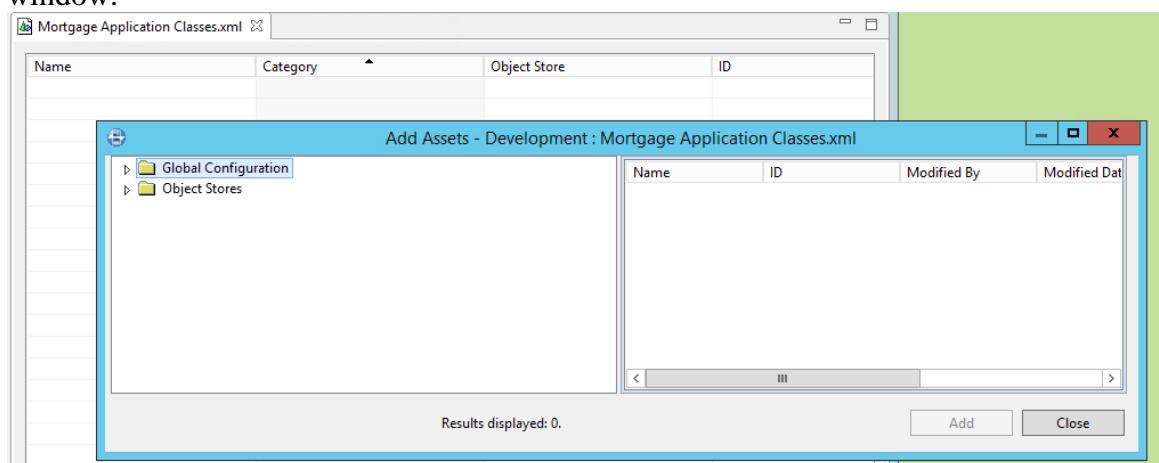
CPE Connection

After saving the changes you can test the connection by entering the password (Think4me). Close the Environment window when the connection has been made.

- 5) Expand the Environment in the navigator view. Right-click on Export Manifests, and select “New > Export Manifest”. Name it “Mortgage Application Classes”.

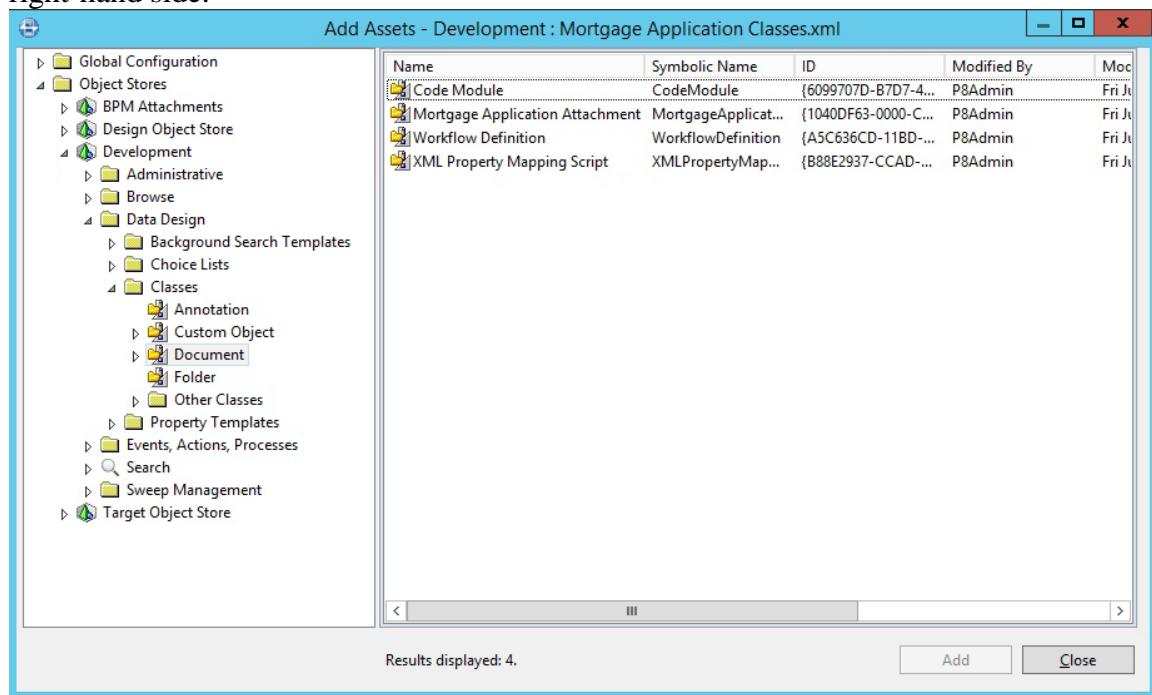


- 6) Double-click on the newly added Export Manifest to open it. Select “Add Assets” from the “Export Manifest” menu in the menu bar. This opens the “Add Assets” window.

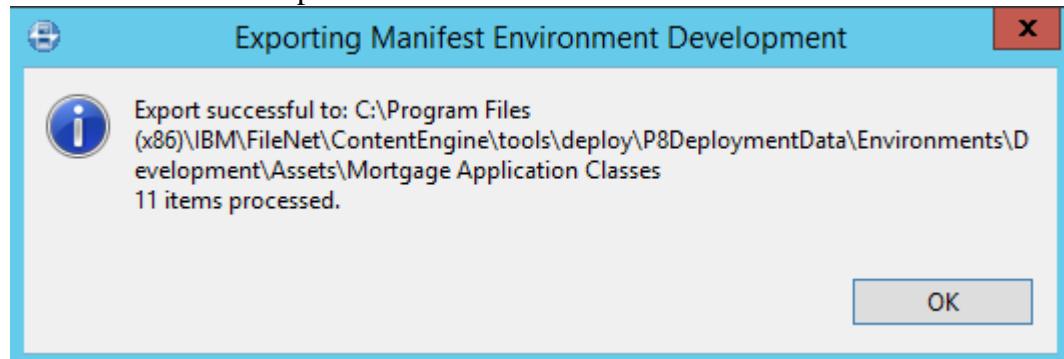


- 7) Open the following entities on the left-hand side: “Object Stores > Development > Data Design > Classes”. Select the “Document” class. Its subclasses appear on the

right-hand side.



- 8) On the right-hand side, click on “Mortgage Application Attachment” and click “Add” to add it to the Export Manifest.
No further assets are required, Deployment Manager will automatically find and export everything required to define the class and its subclasses in the “Target” Object Store, once it is imported.
- 9) Close the “Add Assets” window.
- 10) Save the export manifest.
- 11) Select the Export action, by either right-clicking on the Export Manifest, or choosing the command from the File menu. Leave default values in the entry fields and click “OK”. When the data is exported, you will see the number of entities which were exported.

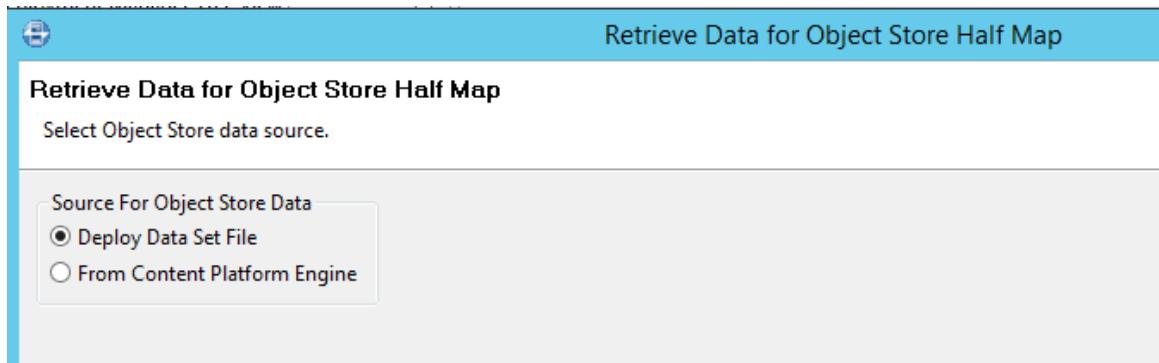


4.2.3 Prepare the Source Environment Half-Maps

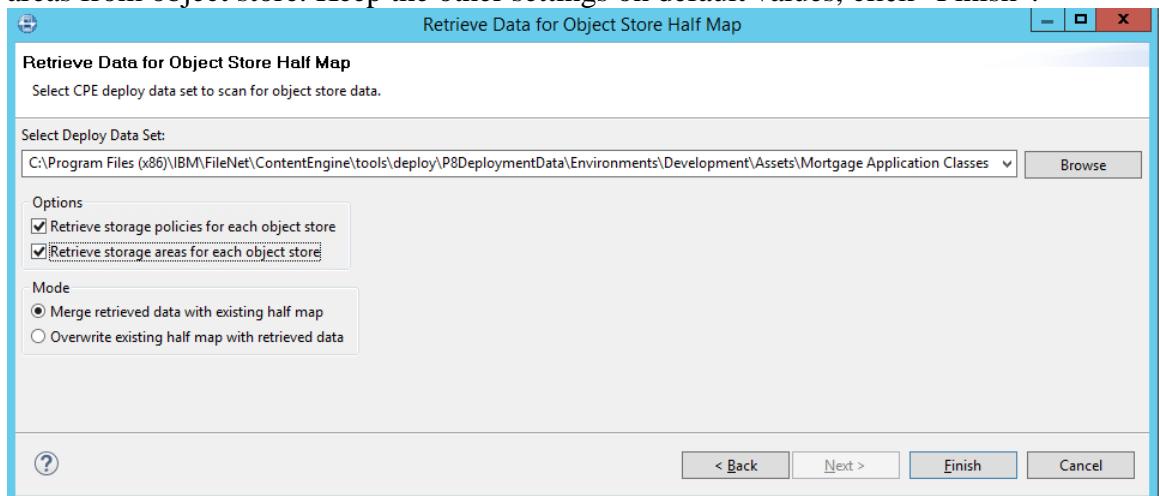
In general, data structures between source and target environment of a deployment are rarely the same: The environments might use different LDAP servers, different user or group names, different Storage Areas, et cetera. For preparing the import, the data in the export file needs to be mapped to match the import environment. This mapping step is auto-generated from so-called “Half-Map” Information. Information that is extracted from the Source and later from the Target environment of a deployment.

In this step, you will export the Object Store Half-Map Information and the Security Half-Map Information from the export file itself. Continue to use the FileNet Deployment Manager with the following steps:

1. In the Deployment Tree on the left side, right click on “Object Store Data” node in the “Development” environment. Invoke “Retrieve Data”.
2. In the window which opens, choose to retrieve data from “Deploy Data Set File”. Click “Next”.



3. In the next dialog page, enable the options to retrieve storage policies and storage areas from object store. Keep the other settings on default values, click “Finish”.



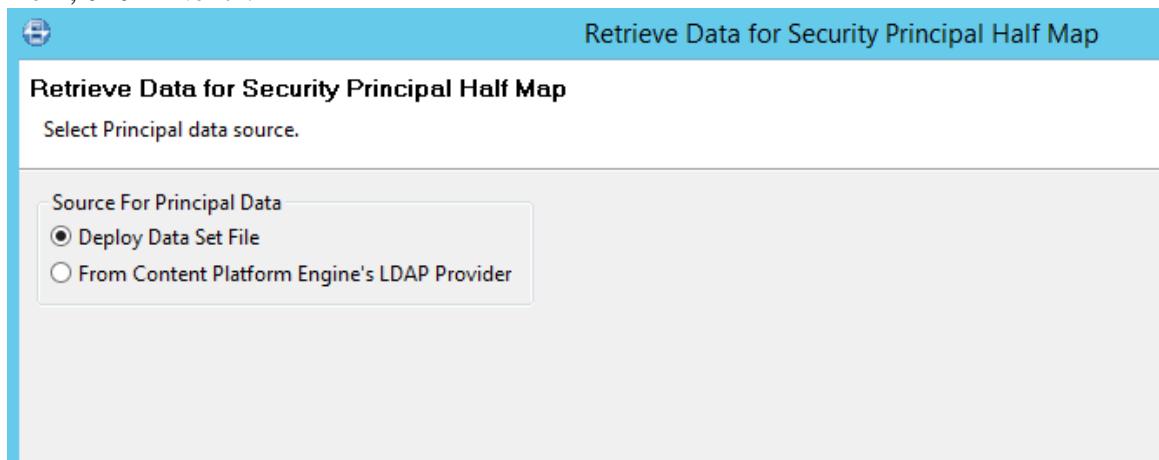
4. Verify that when clicking on Object Store Data, you see only the “Development” Object Store exported. You can switch the tab to check the Storage Policies.

Label	Name	Symbolic Name	ID
Developme...	DEV	[4A75CA4E-ACCB-4B82-8466-5F1F33237D0...	

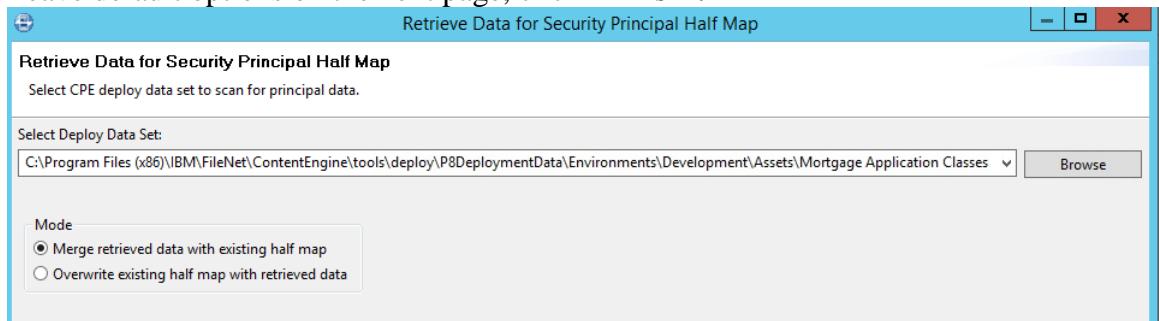
Expand All Collapse All

Label	Display Name	ID
<input type="checkbox"/> Object Store "Development" Storage Policies: 1	Default Database Storage Poli...	{AE0D1944-487E-471C-AB0A-1C0F85A1FBA...}

5. Close the “Object Store Data” window.
 6. Right-click on “Security Principal Data” and invoke “Retrieve Data...”.
 7. In the dialog which opens, select “Deploy Dataset File” for the source to extract from, click “Next”.

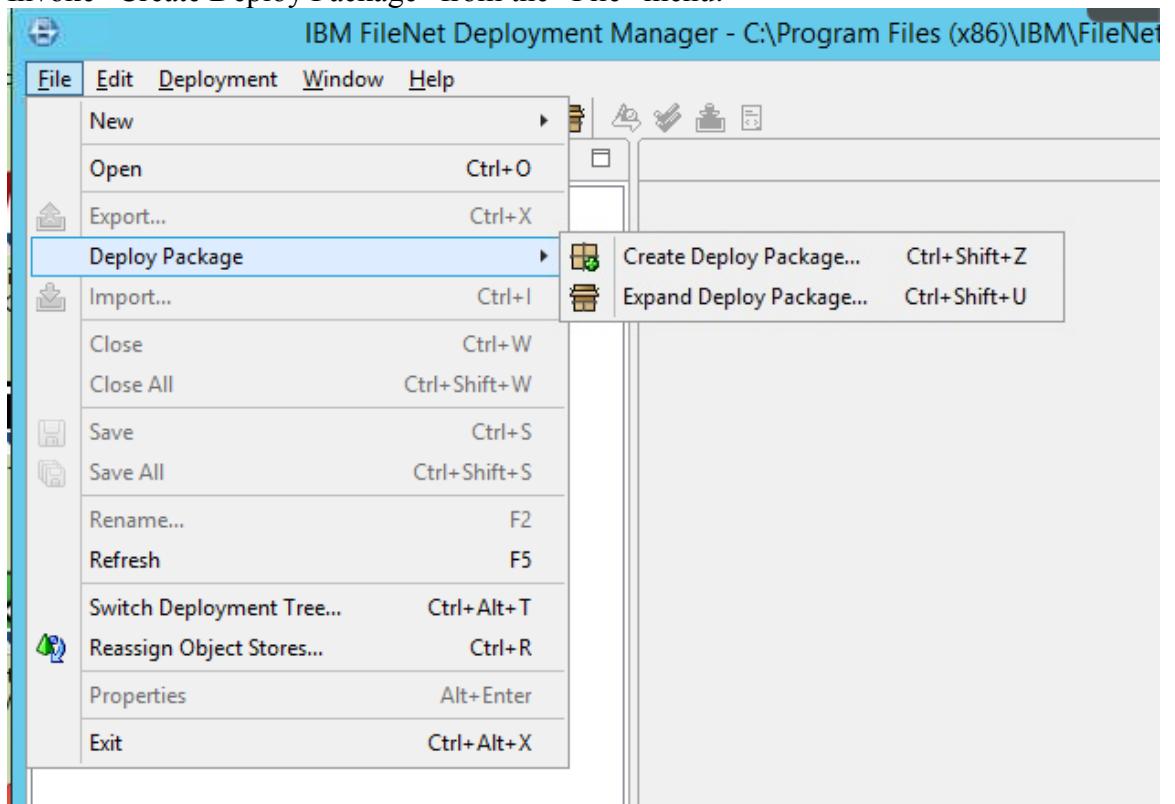


8. Leave default options on the next page, click “Finish”.

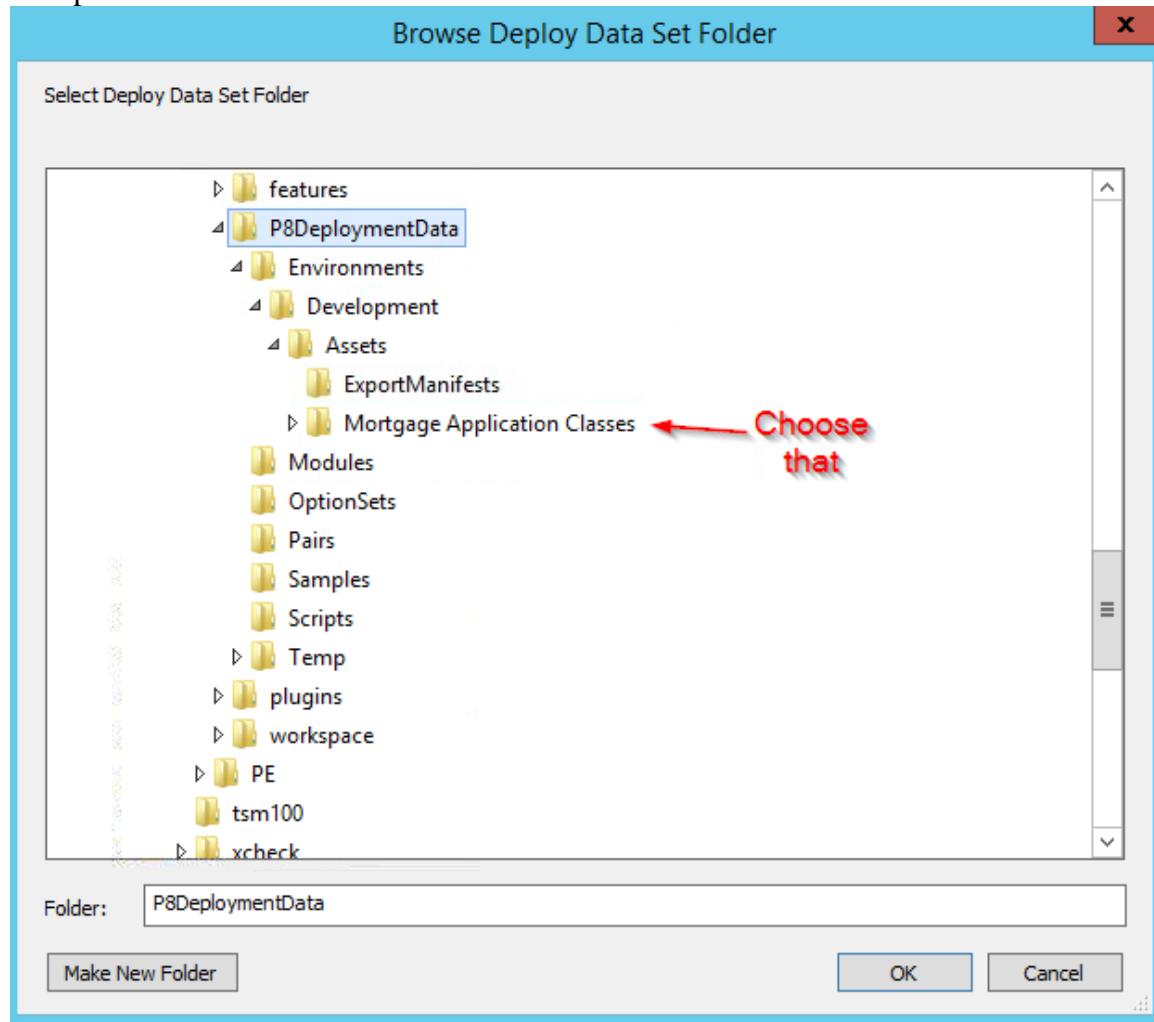


We don't need to extract Service Data or Connection Point Data, as we are exporting Class Definitions and Property Templates only.

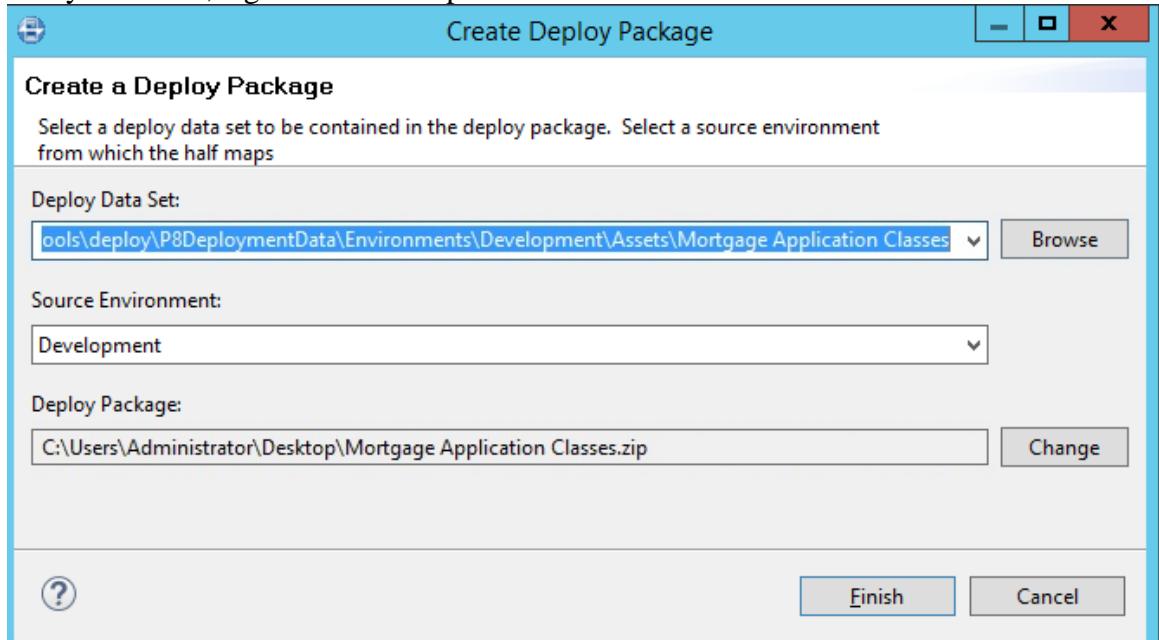
9. Invoke “Create Deploy Package” from the “File” menu.



10. In the dialog which opens, click “Browse” to select the "Deploy Data Set Folder" to export.



11. For the Deploy Package which will be created, browse to a folder which you can easily find later, e.g. on the desktop.



12. Click “Finish” to create the deploy dataset file.

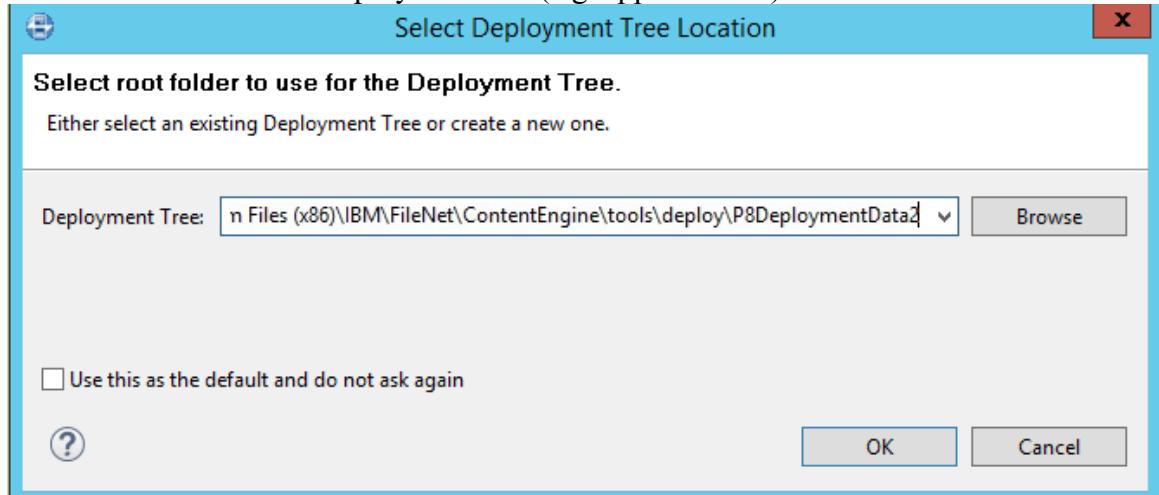
All, what is required for deploying the Classes, Properties, and maybe other Objects from a source, to a destination environment is contained in this ZIP file, nothing more is needed. If environments are distributed, it would suffice to copy only this ZIP file to the target environment. To emphasise that, and to cleanly separate exporting from importing, a new deployment manager tree is created for the rest of the exercise. Technically, this would not be required, of course.

Consequently, at this point you can close the FileNet Deployment Manager.

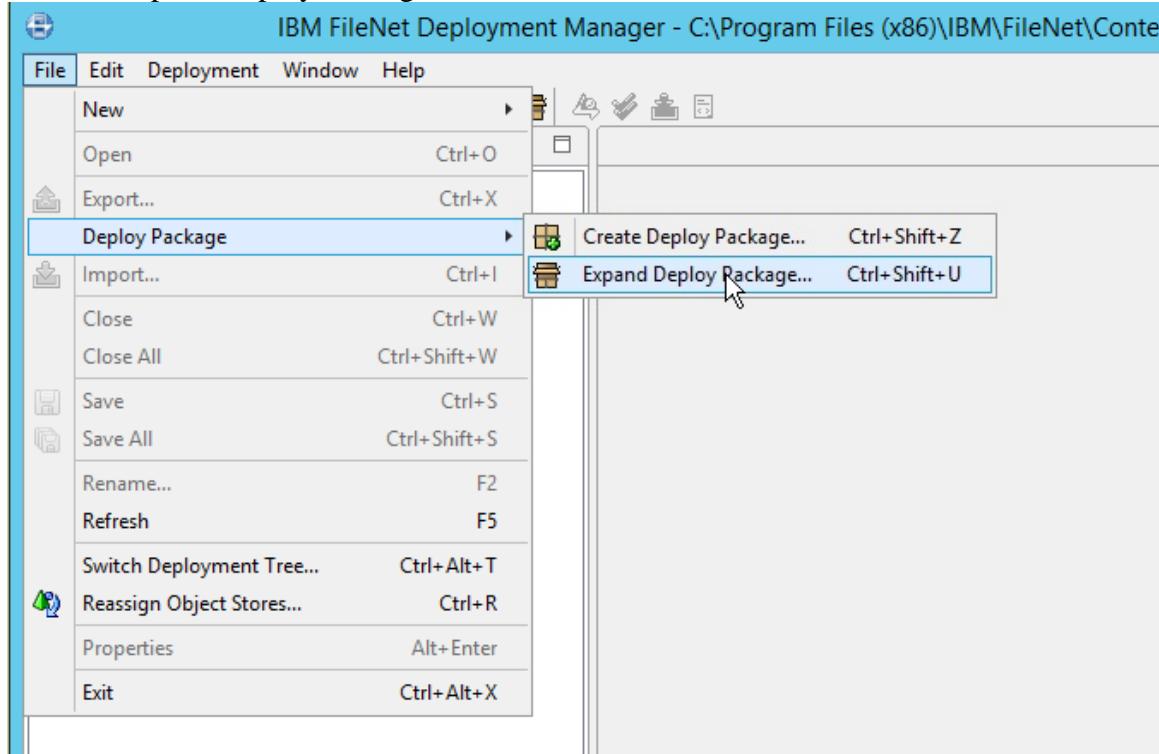
4.2.4 Define Target Environment and Target Environment Half-Maps

At this point of the exercise, first the target environment is created, and second the deploy data set from the last part is imported into it. For the Half-Maps, though, there is no data to export them from, so you have to export the required data directly from the target environment.

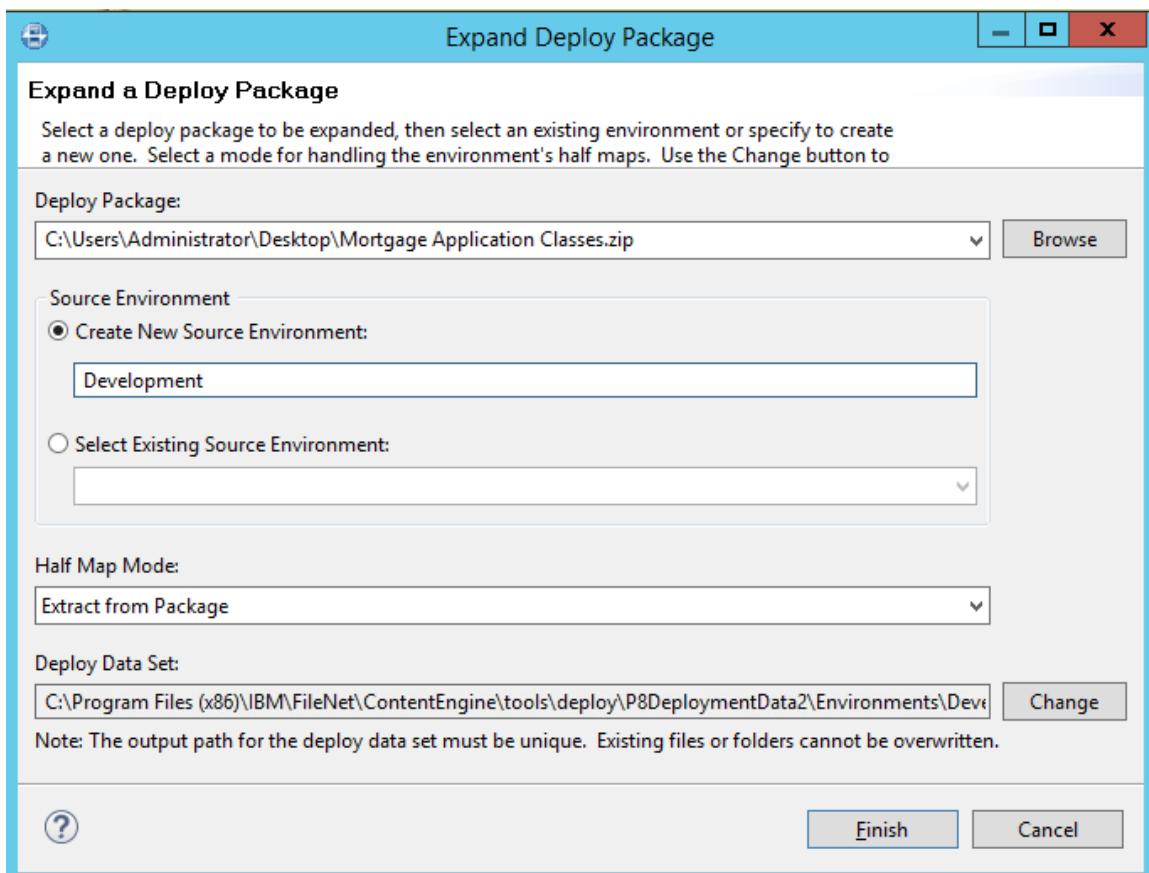
1. Start by running the FileNet Deployment Manager again. When prompted choose a different name for the Deployment tree (e.g. append a “2”):



2. Run the Expand Deploy Package from the “File” menu.



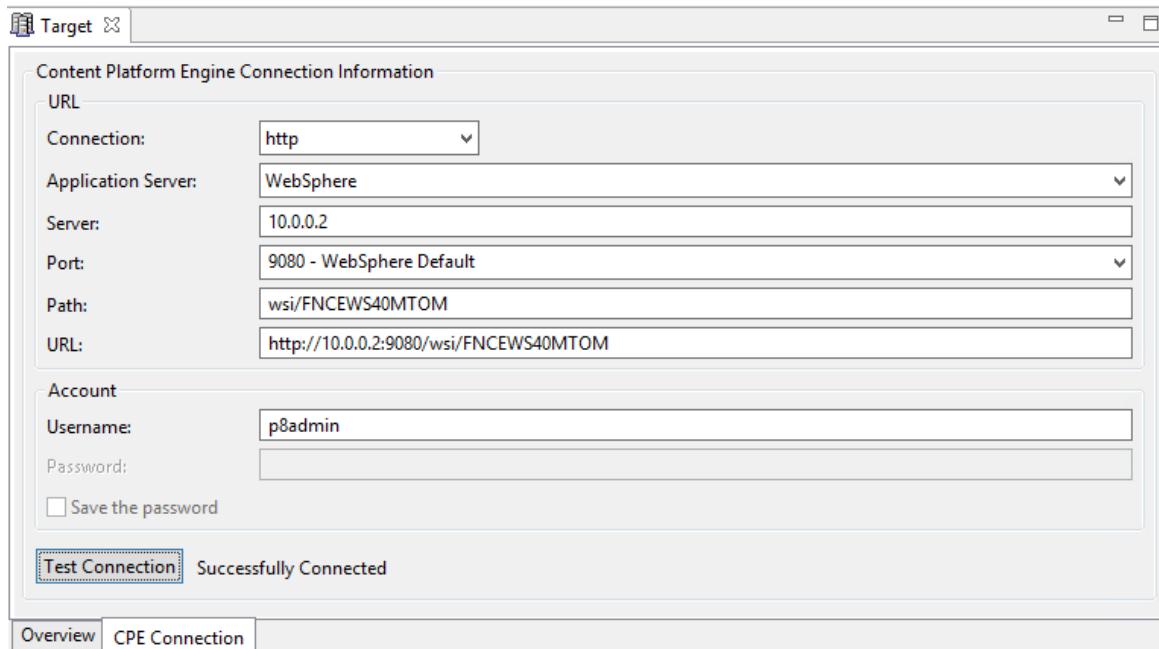
3. For the Deploy Package, browse to the file created in the first part of the exercise. Keep the defaults for the rest of the options, just provide a name for the Environment to create



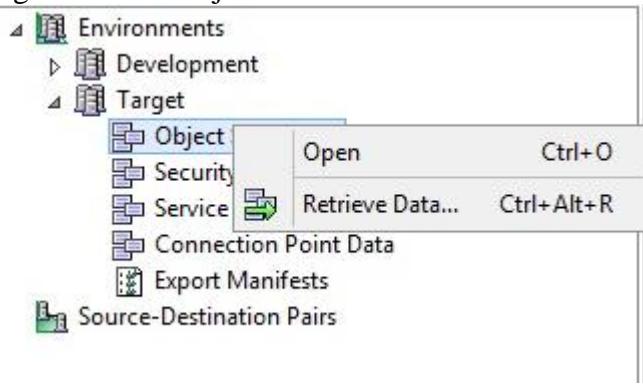
4. Click "Finish". The environment just created has no Content Platform Engine connected to it on this deployment tree. It is only a container for the Deployment Data Set File which was expanded.
5. Right-click on "Environments" and create a new environment called "Target". Double-click to open it, then supply the connection details again:

Server: vm-1.example.com
Port: 9080
Path: wsi/FNCEWS40MTOM
Username: p8admin

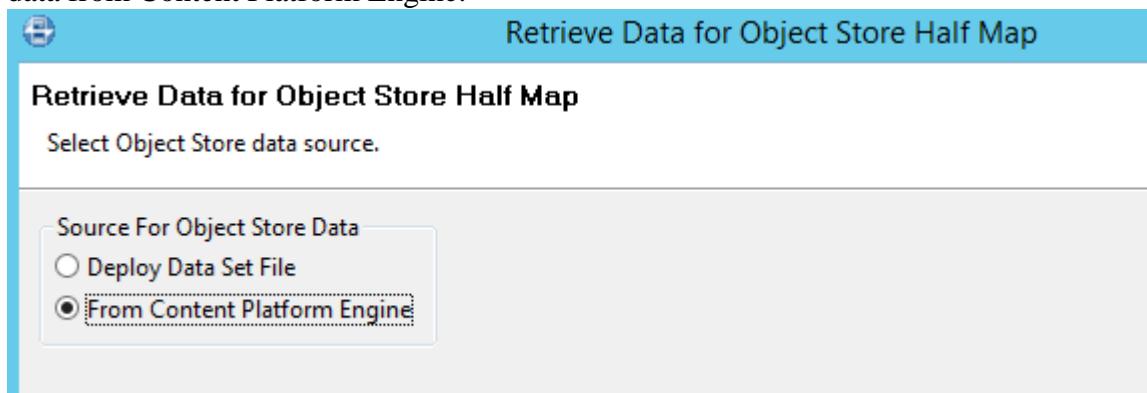
Save it, click "Test Connection" and enter the password (Think4me).



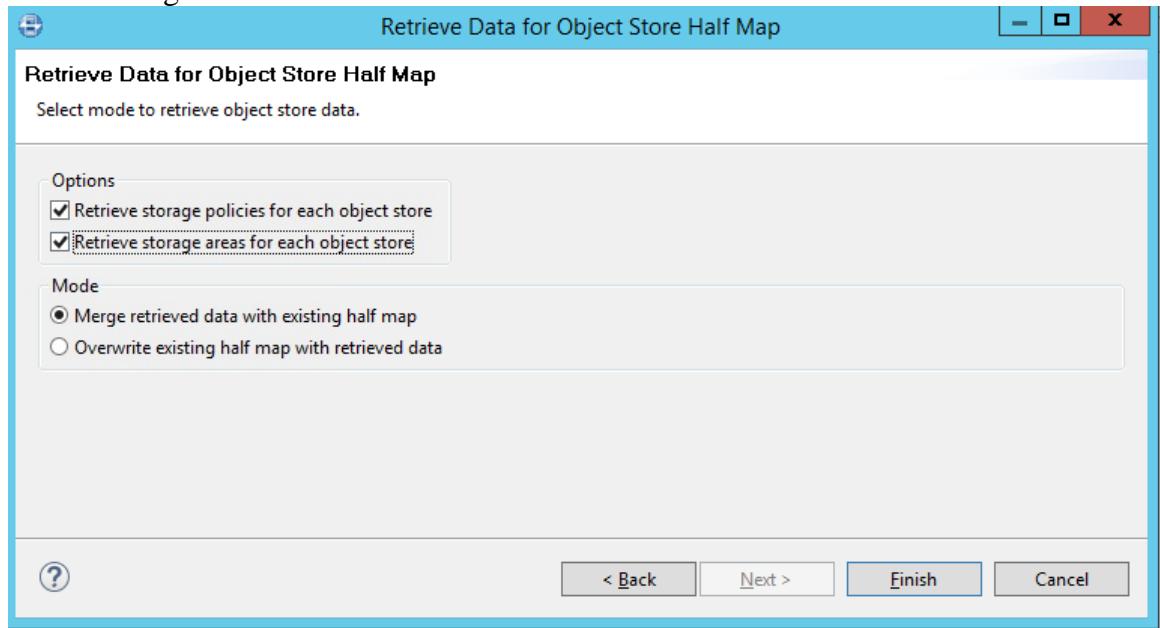
6. Close the Target Environment window.
7. On the deployment tree on the left side, expand the “Target” environment and right-click on Object Store Data. Choose “Retrieve data...”.



8. We don't have a deploy data set file to retrieve data from, so select to retrieve data from Content Platform Engine.



9. Enable the options to retrieve Storage Policies and Storage Areas from Content Platform Engine. Click “Finish”.

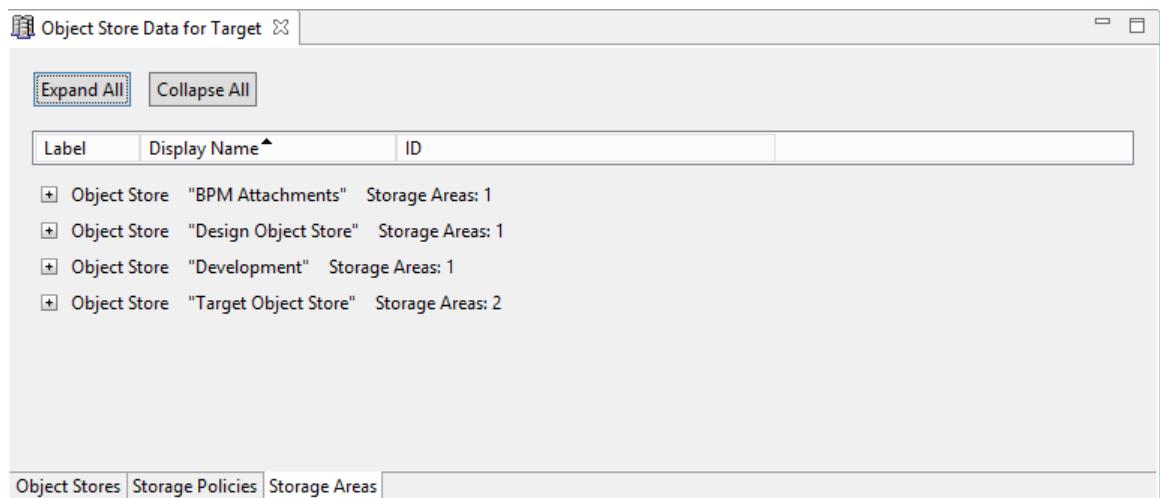
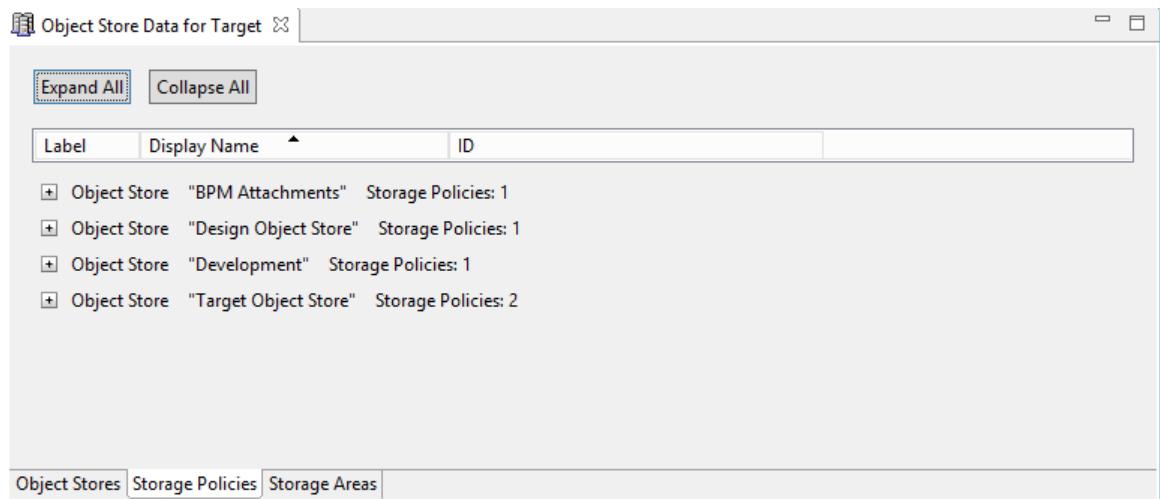


10. Check exported data again, by double-clicking on Object Store Data.

Object Store Data for Target

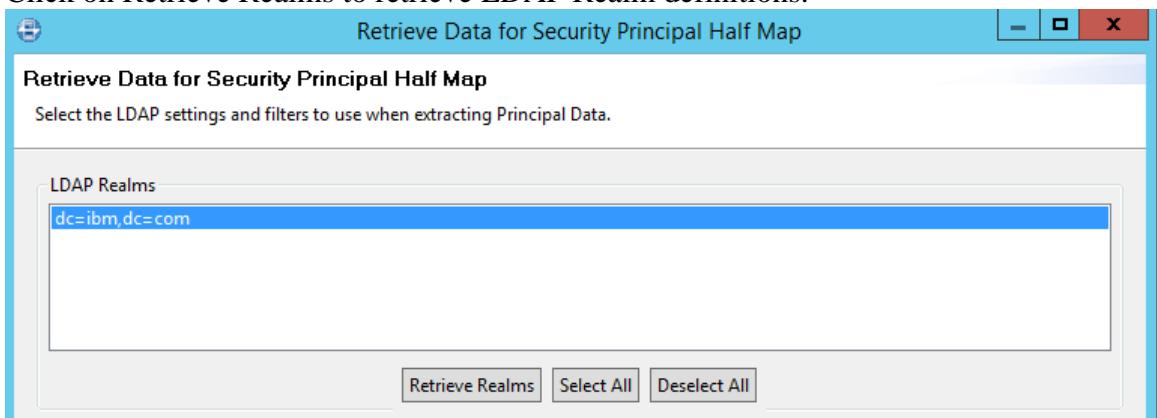
Label	Name	Symbolic Name	ID
BPM Attachments	OS1		{577D3963-3785-4E29-9E72-9AE1BE5A3782}
Design Object Sto...	DOS		{CF2FB5DB-1E0A-4CC8-A5F9-10F7692A7ECE}
Development	DEV		{4A75CA4E-ACCB-4B82-8466-5F1F33237D0D}
Target Object Store	TOS		{B63B8DDD-A83F-45D5-84C9-259FCDEF6CE...}

Object Stores | Storage Policies | Storage Areas

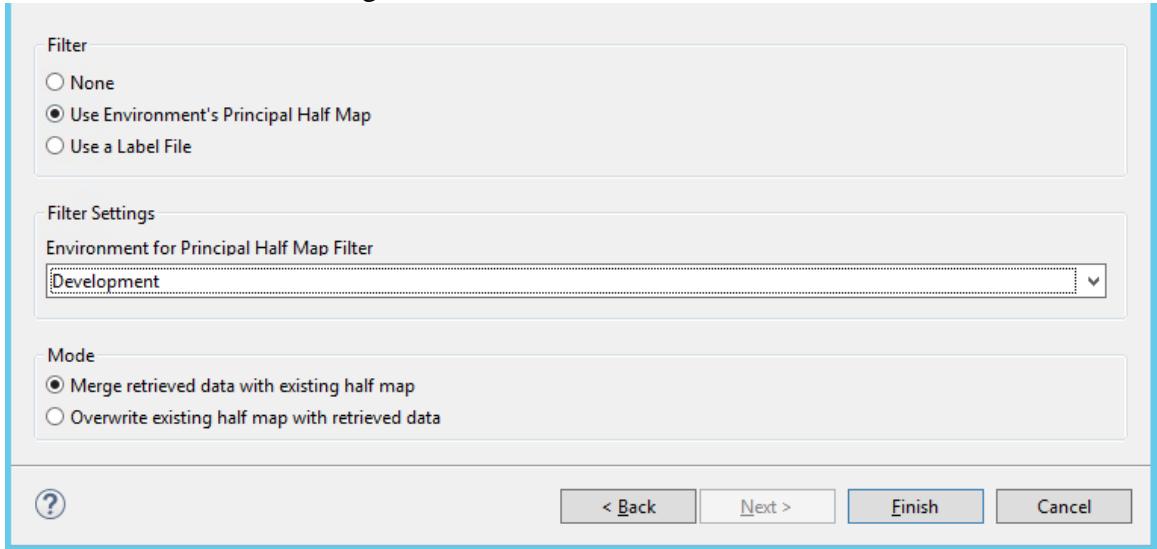


11. Close the Object Store Data again.
12. Right-Click on “Security Principal data” and select to retrieve data.
Select to retrieve data from Content Platform Engines LDAP provider. Click “Next”.

13. Click on Retrieve Realms to retrieve LDAP Realm definitions.



There are three options to retrieve the data required. Of course, the complete realm could be read in, but in a larger enterprise with thousands of users and groups, this probably gives more data than needed. For filtering the required data, we will use the Deployment dataset from the “Development” environment and retrieve the needed usernames from there. The tool will look up the user names required and search them in the LDAP of the target environment. This would only be needed, if the “Development” environment and the “Target” environment are not be using the same LDAP.



14. Click “Finish”.

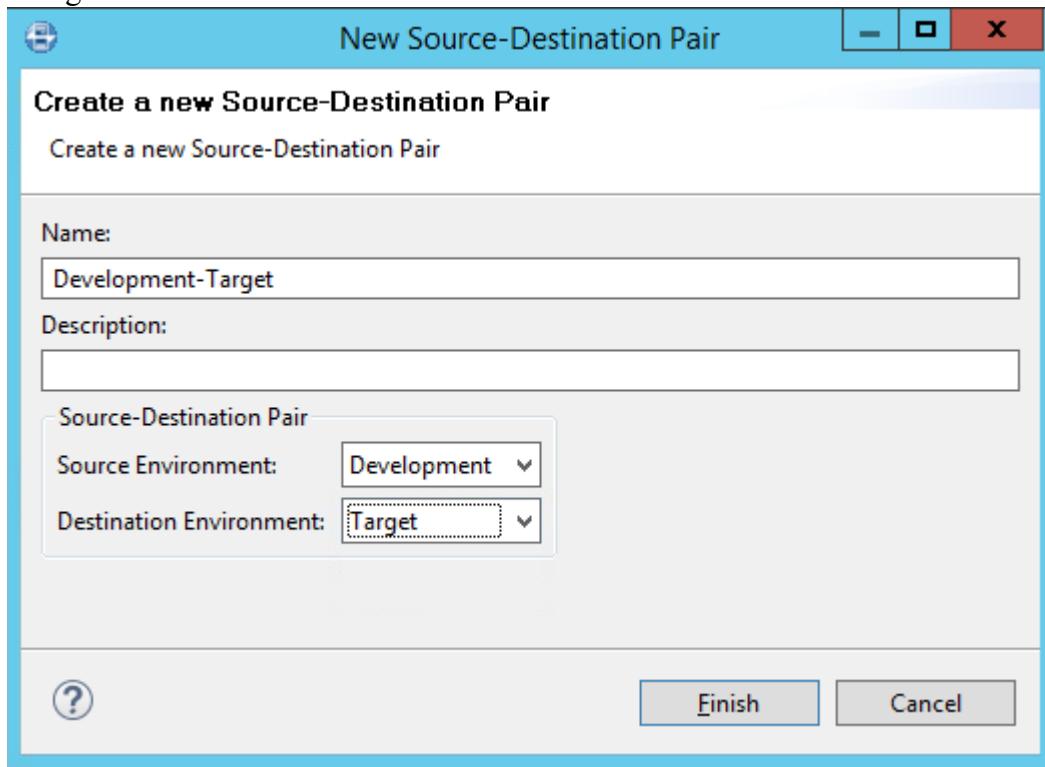
4.2.5 Define Source-Target Pair

The deployment continues by defining a Source-Target Pairing for the Development and the Target environment. By doing so, from the half-maps the mapping is automatically constructed. Then the mapping can be applied by converting the deployment data set file,

so that it suits the import environment. This part finishes by running a simulated import which will generate an Impact Analysis document for the import.

Perform the following steps:

1. Right-click the “Source-Destination Pairs” in the left-hand tree and create a new Source-Destination Pair “New > Source-Destination Pair...”. Specify a name, e.g. “Development-Target”, select the environments to pair, “Development” and “Target” and click “Finish”.



2. Expand the Source Destination pair just created and double-click on “Object Store Map”

Object Store Map for Development-Target				
	Source Name	Destination Name	Source Symbolic Name	Destination Symbolic Name
	Development	Development	DEV	DEV
				{4A75CA4E-ACCE}

3. Choose the “Target Object Store” in the Destination environment by selecting that name.

	Source Name	Destination Name
	Development	Development
	BPM Attachments	
	Design	
	Development	
	Target	

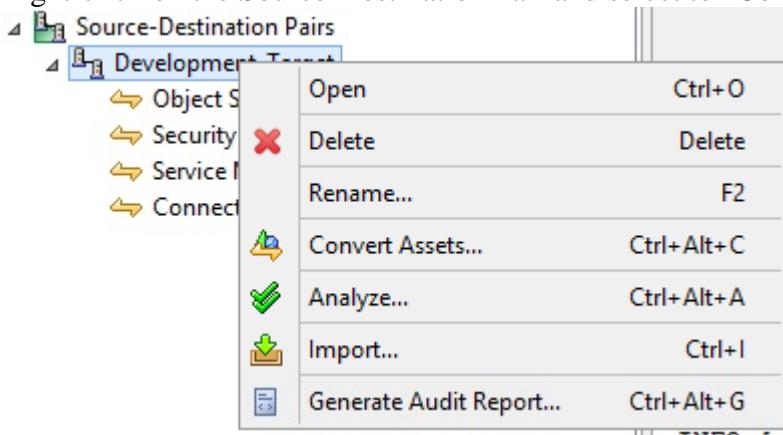
4. Choose the Storage Policies tab and choose to map the “Default Database Storage Policy” of the source environment to the “Mortgage Application Storage Policy” created on Exercise 3.

Object Store Map for Development-Target		Expand All		Collapse All	
		Source Display Name	Destination Display Name	Source ID	Destination ID
<input type="checkbox"/> Object Store "Development" mapped to "Target Object Stor... Storage Policies: 1					
		Default Database Storage Poli...	Default Database Storage Policy	{AE0D1944-487E-471C-AB0A-1C0F85A1FBA...	{665450C1-8AA
					Default Database Storage Policy
					Mortgage Application Storage Policy

5. Save the mapping and close the window.
6. Double-click on “Security Principal map” and observe that the mapping for three users was automatically done. Close the Window again.

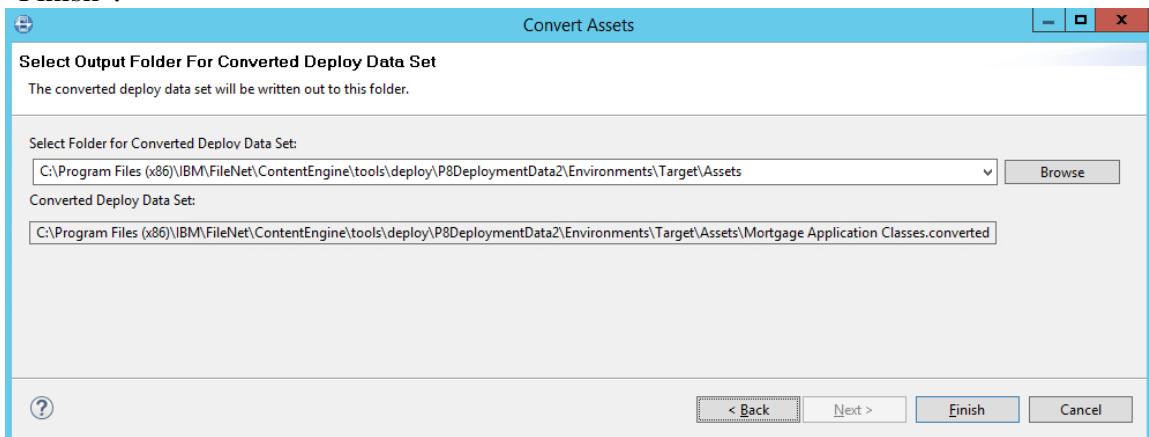
	Source Short Name	Destination Short Name	Source Display Name	Destination Display Name	Source Pri
	p8admin	p8admin	P8Admin	P8Admin	User
	p8admins	p8admins	P8Admins	P8Admins	Group
	testers	testers	testers	testers	Group

7. Right-click on the Source-Destination Pair and select to “Convert Assets...”.

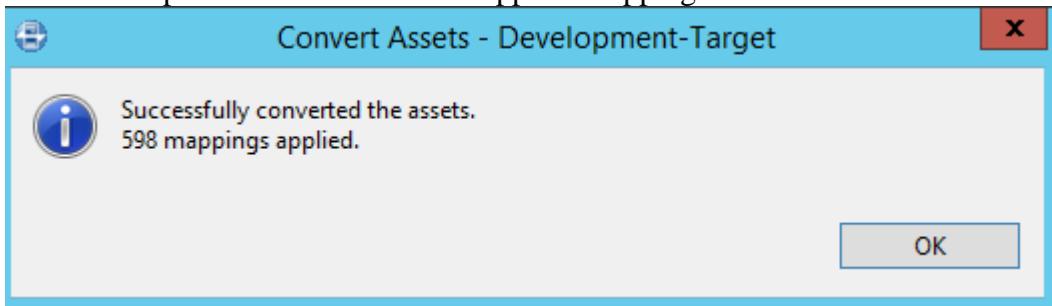


8. Choose the default value for the Deploy Data Set File to convert. Click “Next”.

9. Accept the auto-generated names for the converted Deploy Data Set file. Click “Finish”.



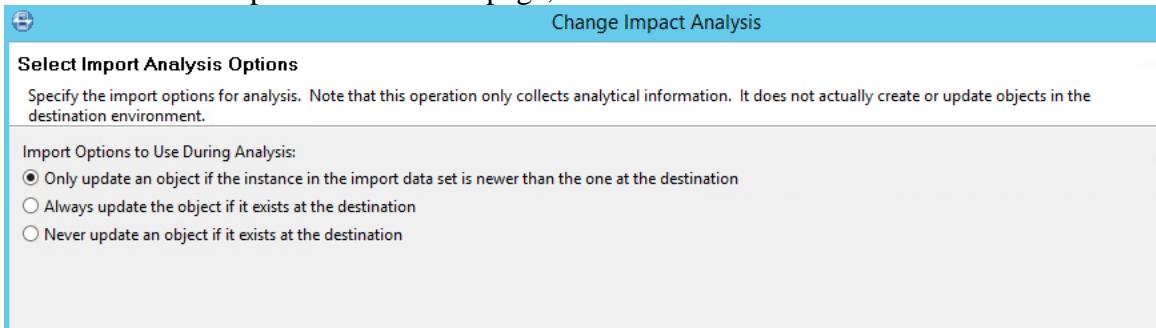
10. A window opens with the number of applied mappings.



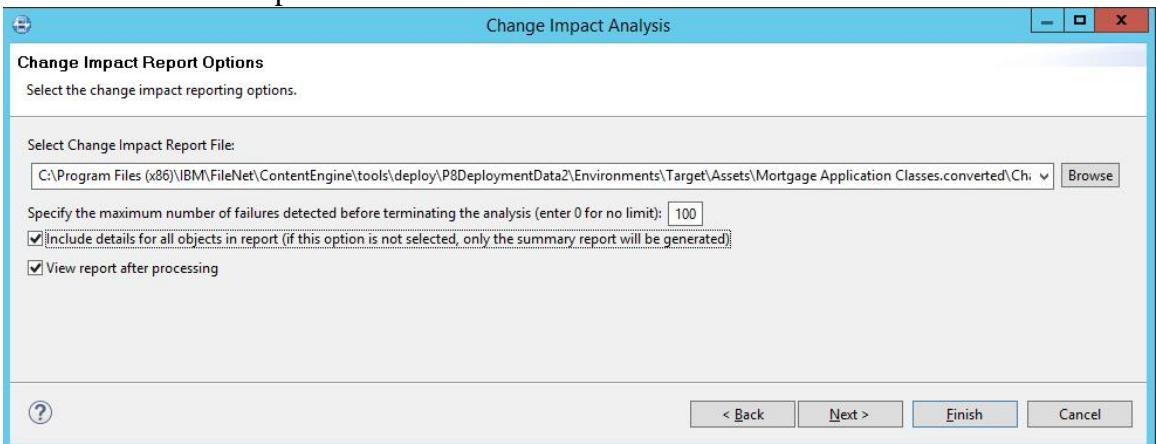
11. Right-click on the Source Destination Pair and select “Analyze”.

12. Accept the name of the converted deployment data set file and click “Next”.

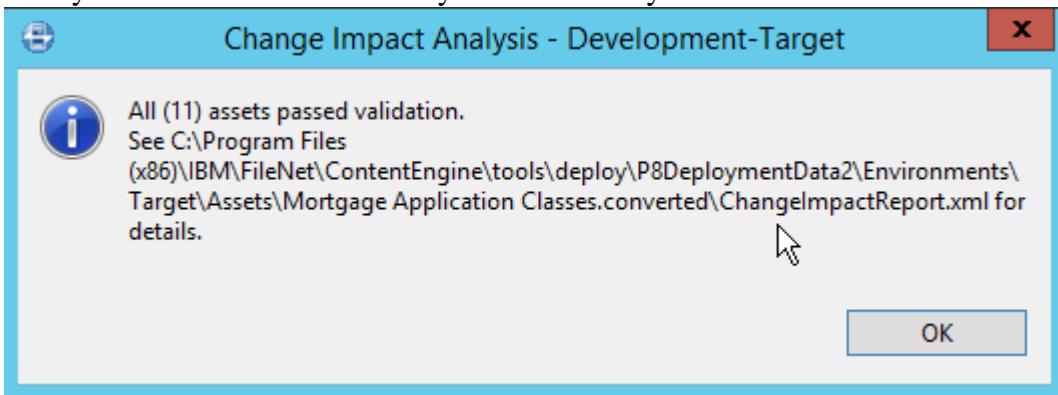
13. Leave the default options on the next page, click “Next”.



14. Enable the option to include details for all objects in the report. Accept the default values for the other options and click “Finish”.



15. Verify that all 11 assets were analyzed successfully.



16. Clicking “OK” will open the Internet Explorer with the generated report. Take your time to review the content. Then go to the bottom of the page and click the link “Passed Assets report #1”, and review it too. None of them should display any analysis errors.

4.2.6 Run the Import

When we run the Import wizard of the FileNet Deployment Manager using the default options, it will try to set some system attributes like the creation date to the same value it had on the source environment, i.e. the Development Object Store in this case. This will not work if the user used for importing is not having special advanced access rights on the object store. In this part of the exercise its first checked that this right is set for the “p8admin” user.

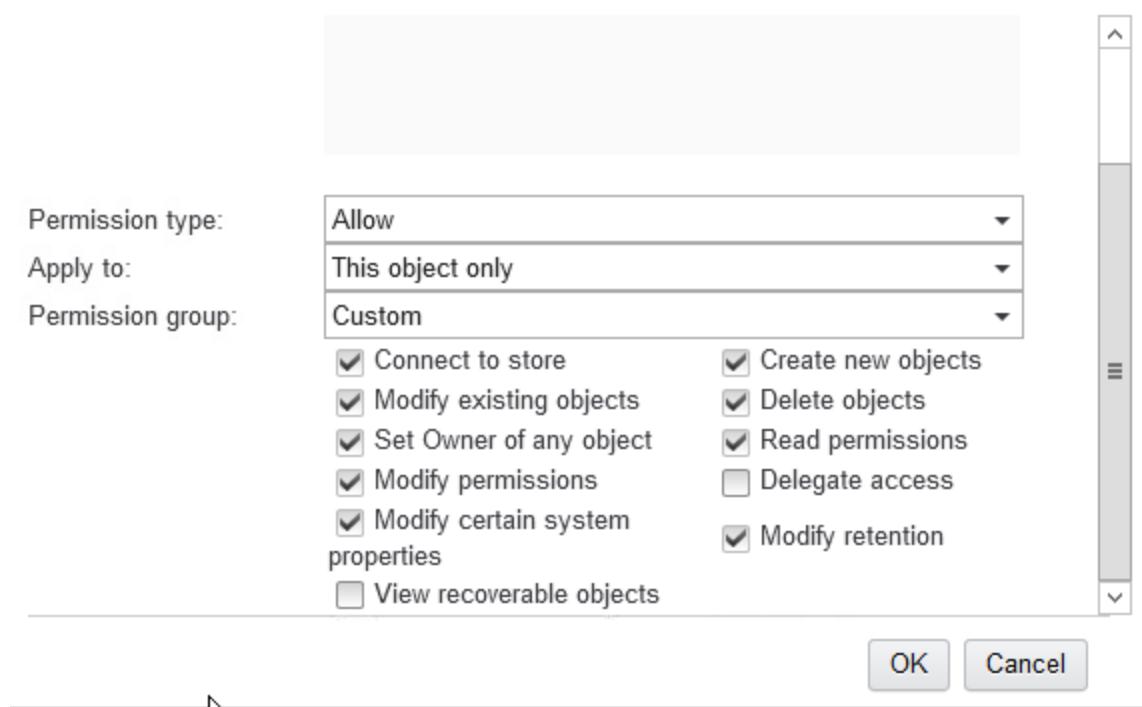
1. Log in to Content Platform Engine Administrative Console (<http://vm-1.example.com:9080/acce>). When prompted for user ID and password, use **P8Admin / Think4me**.
2. In the navigation pane click on the “Target” Object Store.
3. On the right side of the window, the properties of the “Target” Object Store are shown. Choose the “Security” tab.

The screenshot shows the 'Target' Object Store properties page. The 'Security' tab is selected. A note says: 'You can allow or deny permissions to a user or group. Each permission group contains one or more access rights.' Below this is a section titled 'Access Permissions' with a table:

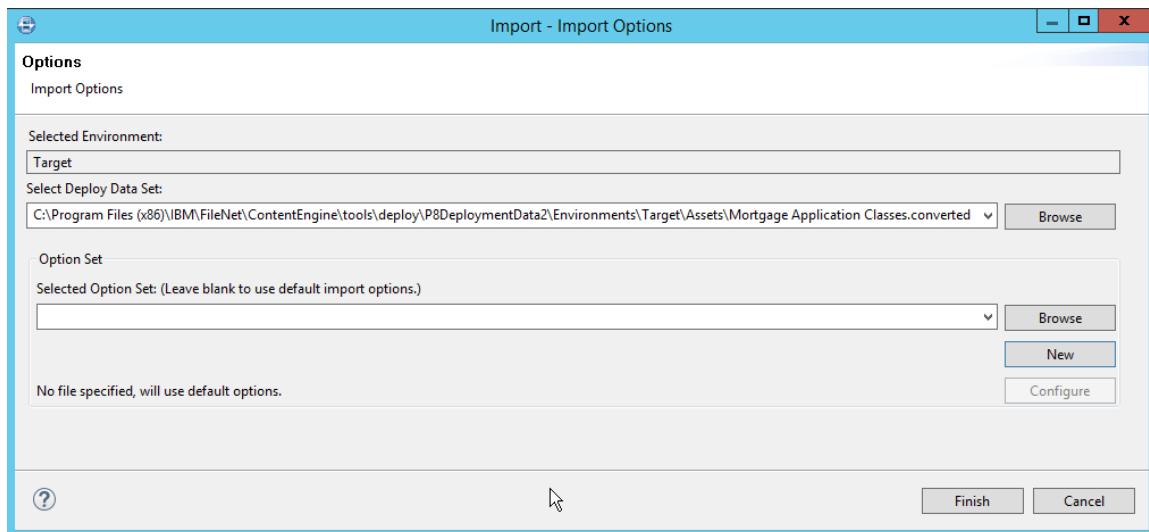
Add User/Group Permission...	Edit...	Remove	3 total	Filter
Name	Source	Permission Type		
#AUTHENTICATED-USERS	Direct	Allow		
P8Admins	Direct	Allow		
P8Admin	Direct	Allow		

4. One after the other, check the row for “P8Admins”, and “P8Admin”. Click “Edit” and perform step 5 for each of the entries.

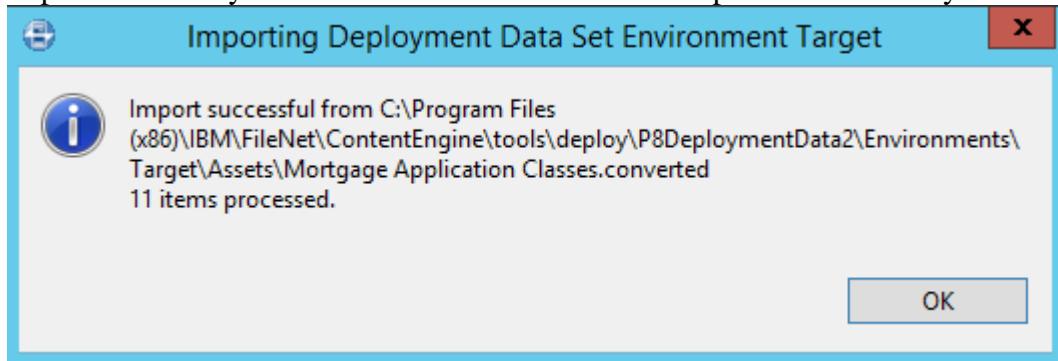
Edit Permissions



5. Scroll down to see the permissions. If “Modify certain system properties” is unchecked, check it. Click “OK”. If you modified the permissions, click “Save” at the top of the “Security” tab. This will allow to set properties such as “Date Created” on imported objects and is required for successfully using Deployment Manager.
6. Leave ACCE open for later, go back to the Filenet Deployment Manager.
7. Right-click on the Source-Destination pair, and select “Import”.
8. In this dialog, you could create a file with an option set for the import options. Read more about this in the documentation on this page
https://www.ibm.com/support/knowledgecenter/SSNW2F_5.5.0/com.ibm.p8.com_mon.deploy.doc/deploy_mgr_command_line_importoptionssetfiles.htm.
We will use the default options, though and will not need to provide an option set. Click “Finish”.



9. The import will run. After it completed a window shows the number of assets that imported correctly or failed. All 11 assets should be imported successfully.



If this is unsuccessful, possible cause would be that the mapping of the Object Store data is incomplete.

10. Close the FileNet Deployment .
11. If ACCE had been closed, or the session has timed out, log in to Content Platform Engine Administrative Console (<http://vm-1.example.com:9080/acce>) again. When prompted for user ID and password, use **P8Admin / Think4me**.
12. Open the “Target” Object Store. In the “Target” Object Store navigate to “Data Design > Classes > Document”. Check that “Mortgage Application Attachment” is listed.
13. Open the “Mortgage Application Attachment” class, stay on the “General” tab and scroll to the “Default Storage Policy” option. Change it to “Mortgage Application Storage Policy”.

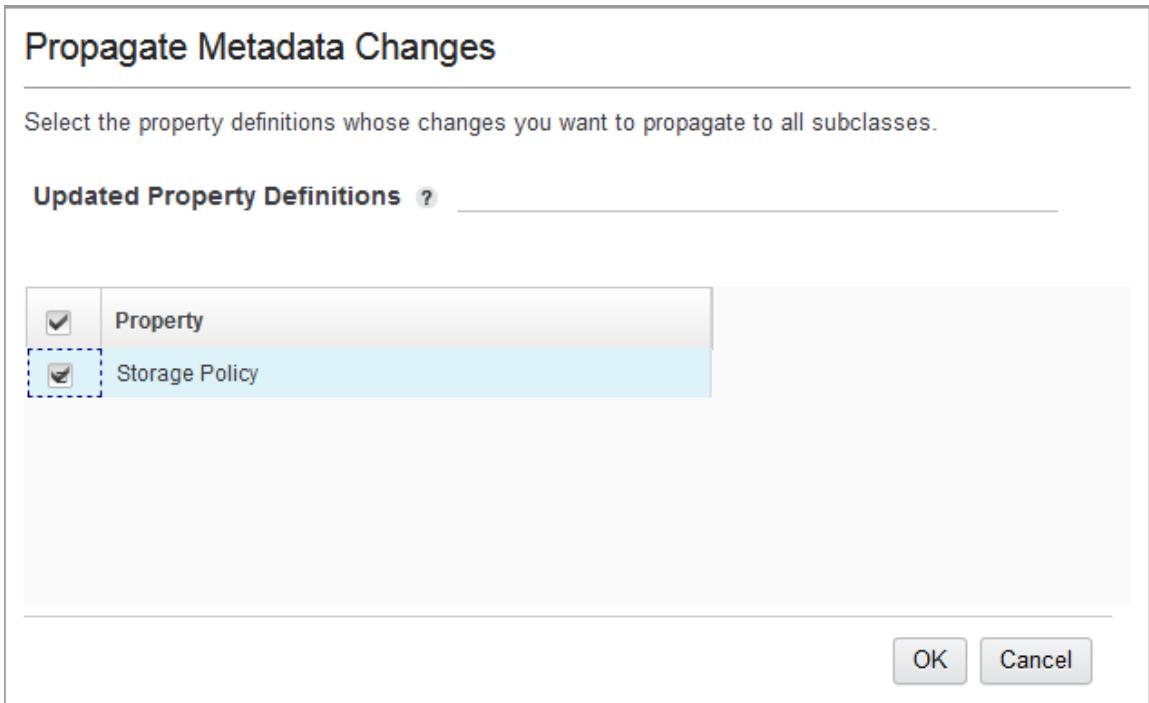
Class Definition: Mortgage Application Attachment

General Properties Property Definitions Default Instance Security Security Policy Security Retention Change Prepr

Support versioning ?
 Compound document ?
 CBR enabled ?

Default storage area: ? <None>
Default storage policy: ? Mortgage Application Storage Policy
Default document lifecycle policy: ? <None>
Default replication group: ? <None>

14. Click “Save”. In the upcomming dialog, choose to propagate the change to the subclasses.



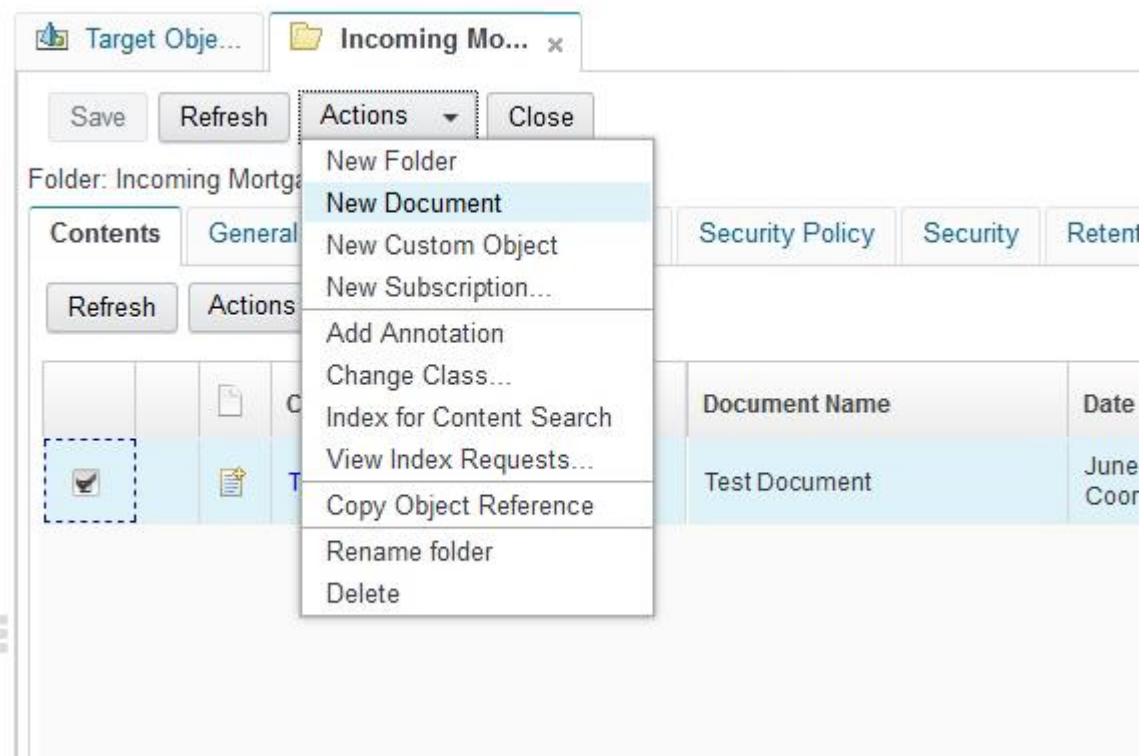
4.3 Deploy Classes – Verification Instructions

1. Log in to Content Platform Engine Administrative Console (<http://vm-1.example.com:9080/acce>). When prompted for user ID and password, use **P8Admin / Think4me**.
2. Open the “Target” Object Store. In the “Target” Object Store navigate to “Data Design > Classes > Document”. Check that “Mortgage Application Attachment” is listed.
3. Double-click on “Mortgage Application Attachment” and choose the “Properties” tab in the window which opens on the right side.
4. Search to find the ID property. Check it against below table.
5. Then do the same for the two subclasses of the “Mortgage Application Attachment” class, the “Loan Application Form” and the “Payslip” class.

Classname	Object ID	OK?
Mortgage Application Attachment	{1040DF63-0000-C61E-AA8D-11DE1F4AC453}	
Loan Application Form	{9040DF63-0000-C611-A954-7E9034A5FC2E}	
Payslip	{2041DF63-0000-CE18-9121-FC3B6C89017C}	

6. Navigate to “Browse > Root Folder” and click on “Incoming Mortgage Application Documents”.
7. In the window on the right side, the content of the folder appears.

8. Click on “Actions” and select “New Document”.



9. Choose “Loan Application Form” class and enter “Test Loan Application Form” as the title, click “Next”.

The screenshot shows a dialog box titled 'Define New Document Objects'. At the top, there are buttons for '< Back', 'Next >', 'Finish', and 'Cancel'. Below the buttons, there is a section titled 'Define New Document Objects' with the sub-instruction: 'The values that you enter for document properties can be used to find the document later. [Learn more...](#)'. There are three input fields: 'Document title:' with the value 'Test Loan Application Form', 'Class:' with the value 'Loan Application Form', and a checked checkbox 'With content?'.

10. Choose some of the sample documents from the Desktop.

The screenshot shows a software interface for creating a new document. At the top, there are tabs: 'Target' (selected), 'Incoming Mo...', and 'New Document...'. Below the tabs are buttons: '< Back', 'Next >', 'Finish', and 'Cancel'. A section titled 'Document Content Source' with the sub-instruction 'Specify the content elements.' is present. Under 'Content Elements', there is a table:

	Sequence	Type	File Name	URL	MIME Type
(1)	...	Content Transfer	AppSrv02.PNG	...	image/png

Below the table, under 'Document', is a 'Document MIME type' field containing 'image/png'. There is also a checkbox labeled 'Classify document:' followed by a question mark icon.

11. Provide the following Data:

Customer Name:	John Doe
Date of Birth:	07/10/1918
Loan Amount:	1000000
Property Address:	Park Street 5
Purchasing Price:	2000000

Click "Next".

The screenshot shows a configuration interface for a new document. At the top, there are tabs: 'Target', 'Incoming Mo...', and 'New Document... *'. Below the tabs are buttons: '< Back', 'Next >', 'Finish', and 'Cancel'. A table lists properties and their values:

Property Name	Property Value	Data Type	Cardinality	Settability
Publishing Subsidiary Folder		/ <Object>	0 <Single>	1 <Settable only before checkin>
Ignore Redirect	<None> (not set)	2 <Boolean>	0 <Single>	0 <Read-write>
Entry Template Object Store Name		8 <String>	0 <Single>	0 <Read-write>
Entry Template Launched Workflow Number		8 <String>	0 <Single>	0 <Read-write>
Entry Template Id		5 <GUID>	0 <Single>	0 <Read-write>
Associated Case		7 <Object>	0 <Single>	0 <Read-write>
Extended Retention Required	<None> (not set)	2 <Boolean>	0 <Single>	0 <Read-write>
Customer Name	John Doe	8 <String>	0 <Single>	0 <Read-write>
Date of Birth	July 10, 1918 at 12:00:00 AM Coordinated Univers	3 <Date>	0 <Single>	0 <Read-write>
Loan Amount	1,000,000	4 <Double>	0 <Single>	0 <Read-write>
Property Address	Park Street 5	8 <String>	0 <Single>	0 <Read-write>
Purchasing Price	200.000	4 <Double>	0 <Single>	0 <Read-write>

12. On page “Document Content and Version”, no changes are required, click “Next”.

13. On page “Specify Setting for Retaining Object”, select indefinite retention, click “Next”.

The screenshot shows a configuration interface for specifying settings for retaining objects. At the top, there are tabs: 'Target Obj...', 'Incoming Mo...', and 'New Document... *'. Below the tabs are buttons: '< Back', 'Next >', 'Finish', and 'Cancel'. The main section is titled 'Specify Settings for Retaining Objects' and contains the following text: 'Specify the length of time that you want this object to be retained before it is deleted from the object store.' Below this, there is a 'Retention date:' label and a group of radio buttons:

- Default retention period
- None ?
- Indefinite ?
- Expiration ?
- Permanent ?

On the right side, there is a date and time picker showing '6/15/2018 18:16:21'.

14. On Page “Advanced Features”, check that Storage Policy is set to “Mortgage Application Storage Policy”. Click “Next”.

15. Check the details on the Summary page and click “Finish” to create the document.

4.4 Deploy Classes – Summary

In this exercise you have:

- 1) Reviewed the Document Classes and Property Templates for storing Document Objects in a FileNet Content Platform Engine Object Store.
- 2) Deployed Document classes from one Environment to another using the FileNet Deployment Manager (FDM).

5 Exercise Configure Retention

Duration approx.: 20 minutes

5.1 Configure Retention – Introduction

In this exercise, retention requirements for the Mortgage Application documents will be implemented. It is assumed, that legal requirements might require that any mortgage application document submitted to the bank needs to be retained at least 1 year. If the mortgage is granted, then all the documents for requesting that granted mortgage need to be retained 5 years. Now, since that is a bit unpractical for this exercise, instead of years we will configure the retention to be 1 hour and 5 hours, instead of years.

For implementing these retention requirements, the Sweep Framework of FileNet Content Platform Engine will be used. The classes for the mortgage application will be configured in such manner, that any uploaded mortgage application document will be retained at least 1 year (hour). Then a Retention Update Sweep Policy will be defined, which will upgrade the retention to 5 years (hours) if the property “Extended Retention Required” has been set to the value true in the document. Setting of the value of this property, when a Mortgage Application was confirmed, will be done by the Workflow solution, in another sub-scenario.

You can find more about updating document objects through background processes in the documentation on this page

https://www.ibm.com/support/knowledgecenter/SSNW2F_5.5.0/com.ibm.p8.ce.admin.tasks.doc/p8pcc175.htm.

You can find more information in the documentation on retention on this page

https://www.ibm.com/support/knowledgecenter/SSNW2F_5.5.0/com.ibm.p8.ce.admin.tasks.doc/p8pcb010.htm.

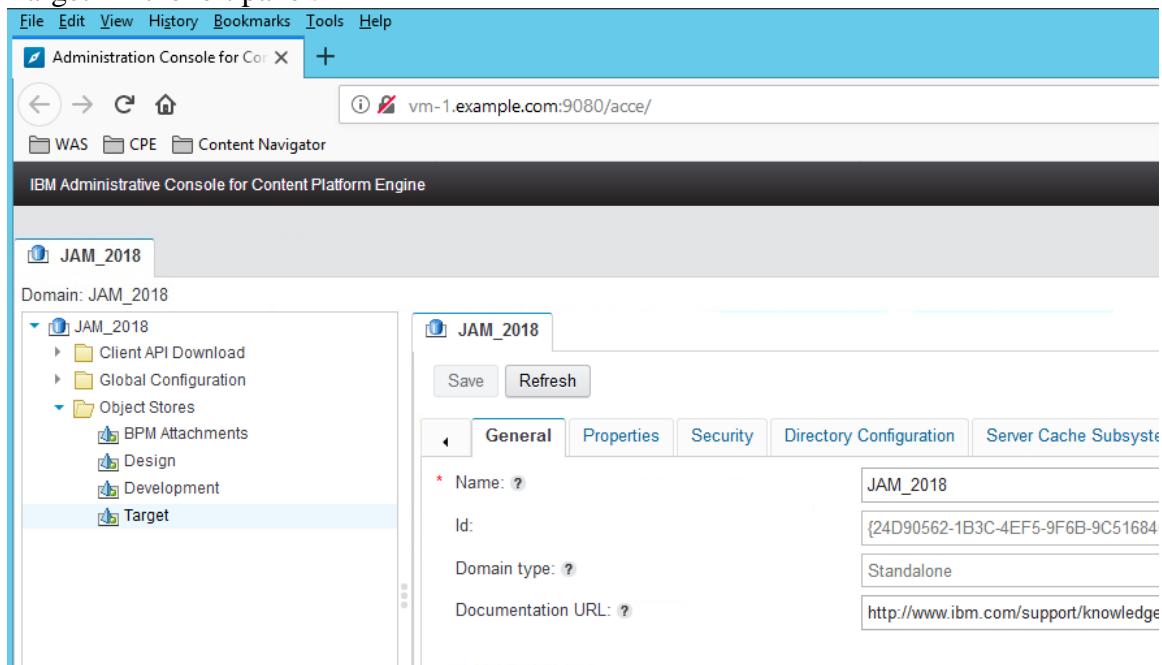
5.2 Configure Retention – Step by Step Instructions

In this exercise you will access the following tools / resources

Tool	Location / URL
Content Platform Engine Administrative Console (ACCE)	http://vm-1.example.com:9080/acce

5.2.1 Setting Default Retention

- 1) Log in to Content Platform Engine Administrative Console (<http://vm-1.example.com:9080/acce>). When prompted for user ID and password, use **P8Admin / Think4me**.
- 2) Open the object store "Target" tab by clicking "JAM_2018 > Object Stores > Target" in the left panel.



- 3) In the Navigation panel for the Object Store, navigate to “Data Design > Classes > Document”. Click the “Mortgage Application Attachment” class to edit it.

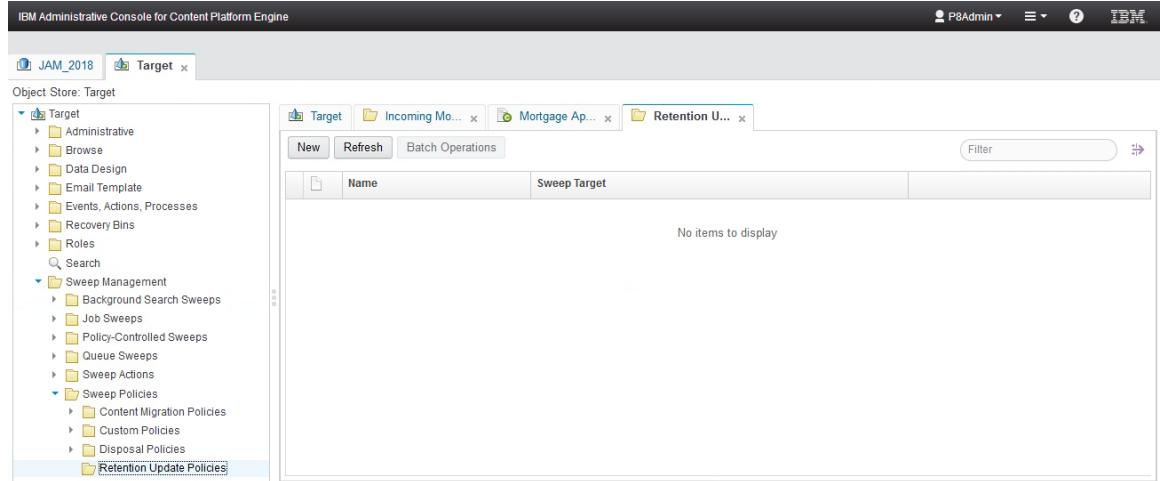
Select the “Retention” tab.



- 4) Set the Retention Period to “Period”. In the entry fields enter value “1” and select hours. Click “Save”.
- 5) Repeat the change for the subclasses of “Mortgage Application Attachment”, the “Payslip” class and the “Loan Application Form” class.

5.2.2 Configuration for Extended Retention

- 1) Still in ACCE, and still in the “Target” Object Store, please use navigation panel on left side to navigate to “Sweep Management > Sweep Policies”. Click on “Retention Update Policies”. A window opens on right side showing that currently no Retention Update Policies exist.



- 2) Click “New”. In the wizard which opens, provide the name “Extended Retention for Mortgage Application Attachments” on the first page. Set the Sweep Mode to “Normal”, and enter a check mark for “Enable retention update policy”. It is a good practice to provide descriptions too, so you are encouraged to provide one.

Display Name: Extended Retention for Mortgage Application Attachments

Sweep Mode: Normal

Enable retention update policy: Checked

Define Retention Update Policies

You can extend the period in which objects are retained and not deleted from the object store. [Learn more...](#)

* Display name: ?	Extended Retention for Mortgage Application Attachments
Existing names:	<input type="text"/>
Descriptive text: ?	This retention update policy increases the retention for Mortgage Application Attachment documents, including subclasses , if the property MA_ExtendedRetentionRequired is set to true.
* Sweep mode: ?	Normal
*	<input checked="" type="checkbox"/> Enable retention update policy ?

- 3) On the next page, set the “Target class” name to “Mortgage Application Attachment”. Provide the filter expression “MA_ExtendedRetentionRequired = true” and select to include subclasses. Leave the number of result sets to retain as 10. This will allow to review the documents, for which retention was extended, but perform cleanup of old data too.

Define Sweep Targets

Specify the criteria and rules that identify the objects that must be retained in this object store.

* Target class: ?	Mortgage Application Attachment
Filter expression: ?	MA_ExtendedRetentionRequired = true
Include subclasses: ?	<input checked="" type="checkbox"/> Enabled
* Number of sweep iterations with result records to retain: ?	10

- 4) Leave the next page unchanged (blank). This way the Sweep will continue to run until disabled.

Define Retention Update Policy Dates

Enter the dates when the retention update policy starts and ends the sweep for objects that must be retained.

Effective start date: ?

Effective end date: ?

Specific retention date: ?

- 5) On the next page, it is configured to which new value the retention should be set. It can only be increased. Choose to set it to 5 hours starting with the date it was created, as follows:

Define Retention Time

Enter the criteria for establishing when the retention date is updated for objects. The retention date is updated when the objects are assigned a class that is specified by the filter expression.

* Retention duration update: ? 5

* Retention period units: ? Hours

* Base date property name: ? DateCreated

- 6) On the last page, the settings can be reviewed. Click “Finish”.
- 7) When the Retention Update Policy was created, a window opens confirming this. Click “Open” to immediately open the newly created Retention Update Policy.

Success

Start time: June 16, 2018 at 3:29:19 PM Coordinated Universal Time

End time: June 16, 2018 at 3:29:21 PM Coordinated Universal Time

Elapsed time: 2 seconds

100%

Created "Extended Retention for Mortgage Application Attachments"

- 8) Review the properties of the Retention Update Policy. Properties might indicate, that it already ran once over the documents.

Retention Update Policy: Extended Retention for Mortgage Applic...

General	Properties	Security	Sweep Results
Policy controlled sweep: ?	Document		
Filter expression: ?	MA_ExtendedRetentionRequired = true		
* Sweep mode: ?	Normal		
Option:	<input checked="" type="checkbox"/> Include subclasses ?		
Effective start date: ?			
Effective end date: ?			
* Number of sweep iterations with result records to retain: ?	10		
Completed iterations: ?	0		
Examined object count: ?	0		
Processed object count: ?	0		
Failed object count: ?	0		

5.3 Configure Retention – Verification Instructions

- 1) Still in ACCE, with the “Target” Object Store open, use the navigation panel on the left side to navigate to “Browse > Root Folder”. Click on “Incoming Mortgage Application Documents”. A window opens on the right side containing the documents of that folder. It should show the “Test Loan Application Form” which was created in section 4.3 on page 82.

Containment Name	Document Name	Date Created	Created By	Class	Major Version Number	Minor Version Number	Status
Test Document	Test Document	June 14, 2019 at 12:55:12 PM Coordinated Universal Time	PAdmin	Document	1	0	1 (Released)
Test Loan Application Form	Test Loan Application Form	June 15, 2018 at 6:19:27 PM Coordinated Universal Time	PAdmin	Loan Application Form	1	0	1 (Released)

- 2) Click on “Test Loan Application Form”, and verify the “Retention” tab. It should display retention is “Indefinite”, which means, it will be retained, but its not specified yet how long.

General	Properties	Versions	Content Elements	Folders Filed In	Annotations	Security Policy	Security	Retention	Lifecycle P...
<p>Retention:</p> <p><input type="radio"/> None ?</p> <p><input checked="" type="radio"/> Indefinite ?</p> <p><input type="radio"/> Expiration ?</p> <p><input type="radio"/> Permanent ?</p> <p>6/16/2018 15:41:58</p>									

- 3) Select the “Properties” tab and search the property displayed as “Extended Retention Required”. Using the horizontal scroll bar, scroll to the right until you see the symbolic name of it is “MA_ExtendedRetentionRequired”.

The screenshot shows the 'Properties' tab of a document named 'Test Loan A... (v1.0)'. The table lists the following properties:

Property Name	Is a Value	Hidden	Symbolic Name
Entry Template Launched Workflow Number	True		EntryTemplateLaunchedWorkflowNum {3}
Entry Template Id	alse	True	EntryTemplateId {9}
Associated Case	alse	True	CmAcMAssociatedCase {D}
Extended Retention Required	alse	False	MA_ExtendedRetentionRequired {F}
Customer Name	alse	False	MA_CustomerName {9}
Date of Birth	alse	False	MA_MADate {78}
Loan Amount	alse	False	MA_LoanAmount {F}

- 4) Select the value “True” for it and click “Save”.
- 5) The sweep subsystem has a Sweep Activity Delay configured for it. This means that the sweep policy will not immediately update the retention. Wait approx. 2 minutes, you might also continue with the other exercises and get back to this at a later time. If you decide to wait, you can get back to the Retention Update Policy window and refresh it from time to time. When it runs, it should increase the counters on the “General” tab.

Completed iterations: ?

Examined object count: ?

Processed object count: ?

Failed object count: ?

- 6) When the counters increased, get back to the “Test Loan Application” document properties window and click “Refresh”. Check the “Retention” tab.

The screenshot shows the 'Retention' tab of the 'Test Loan A... (v1.0)' document properties. The retention settings are as follows:

- Retention Type: Expiration
- Expiration Date: 6/16/2018
- Expiration Time: 20:51:51
- Other options: None, Indefinite, Permanent

5.4 Configure Retention – Summary

In this exercise you have:

- 1) Configured the default retention for the document classes created earlier.
- 2) Defined a Retention Update Policy for defining the retention based on the metadata of the documents.

6 Exercise: Dynamic Filing of Payslips

Duration approx.: 15 minutes

6.1 *Dynamic Filing of Payslips – Introduction*

In one of the exercises of the Workflow sub-scenario the Business Automation Workflow (BAW) solution will be configured in such a way, that when a document of type “Mortgage Application Form” is created in the repository, a new Case will be started. At some point when the case is processed, the customer will be asked to additionally file one or more copies of their Payslips, for checking if the mortgage can be granted or not.

Thus, when the Payslip document(s) are filed in Content Platform Engine. It is intended that this “notifies” the matching case, so that the case can continue. For this, the case capability of BAW needs the document to be filed within the case folder created by the case capability for processing that case. This folder name, however, is unknown to Datacap. So, some additional logic is required to file the Payslip in the right place.

Within FileNet Content Platform Engine, this can be achieved for example by using an Event Subscription. This means, FileNet Content Platform Engine will be configured to run a small piece of JavaScript code, whenever a document for the Payslip document class is created in the Data Store. That JavaScript code looks up the Customer name in the Payslip documents properties, searches the matching Case Manager Folder(s) and files the document in all matching folders.

For more details on events and subscriptions, refer the Content Platform Engine documentation

https://www.ibm.com/support/knowledgecenter/en/SSNW2F_5.5.0/com.ibm.p8.sysoverview.doc/p8sov006.htm

The Event Subscription created in this exercise cannot be tested as part of the ECM sub-scenario, as it can only be executed successfully, if a case folder for a customer exists. The case folder will not exist until the BAW solution gets deployed as part of the Workflow sub-scenario, and a case has been created for processing a Mortgage Application Form of a user. Therefore, either working on this exercise could be delayed until the Workflow sub-scenario is complete or just the testing part should be postponed. When doing it at an earlier stage, it can only be verified, that we get the expected error message, which explains that there is no subclass of the Case Folder class with a definition of the “Customer Name” property.

6.2 Dynamic Filing of Payslips – Step by Step Instructions

In this exercise you will access the following tools / resources

Tool	Location / URL
Content Platform Engine Administrative Console (ACCE)	http://vm-1.example.com:9080/acce

To get started with this exercise, execute the following steps:

- 1) Log in to Content Platform Engine Administrative Console (<http://vm-1.example.com:9080/acce>). When prompted for user ID and password, use **P8Admin / Think4me**.
- 2) Open the object store "Target" tab by clicking "JAM_2018 > Object Stores > Target" in the left panel.

The screenshot shows the IBM Administrative Console interface. The title bar reads "File Edit View History Bookmarks Tools Help" and "Administration Console for Content Platform Engine". The address bar shows the URL "vm-1.example.com:9080/acce". The left sidebar has links for "WAS", "CPE", and "Content Navigator". The main content area is titled "IBM Administrative Console for Content Platform Engine". On the left, there is a tree view under "Domain: JAM_2018" with nodes like "Client API Download", "Global Configuration", "Object Stores" (which is expanded to show "BPM Attachments", "Design", "Development", and "Target"), and "Target" is selected. On the right, there is a form for the "Target" object store with tabs for "General", "Properties", "Security", "Directory Configuration", and "Server Cache Subsystems". The "General" tab is active. The "Name" field is set to "JAM_2018", "Id" is "24D90562-1B3C-4EF5-9F6B-9C51684", "Domain type" is "Standalone", and the "Documentation URL" is "http://www.ibm.com/support/knowledgecenter".

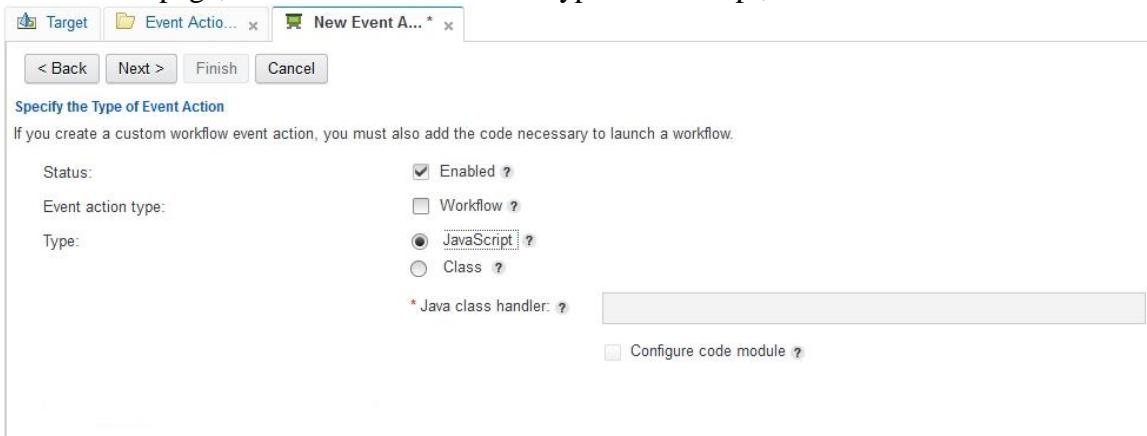
- 3) With the open tab for the Object Store “Target”, in the navigation panel on left side unfold “Events, Actions, Processes”, and click “Event Actions”.

The screenshot shows the IBM Administrative Console interface. The title bar reads "Administration Console for Content Platform Engine". The address bar shows the URL "vm-1.example.com:9080/acce/". The left sidebar is titled "Object Store: Target" and contains a tree view with categories like "Browse", "Root Folder", "IBM Case Manager", "Data Design", "Email Template", "Events, Actions, Processes", and "Event Actions". The "Event Actions" node is selected. The main content area has tabs "Target" and "Event Action...". A sub-tab "Event Action..." is active. Below it is a table titled "Event Actions" with columns: Display Name, Is Enabled, Description, Prog ID, Creator, and Date Created. The table lists several entries, all of which are currently enabled. The last entry in the list is "CmAcnCreateCaseSubfoldersEvent" with a date of June 19, 201.

- 4) Click “New”, to create a new “Event Action”. Name it “File Payslip Event Action”, click “Next”.

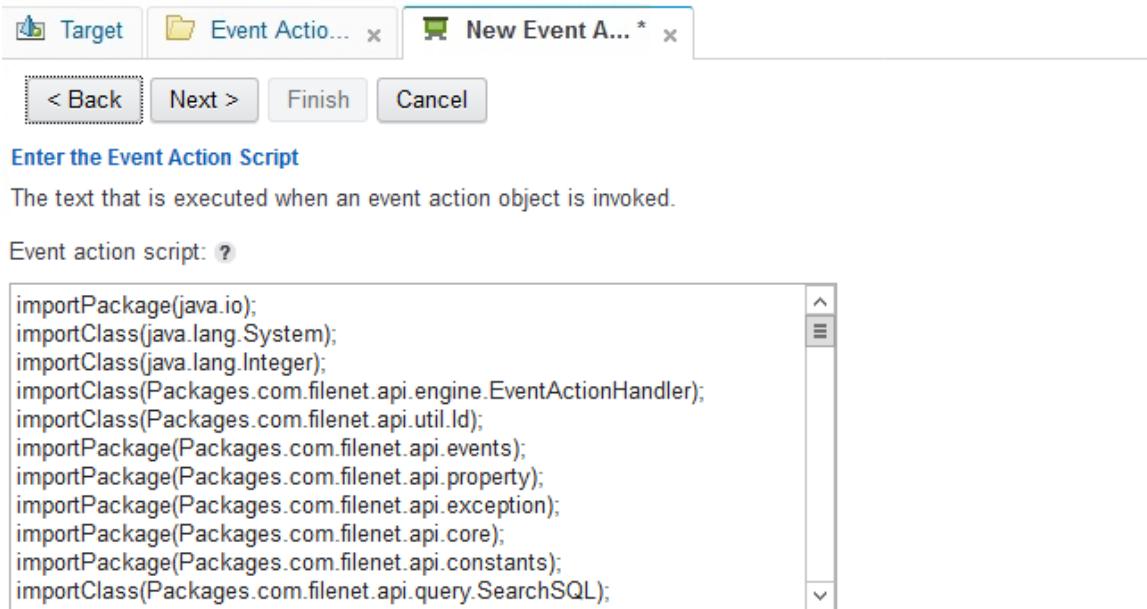
The screenshot shows the "New Event Action" wizard. The title bar includes the URL "vm-1.example.com:9080/acce/" and the user "P8Admin". The left sidebar is identical to the previous screenshot. The main window has tabs "Target", "Event Action...", and "New Event A...". The "New Event A..." tab is active. It displays a form with a "Display name" field containing "File Payslip Event Action". Below it is a list of existing names: CmAcnCaseCreationEventAction, CmAcnCaseEventAction, CmAcnCaseMemberEventAction, CmAcnCaseSubfolderEventAction, CmAcnCreateCaseSubfoldersEventAction, and CmAcnDocumentCreateCaseEventAction.

- 5) On the next page, choose “Event action of type” JavaScript, click “Next”.

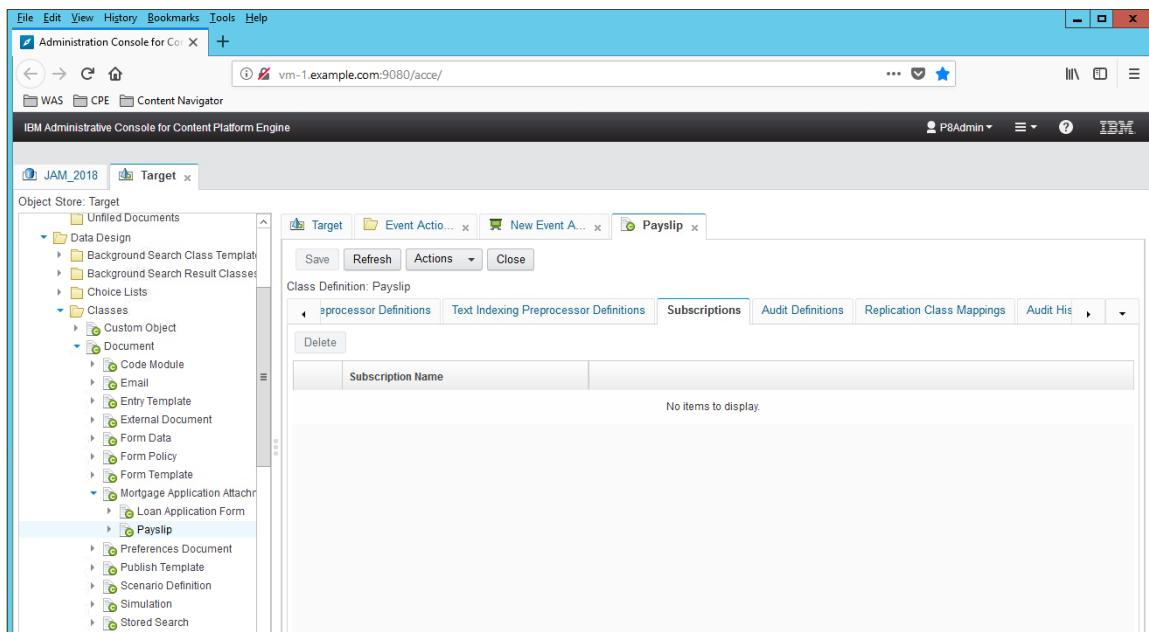


- 6) Open Windows Explorer and locate the directory “C:\Exercise5”. Open the file “File Payslip Event Action.js” with Notepad++ and copy the content of that file to the clipboard.

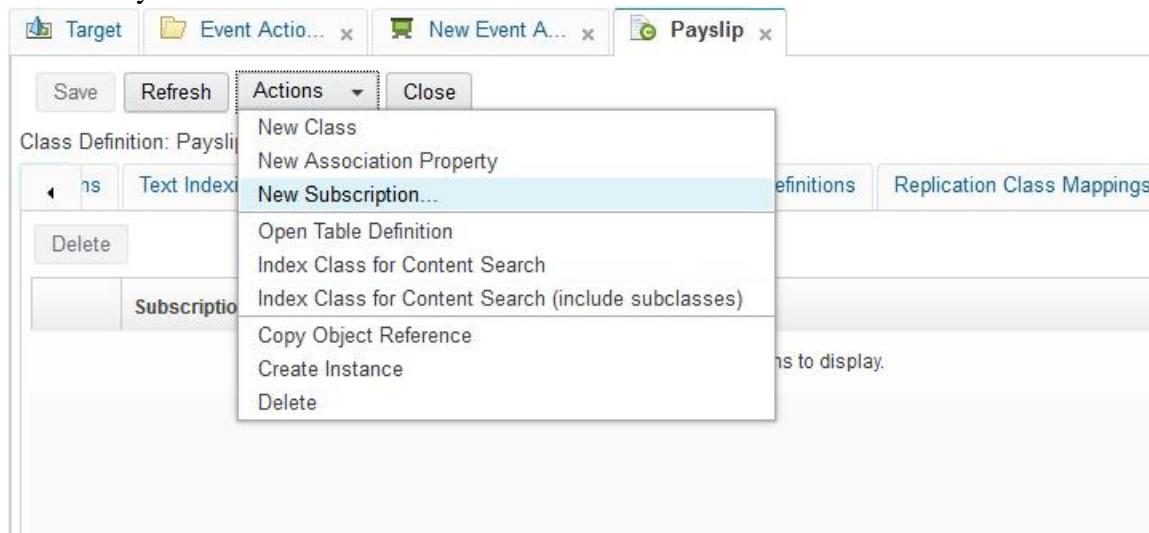
Then get back to the ACCE. Remove everything from the “Event Action Script” text box, and then paste the content of the file “File Payslip Event Action.js” into the text field. Click “Next”, then “Finish” on the Summary page. With the Event Action created, click “Close”.



- 7) Next navigate to the Payslip Document class, you find it by selecting “Data Design > Classes > Document > Mortgage Application Attachment” and clicking on the “Payslip” document class. With the class properties window open on the right side, choose the “Subscriptions” tab.



- 8) From the Actions drop down menu of the class, choose the “New Subscription” menu entry.



- 9) In the New Subscription dialog, provide the name “File Payslip to Matching Case Folder”, and click “Next”.

Target Event Action... New Event A... Payslip New Subscription *

< Back Next > Finish Cancel

Name and Describe the Subscription

To associate an event with an event action (a programmatic response), create a subscription for an object or a class. [Learn more...](#)

* Display name:

Existing names:

- CmAcmCaseFolderCreationSubscription
- CmAcmCaseFolderFileUnfileAndUpdateSubscription
- CmAcmCaseMemberSubscription
- CmAcmCaseSubfolderFileUnfileSubscription
- CmAcmCaseTaskSubscription
- CmAcmCreateCaseSubfoldersSubscription
- CmAcmDocumentFileUnfileCustomEventSubscription
- CmAcmQuickTaskAssignmentSubscription
- CmAcmQuickTaskAttachmentCollectionSubscription
- CmAcmQuickTaskAttachmentSubscription

Description:

- 10) On the next page, choose to apply the subscription to all object of the class “Payslip”, click “Next”:

Target Event Action... New Event A... Payslip New Subscription *

< Back Next > Finish Cancel

Specify the Subscription Behavior

You can specify the scope and behavior of this subscription.

* Scope: Applies to all objects of this class
 Applies to this instance of this class or the metadata for this class
 Applies to any version of this document version series

Workflow subscription option: Create a workflow subscription

Thumbnail generation option: Generate thumbnails

Video transcription option: Create a video transcription

- 11) On the next page, check to subscribe on the “Checkin Event”. This usually has better results than subscriptions on the “Creation Event”, the checkin occurs later

and the properties have already been stored when it fires. Click “Next”.

The screenshot shows the 'Select the Triggers' dialog. At the top, there are tabs: Target, Test, and New Subscri... * (which is active). Below the tabs are buttons: < Back, Next >, Finish, and Cancel. The main area is titled 'Select the Triggers' with the sub-instruction: 'Select the system or custom events that will trigger the actions that are defined in the associated event action script or COM object.' A list titled 'Triggers:' contains a table:

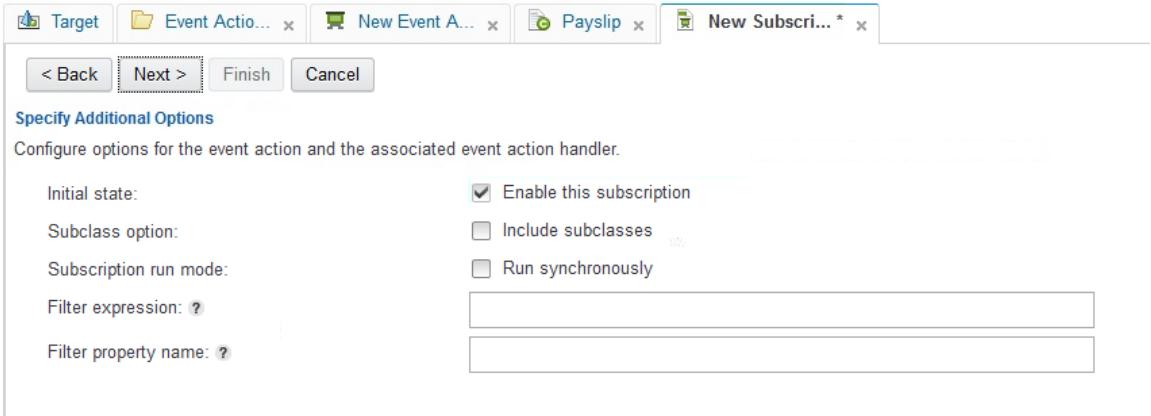
<input type="checkbox"/>	Event Name
<input type="checkbox"/>	Cancel Checkout Event
<input type="checkbox"/>	Case File Event
<input type="checkbox"/>	Case Related Event
<input type="checkbox"/>	Case Unfile Event
<input type="checkbox"/>	Change Class Event
<input type="checkbox"/>	Change State Event
<input checked="" type="checkbox"/>	Checkin Event
<input type="checkbox"/>	Checkout Event
<input type="checkbox"/>	Classify Complete Event

- 12) On the next page of the dialog, choose the “File Payslip Event Action” which was created earlier. Notice the Event Action could also have been created directly from here.

The screenshot shows the 'Select an Event Action' dialog. At the top, there are tabs: Target, Event Actio..., New Event A..., Payslip (which is active), and New Subscri... *. Below the tabs are buttons: < Back, Next >, Finish, and Cancel. The main area is titled 'Select an Event Action' with the sub-instruction: 'Select the event action that defines the actions to be taken when the subscription is triggered.' A dropdown menu is open, showing the option 'File Payslip Event Action'.

- 13) On the last page, additional options can be specified. Leave the default enabled, which is to Enable the subscription, and to not run it synchronously. A synchronous event subscription will be executed together with checkin of the Payslip document and will prevent successful checkin of the Payslip if it fails.

Click “Next” to get to the summary page, then click “Finish”:

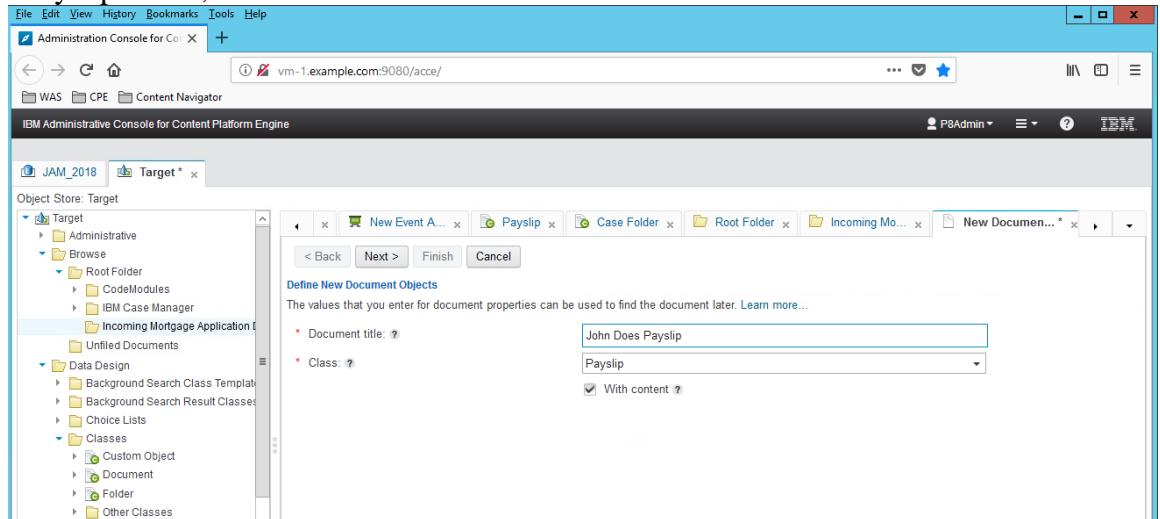


6.3 Dynamic Filing of Payslips – Verification Instructions

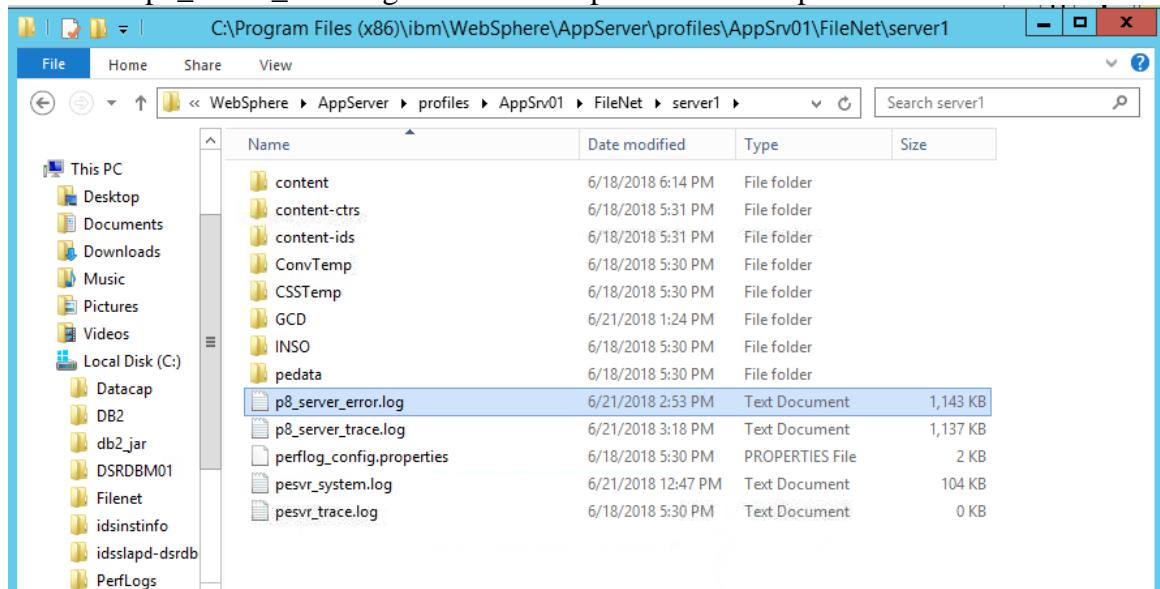
The Event Subscription created in this exercise cannot really be tested, as it can only be executed successfully, if a case folder for a customer exists. The case folder will not exist until the Workflow solution gets deployed as part of the Workflow sub-scenario, and a case has been created for processing a Mortgage Application Form of a user. Therefore, it is advised to postpone verifying this exercise, until the Case folder has been created, when working on the Workflow sub-scenario.

When doing it at an earlier stage, it can only be verified, that you get the expected error message, which is that there is no subclass of the Case Folder class with a definition of the Customer Name property.

- 1) In ACCE, in the open “Target” Object Store tab, navigate to “Browse”. Click on the “Incoming Mortgage Application Documents” folder to display it.
- 2) In the open folder window on right side, choose “Add document” from the actions menu to create a new document. Name it “John Does Payslip”, and choose the “Payslip” class, click “Next”.



- 3) On the next page, add some document from the desktop, click “Next”.
- 4) On the next page, find the “Customer Name” property near the bottom and supply the name “John Doe”. Click “Next”.
- 5) Leave all the rest of the settings unchanged, click “Next” 4 times, then “Finish”, and “Close”.
- 6) Open an Explorer window and find the FileNet Log Directory, on this path:
 C:\Program Files
 (x86)\ibm\WebSphere\AppServer\profiles\AppSrv01\FileNet\server1. Right-click on the file p8_server_error.log and select to open it with Notepad++



- 7) Press STRG and END keys together to go to the end of the file and find the following error message from the event subscription. All in all, you might find it up to 8 times before FileNet Content Engine gives up executing it further:

```
com.filenet.api.exception.EngineRuntimeException: FNRCR0081E:  

RETRIEVE_PROPERTY_NOT_DEFINED: The property MA_CustomerName  

is not defined. ObjectStore: "Target", SQL: "SELECT [MA_CustomerName],  

[FolderName], [PathName], [Id] FROM [CmAcmCaseFolder] WHERE  

([MA_CustomerName] = 'John Doe')"
```

6.4 Dynamic Filing of Payslips – Summary

In this exercise you have:

- 1) Created an Event Action with some JavaScript code and stored it in the “Target” Object Store.
- 2) Created a Subscription on the Payslip class, so that the code is executed whenever new documents of class Payslip are checked in into the FileNet Data Store.

7 Exercise: Alternative Document Upload

Duration approx.: 30 minutes

7.1 Alternative Document Upload – Introduction

When everything works as it should, new Mortgage Application documents should be uploaded by IBM Datacap. If you haven't finished the Datacap sub-scenario or plan to skip it, you can also use the alternative document upload facility you implement in this exercise using IBM Content Navigator (ICN).

IBM Content Navigator (ICN) is a web client that provides users with a console for working with content from multiple content servers. For some background of ICN, please refer to the documentation

https://www.ibm.com/support/knowledgecenter/SSEUEX_3.0.3/com.ibm.installingeuc.doc/eucao001.htm.

Entry templates save you time when the items that you are adding or checking in to a repository require the same information. For example, entry templates can specify predefined values, such as the location, class, property values, or security for the items. The information that you enter is consistently applied to all the items that you add or check in. For some background of Entry templates, please refer to the documentation https://www.ibm.com/support/knowledgecenter/SSEUEX_3.0.3/com.ibm.usingeuc.doc/euche013.htm.

In this exercise, you will create a desktop in IBM Content Navigator (ICN) which is configured to connect to a FileNet P8 repositories. In the created desktop, you will create two Entry Templates which you can use to upload the two different Mortgage Application document types.

You will:

- Log-on to IBM Content Navigator Administration Desktop,
- create a new desktop: Mortgage Application Desktop,
- create an Entry Template for the "Loan Application Form" document class,
- create an Entry Template for the "Payment Slip" document class,
- associate the two entry templates for usage with the "Incoming Mortgage Applications" folder,
- and upload several documents using the two Entry Templates.

In this exercise you will access the following tools / resources

Tool	Location / URL
IBM Content Navigator Administration Desktop	http://vm-1.example.com:9081/navigator/?desktop=admin

7.2 Alternative Document Upload – Step by Step Instructions

To get started with this exercise, execute the following steps:

- 1) Log in to IBM Content Navigator Administration Desktop (<http://vm-1.example.com:9081/navigator/?desktop=admin>). When prompted for user ID and password, use **P8Admin / Think4me**.
- 2) Open the Repository “Target” tab by clicking “Repositories” in the left panel and then double-clicking “Target” in the listed Repositories. You will see that it is connected to the object store “Target” of the Content Platform Engine. In the following steps, you will create a desktop for the repository “Target”.

The screenshot shows the IBM Content Navigator Administration Desktop interface. On the left, there is a sidebar with various navigation options: Desktops, Repositories, Sync Services, FileNet Content Manager, Content Manager OnDemand, Daeja ViewONE, Viewer Maps, Plug-ins, Menus, Labels, Themes, Icon Mapping, Settings, Role-based Redactions, and Role-based Desktop Administration. The 'Repositories' option is selected. On the right, the main workspace has tabs for 'Desktops', 'Repositories', and 'Target'. The 'Target' tab is currently active, indicated by a blue border. Below the tabs are buttons for 'Save and Close', 'Save', 'Reset', and 'Close'. The main content area is titled 'FileNet Content Manager repository: Target'. It contains several configuration fields:

- * Display name: Target
- * ID: Target
- * Protocol: EJB
- * Server URL: iiop://vm-1.example.com:2809/FileNet/Engine
- * Object store symbolic name: Target
- * Object store display name: Target

A 'Connect...' button is located at the bottom of this section.

- 3) In the repository “Target” tab, click “Connect”. When prompted for user ID and password, use **P8Admin / Think4me**. Then click the sub-tab “Configuration Parameters”, and scroll down to “Optional Features”, select “Enable” for the “Entry template management” field, and then click “Save”.

The screenshot shows the IBM Content Navigator interface with the 'Target' tab selected. The left sidebar lists various system components. The main area displays configuration parameters for a new desktop. The 'General' tab is active, showing settings for approval workflows, box operations, teamspaces, and entry template management. A specific section for entry template management includes a 'Select Users and Groups...' button. Below this, the 'Creators:' field is set to '#AUTHENTICATED-USERS' and the 'Administrators:' field lists '#CREATOR-OWNER', 'P8Admin', and 'P8Admins'.

- 4) Create a desktop named “Mortgage Application Desktop”:
 - a. Open the “Desktops” tab by clicking “Desktops” in the left panel, and then open the “New Desktop” tab by clicking "New Desktop" in the “Desktops” tab.
 - b. In the sub-tab “General”, enter "Mortgage Application Desktop" as Name, and enter “MA” as ID. ***Please note that this ID is case sensitive and will be used to access the desktop later in a browser!***
 - c. Still on sub-tab “General”, please select “Target” repository as “Repository for Authentication”. Enable “Limit access to specific users and groups” and select the group “testers” and “P8Admins” to allow access and leave defaults for all other fields.

IBM Content Navigator

Desktops *New Desktop x

Save and Close Save Reset Close

Desktop: **New Desktop**

A desktop determines what the user can see and do when they log in to the web client. After you create a desktop, you can see so that they can access the desktop.

General	Repositories	Layout	Appearance	Menus	Workflows
* Name: <input type="text" value="Mortgage Application Desktop"/>					
* ID: <input type="text" value="MA"/>					
Description:					
▼ Authentication					
* Repository: Target <input type="button" value="▼"/>					
Limit access to specific users and groups: <input checked="" type="radio"/> Enable <input type="radio"/> Disable					
<input type="button" value="Select Users..."/>					
No access:					
Allow: <input type="button" value="testers x"/> <input type="button" value="P8Admins x"/>					

- d. In the sub-tab “Layout”, select “Entry Template Manager” from the “Displayed features”, and verify that “Target” is set as the default repository in the right panel.
 (In case you don’t see any repository listed as “Repositories” and “Default repository”, make sure you have enabled “Entry template management” for the “Target” repository before creating the desktop. If you need to make a change to the repository, make sure to close and open the desktop again to pick up these changes.)

Desktop: **New Desktop**

A desktop determines what the user can see and do when they log in to the web client. After you create a desktop, you can send the desktop URL to users so that they can access the desktop.

Feature	Repository
Home	Target
Browse	Target
Search	Target
Teamspace	Target
Work	Target
Entry Template Manager	Target

- e. In the sub-tab “Appearance”, enter “Mortgage Application Desktop” as Application name. Finally click “Save and Close”, and verify that the new desktop is listed on the Desktops tab.

Desktops × Mortgage Application Desktop ×

Save and Close Save Reset Close

Desktop: Mortgage Application Desktop

General Repositories Layout Appearance Menus Workflows Mobile

You can customize the appearance of the desktop by changing the login page and banner that are displayed for the desktop.

Application name:

Theme:

End user help URL: Default URL

Use custom help in IBM Knowledge Center Customer Installed

* Taxonomy code:

* Help context:

* Landing page:

- 5) Create an Entry Template for the "Loan Application Form" document class:
- Log in to Mortgage Application Desktop (<http://vm-1.example.com:9081/navigator/?desktop=MA>). When prompted for user ID and password, use **P8Admin / Think4me**. Please note case sensitivity!
 - Open the “Entry Template Manager” tab by clicking “Home > Entry Template Manager” in the left panel, and then click “New Entry Template > Document Entry Template”.

Mortgage Application Desktop

Entry Template Manager

Refresh New Entry Template Actions

Document Entry Template
Folder Entry Template

There are no entry templates

- c. In the section “Define the Entry Template”, set the following fields, and leave the defaults for other fields.

- Name: Loan Application Form Entry Template
- Save in: \Target\Incoming Mortgage Application Documents
- Share with: P8Admins, testers

The screenshot shows the 'Entry Template Manager' interface with the 'Define the Entry Template' section selected. The 'Name' field is populated with 'Loan Application Form Entry Template'. The 'Save in' field is set to 'Incoming Mortgage Application Docu...'. The 'Share with' field contains 'P8Admins' and 'testers'.

- d. In the section “Set the Item Storage Location”, set the following fields, and leave the defaults for other fields.

- Hide the Save in field: selected
- Default Save in location: \Target\Incoming Mortgage Application Documents

The screenshot shows the 'Set the Item Storage Location' section. The 'Hide the Save in field' radio button is selected. The 'Default Save in location' dropdown is set to 'Incoming Mortgage Application Docur...'. The 'Require users to add new items to a folder' checkbox is checked, while the 'Require users to add items to the default location or a child folder of the default location' checkbox is unchecked.

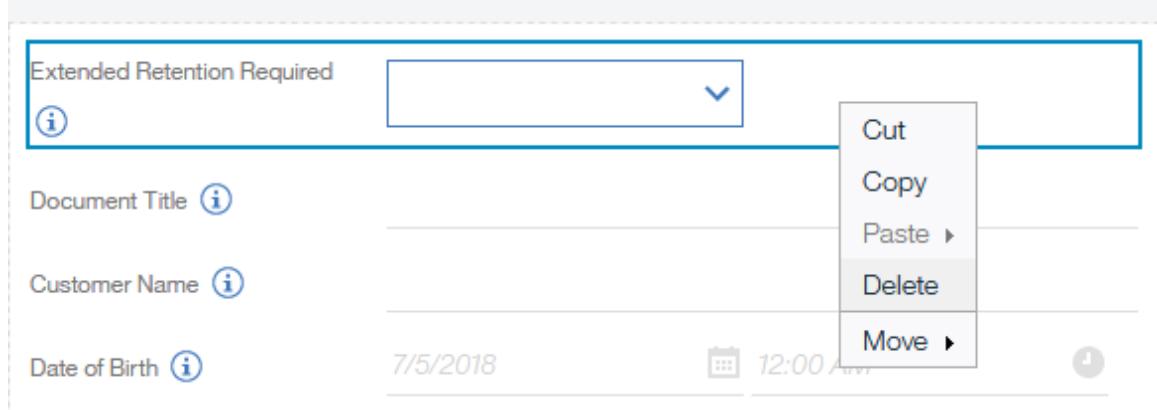
- e. In the section “Set the Item Properties”, set the Class to “Loan Application Form” and leave defaults for other fields. You can hide the field “Extended Retention Required” by clicking on “Edit Layout...”.

▼ Set the Item Properties i

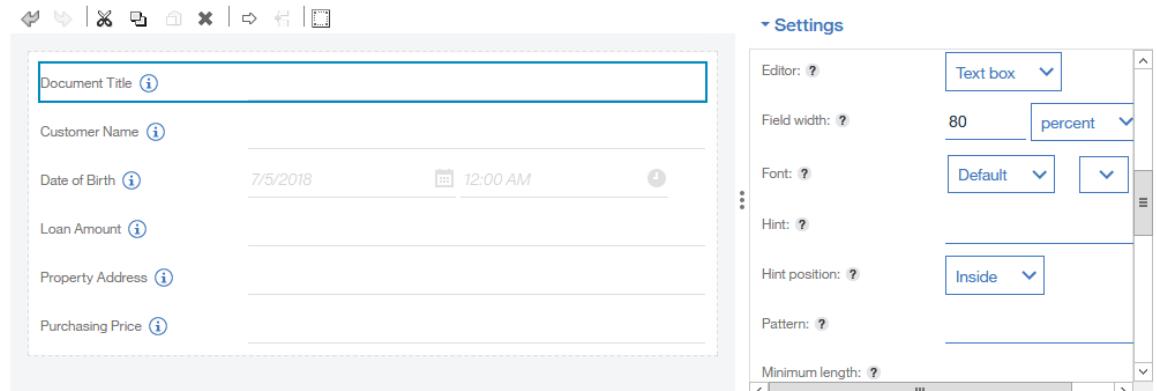
Show the **Properties** section i Hide the **Properties** section i

Class: **Loan Application Form** ▼ Edit Layout... Clear

- f. In the Layout Editor, you can right-click the field “Extended Retention Required”, and invoke Delete to hide it



- g. To get an optimal screen layout, you can also click on each of the text entry fields, one after the other, and for each of them edit the property “Field Width” to be 80 Percent.



- h. Close the Layout Editor by pressing “Save and Close” button.

Entry Template Manager *New Entry Template x

[Save and Close](#) [Copy](#) [Cancel](#)

Define the Entry Template [Set the Item Properties](#) [i](#)

Show the Properties section [i](#) Hide the Properties section [i](#)

Set the Item Storage Location
Set the Item Properties
Set the Item Security

Class: [Loan Application Form](#) [Edit Layout...](#) [Clear](#)

Configure a Workflow for the Item
Document Title: [i](#)

Set Options for the Item
Customer Name: [i](#)

Date of Birth: [i](#) M/d/yyyy, h:mm a [Calendar](#)

Loan Amount: [i](#)

Property Address: [i](#)

Purchasing Price: [i](#)

Extended Retention Required: [i](#)

Hidden

- i. In other sections (i.e. “Set the Item Security”, “Configure a Workflow for the Item”, “Set Options for the Item”), leave the defaults for all fields.
 - j. Click “Save and Close” to save the entry template, and then verify that your new entry template is listed in “Entry Template Manager”.
- 6) Repeat the step 5 to create another Entry Template for the “Payment Slip” document class. Note: the following fields need use different values.
- “Name” in the section “Define the Entry Template”: Payment Slip Entry Template
 - “Class” in the section “Set the Item Properties”: Payment Slip

Mortgage Application Desktop

[Entry Template Manager](#) [v](#)

Entry Template Manager

[Refresh](#) [New Entry Template](#) [v](#) | [Actions](#) [v](#)

	Loan Application Form Entry Template
Description: Class Name: Loan Application Form Template Type: document Workflow Name:	
	Payment Slip Entry Template
Description: Class Name: Payslip Template Type: document Workflow Name:	

- 7) Associate the two Entry Templates for usage with the "Incoming Mortgage Applications" folder.
- Open the view "Browse" by switching from "Entry Template Management" to "Browse"
 - Open the view "Properties" of "Incoming Mortgage Applications" by right-clicking "Target > Incoming Mortgage Applications" and then selecting "Properties" from the context menu.

The screenshot shows the 'Mortgage Application Desktop' interface. In the center, there is a list titled 'Target > Incoming Mortgage Application Documents' containing four items:

Name	Size	Modified By	Modified On
Loan Application Form Entry Template	4 KB	P8Admin	6/20/2018
Payment Slip Entry Template	4 KB	P8Admin	6/20/2018
Test Document	19 KB	P8Admin	6/19/2018
Test Loan Application Form	19 KB	P8Admin	6/19/2018

To the left, a context menu is open for the 'Incoming Mortgage Applications' folder. The menu includes options like Open, Refresh, Properties (which is highlighted), Add to Favorites, Export, Delete, New Folder, Add Document, Link, Send Email, Folders, and Workflow.

- c. Click “Associate Entry Templates” on the view “Properties”, and then add both “Loan Application Form Entry Template” and “Payment Slip Entry Template”, and click “Save”.

Name	Description	Class Name	Template Type	Workflow Name	File Types
Loan Application Form Entry Template	Loan Application Form	document			Any type of file
Payment Slip Entry Template	Payslip	document			Any type of file

Name	Description	Class Name	Template Type
There are no entry templates			

Now you have completed to create two Entry Templates, which will be used to upload Mortgage Application documents.

7.3 Alternative Document Upload – Verification Instructions

To verify the successful completion of this exercise, you will upload two documents using the Loan Application Form Entry Template, and another two documents using the Payment Slip Entry Template.

- 1) Open the folder “Incoming Mortgage Application Documents” by clicking “Target > Incoming Mortgage Applications” in the left panel, and then click “Add Document”.

The screenshot shows the 'Mortgage Application Desktop' interface. On the left, there's a navigation tree with 'Target' expanded, showing 'Incoming Mortgage'. On the right, a list of files in the 'Incoming Mortgage Application Documents' folder is displayed. The files are:

Name	Size	Modified By	Mod
John Does Payslip	19 KB	P8Admin	7/2/1
Loan Application Form Entry Template	4 KB	P8Admin	7/2/1
Payment Slip Entry Template	4 KB	P8Admin	7/2/1
Test Document	19 KB	P8Admin	7/2/1
Test Loan Application Form	19 KB	P8Admin	7/2/1

- 2) Select “Loan Application Form Entry Template” as Entry template, choose a document from the local OS, set the following fields, and click “Add”.

- Document Title: Loan Application Form 001
- Customer Name: Customer001
- Date of Birth: 07/10/1918, 12:00 AM
- Loan Amount: 1000000
- Property Address: Park Street 001
- Purchasing Price: 2000000

General

- * Entry template: Loan Application Form Entry Template
- * Save in: Incoming Mortgage Application Docu...
- What do you want to save? Local document
- * File name: Browse... No files selected.
- Major version

Properties

* Class: Loan Application Form	
Document Title	Loan Application Form 001
Customer Name	Customer001
Date of Birth	7/10/1918 12:00 AM
Loan Amount	1,000,000
Property Address	Park Street 001
Purchasing Price	2,000,000

Add Document

The values that you enter for the document properties can be used to find the document later.

Add Cancel

- 3) Repeat steps 1~2 to upload another document using the “Loan Application Form” Entry Template. Use the following values:
 - Document Title: Loan Application Form 002
 - Customer Name: Customer002
 - Date of Birth: 07/11/1918, 12:00 AM
 - Loan Amount: 1000000
 - Property Address: Park Street 002
 - Purchasing Price: 2000000
- 4) Click “Add Document”, select “Payment Slip Entry Template” as Entry Template, select a document from the local OS, set the following fields, and click Add.
 - Document Title: Payment Slip 001
 - Customer Name: Customer001
 - Payment Date: current date
 - Net Income: 10000

The screenshot shows the 'Add Document' dialog box with two tabs: 'General' and 'Properties'.
General Tab:
 - Entry template: Payment Slip Entry Template
 - Save in: Incoming Mortgage Application Docu...
 - What do you want to save?: Local document
 - File name: AppSrv01.PNG
 - Major version: checked
Properties Tab:
 - Class: Payslip
 - Document Title: Payment Slip 001
 - Customer Name: Customer001
 - Payment Date: 6/20/2018, 12:00 AM
 - Net Income: 10,000

- 5) Repeat step 4 to upload another document using the “Payment Slip Entry Template”. Use the following values:
 - Document Title: Payment Slip 002
 - Customer Name: Customer002
 - Payment Date: current date
 - Net Income: 10000
- 6) Verify that you can see all new documents under the folder “Incoming Mortgage Application Documents”.

The screenshot shows the 'Mortgage Application Desktop' interface with the following details:
 - Top navigation bar: Mortgage Application Desktop, P8Admin, and a help icon.
 - Left sidebar: 'Target' section with 'Incoming Mortgage...' selected and 'Saved Searches' option.
 - Main area: 'Actions' bar with Refresh, Add Document, New Folder, and Actions dropdown. Below it is a table listing documents in the 'Incoming Mortgage Application Documents' folder:

Name	Size	Modified By	Mod
Loan Application Form 001	19 KB	P8Admin	6/20/2018
Loan Application Form 002	19 KB	P8Admin	6/20/2018
Loan Application Form Entry Template	4 KB	P8Admin	6/20/2018
Payment Slip 001	19 KB	P8Admin	6/20/2018
Payment Slip 002	19 KB	P8Admin	6/20/2018
Payment Slip Entry Template	4 KB	P8Admin	6/20/2018
Test Document	19 KB	P8Admin	6/15/2018
Test Loan Application Form	19 KB	P8Admin	6/15/2018

 - Right sidebar: 'Properties' and 'System Properties' sections.

7.4 Alternative Document Upload – Summary

In this exercise you have:

- 1) Created a desktop named Mortgage Application Desktop.
- 2) Created an Entry Template for the "Loan Application Form" document class.
- 3) Created an Entry Template for the "Payment Slip" document class.
- 4) Associated the two Entry Templates for usage with the "Incoming Mortgage Applications" folder.
- 5) Uploaded two documents using the "Loan Application Form Entry Template" and two documents using the "Payment Slip Entry Template".

8 Exercise: Configure ICN Search

The Search templates configured in this exercise are not needed in the end-to-end szenario. Because of this, it is not needed to complete the exercise, if the target is to complete the end-to-end szenario.

Duration approx.: 15 minutes

8.1 Configure ICN Search – Introduction

The Content Platform Engine Administrative Console (ACCE) is not meant to be used directly by end-users, although it can be accessed by them. As a means for finding and displaying Mortgage Application attachments, you can set up and save respective searches in IBM Content Navigator (ICN).

For some background on ICN searches, please refer to the documentation

https://www.ibm.com/support/knowledgecenter/SSEUEX_3.0.3/com.ibm.usingeuc.doc/euche037.htm.

In this exercise, you will create three ICN searches to search your example Mortgage Application documents created in Exercise 7.

You will:

- Log-on to IBM Content Navigator Administration Desktop, and visit the Search setting for the repository “Target”,
- create and run a search for Mortgage Application documents, with parameters for (the beginning of) the Document Title, Customer Name and the Creation Date (from - to),
- create and run a search for Mortgage Application documents which are filed in the folder "Incoming Mortgage Application Documents",
- create and run a search for Mortgage Application documents based on words contained in the document title.

In this exercise you will access the following tools / resources

Tool	Location / URL
IBM Content Navigator Administration Desktop	http://vm-1.example.com:9081/navigator/?desktop=admin
Mortgage Application Desktop created in Exercise 7	http://vm-1.example.com:9081/navigator/?desktop=MA

8.2 Configure ICN Search – Step by Step Instructions

To get started with this exercise, execute the following steps:

- 1) Log in to IBM Content Navigator Administration Desktop (<http://vm-1.example.com:9081/navigator/?desktop=admin>). When prompted for user ID and password, use **P8Admin / Think4me**.
- 2) Open the Repository “Target” tab by clicking “Repositories” in the left panel and then double-clicking “Target” in the listed Repositories.
- 3) In the repository “Target” tab, click “Connect”. When prompted for user ID and password, use **P8Admin / Think4me**. Next click the sub-tab “Search”, you will see many Search options which can be customized. For example, you might modify the maximum search time, or narrow down the maximum number of search results.

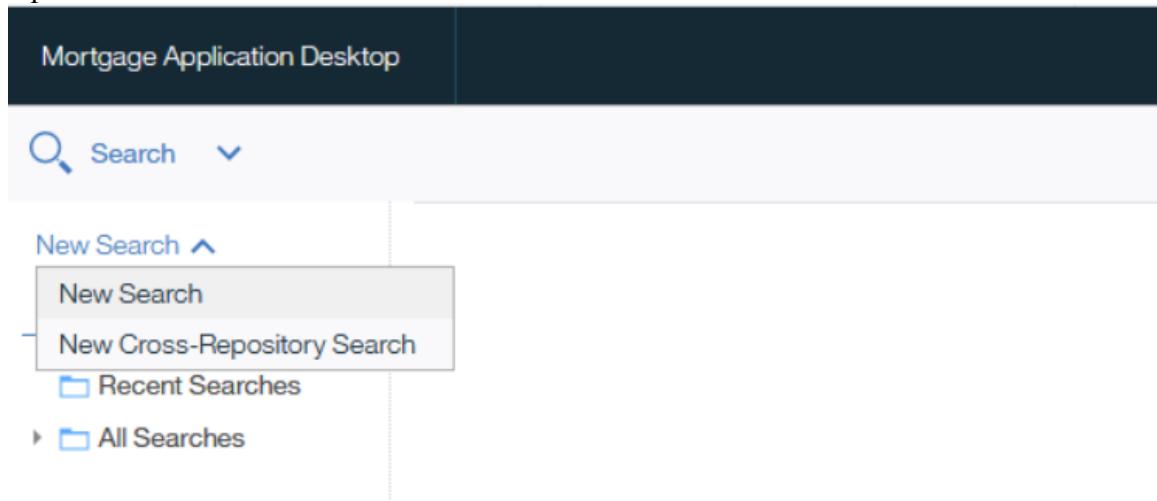
The screenshot shows the IBM Content Navigator Administration Desktop interface. The top navigation bar includes the title 'IBM Content Navigator' and a user profile for 'P8Admin'. The left sidebar lists various administration categories: Desktops, Repositories, Sync Services, FileNet Content Manager, Content Manager OnDemand, Daeja ViewONE, Viewer Maps, Plug-ins, Menus, Labels, Themes, Icon Mapping, Settings, Role-based Redactions, and Role-based Desktop Administration. The main content area is titled 'FileNet Content Manager repository: Target'. It features tabs for General, Configuration Parameters, System Properties, Browse, and Search (which is currently selected). Under the Search tab, there are several configuration options:

- Cross-repository searches: A radio button for 'Disable' is selected.
- Number of results: A radio button for 'No limit' is selected.
- Timeout (in seconds): A radio button for 'Limit to 60' is selected.
- Match: A radio button for 'Match all of the search criteria' is selected.
- Allow search on: Checkboxes for 'Documents' and 'Folders' are checked.
- Default search type: Radio buttons for 'Documents' and 'Folders' are available.
- Default search version: Radio buttons for 'Released version', 'Current version', and 'All versions' are available.

A note at the bottom states: 'Ensure that users have access to a desktop that supports their role. For example, ensure that search creators have access to a desktop that allows them to create searches and cross-repository searches.'

- 4) Log in to the Mortgage Application Desktop created in Exercise 7 (<http://vm-1.example.com:9081/navigator/?desktop=MA>). When prompted for user ID and password, use **P8Admin / Think4me**.

- 5) Open the “Search” view and click “New Search > New Search”.



- 6) Create “Search001”: a search for Mortgage Application documents, with parameters for (the beginning of) the Document Title, Customer Name and the Creation Date (from - to).

a) Set the search criteria as below

- Class: Mortgage Application Attachment
- Document Title: Starts With “Loan”
- Customer Name: Equals “Customer001”
- Added On: Between “7/10/2018” and “7/13/2018”

Search Criteria

Search in: \Target (Including subfolders) Search options: Documents, Released version

Class: Mortgage Application Attachment (Incl ...)

Document Title: Starts With Loan

Customer Name: Equals Customer001

Added On: Between 6/19/2018 and 6/21/2018

Add Property Show All Properties Property options: Match all

Search Reset Save Save As... Cancel Results Display Keep search criteria open

- b) Click “Search” to see the documents matching the search criteria.

The screenshot shows a search interface titled "New Search". The "Search Criteria" section is empty. The "Search Results" section displays one item:

Name	Size	Modified By	Modified On	Major Version
Loan Application Form 001	19 KB	P8Admin	6/20/2018, 6:57 AM	1

- c) Click “Search Criteria”, click “Save”, enter “Search001” as Name, and then click “OK”.

Save Search

The "Save Search" dialog box contains the following fields:

- * Name:** Search001
- Description:** (empty)
- Save in:** Target
- Run the search when opened:**
- Show the search in the folder structure:** (with an info icon)
- Share search with:** Only me
- Buttons:** OK, Cancel

- 7) Create “Search002”: a search for Mortgage Application documents which are filed in the folder "Incoming Mortgage Application Documents".

a) Set the search criteria as below

- Search In: \Target\Incoming Mortgage Application Documents
- Class: Mortgage Application Attachment

The screenshot shows the 'Mortgage Application Desktop' interface with a 'New Search' dialog open. The search criteria are set to 'Search in: \Target\Incoming Mortgage Application...' and 'Class: Mortgage Application Attachment (Incl...)'. The 'Document Title' dropdown is set to 'Starts With'. At the bottom, there are buttons for 'Search', 'Reset', 'Save', 'Save As...', 'Cancel', and 'Results Display'. A checkbox for 'Keep search criteria open' is also present.

b) Click “Search” to see the returned documents

The screenshot shows the 'Search Results' interface with a table displaying the following documents:

Name	Size	Modified By	Modified On	Major Version
John Does Payslip	19 KB	P8Admin	7/2/2018, 9:25 AM	1
Loan Application Form 001	19 KB	P8Admin	7/2/2018, 10:17 AM	1
Loan Application Form 002	19 KB	P8Admin	7/2/2018, 10:18 AM	1
Payment Slip 001	19 KB	P8Admin	7/2/2018, 10:19 AM	1
Payment Slip 002	19 KB	P8Admin	7/2/2018, 10:20 AM	1
Test Loan Application Form	19 KB	P8Admin	7/2/2018, 9:17 AM	1

c) Click “Search Criteria”, and then click “Save”, and enter “Search002” as Name, and then click “OK”.

- 8) Create “Search003”: a search for Mortgage Application documents based on words contained in the document title.

- a) Set the search criteria as below
- Class: Mortgage Application Attachment
 - Document Title: Like “001”

The screenshot shows the 'Mortgage Application Desktop' search interface. On the left, there's a sidebar with 'Recent Searches' (Search002, Search001) and 'All Searches' (Search001, Search002). The main area is titled 'New Search' and contains 'Search Criteria'. It includes fields for 'Search in' (set to '\Target (Including subfolders)'), 'Class' (set to 'Mortgage Application Attachment (Incl...)'), and 'Document Title' (set to 'Like 001'). Below these are buttons for 'Add Property', 'Show All Properties', and 'Property options: Match all'.

- b) Click “Search” to see the documents matching the search criteria.

The screenshot shows the search results page. At the top, there are buttons for 'Refresh', 'Add Document', and 'Actions'. Below that, it says 'Showing results for: New Search'. A table lists the results:

Name	Size	Modified By	Modified On	Major Version
Loan Application Form 001	19 KB	P8Admin	6/20/2018, 6:57 AM	1
Payment Slip 001	19 KB	P8Admin	6/20/2018, 7:17 AM	1

At the bottom, it says 'Total: 2'.

- c) Click “Search Criteria”, click “Save”, enter “Search003” as Name, and then click “OK”.

You have now completed to create and run three ICN Searches based on different search criteria.

8.3 Configure ICN Search – Verification Instructions

Nothing to be done.

8.4 Configure ICN Search – Summary

In this exercise you have:

- 1) Looked at the available Search setting for the repository “Target”,
- 2) created and run a search for Mortgage Application documents, with parameters for (the beginning of) the Document Title, Customer Name and the Creation Date (from - to),
- 3) created and run a search for Mortgage Application documents which are filed in the folder "Incoming Mortgage Application Documents",
- 4) created and run a search for Mortgage Application documents based on words contained in the document title.

9 Exercise Troubleshooting a Search

Please note that this exercise is also not required to complete the other sub-scenarios, it is optional.

Duration is approx. 30 minutes.

9.1 Troubleshooting a Search – Introduction

The runtime side of a search against the Content Platform Engine is determined by many factors, and sometimes, for understanding and increasing performance, additional insight is required. In this exercise you will enable tracing on the Content Platform Engine level, determine the runtime characteristics of a search, including the time consumed by the database, and the database SQL query which is generated for the search.

More details for reviewing, rewriting and accelerating queries for Content Platform Engine can be found in the documentation in the section “Tuning IBM FileNet P8 queries”

https://www.ibm.com/support/knowledgecenter/SSNW2F_5.5.0/com.ibm.p8.performance.doc/p8ppt263.htm, or in the technical document “Indexing for IBM FileNet P8 Content Engine Searches” <http://www-01.ibm.com/support/docview.wss?uid=swg21502886>.

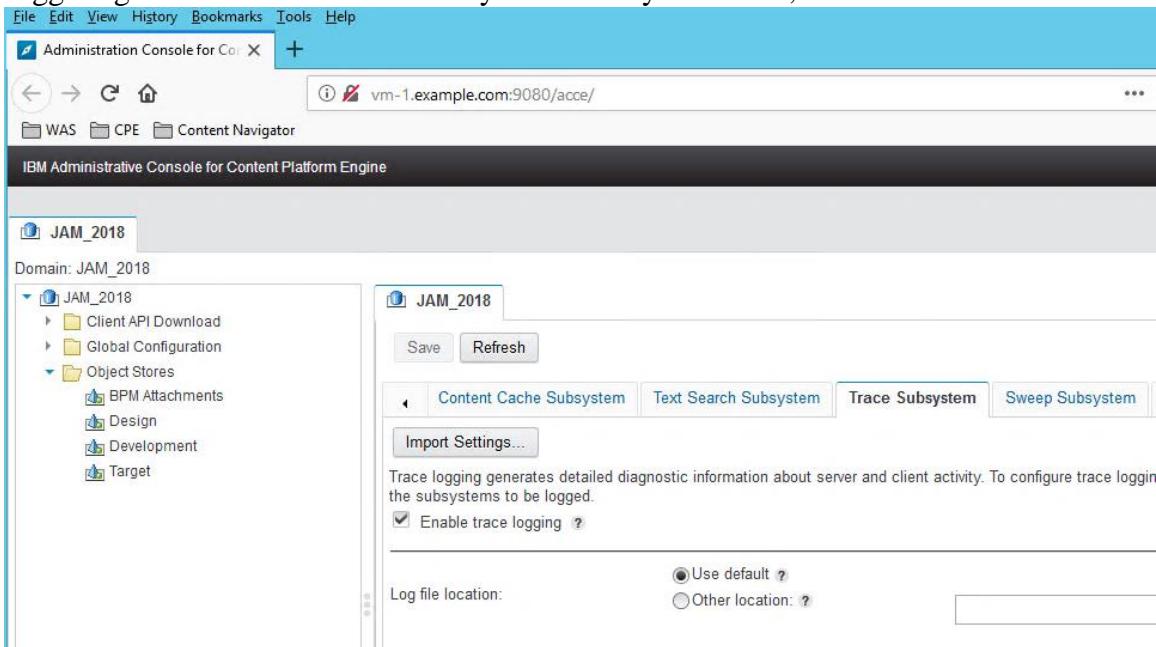
9.2 Troubleshooting a Search – Step by Step Instructions

In this exercise you will access the following tools / resources

Tool	Location / URL
Content Platform Engine Administrative Console (ACCE)	http://vm-1.example.com:9080/acce
Mortgage Application Desktop created in Exercise 7	http://vm-1.example.com:9081/navigator/?desktop=MA

To complete this exercise, execute the following steps:

- 1) Log in to Content Platform Engine Administrative Console (<http://vm-1.example.com:9080/acce>). When prompted for user ID and password, use **P8Admin / Think4me**.
- 2) In the “JAM_2018” Domain properties, navigate to the “Trace subsystem” tab. If the content of the tab does not get displayed, click once in the empty area for triggering a refresh. If the Trace subsystem is not yet enabled, enable it.



- 3) Enable the following trace subsystems: Database (All Details), Error (All details), Search (All Details), Security (All Details).

The screenshot shows two identical configurations of the Trace Subsystem for the JAM_2018 environment. Both configurations include a 'Log file location' section with 'Use default' selected and an empty text field. Below this is a 'Subsystems' section with a table of trace flags.

Log file location:

- Use default
- Other location:

Subsystems

Name	<input type="checkbox"/> Detail ?	<input type="checkbox"/> Moderate ?	<input type="checkbox"/> Summary ?	<input type="checkbox"/> Timer ?
Database Trace Flags	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Directory Trace Flags	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
EJB Trace Flags	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Engine Trace Flags	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Error Trace Flags	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Events Trace Flags	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The second configuration is identical to the first, showing the same settings and trace flag table.

- 4) Click “Save”, leave ACCE window open.
- 5) Log in to Mortgage Application Desktop created in Exercise 7 (<http://vm-1.example.com:9081/navigator/?desktop=MA>). When prompted for user ID and password, use **P8Admin / Think4me**.
- 6) Choose the “Search” feature on the left side drop-down menu and create a new search. In the properties, select to search documents of class “Mortgage Application Attachment”, and those documents where the Customer name property starts with “Customer”. Please note some matching documents were

added during Exercise 7.

The screenshot shows the Administration Console for Content Navigator. The title bar has tabs for 'Administration Console for Content' and 'Mortgage Application Desktop'. The address bar shows the URL 'vm-1.example.com:9081/navigator/?desktop=MA'. The left sidebar includes links for 'WAS', 'CPE', and 'Content Navigator'. The main area is titled 'Mortgage Application Desktop'. A search bar at the top says 'Search' with a dropdown arrow. Below it is a 'New Search' section with a dropdown menu for 'Search name contains' and options for 'Recent Searches' (including 'Search001') and 'All Searches'. To the right is a 'New Search' panel with 'Search Criteria' fields: 'Search in: \Target (Including subfolders)' and 'Class: Mortgage Application Attachment (Incl...)'. Below these are dropdowns for 'Customer Name' (set to 'Starts With') and 'Customer'. At the bottom of the search panel are buttons for 'Add Property', 'Show All Properties', and 'Property options: Match all'.

- 7) Run the search by clicking “Search”.
- 8) Using Windows Explorer, navigate to the FileNet Content Platform Engine Log directory “C:\Program Files (x86)\ibm\WebSphere\AppServer\profiles\AppSrv01\FileNet\server1”.

The screenshot shows a Windows Explorer window with the path 'C:\Program Files (x86)\ibm\WebSphere\AppServer\profiles\AppSrv01\FileNet\server1'. The left pane shows 'Favorites' (Desktop, Downloads, Recent places) and 'This PC' (Desktop, Documents, Downloads, Music, Pictures, Videos). The right pane displays a list of files and folders:

Name	Date modified	Type	Size
content	6/18/2018 6:14 PM	File folder	
content-ctrs	6/25/2018 1:25 PM	File folder	
content-ids	6/25/2018 1:18 PM	File folder	
ConvTemp	6/18/2018 5:30 PM	File folder	
CSSTemp	6/18/2018 5:30 PM	File folder	
GCD	6/25/2018 3:32 PM	File folder	
INSO	6/18/2018 5:30 PM	File folder	
pedata	6/18/2018 5:30 PM	File folder	
p8_server_error.log	6/25/2018 1:25 PM	Text Document	1,674 KB
p8_server_trace.log	6/25/2018 1:26 PM	Text Document	1,664 KB
perlog_config.properties	6/18/2018 5:30 PM	PROPERTIES File	2 KB
pesvr_system.log	6/25/2018 1:26 PM	Text Document	116 KB
pesvr_trace.log	6/18/2018 5:30 PM	Text Document	0 KB

- 9) Right-click on “p8_server_trace.log and select “Edit with Notepad++”.
- 10) Try to find the search, which was run in step 7 above, for example by searching for the Symbolic Name of the document class: MortgageApplicationAttachment. This should bring you to a line like the following:

```

12479 2018-06-25T15:43:28.781 49C731AD SEC FNRC0000D - DEBUG SecurityContext : principalVal=P8Admin name=P8Admin
isAnon=true isRealmCheck=true
12480 2018-06-25T15:43:28.781 49C731AD SRCH FNRC0000D - DEBUG Search for: "SELECT t.[DocumentTitle], t.[ContentSize],
t.[LastModifier], t.[DateLastModified], t.[MajorVersionNumber], t.[ClassDescription], t.[IsCurrentVersion],
t.[IsReserved], t.[Reservation], t.[MimeType], t.[VersionStatus], t.[MinorVersionNumber], t.[VersionSeries], t.[Id],
t.[ReplicationGroup], t.[Creator], t.[ReservationType], t.[IsVersioningEnabled], t.[Owner],
t.[EntryTemplateObjectStoreName], t.[EntryTemplateId], t.[EntryTemplateLaunchedWorkflowNumber], t.[CompoundDocumentState]
FROM [MortgageApplicationAttachment] t WHERE t.[MA_CustomerName] LIKE 'Customer%' AND t.VersionStatus = 1 ORDER BY
t.[DocumentTitle] OPTIONS (TIMELIMIT 60, COUNT LIMIT 2147483647)" continue from: 'null'
12481 2018-06-25T15:43:28.781 49C731AD SEC FNRC0000D - DEBUG Read SD with zero count of protected-from ids
12482 2018-06-25T15:43:28.781 49C731AD SEC FNRC0000D - DEBUG _getSecurityToken domain=JAM_2018
SID=S-1-97-2070447756-4030772337-4284074414-2976703662 found in UAT cache :
SID=S-1-97-2070447756-4030772337-4284074414-2976703662
12483 2018-06-25T15:43:28.781 49C731AD SRCH FNRC0000D - DEBUG Effective result count limit = 2000
12484 2018-06-25T15:43:28.781 49C731AD DE FNRC0000D - DEBUG Executing SQL (0DF616F): "SELECT epoch_id, u1708_documenttitle,
content_size, modify_user, modify_date, major_version_number, object_class_id, is_current, is_reserved, mime_type,
version_status, minor_version_number, version_series_id, object_id, replication_group_id, creator, reservation_type,
versioning_enabled, security_id, usce8_entrytemplatelinkedobjectstore, u9855_entrytemplatelaunchedwork,
compound_document_state, security_folder_id, recovery_item_id FROM DBADMIN.DocVersion TO WHERE ((TO.object_class_id IN
(?, ?, ?)) AND TO.home_id IS NULL AND ( (u91b8_ma_customername LIKE ? AND version_status = ?))) ORDER BY
u1708_documenttitle ASC, object_id ASC FETCH FIRST 400 ROWS ONLY OPTIMIZE FOR 400 ROWS" In-bindings:
((1040DF63-0000-C611-AA8D-11DE1F4C453),(9040DF63-0000-C611-A954-7E9034A5FC2E),(2041DF63-0000-CE18-9121-FC3B6C89017C),'Custo
mer%',)
12485 2018-06-25T15:43:28.781 49C731AD DE FNRC0000D - DEBUG Executed SQL (0DF616F) in 4.675 milliseconds
12486 2018-06-25T15:43:28.781 49C731AD SEC FNRC0000D - DEBUG Read SD with zero count of protected-from ids
12487 2018-06-25T15:43:28.781 49C731AD SEC FNRC0000D - DEBUG <securitytracedetail>\n<securityrefs sdidentity="0xF50549E4"
principalname="P8Admin"/>\n<securedobject id="#(BOA63664-0000-CC15-A4C3-9B41269DAD3E;" classid="#(9040DF63-0000-C611-A954-7E9034A5FC2E)" classname="LoanApplicationForm"
objectstoid="#(C838FDBE-BD2C-4966-BF0F-149387DC51D8)">/>\n<accessallowed value="1343176191">\n<accessmaskdescription>READ WRITE MAJOR VERSION LINK UNLINK MINOR VERSION VIEW_CONTENT CREATE_INSTANCE
CHANGE_STATE PUBLISH RESERVED12 RESERVED13 DELETE READ_ACL WRITE_ACL DELEGATE_ACCESS WRITE_OWNER PRIVILEGED_WRITE
</accessmaskdescription>\n<accessallowed>\n<accessstoken principalname="P8Admin" size="5">\n<principal
name="cn= testers, cn= groups, dc= ibm, dc= com" sid="S-1-97-2524513772-275859935-2572149936-2939768601"/>\n<principal
name="cn= P8Admins, cn= groups, dc= ibm, dc= com" sid="S-1-97-2950640278-3175929776-3062577318-2372208003"/>\n<principal
name="cn= TivoliDirectoryServer" sid="S-1-96-613599021-1189701729-456560046-2433792821"/>\n<principal
name="uid= P8Admin, cn= users, dc= ibm, dc= com" sid="S-1-97-2070447756-4030772337-4284074414-2976703662"/>\n<principal
name="# AUTHENTICATED-USERS" sid="S-1-5-11"/>\n<accessstoken value="998911">\n<accessmaskdescription>READ WRITE MAJOR VERSION LINK UNLINK MINOR VERSION
VIEW_CONTENT CREATE_INSTANCE CHANGE_STATE PUBLISH RESERVED12 RESERVED13 DELETE READ_ACL WRITE_ACL
DELEGATE_ACCESS WRITE_OWNER </accessmaskdescription>\n<effectiveaccess value="998911">\n<accessmaskdescription>READ WRITE MAJOR VERSION LINK UNLINK MINOR VERSION
VIEW_CONTENT CREATE_INSTANCE CHANGE_STATE PUBLISH RESERVED12 RESERVED13 DELETE READ_ACL WRITE_ACL
DELEGATE_ACCESS WRITE_OWNER </accessmaskdescription>\n<effectiveaccess>\n<owner

```

- 11) The green keyword in the line is the thread-ID. With it, next / previous output lines of the same thread can be identified. The line is coming from the Search subsystem (SRCH). By reviewing the line, it can be seen that Content Navigator by default sorts the output by the Document Title, as the following Content Engine Query was generated:

```

SELECT t.[DocumentTitle], t.[ContentSize], t.[LastModifier],
t.[DateLastModified], t.[MajorVersionNumber], t.[ClassDescription],
t.[IsCurrentVersion], t.[IsReserved], t.[Reservation], t.[MimeType],
t.[VersionStatus], t.[MinorVersionNumber], t.[VersionSeries], t.[Id],
t.[ReplicationGroup], t.[Creator], t.[ReservationType], t.[IsVersioningEnabled],
t.[Owner], t.[EntryTemplateObjectStoreName], t.[EntryTemplateId],
t.[EntryTemplateLaunchedWorkflowNumber], t.[CompoundDocumentState]
FROM [MortgageApplicationAttachment] t WHERE t.[MA_CustomerName]
LIKE 'Customer%' AND t.VersionStatus = 1 ORDER BY t.[DocumentTitle]
OPTIONS (TIMELIMIT 60, COUNT LIMIT 2147483647 )

```

- 12) One of the next lines with the same thread-ID is from the Database subsystem (DB). The query translated into SQL can be found in the line: "SELECT epoch_id, u1708_documenttitle, content_size, modify_user, modify_date, major_version_number, object_class_id, is_current, is_reserved, mime_type, version_status, minor_version_number, version_series_id, object_id, replication_group_id, creator, reservation_type, versioning_enabled, security_id,

```

u5ce8_entrytemplateobjectstore, u9855_entrytemplateid,
u5948_entrytemplatelaunchedwor, compound_document_state,
security_folder_id, recovery_item_id FROM DB2ADMIN.DocVersion T0
WHERE ((T0.object_class_id IN (?, ?, ?)) and T0.home_id IS NULL AND (( 
u91b8_ma_customername LIKE ? AND version_status = ?))) ORDER BY
u1708_documenttitle ASC, object_id ASC FETCH FIRST 400 ROWS ONLY
OPTIMIZE FOR 400 ROWS" In-bindings: ({1040DF63-0000-C61E-AA8D-
11DE1F4AC453},{9040DF63-0000-C611-A954-7E9034A5FC2E},{2041DF63-
0000-CE18-9121-FC3B6C89017C},'Customer%',1)

```

One of the next lines for the DB subsystem with the same thread-ID should contain the execution time of the query, e.g.

49C731AD DB FNRCE0000D - DEBUG Executed SQL (0D8F616F) in 4.675 milliseconds

The dot is a decimal dot, not a thousand-separator.

- 13) One of the next lines should be a line from the security subsystem (SEC) with the access token for one of the objects, which were found by running the query. As a user should only see the documents, to which they have access to, FileNet needs to review the security of all found documents. The access token can best be viewed by copying into a document and replacing all “\n” strings with a linefeed. Notepad++ can do that.

The following can be seen in the access token:

- a. Information about the secured object itself
- b. Information about the allowed access to the secured object
- c. The access token itself, i.e. the user for which the token is for, and all groups the user is a member of
- d. The security descriptor, i.e. the security settings of the secured entity
- e. The applied markings, in case security from a Marking Set was applied
- f. Timing information on how long it required to check security.

- 14) Get back to ACCE and open the “Target” Object Store. Navigate to “Data Design > Table Definitions” and click on the “DocVersion” table.

The screenshot shows the 'Indexes' tab for the 'DocVersion' table definition. The table has the following structure:

Index Name	System Owned	Requires Unique Values	Index created with LOWER()	Storage Location
I_DocVersion22	True	True	False	TOSDB_INDX_TS
I_DocVersion73	True	False	False	TOSDB_INDX_TS
UI_u2297_sourcedocument	False	False	False	
UI_uc7b7_ownerdocument	False	False	False	
UI_u69d7_cmacmassociatedcase	False	False	False	TOSDB_INDX_TS

15) Choose the “Indexes” tab and add the following new Index.

Add Index (DB2)

Index name:

Requires unique values:

Add the columns in the order in which the fields are to be indexed.

Add	Remove	Move Up	Move Down	Column Name	Sort Order	Data Type	Size	Allows Null Values
<input type="checkbox"/>				u91b8_ma_customername	Ascending	String	40	True
<input type="checkbox"/>				u1708_documenttitle	Ascending	String	255	True

OK Cancel

- 16) Run the query again and determine the new execution time. Find out, if the new index had a positive or negative effect on the execution time of the query.

9.3 Troubleshooting a Search – Verification Instructions

Nothing explicitly to verify. Before you finish with the exercise, we suggest to deactivate the traces again, as this might have a negative impact on the performance later on.

- 1) Open ACCE
- 2) In the domain properties, choose the Trace Subsystem tab.
- 3) Remove the ticks in the trace subsystems which were enabled. (Click on Summary and Timer to get everything disabled), click “Save”.
- 4) Disable the trace, click “Save” again.

9.4 Troubleshooting a Search – Summary

In this exercise you have:

- 1) Used Content Engine Tracing to review security and query execution behavior and timing.
- 2) Defined an Index to try to accelerate a Content Engine query.