Lab Guide

Hands-on-Lab

FileNet Workshop
powered by Cloud Pak for Business Automation

Lab 1 –

IBM

Table of Contents

Overview of FileNet

<mark>TBD</mark>

Lab – FileNet and the storage system

<mark>TBD</mark>

In this tutorial, you will explore the following key capabilities:

1. Configure advanced storage areas in file systems
2. Add a Cloud Object Store bucket as a storage device
3. How to use FileNet replication feature to provide failover storage
4. Understand how Sweeps work and how to use them to move content
5. Apply retention to a document class objects
6. Use the logical deletion feature to avoid unintentional deletions

How to access the environment

Each student has a user to access the environment, *userX*, where X is the number of the student. The password is the same for every student is *password*.

To access ACCE – FileNet Administration client

https://cpe-dtecp4ba.dteroks-270001y003-evica-4b4a324f027aea19c5cbc0c3275c4656-0000.eu-de.containers.appdomain.cloud/acce

To access Content Navigator

https://navigator-dtecp4ba.dteroks-270001y003-evica-4b4a324f027aea19c5cbc0c3275c4656-0000.eu-de.containers.appdomain.cloud/navigator/?desktop=**userX**

Where **userX** is the number of the user assigned to you to access the environment.

Important: When accessing to any of the previous URLs the students need to accept the certificates.

Exercise 1. Create a Contract document class

Each student must access the FileNet administration client - ACCE by clicking on this URL
https://cpe-dtecp4ba.dteroks-270001y003-evica-4b4a324f027aea19c5cbc0c3275c4656-0000.eu-de.containers.appdomain.cloud/acce

Enter your credentials

Click on Object Stores and click on the Object Store created for your user.

Once the Object Store is open, a new tap appears showing the Object Store.

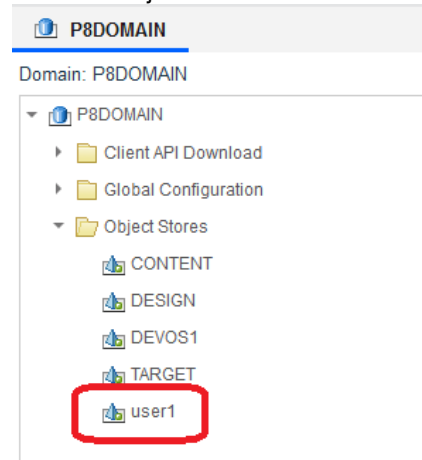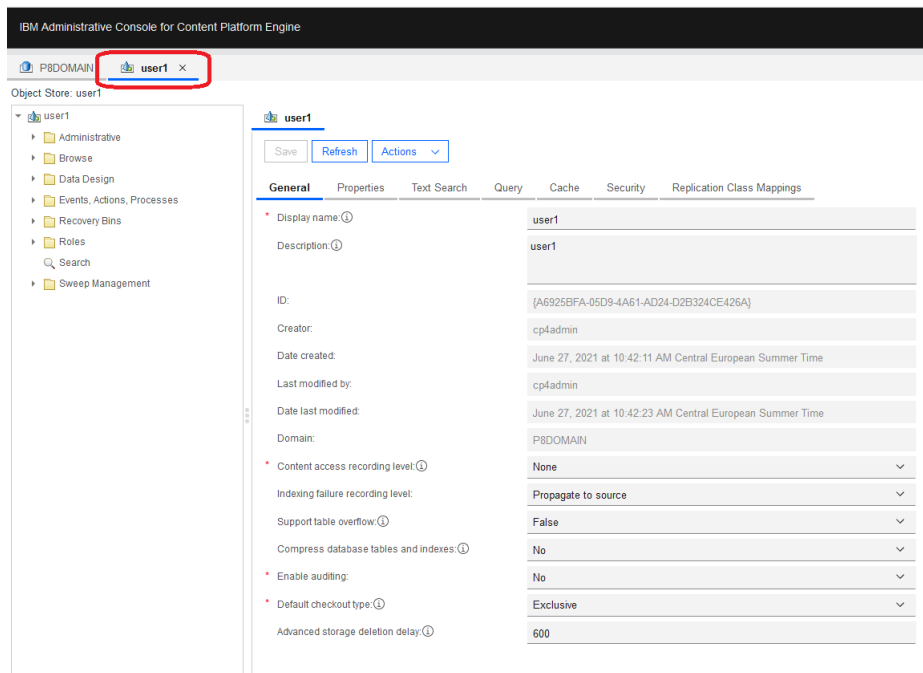Now, we are going to create a document class to store client's contracts of our company, this document class will have three properties: contract number, customer name and NIF of our customer. The first thing to do is to create property templates that our document class will use, these property templates can be reused later in other document classes that we could create.

Display Data Design and right click on Property Templates, select New Property Template.
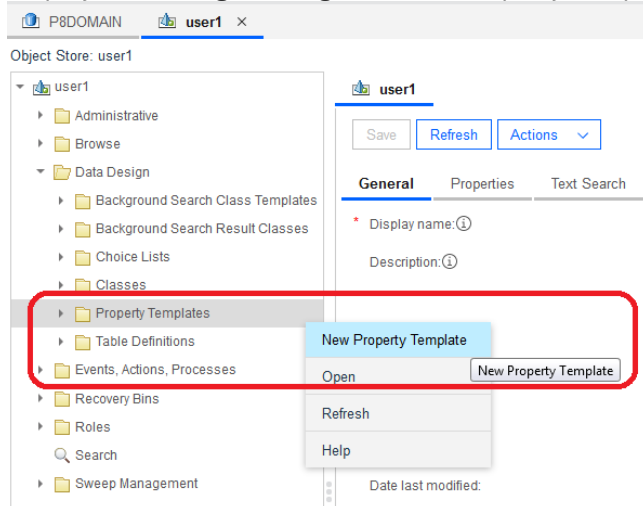
The wizard to create the Property Template appears, fill in the Display Name with the value "Contract Number", the Symbolic Name with the value "ContractNumber", notice that Symbolic Name does not allow white spaces, and finally the Description. Click on Next.

The next step of the wizard will ask us for the Data Type of the Property Template, select Integer and click Next.

Next step will ask for a Choice List, this step is only required for Property Templates of Data Type String that are going to have a predefined list of values, that is what is call in FileNet a Choice List. We are not going to use a Choice List, so we click Next.

In the next step, we can choose if our Property Template is going to be single value or multiple values, in our case we select Single Value, and we are going to define this property as a required property, select the option "Set Other Attributes" and click Next.

In the next step select Value required, notice that among other attributes, you can define a minimum, maximum and default values.

In the next step you could select the access rights required to modify the property definition, we don't need to select anything in this step, click on Next.
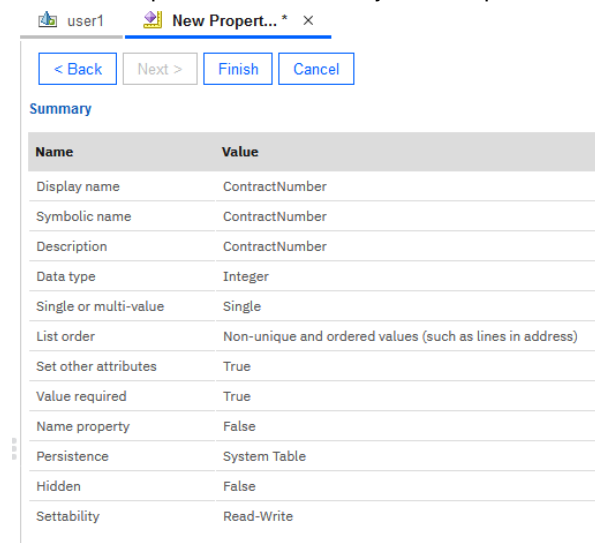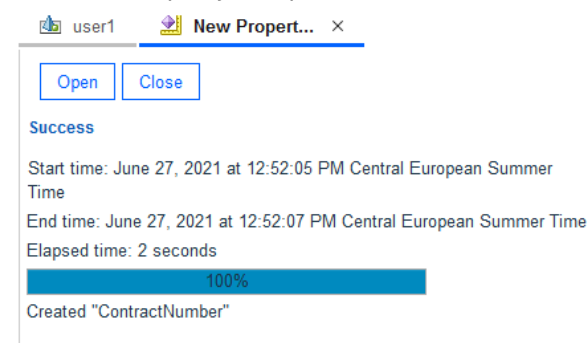
The last step shows a summary of the options selected, click on Finish to create the Property Template.

Once the Property Template is created, click on Close.

Repeat the process to create the next two Property Templates.

- Customer Name → Data Type String
- DNI → Data Type String

Once the three Property Templates are created you can check that those properties exist in the list.

Once the Property Templates are created we can create the Document Class. Under Data Design expand Classes, right click on class Document and click on New Class.
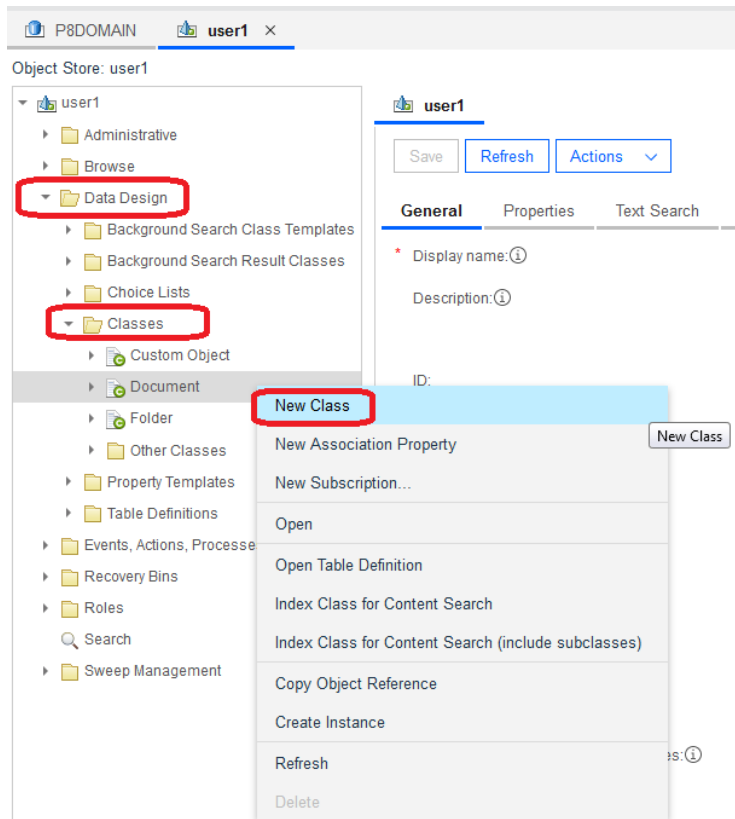
The wizard to create the Document class appears, fill in the Display Name with the value "Contract", also fill in Symbolic Name and Description with the same value.
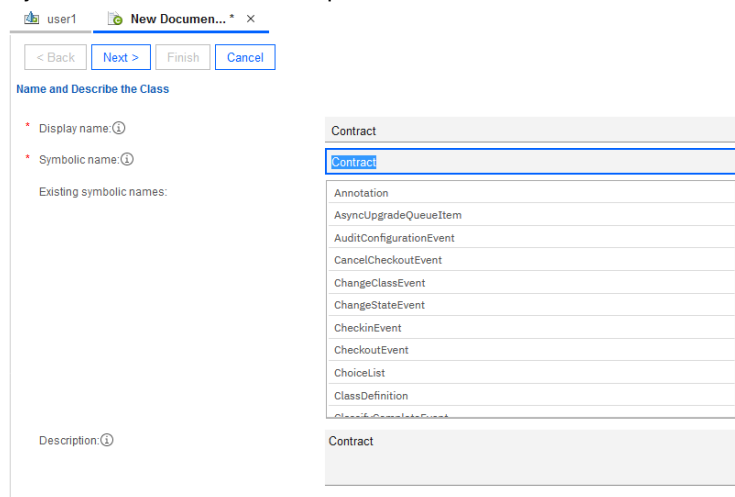
In the next step you could select the Object-Value properties inherited from the parent class, this topic is outside the scope of this workshop, click on Next.

Property	Data Type	Is Inherited	Is System
Class Description	Object		True
This	Object	True	True
Replication Group	Object	True	True
External Replica Identities	Object	True	True
Hold Relationships	Object	True	True
Audited Events	Object	True	True
Permissions	Object	True	True
Active Markings	Object	True	True
Containers	Object	True	True
Annotations	Object	True	True
Security Policy	Object	True	True

A summary of the options selected is displayed, click on Finish to create the class.

Summary

Name	Value
Display name	Contract
Symbolic name	Contract
Description	Contract
Class Properties	

Once created click on Close.

Success

Start time: June 27, 2021 at 1:10:25 PM Central European Summer Time
End time: June 27, 2021 at 1:10:28 PM Central European Summer Time
Elapsed time: 3 seconds

100%
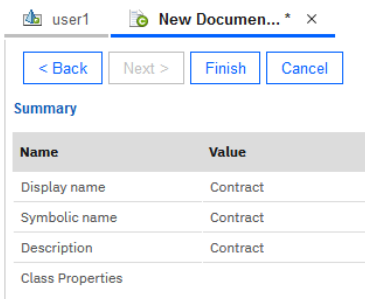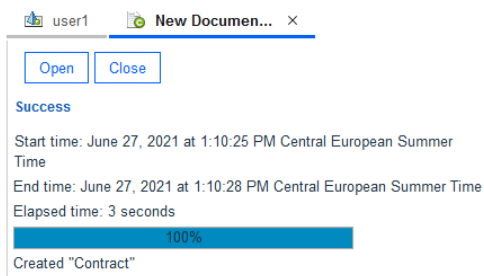
Created "Contract"

After the creation of the Document Class and the Property Templates, the next step is creating an instance of each of the three properties in the Contract class that we have just created.

Expand the class Document and click on the Contract class to open it, a new tap appears showing the properties of the class Contract.
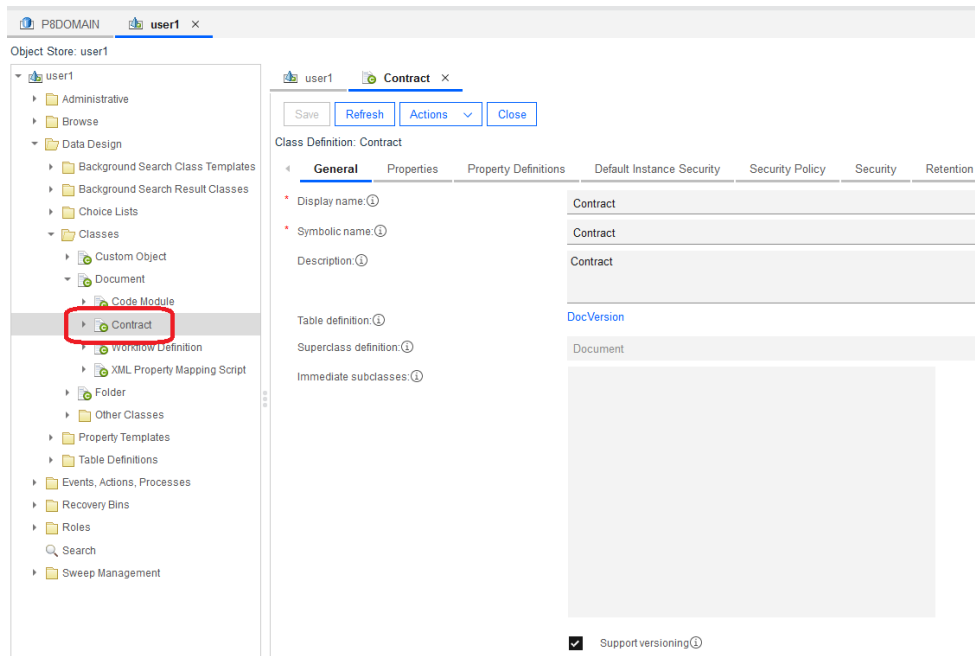
Select the tab Property Definitions and click on Add, select the three properties and click on Ok.
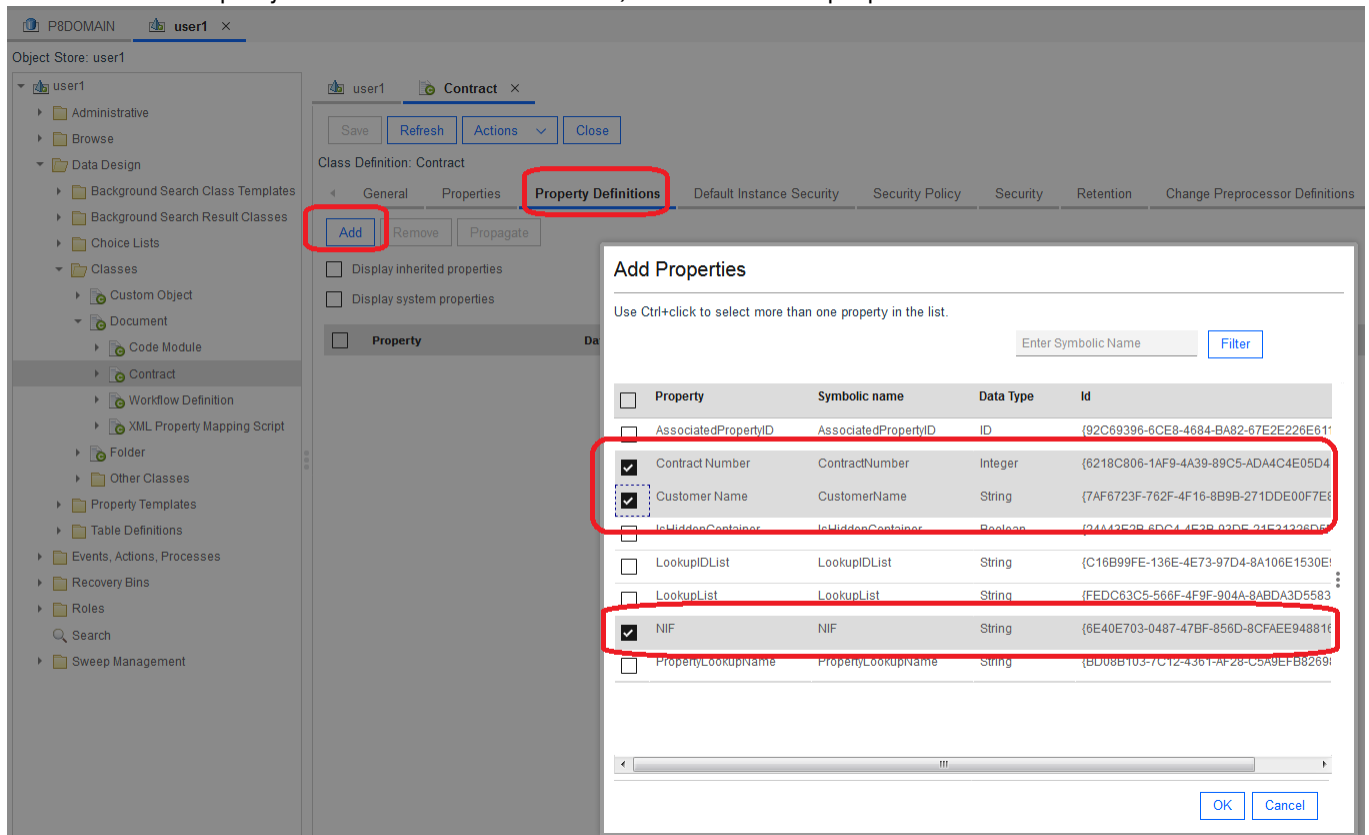
The three properties instances are added to the list of properties of the class, click on Save to save the changes.
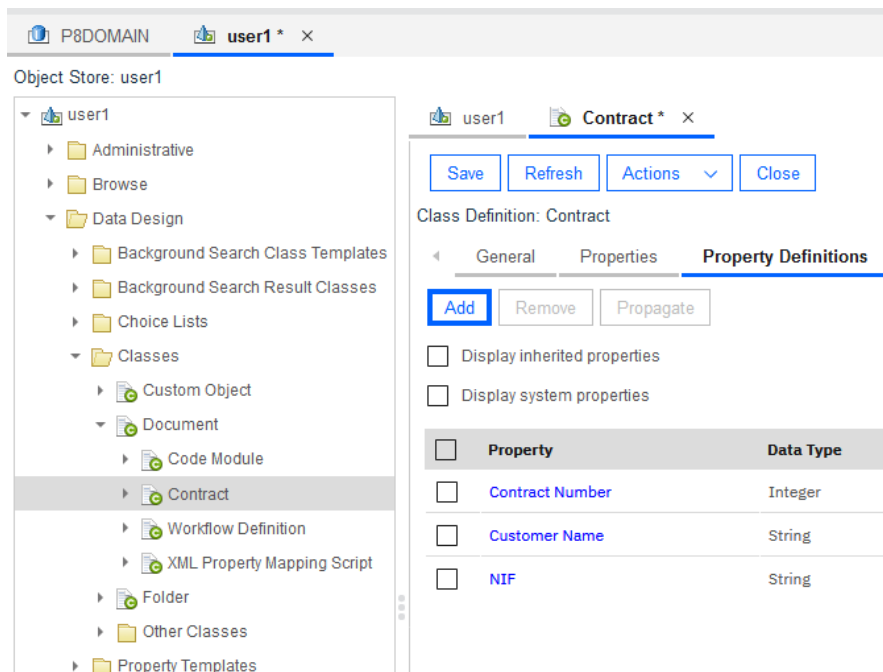
Now the Contract class is ready to store contract documents, but before adding our first contract, we are going to create an index in the database for the property Contract Number of our Contract class. In previous versions of FileNet this step has to be requested to your database administrator, but since FileNet versions 5.2.1, you can create indexes directly from ACCE.

Click on Table Definitions, in the filter field type "docversion", the table DocVersion will be displayed, click on it and a new tab showing that table will appear. The table DocVersion is the master data table for all documents in the Object Store, each Object Store in a FileNet domain has DocVersion table.
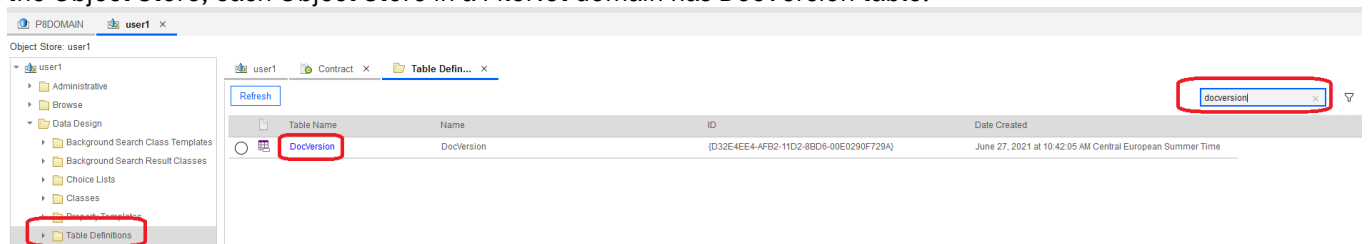
In the DocVersion table select the Indexes tab, notice that by default two indexes already exist in the table DocVersion, those indexes are used by FileNet for searches based on the FileNet's objects internal IDs. Now, click on Add and a new window appears, where we can create our own index for the Contract Number property of our Contract Class, fill in the Index Name field with the value "ContractNumber", without whitespaces, then expand the Column Name list box and look for the Contract Number column, select the column and click on Ok.

Important: the column name, as you can see in the image below, has the following name **u5336_contractnumber** this name is created automatically by FileNet, in your environment the column name could be different because the first part of the name **u5336_** is generated automatically by FileNet and normally will be different in each environment.
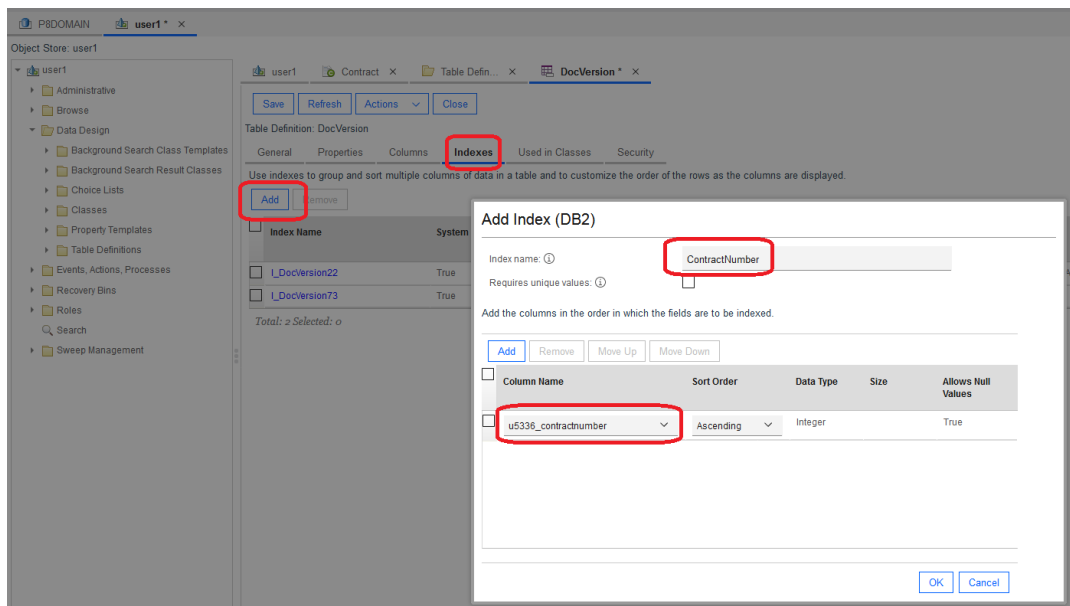
To create the Index by clicking on Save.
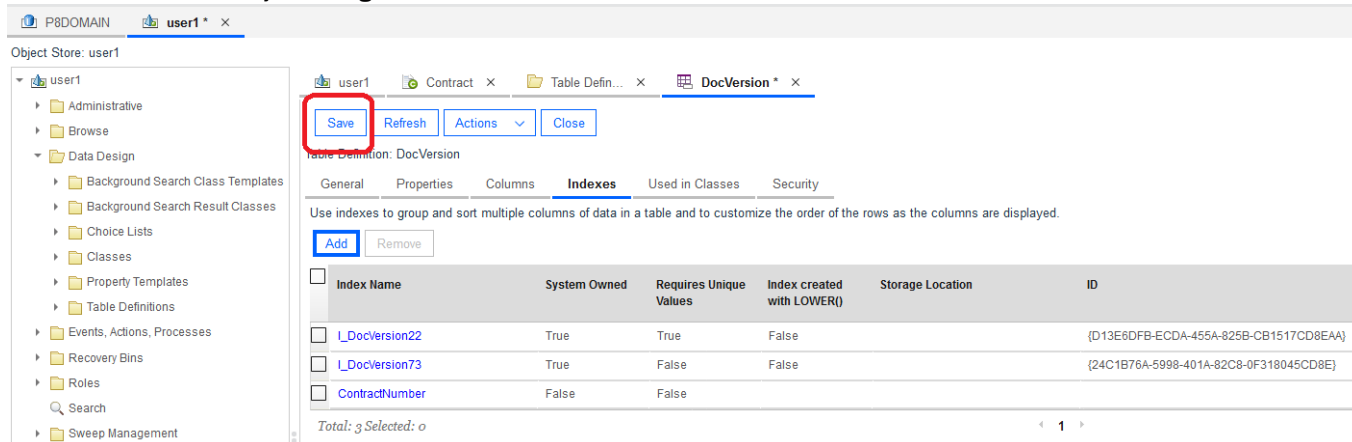
At this moment we are ready to start loading Contract documents in our Contract class. We are going to use Content Navigator to add new contract documents, to do that use the following URL, replace **user1** at the end of the URL for your user.

https://navigator-dtecp4ba.dteroks-270001y003-evica-4b4a324f027aea19c5cbc0c3275c4656-0000.eu-de.containers.appdomain.cloud/navigator/?desktop=**user1**

Once you click on the previous URL the following login web page for the Cloud Pak for Business Automation appears, select Enterprise LDAP and login with your user and password.
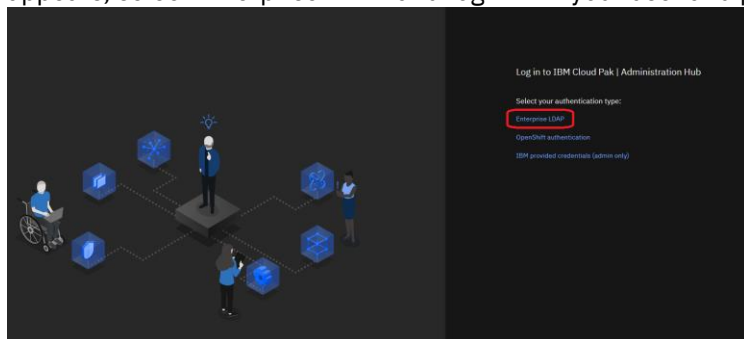
After login, click on Browse Content.
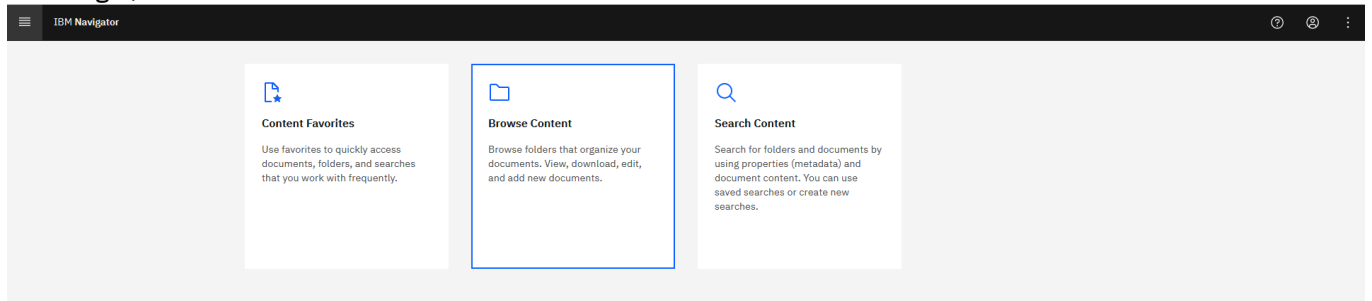
Click on Add Document button.
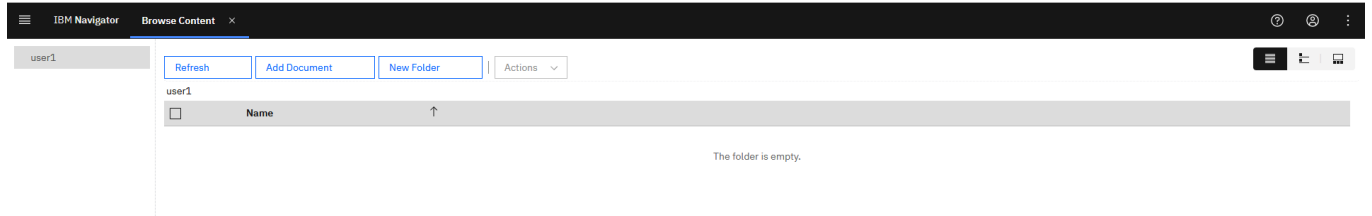
Select the document class Contract.
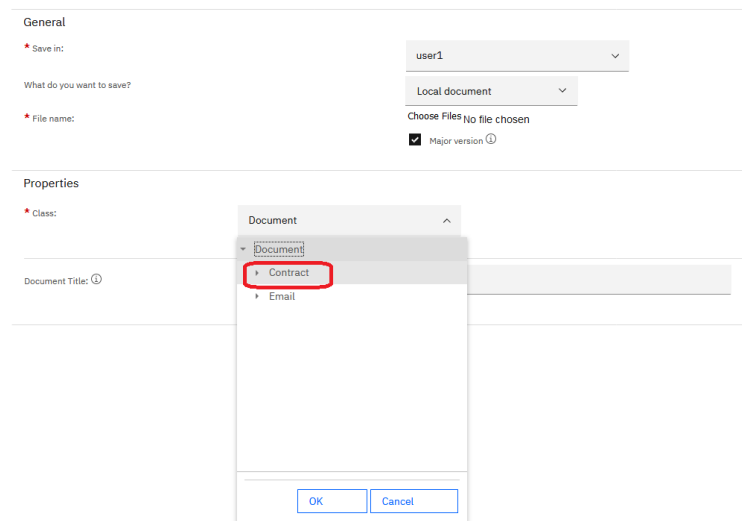
After selecting the Contract class, the attributes are displayed, fill in the values as you see them in the image below, please use the same values, as they will be used later. After filling in the values, click on **Choose Files** to add a document, attach any document from you PC , for instance, a MS Word, PDF, image or TXT.

General

* Save in: user1 ▼

What do you want to save?   Local document ▼

* File name: Choose Files no file chosen
                          ☑ Major version ⓘ

Properties

* Class: Contract ▼

Document Title: ⓘ   Contract1

*Contract Number: ⓘ   1

*Customer Name: ⓘ   John Doe

*NIF: ⓘ   123456789A

In the example below, we have attached an image file of a sample contract. Click Add to finish.

General

* Save in: user1 ▼

What do you want to save?   Local document ▼

* File name: Choose Files contract-agreement-template.jpg
                          ☑ Major version ⓘ

Properties

* Class: Contract ▼

Document Title: ⓘ   Contract1

*Contract Number: ⓘ   1

*Customer Name: ⓘ   John Doe

*NIF: ⓘ   123456789A

Add Document

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

Add

Cancel

After adding the document, we are going to search for the document and display it. Click on IBM Navigator.

☰ IBM Navigator   Browse Content ✕

user1

Refresh   Add Document   New Folder | Actions ▼
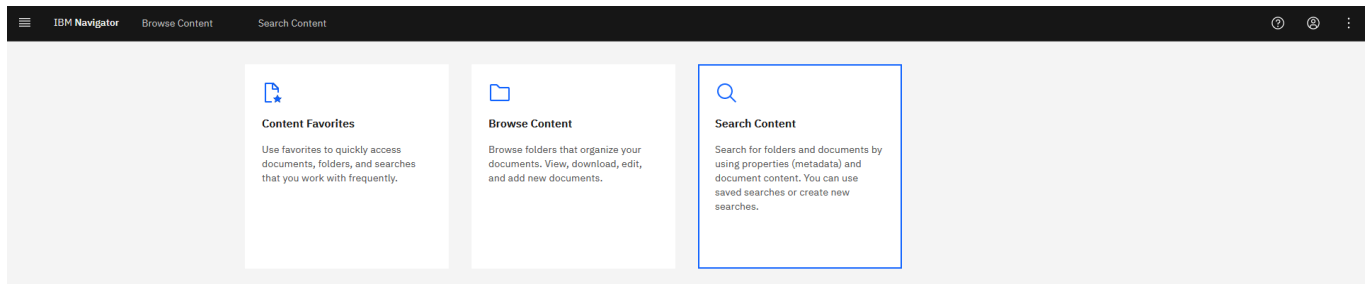
user1

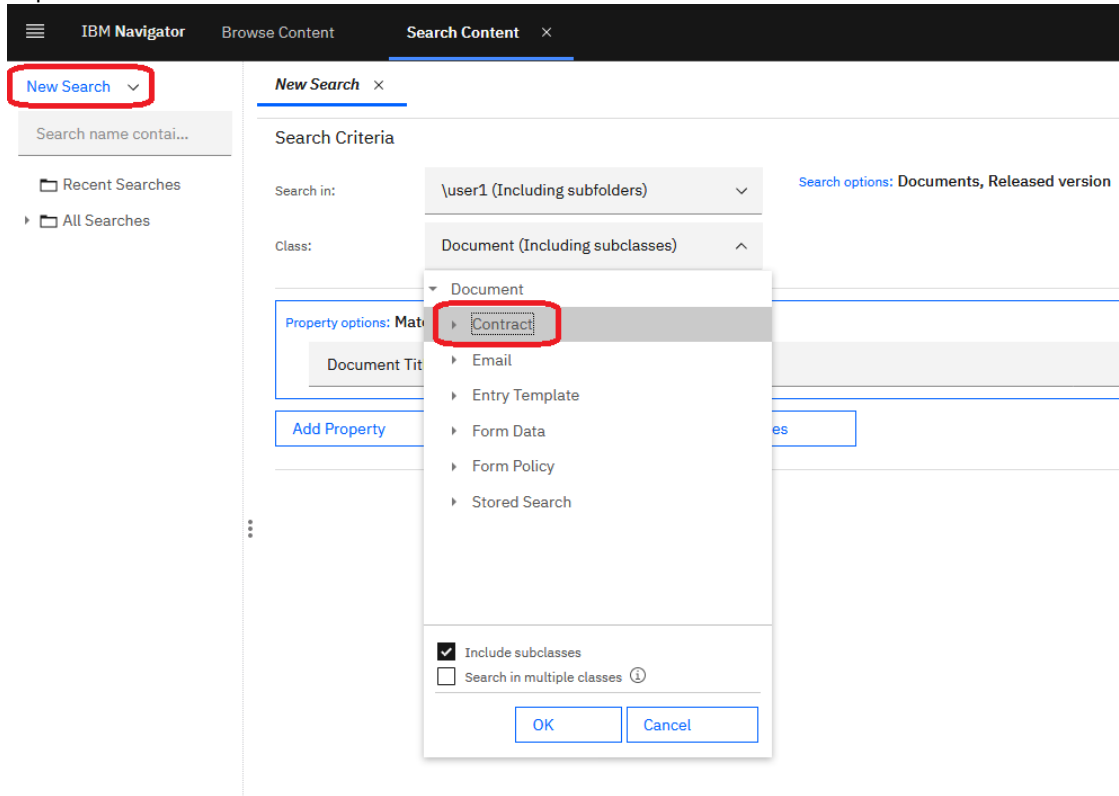☐   Name   ↑

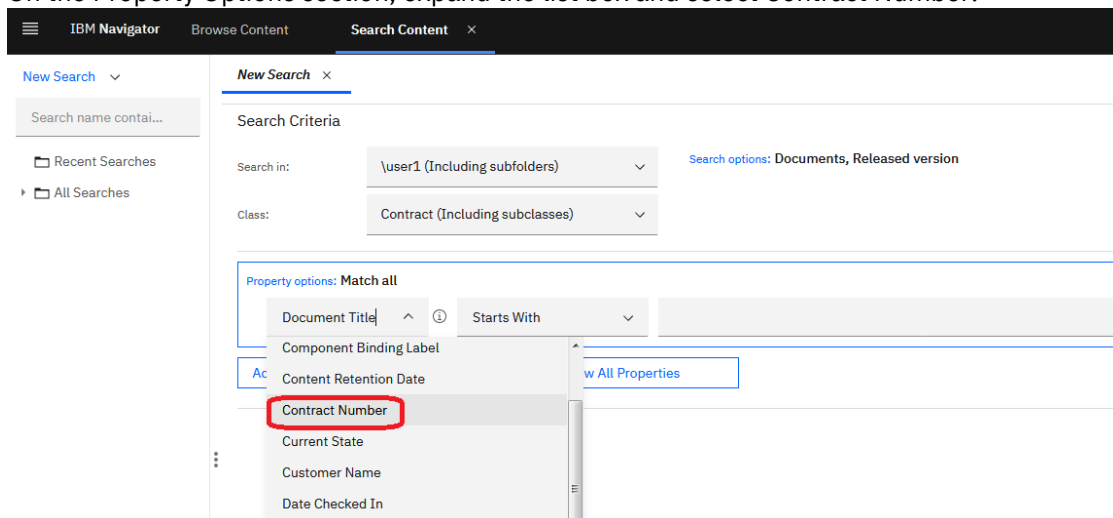You will go back to the previous Menu, now click on Search Content.

A new tab is open, click on New Search, that action will open a tab on the right frame to define the new search, expand the class list box and select the Contract class.

On the Property Options section, expand the list box and select Contract Number.

After selecting Contract Number, make sure Equals is the operator and use as value 1, click on the Search button to start the search.

Once the search is finished, the Search Criteria section will be collapsed and the Search Results section appears showing the results of the search. Clik on the object found and you will see in the right side the attributes of that object.

If you double click on the object, the Content Navigator document viewer opens the documents, as you can see in the image below. In our example, we have used a JPG image file, depending on the type of document you uploaded the viewer can be opened or not, some content like TXT files do not trigger the viewer, when you double click on a object containing a TXT file Content Navigator just open a web tab showing directly the TXT file.
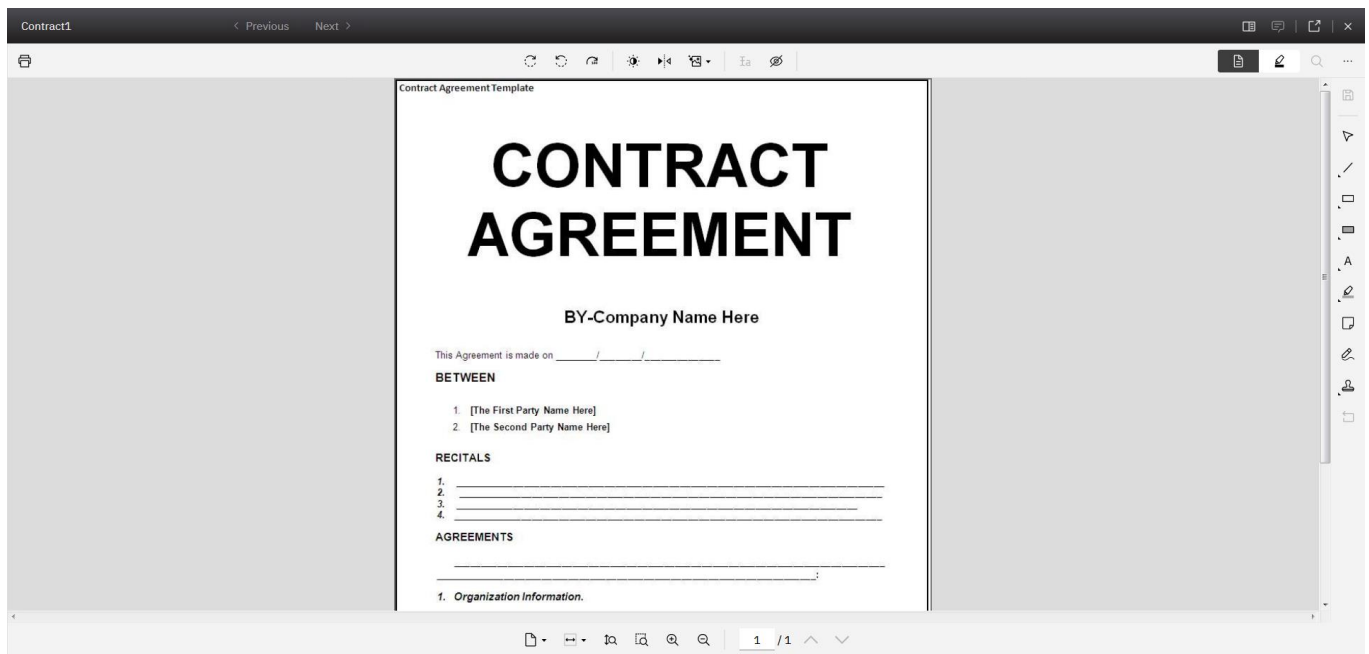
Exercise 2. Create a new advance storage area

In the previous exercise we have added a new document to our Object Store, FileNet can use different types of storage solutions to keep the documents uploaded. Let's find out where the document uploaded in the previous exercise has been stored.

Login in ACCE and open the Object Store assigned to your user. Expand Data Design → Classes and click on the Contract class.

In the General tab of the Contract class, scroll down an you will see that a default storage policy is selected by default for the class, in the image below you see that the class has a storage policy called **Default Database Storage Policy**.

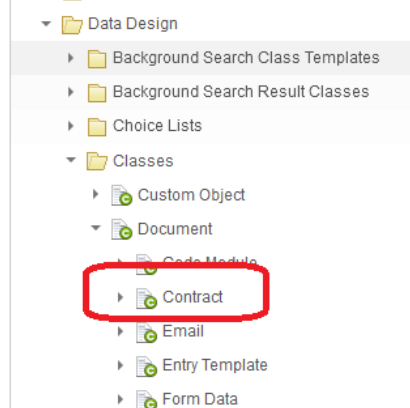**Default storage area** → A unique physical storage where the documents associated to the class are stored, this property has precedence over the default storage policy.
Default storage policy → A storage policy provides mapping to specific physical storage areas and is used to specify where content is stored for a class or object with content

TIP: As a best practice is better to use default storage policy instead a default storage area, because a storage policy provides more flexibility on how to control the storage and how to manage multiple storage areas for your document class.

In the left frame expand Administrative → Storage → Storage Policies and click on Default Database Storage Policy, a new tab will be open showing the properties of the policy, as you see in the image below, this policy only has one storage area **Default Database Storage Area**.

In the left frame expand Administrative → Storage → Storage Policies and click on Default Database Storage Area, and click on the Statistics tab. In this tab you can see the total files stored, the total size, etc.

The Default Database Storage Area is a storage area that uses the database of the Object Store to store the documents, this kind of storage area can be useful to store small files, like configuration files or files with a size of 1Kb – 2Kb, but when you need to store bigger files, like PDFs, Word files, etc. You need to use other types of storage areas otherwise the database size of the Object Store will increase rapidly and that is a problem to manage the platform.

Therefore, as a best practice is a good idea to use an external storage area, for instance an external file system where we can store our documents for our Contract class. This is what we are going to do in this exercise.

The first step to create and external storage area is to create a storage device for the storage area. A storage vice in FileNet represent a physical storage device where documents can be stored, this type of device can be a file system, cloud object storage, WORM device, etc. To create the storage device, you have to expand Storage → Advanced Storage → Advanced Storage Devices, right click on File System Storage Devices and select New File System Storage Device.
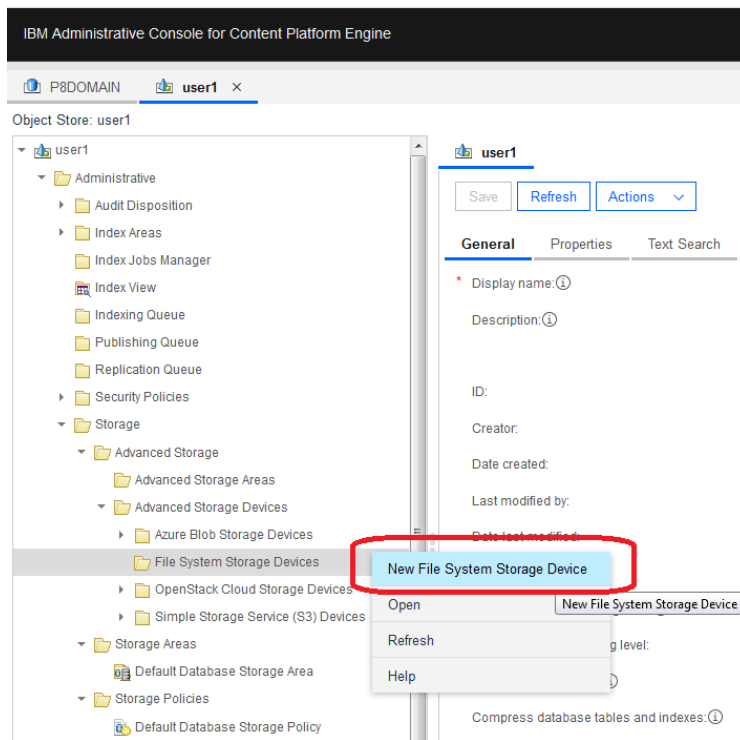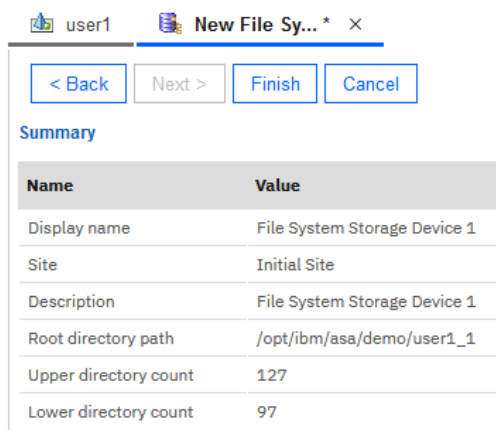
The wizard to create the storage device will be started, fill in the name of the storage device with the value "File System Storage Device 1" and click Next.

Fill in the root directory parameter with "/opt/ibm/asa/demo/user**X**_1" replace **X** with the number of your user.
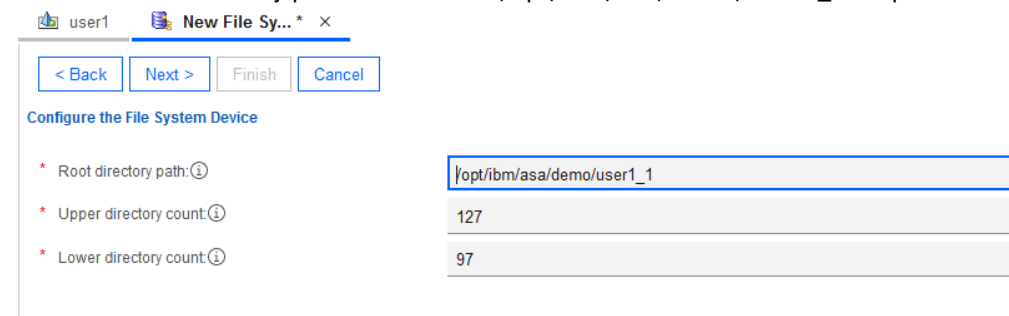
Click Finish to create the storage device.

Once the storage device is created you can see it under File System Storage Devices.

Now we have to create the Advanced Storage Area, this object in FileNet represent the relationship between one or several storage devices and one or more Document classes. We are going to create an Advance Storage Area and assign it the storage device created previously. Expand Storage → Advanced Storage and right click on Advanced Storage Areas, select New Advanced Storage Area to start the wizard.
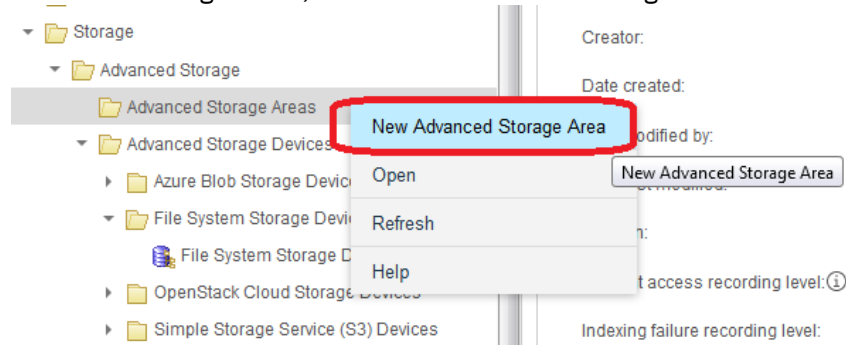
Fill in the value for Display Name with "Advanced Storage Area 1 - User **X**" where **X** is the number of your user. Click Next.

In the next screen some special properties for the storage area are showed, with this properties you can determine the maximum number documents or size for the storage area, if the content will be encrypted or compressed, etc. Leave the default values and click Next.

In the next step, you can select the deletion method and how many storage devices will be associated to our storage area, fill in the value 1 for "Required synchronous devices" and select the storage device created previously.

user1   New Advance... *   ×

< Back   Next >   Finish   Cancel

Associate a Storage Device with this Advanced Storage Area

You can select one or more of the available storage device connections to associate with the advanced storage area. You can also specify how content is replicated from the storage area to the device. Learn more…

* Deletion method: ⓘ   Clear   ⌄

* Required synchronous devices: ⓘ   1

* Available storage replication devices:

New...

	Device Replica Name	Site	Device Replica Type	Deletion Method Supported
✔	File System Storage Device 1	Initial Site	File System Storage Device	Purge

In the next step you can customize some parameters for the storage area, these parameters are rarely modified and usually are changed with the guidance of IBM Support. Leave the default values and click Next.

user1   New Advance... *   ×

< Back   Next >   Finish   Cancel

Advanced Storage Area Parameters

* Content ID batch size: ⓘ   100

* Content ID batch TTL: ⓘ   900

* Open time limit: ⓘ   30

Content integrity options: ⓘ

☐	**Content Integrity Options**
☐	Validate on creation
☐	Verify signature on creation
☐	Validate on retrieval
☐	Verify signature on retrieval
☐	Auto repair on retrieval
☐	Verify signature on content validation
✔	Auto repair on content validation
☐	Compute content signature

In the next step you can assign the storage area to a storage policy, the storage policy is the FileNet element that will establish the relationship between document classes and storage areas, it is recommended to always use a storage policy instead of assign a storage area directly to a document class. In our example, we are not going to assign our storage area to a storage policy yet, later we will create a storage policy. Click Next.

user1   New Advance... *   ×

< Back   Next >   Finish   Cancel

Select Storage Policies

Storage policies help you manage your documents especially when you store documents in one or more storage areas. For example, storage policies evenly distribute documents across multiple storage areas to improve the performance of working with the documents. Storage policies also ensure that a storage area is always available to store documents.

Storage policies:

	Name
☐	Default Database Storage Policy

A message displays the recommendation to map the storage area to a storage policy, as mentioned before we'kk do this later. Click ok.

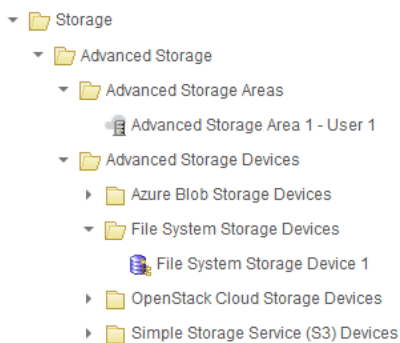Administration Console for Content Platform Engine

It is strongly recommended that you map the storage area to a storage policy.

OK

A summary of the storage area options is displayed, click Finish to create the storage area.

user1   New Advance... *   ×

< Back   Next >   Finish   Cancel

Summary

Name	Value
Display name	Advanced Storage Area 1 - User 1
Site	Initial Site
Description	Advanced Storage Area 1 - User 1
Maximum number of elements	Unlimited
Maximum size	Maximum allowed on device
Encryption method	AES Counter Mode with 128-bit key
Suppress duplicate content elements	False
Compression threshold (percentage)	80
Compress content	False
Standby activation priority	0
Deletion method	Clear
Required synchronous devices	1
Available storage replication devices	File System Storage Device 1
Content ID batch size	100
Content ID batch TTL	900
Open time limit	30
Content integrity options	32
Storage policies	

Once the storage area is created, you can see it under Advanced Storage Areas.

- Storage
  - Advanced Storage
    - Advanced Storage Areas
      - Advanced Storage Area 1 - User 1
    - Advanced Storage Devices
      - Azure Blob Storage Devices
      - File System Storage Devices
        - File System Storage Device 1
      - OpenStack Cloud Storage Devices
      - Simple Storage Service (S3) Devices

Now we are going to create the Storage Policy to map our storage area. Expand Storage and right click on Storage Policies, select New Storage Policy to start the wizard.
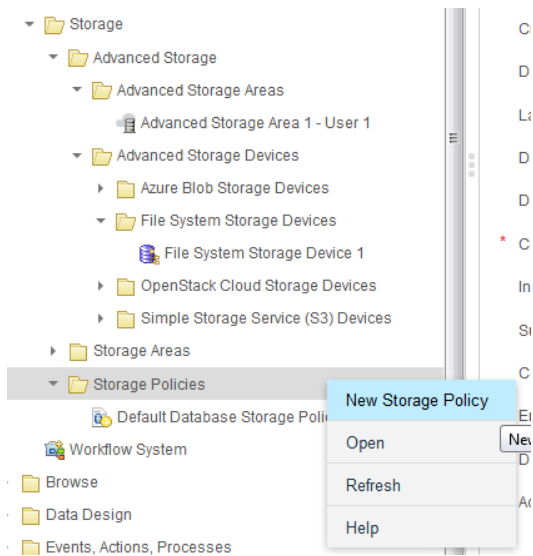
Fill in the value "Storage Policy 1 – User**X**" where X is the number of your user, for the Display Name parameter. Click Next.

In the next step we can choose the method to select our storage area. Click Next.

In the next step, select our previously created storage area and click Next.
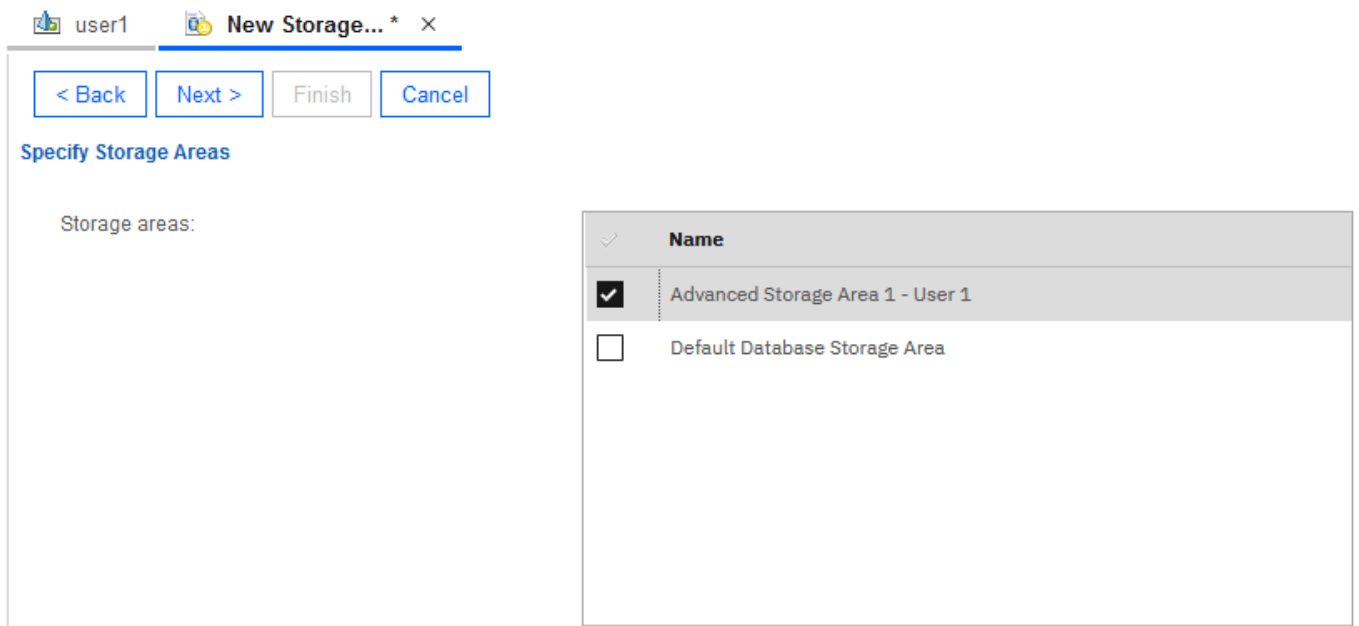
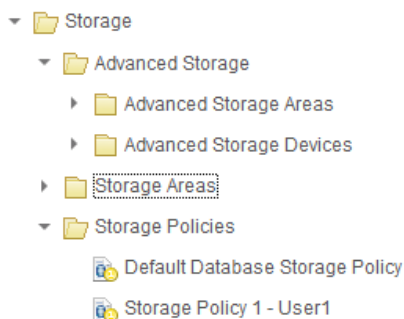In the final step a summary of our storage policy is showed, click Finish to create the storage policy.
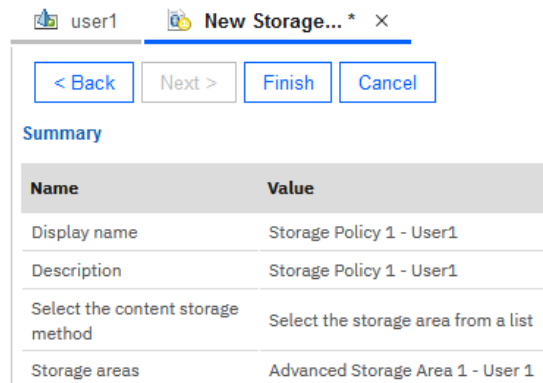
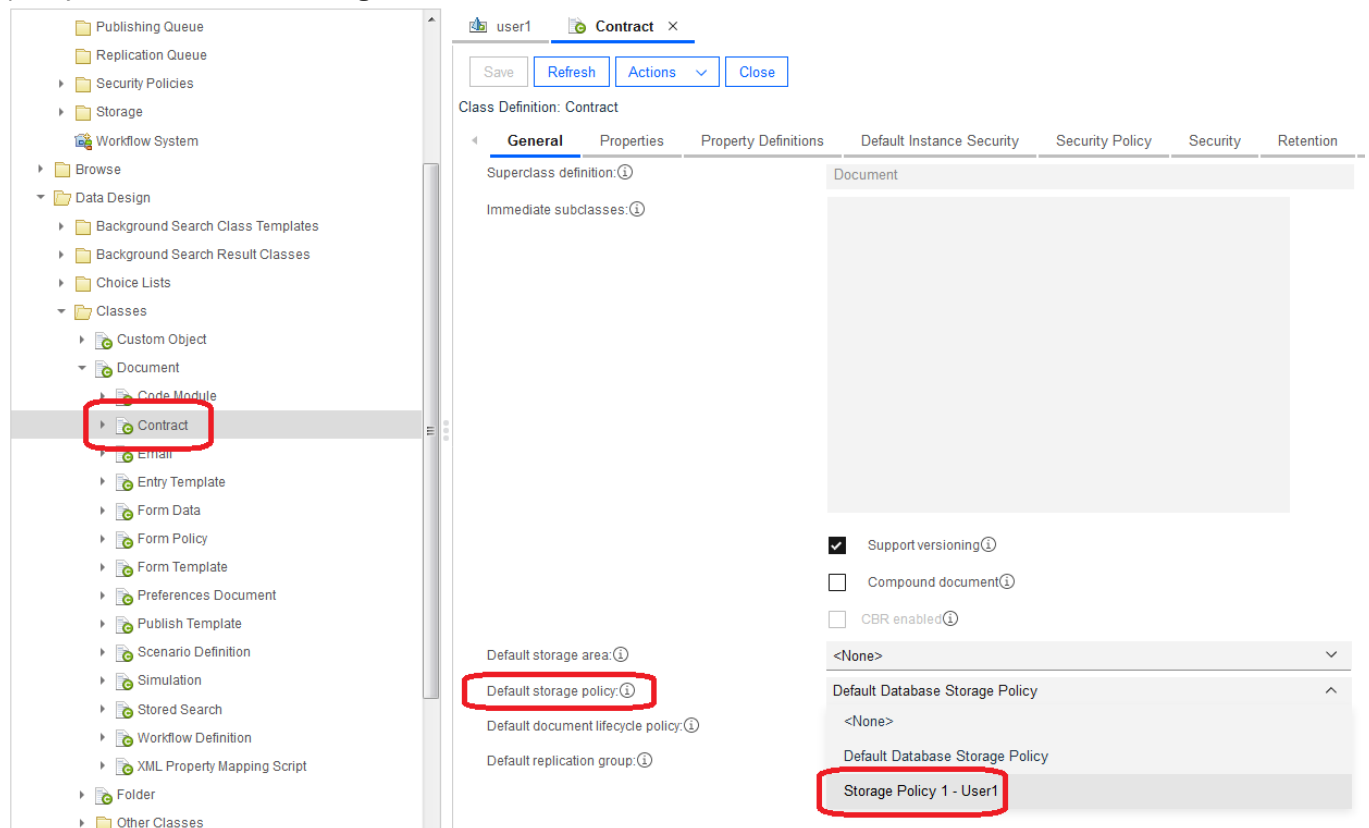Under Storage → Storage Policies you can see our new storage policy.

Once we have a storage device linked to a storage area and a storage policy with an assigned storage area, we can configure our document class Contract to use the new storage policy, after this configuration every document storage using our Contract class the documents will be stored inside our storage device.

To assign the storage policy to our document class expand Data Design → Classes → Document, click on our document class Contract.
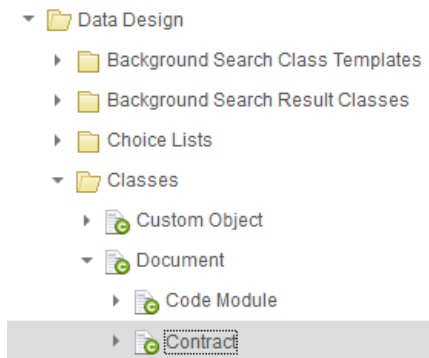
The class definition is opened, scroll down and expand the list box Default storage policy, select our new storage policy and save the new configuration for our document class.

Now, login Content Navigator and we are going to add a new contract document.

https://navigator-dtecp4ba.dteroks-270001y003-evica-4b4a324f027aea19c5cbc0c3275c4656-0000.eu-de.containers.appdomain.cloud/navigator/?desktop=user**X**

Replace **X** for your user number.

Select Browse Content and click the button Add Document. Select Contract class, fill in the values for the required properties and choose a file to upload. Click on Add.

After adding a new document, go back to ACCE https://cpe-dtecp4ba.dteroks-270001y003-evica-4b4a324f027aea19c5cbc0c3275c4656-0000.eu-de.containers.appdomain.cloud/acce

We are going to check that the document that we have just added is in fact stored inside our new storage area. Expand Storage → Advanced Storage → Advanced Storage Areas, click on our storage area, a new tab will be open in the right frame showing the storage area properties, click on the Statistics tab, there you can check that total files now is 1, that is our new document.

Question: So far, we have added two documents to our Contract class, but when we added the first document the storage policy for the class was "Default Database Storage Policy", and for the second one the storage policy was "Storage Policy 1 – UserX", the first policy stores document in the database and the second stores documents in an external file system. What do you think this document class configuration change means for the already stored document?

- Has the first document been moved to the new storage area when we changed the class?
- Is it accessible the first document if the storage policy is now a different one?

To understand how FileNet deals with this change, we are going to search for the first document and review its properties.
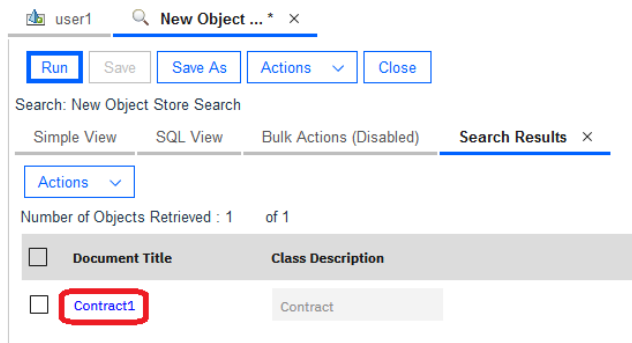
Right click on Search and select New Object Store Search.
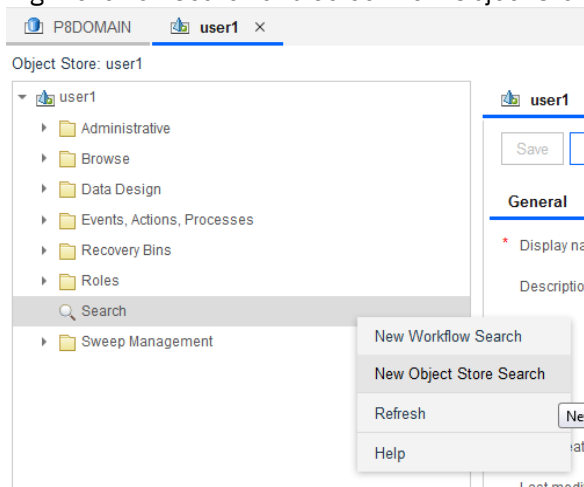
The search dialog opens as a new tab, for the class select Contract in the list box, for the properties select ContractNumber in the list box, as an operator select Equal To, and fill 1 as the value. Click on the button Run.
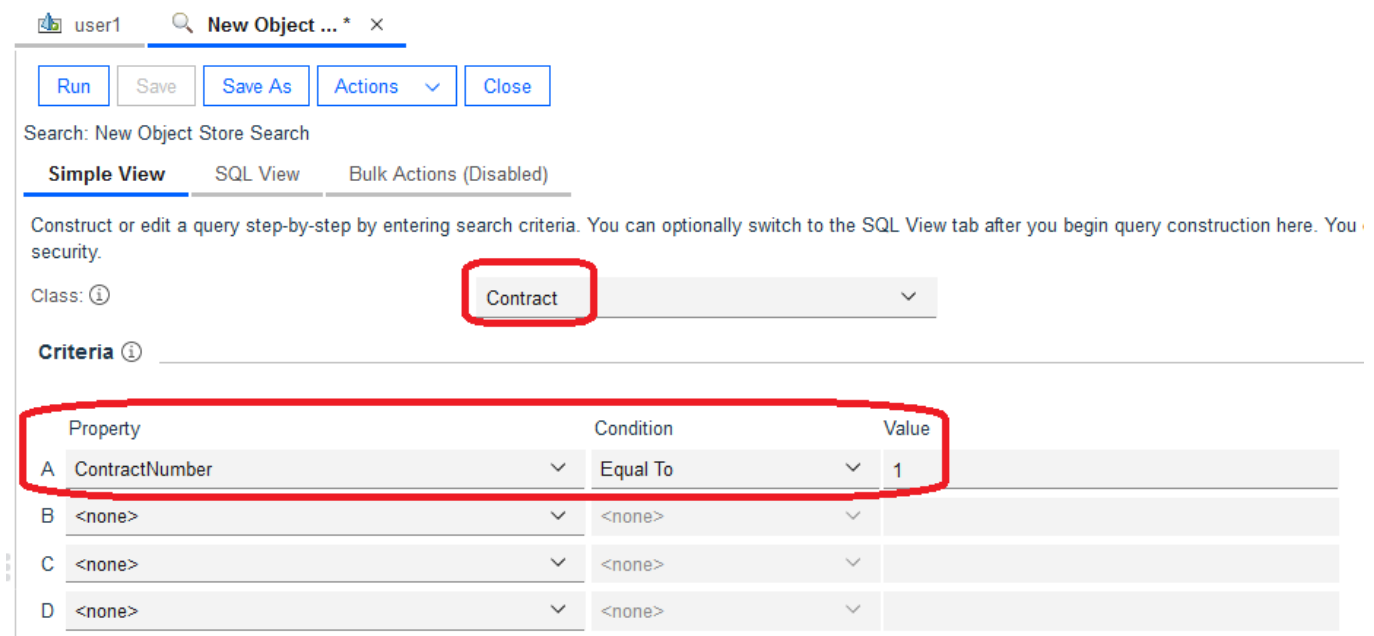

A search results tab is opened showing the first document, click on the document.

The document is opened in a new tab, click on the Properties tab, scroll down and look for the properties Storage Area and Storage Policy. As you can see FileNet keeps the document in the original storage area where it was stored and maintains the Storage Policy. Therefore, the document is not moved and is accessible, if you click on the Actions button and click on View/Download you will be able to access the document. Search for the second document and review its properties, notice that the properties are different for the second document because it was stored in other storage area because the Contract class has a different storage policy.

This means that the relationship between a specific document and storage location is handled at the document level, not at the class level.
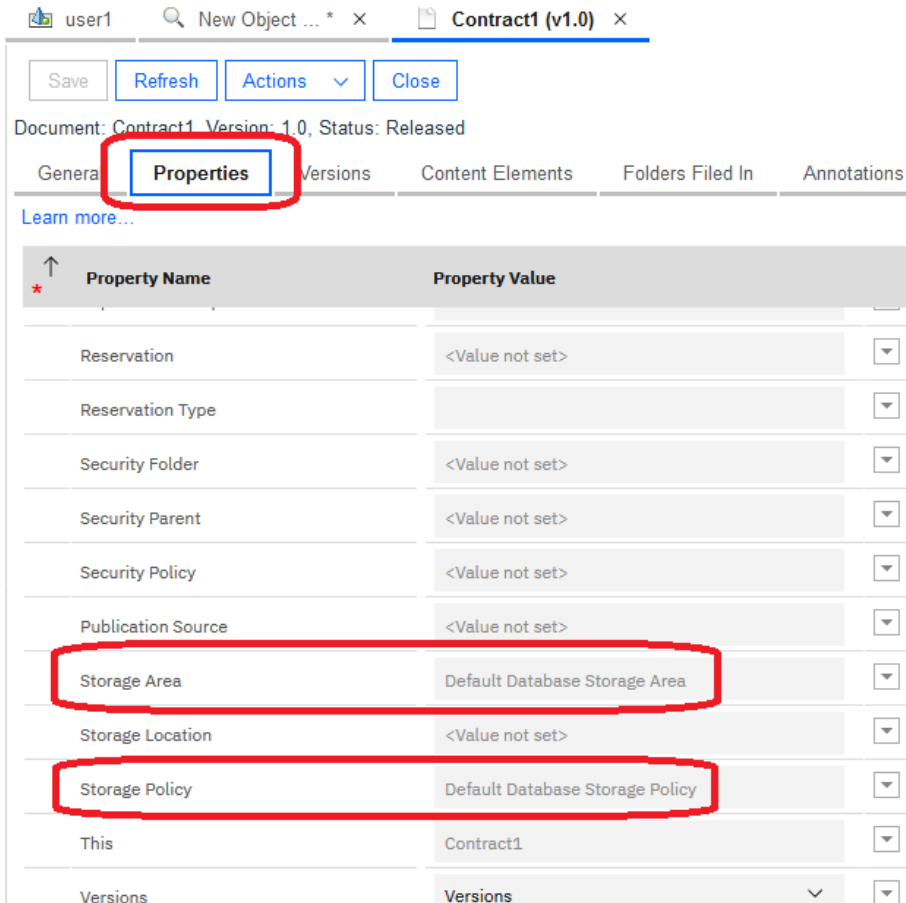

Exercise 3. Create a new advance storage area with replication

In this exercise we are going to use one of the new features of FileNet 5.5.x, which is replication between storage devices linked to a storage area. Using this feature the documents uploaded to FileNet will be replicated internally in two storage devices associated to an advanced storage area.

First, we are going to create two storage devices, the first storage device will be a file system storage device, follow these steps.

Expand Storage → Advanced Storage → Advanced Storage Devices, right click on File System Storage Devices and click on New File System Storage Device.
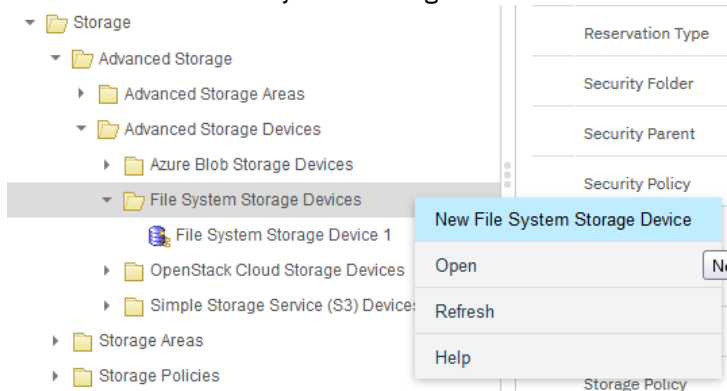
Fill in "File System Storage Device 2" for the Display name parameter. Click Next

In the next step, fill in the parameter Root directory path with the value "/opt/ibm/asa/demo/user**X**_2" where **X** is your user number. Click Next.


In the next step click Finish to create the storage device.

Name	Value
Display name	File System Storage Device 2
Site	Initial Site
Description	File System Storage Device 2
Root directory path	/opt/ibm/asa/demo/user1_2
Upper directory count	127
Lower directory count	97

Now, we have created the first storage device, for the second storage device we are going to create a storage device using a bucket in IBM Cloud Object Storage. Follow these steps to create the second device.

Expand Storage → Advanced Storage → Advanced Storage Devices, right click on Simple Storage Service (S3) Devices and click on New Simple Storage Service (S3) Device.
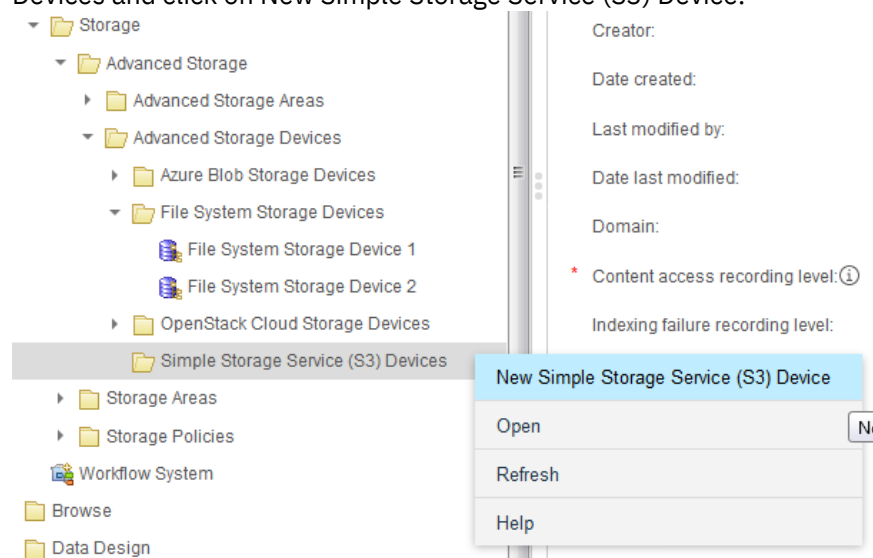
The wizard to create the storage device is opened in a new tab. Fill in the Display name parameter with the value "Bucket S3 User**X**" where **X** is your user number. Click Next.

In the next step fill in the values for the connection to the Cloud Object Store bucket.

Device connection URL: http://s3.eu-de.cloud-object-storage.appdomain.cloud/filenetworkshopuser**X**
S3 Access Key ID: **77902ae3a0444c548f5fefcb94e75933**
S3 Secret Access Key: **6445ec531640bd5e030c5aa9133d37e09cf53d9968b4011a**
Confirm S3 Secret Access Key: **6445ec531640bd5e030c5aa9133d37e09cf53d9968b4011a**
S3 Bucket name: **filenetworkshopuserX**
S3 Region name: **us-standard**
Uncheck HTTPS certificate validation

Note:
- For the Device connection URL, replace the **X** at the end of the URL for your user's number.
- For the S3 Bucket name, replace the **X** at the end of the URL for your user's number.

The next step shows a summary, click Finish to create the storage device.

Once the storage device is created you can see it under the folder Simple Storage Service (S3) Devices.
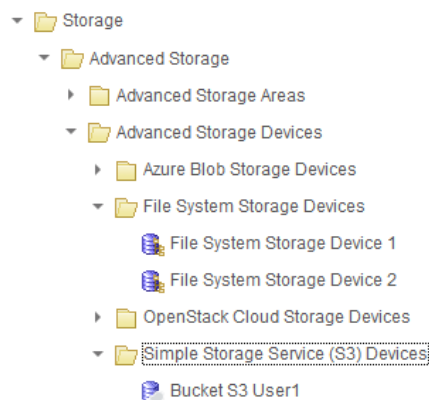
After the creation of the two storage devices, we can create the new advanced storage area, expand Storage →
Advanced Storage, right click on Advanced Storage Areas and click on New Advanced Storage Area.
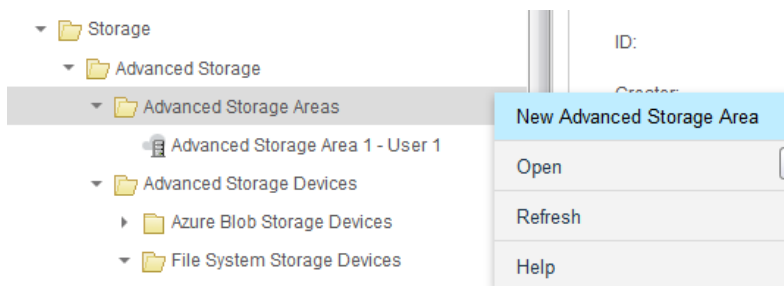
The wizard to create the storage area opens in a new tab in the right frame, fill in the Display name parameter
with the value "Advanced Storage Area 2 - User**X**", replace **X** with your user's number.

In the next step leave the default values and click Next.

In the next step, we need to configure the replication feature, for the "Required synchronous devices" parameter set the value to 2 and select the two storage devices created previously. With this configuration every time that a document is uploaded to this storage area, the physical document will be replicated by FileNet in each of the two storage devices. This replication process is transparent for the user, if one of the storage devices goes offline, the user will be able to access the documents in the replica storage device.

In the next step, leave the default values and click Next.

In the next step, do not select a storage policy, we will create a new one later. Click Next.

Click Ok in the message.

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It is strongly recommended that you map the storage area to a storage policy.

OK

The final step shows a summary, click on Finish to create the storage area.

user1   New Advance... *   ×

< Back   Next >   Finish   Cancel

Summary

Name	Value
Display name	Advanced Storage Area 2 - User1
Site	Initial Site
Description	Advanced Storage Area 2 - User1
Maximum number of elements	Unlimited
Maximum size	Maximum allowed on device
Encryption method	AES Counter Mode with 128-bit key
Suppress duplicate content elements	False
Compression threshold (percentage)	80
Compress content	False
Standby activation priority	0
Deletion method	Clear
Required synchronous devices	2
Available storage replication devices	File System Storage Device 2 Bucket S3 User1
Content ID batch size	100
Content ID batch TTL	900
Open time limit	30
Content integrity options	32
Storage policies	

Once we have created the storage area, we need to create the storage policy. Expand Storage → Advanced Storage, right click on Storage Policies and click on New Storage Policy.
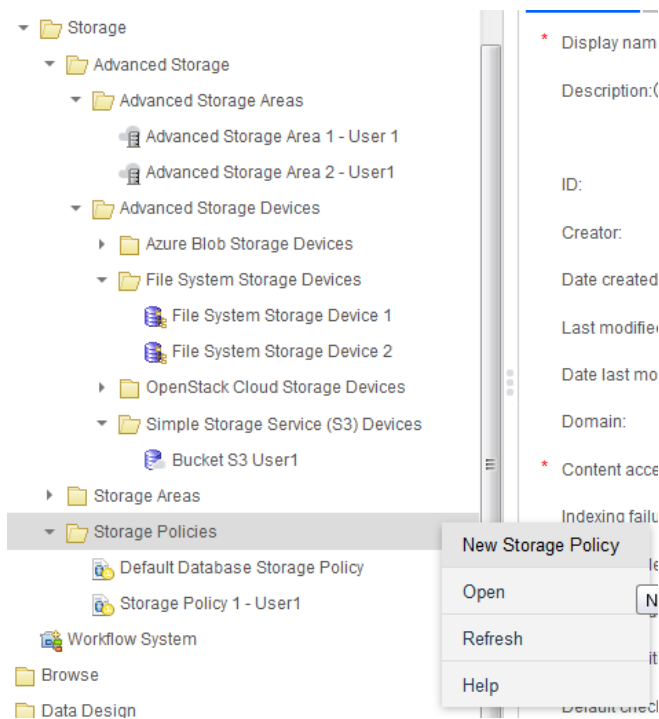
The wizard to create the storage policy opens in a new tab, fill in the parameter Display name with the value "Storage Policy 2 – User**X**" where **X** is your user number. Click Next.

In the next step, leave the default values and click Next.

In the next step, select "Advanced Storage Area 2 – User**X**" replace **X** with your user's number.

In the next step, click Finish.

After the creation of the storage policy, we need to reconfigure the Contract class to assign the new storage policy. Expand Data Design → Classes → Document, click on Contract class, the document class is opened in a new tab, scroll down in the General tab for the Contract class and select "Storage Policy 2 – User**X**", where **X** is your user's number, in the Default Storage Policy list box. Click Save.
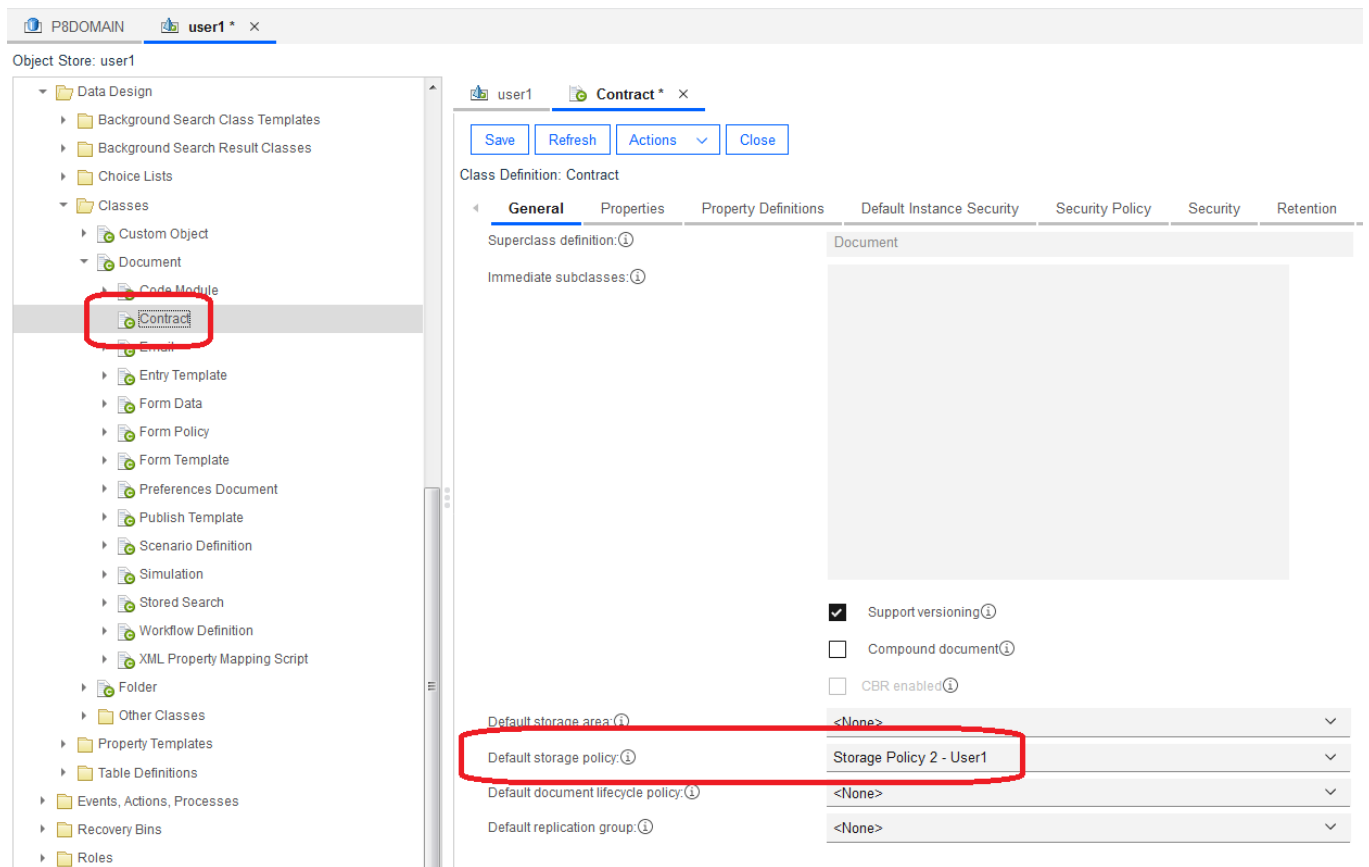
After assigning the new storage policy, we are going to add a new document, but this time we are going to use ACCE to add a new document. Click on Browse
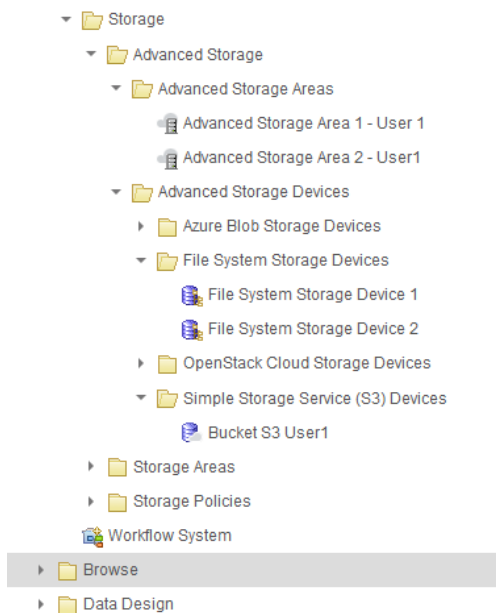
In the right side a new Browse tab is opened.
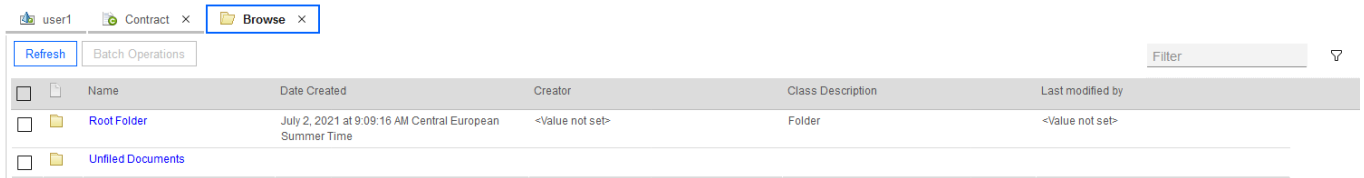
Click on Root Folder, a Root Folder tabs opens, click on the Actions button and select New Document.
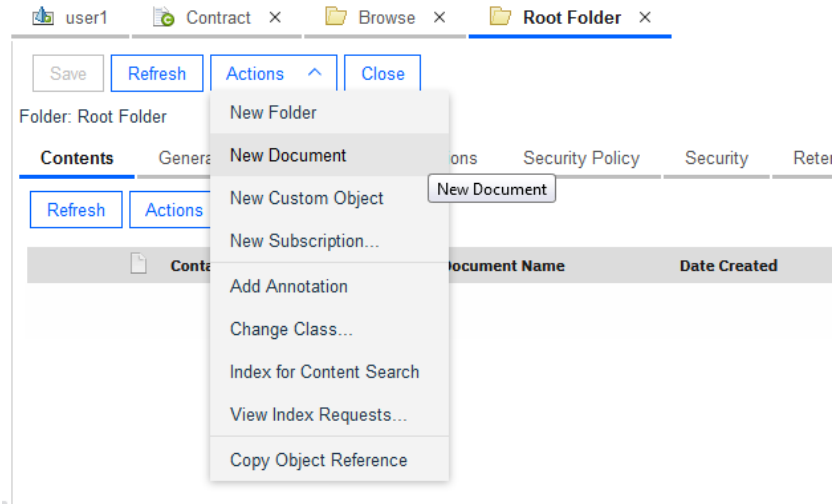
A wizard tab appears showing the Add Document process, fill in the Document title with the value Contract3 and select in the Class list box select Contract. Click Next.
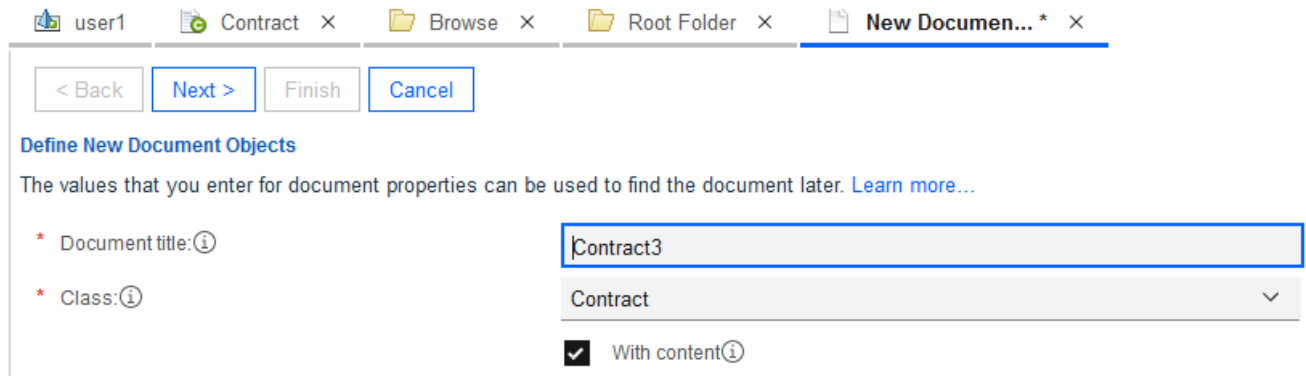
In the next screen, click the button Add, a new window opens, add a document to upload and click on Add Content. Then click Next.
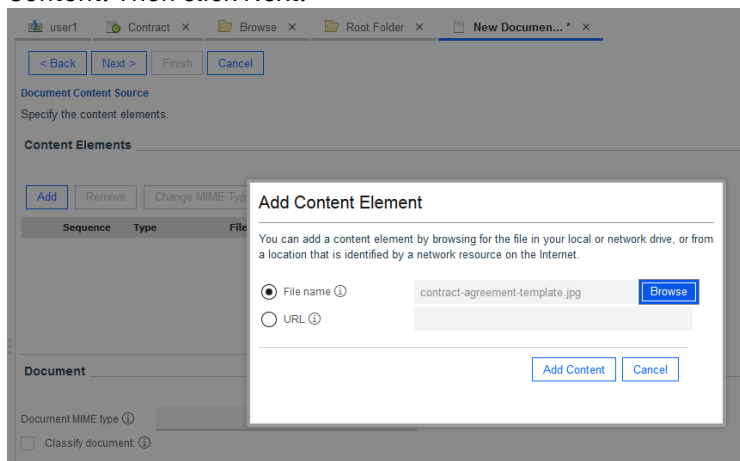
In the next screen, fill in the values for the required properties.

In the next screen, leave the default values and click Next.

In the next screen, leave the default values and click Next.

In the next screen, leave the default values and click Next.

In the next screen a summary is displayed, click on Finish to create the document.

< Back   Next >   Finish   Cancel

Summary

Name	Value
Document title	Contract3
Class	Contract
With content	True
Save as reservation	False
Create minor version	False
Create as compound document	False
Retention date	None
Storage policy	Storage Policy 2 - User1
Content elements	contract-agreement-template.jpg
MIME type	image/jpeg
Classify document	false
ContractNumber	3
Customer Name	Larry Smith
DNI	22222222B

After creating the document, we are going to review the storage area and the storage devices to confirm that the document has been replicated. Expand Storage → Advanced Storage, and click on Advanced Storage Area2 – User**X**, File System Storage Device 2 and Bucket S3 User**X**, where **X** is your user's number.
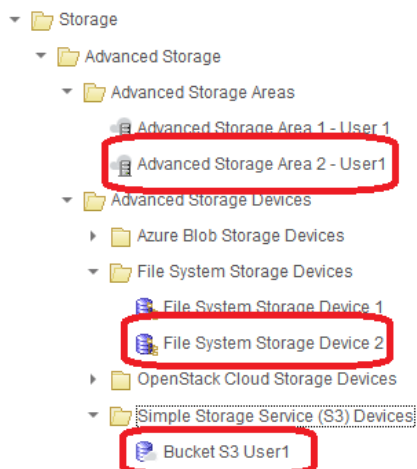
In the right side a new tab is opened for each of the storage devices and for the storage area. In the storage area tab, click on Statistic tab and review that 1 document has been added to the storage area.

In the File System Storage Device 2 tab, click on Storage Areas tab. Check that 1 file is in the storage area associated to this storage device.

In the Bucket S3 UserX tab, click on the Storage Areas tab, check that 1 file is in the storage area associated to this storage device. As you can see by the Total File Size this document is the same document in the other storage device, this is a replication of the other document.

The students will not be able to access the IBM Cloud to check that the document is in the bucket, as example, the following screenshot shows the document stored in the Cloud Object Store Bucket in IBM Cloud.
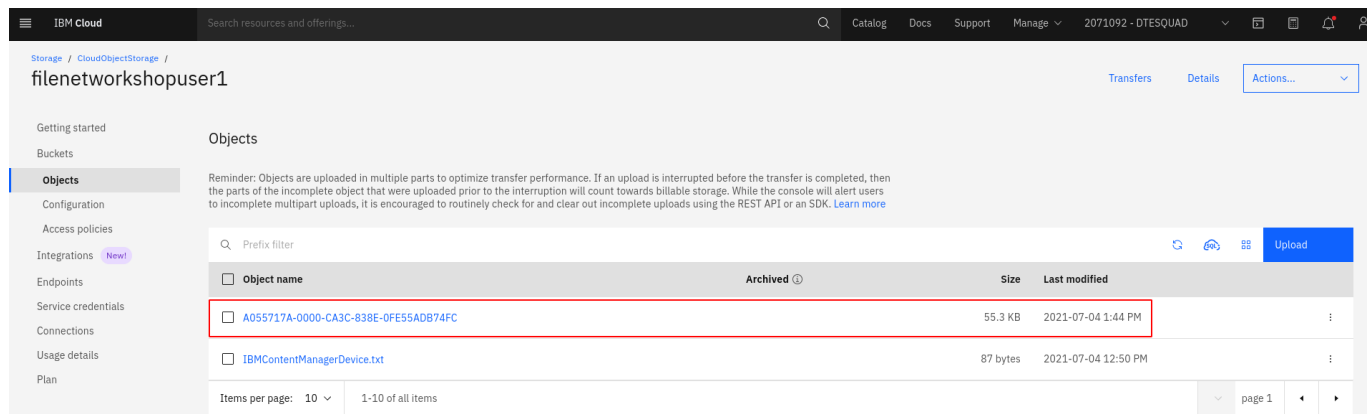
Exercise 4. Move document between advanced storage areas with Sweeps

In the previous exercises we have created several documents, each one of them are stored in a different storage area, in this exercise we are going to use the Sweep Management feature to know how to move documents from one storage area to another.

Understanding the Sweep Management feature to move documents is important because is the answer to the following questions.

- Unify disperse old storage areas
- Deprovision old storage solutions
- Move documents for a specific document class due to functional requirements (tier 2 storage or faster retrieval)
- Split the physical connection to storage, for instance, migrate documents to buckets on Public Cloud providers, so you can move FileNet to another infrastructure.

Once we know why is important to know how the Sweep Management feature works, we are going to move the first document that we added, which is stored in the Default Database Storage Area, to the replication storage area that we created in our last exercise.

First, we are going to search for the documents in our Contract document class. To do that follow these steps. Right click on Search, select New Object Store Search.
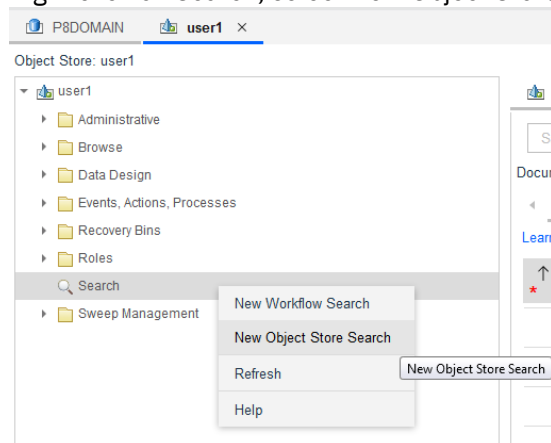
A new tab opens in the right frame, select for the Class list box the class Contract, in the criteria section, choose the property ID and for the condition Is Not Null, this search will look for all the documents in the class, click Run.

A new tab Search Results opens showing all the documents in this class, click on Contract1 to display the properties of this document.

A tab showing the document properties is opened, in the Properties tab scroll down till you see the Storage Area property, check that the value of this property is "Default Database Storage Area", also notice that the property Storage Policy's value is "Default Database Storage Policy".

We are going to create a sweep job to move content, specifically this document from the current storage area to our target storage area, later we will come back to this document properties tab to check that the values have been updated once the document has been moved. Do not close the document tab.

Expand Sweep Management → Job Sweeps, right click on Bulk Move Content Jobs, and click on New Bulk Move Content Job.
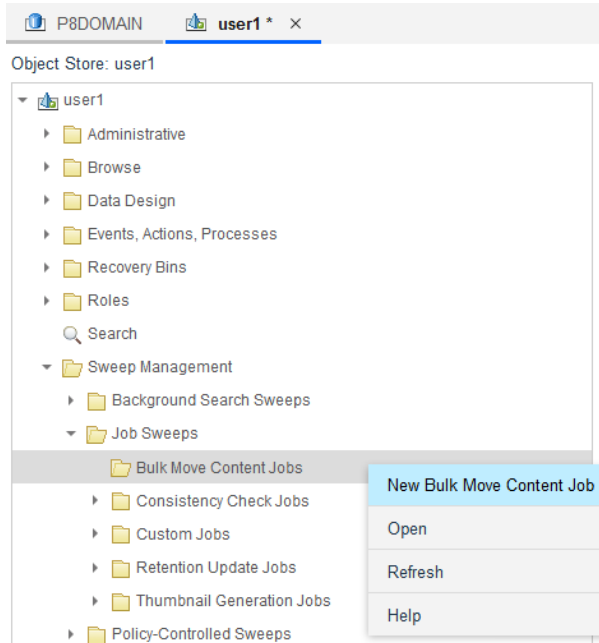
The wizard to create the jobs is opened. Fill in the name of the job, for instance, "Move Contract1", in the Sweep mode parameter select "Normal", here you have other two options that are used to do a preview of the job is you are unsure of the result before running it. Finally, select the checkbox "Enable bulk move content job". Click Next.
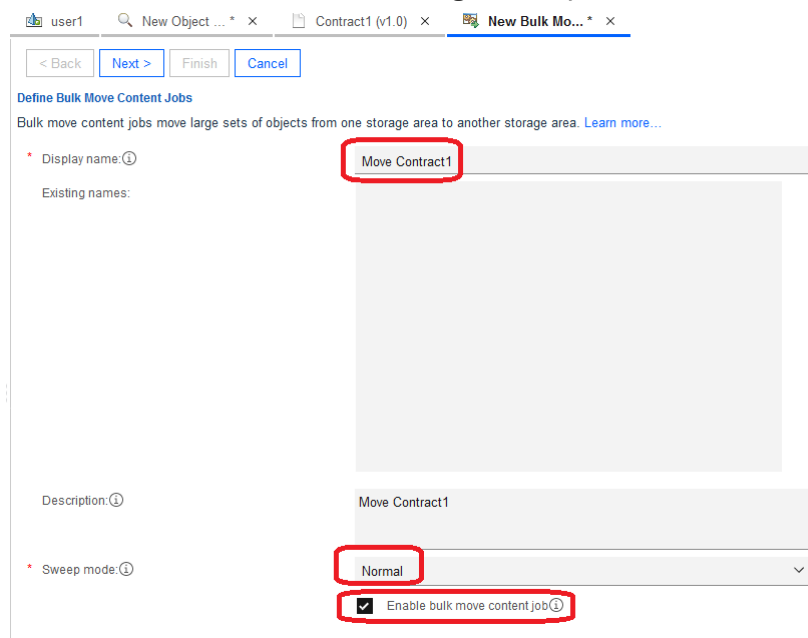
In the next step we are going to select for which document class we are going to move documents, select Contract for the parameter Target class. We can filter what documents will be moved, in our exercise we are going to move the document with contract number 1, fill in "ContractNumber=1" in the Filter expression text box; we need to indicate where we are going to move the document, for that we select the storage policy, in our case

we are going to select "Storage Policy 2 – User **X**" where **X** is your user's number, this is the storage policy that is replicated. Finally, we check the boxes for the options "End replication after move", "Update storage policy" and "Record failures". Click Next.

In the next screen we can schedule when the job will be executed, this can be useful when you are going to move many documents and you prefer to run the job overnight, in our case we leave the dates blank, this means to start the job immediately. Click Next.

In the next step a summary of the job is presented to us before running it. Click Finish after clicking Finish the job will be launched.

Name	Value
Display name	Move Contract1
Description	Move Contract1
Sweep mode	Normal
Enable bulk move content job	True
Target class	Contract
Filter expression	ContractNumber=1
Storage policy names	Storage Policy 2 - User1
Include subclasses	False
End replication after move	True
Update storage policy	True
Record failures	True

Once the job is launched click Open to review the Job properties and results.
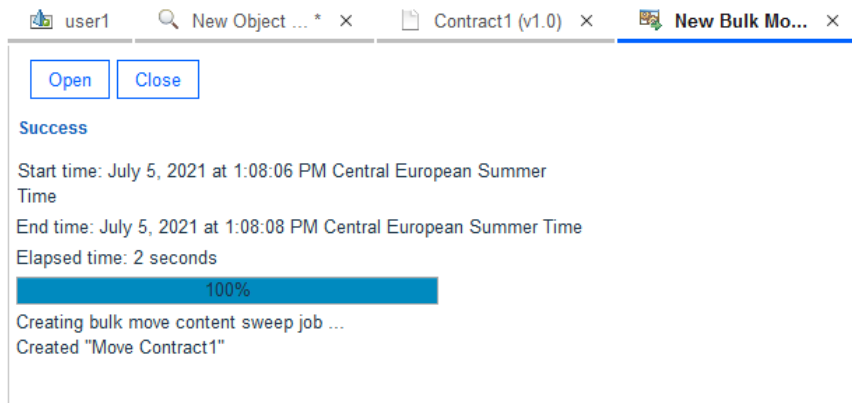
In the General tab of the job you can review the start and end date/time when the job was ran it; at the bottom you can take a look at the objects that where found in the Contract document class, in our example the value is three, because we have three documents and we can also review how many objects/documents were processed, in our exercise we filtered the search to find one specific document, so the job only moves one document.
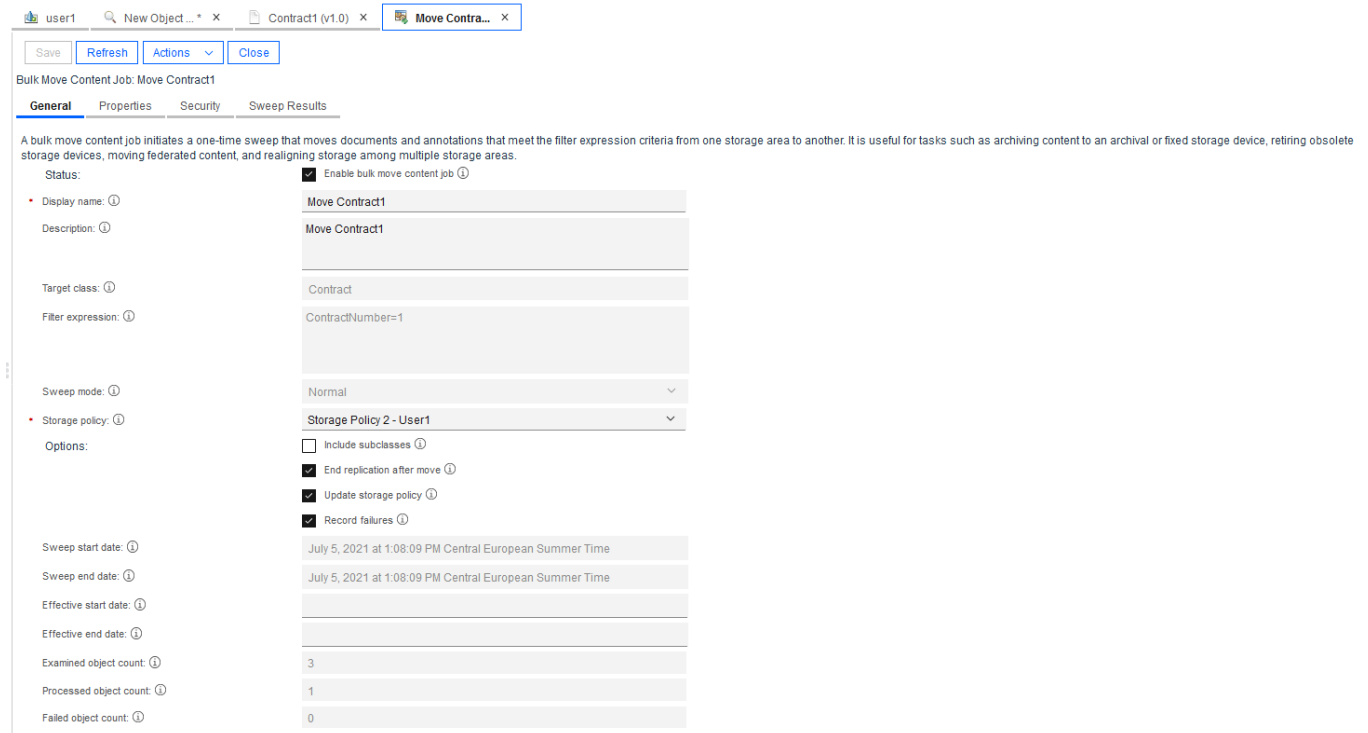
If we go back to the Contract1 document tab properties and click Refresh, we notice that the properties Storage Area and Storage Policy have been updated due to the execution of the move job.

We open the storage area "Advanced Storage Area 2 – User**X**" where **X** is your user's number, click on the Statistic tab, by looking at the Total Files and Files created values, we notice that one document has been added, you might need to click Refresh to update the values.

If you open the storage area "Default Database Storage Area" and click on the Statistic tab, you'll notice that the Total files is now zero, and Files created is one and Files delete is one, that is the work of the move job.

Now you know how to move document among storage areas, usually we are not going to move one document but thousands or millions, so it is important to have in mind two things, first you can schedule when the Sweeps work, you might want to schedule the Sweeps to only work during the night or on weekends to decrease the impact o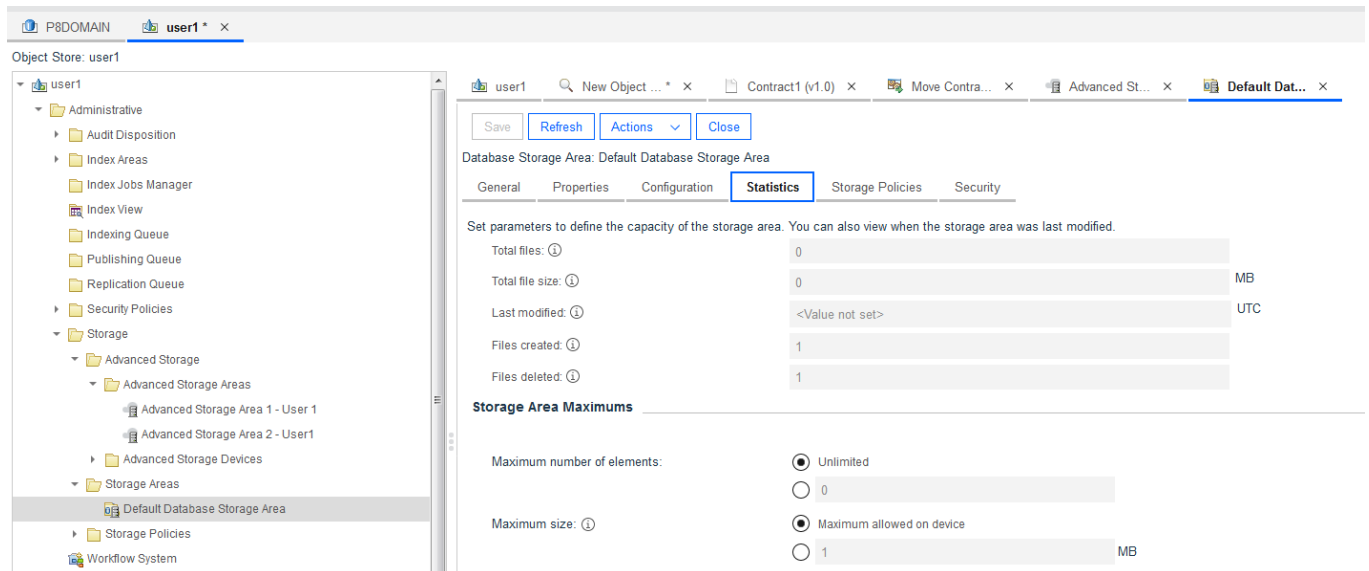n performance. As you can see in the image below, by clicking on the FileNet domain, in our environment is called P8DOMAIN, you will see the subsystem tabs, look for the Sweep Subsystem by clicking on the right arrow, once in the Sweep Subsystem tab, you can see at the bottom a Schedule section that allows you to create a schedule for the sweeps, this configuration applies to all the object stores in you FileNet domain.

The second thing to take into account, is the creation of index to improve the performance of the Sweeps. https://www.ibm.com/docs/en/filenet-p8-platform/5.5.x?topic=databases-creating-index-improve-sweep-performance
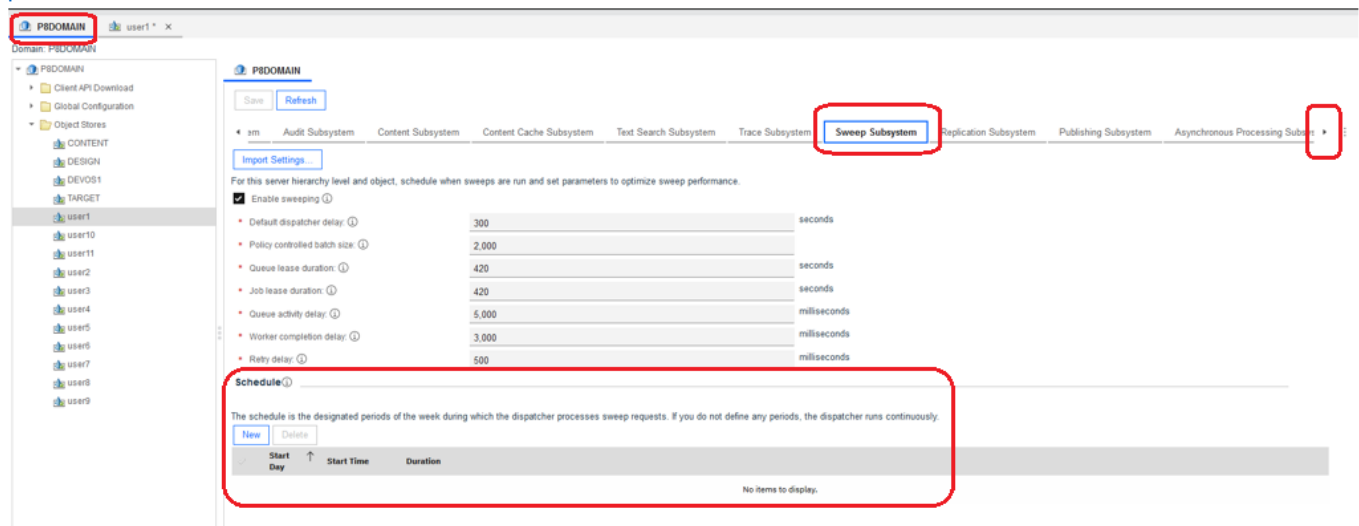
Exercise 5. Apply retention to a FileNet Class and using the logical deletion

Another important topics regarding FileNet and storage is retention and logical deletion. When we talk about retention in FileNet, we refer to the possibility to configure a period of time during which the documents cannot be deleted, this is important not only to avoid incorrect deletions but to comply with standards and regulations like the GDPR, in addition to the retention concept in FileNet, the storage where the documents are stored can support WORM (Write Once Read Many), FileNet supports several WORM devices from different vendors. Both

concepts together FileNet retention and WORM support provide the mandatory requirements to comply with many EU and USA regulations.

The other important topic is logical deletion, FileNet supports a logical deletion of documents, this means the capability to send a document to a recovery bin, once a document is in a recovery bin, the document will not appear in searches and cannot be retrieved, but the document remains in the database and in the storage area, FileNet gives the possibility to restore the document from the recovery bin, this feature allows customers to configure a safe deletion process.

In this exercise we are going to learn both concepts, retention and logical deletion.

To configure retention in FileNet, although we can use it at the document level, the best way to use retention is at the document class level, this way all the documents stored for this document class will have the same retention period.

Expand Data Design → Classes → Document, click on Contract class, in the right side a tab with the class properties is opened, click on the Retention tab. Select Period for the Retention Period and configure 15 minutes. Click Save.
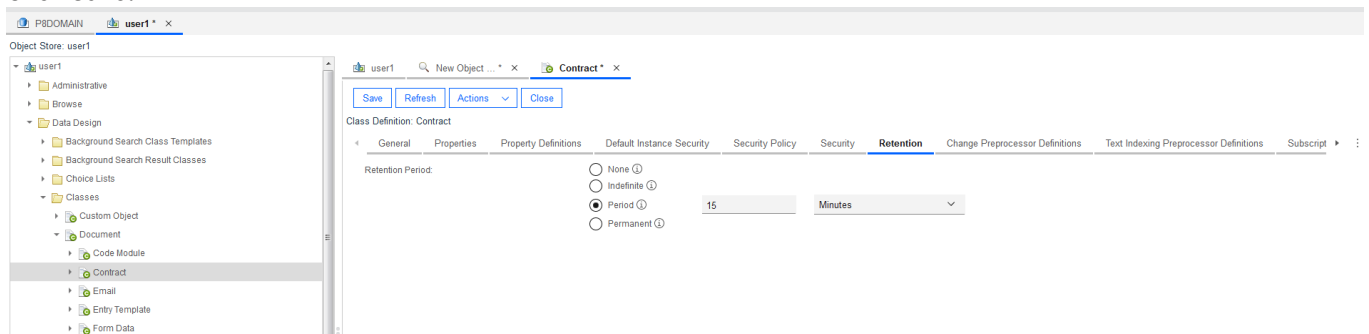
Now add a new document for this class, Expand Browse and click on Root Folder, on the right side the Root Folder tab appears, click on the Actions buttom and click on New Document.
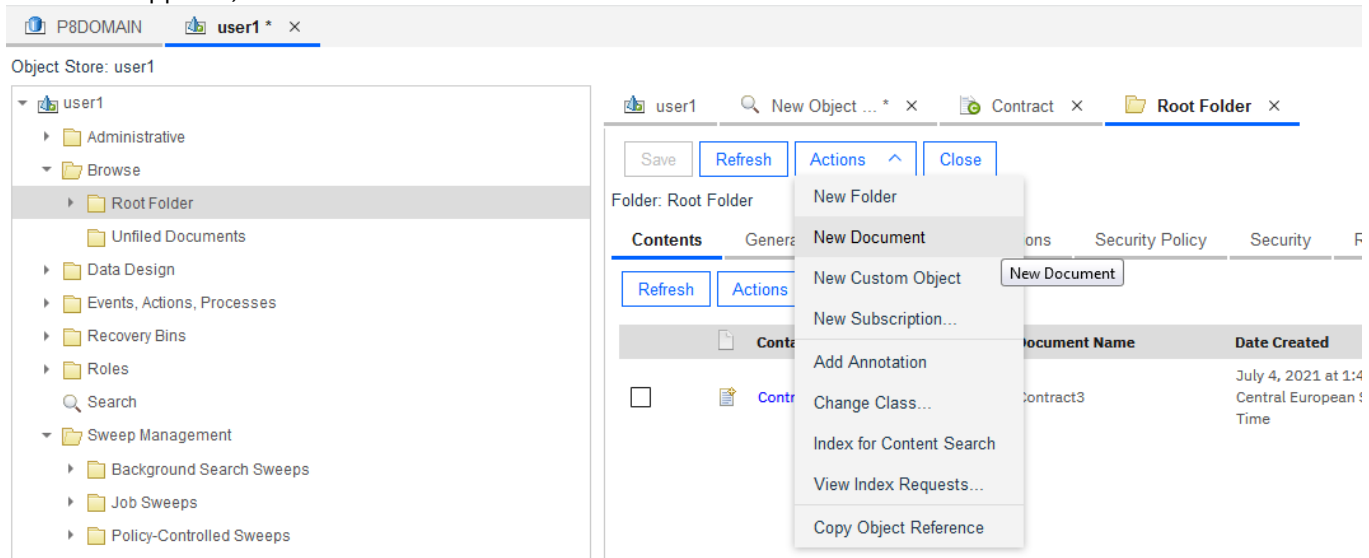
The wizard to add a new document appears, fill in the Document title with Contract4, select Contract as the class and be sure the check With content is selected. Click Next.

A new window is displayed, select a document from you PC and click in the buttom Add Content, then click Next.

Fill in the required properties as you can see in the image below and click Next.

In the next step leave the default values and click Next.

In the next step, you can see that the Expiration value is set due to the configuration of the retention period that we set up at the class level. Click Next.

In the next step, leave the default values and click Next.

The last step is the summary, click Finish to create the document.

Name	Value
Document title	Contract4
Class	Contract
With content	True
Save as reservation	False
Create minor version	False
Create as compound document	False
Retention date	2021-07-05T11:58:15.805Z
Storage policy	Storage Policy 2 - User1
Content elements	contract-agreement-template.jpg
MIME type	image/jpeg
Classify document	false
ContractNumber	4
Customer Name	Julia Smith
DNI	33333333C

Once the document is created click on Open, to display the document properties.

Success

Start time: July 5, 2021 at 1:44:06 PM Central European Summer Time
End time: July 5, 2021 at 1:44:08 PM Central European Summer Time
Elapsed time: 1 seconds

100%

Created "Contract4"

In the document properties tab, now we are going to delete the document, click the Actions buttom and click on Delete.
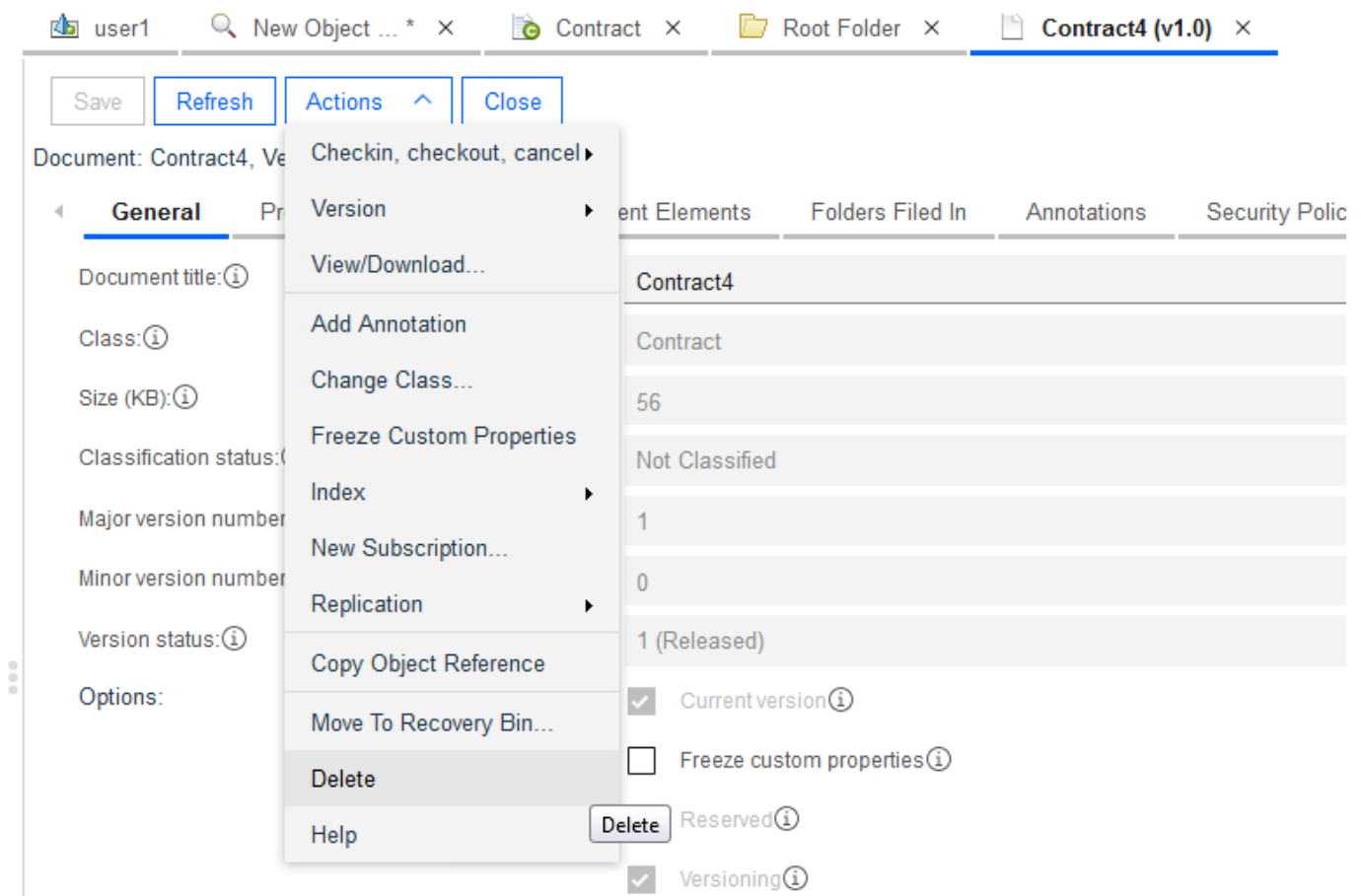
A message requiring confirmation is displayed, click Ok.

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Do you want to delete document 'Contract4 (1.0)'?

[OK] [Cancel]

An error will appear saying that you do not have permission to delete the document, take into account that your user is an administrator user in this object store, so even an administrator user cannot delete the document. The reason why you cannot delete the document is because you are still inside the 15 minutes period where FileNet does not allow the deletion of the document, if you come back after the 15 minutes you will be able to delete the document.
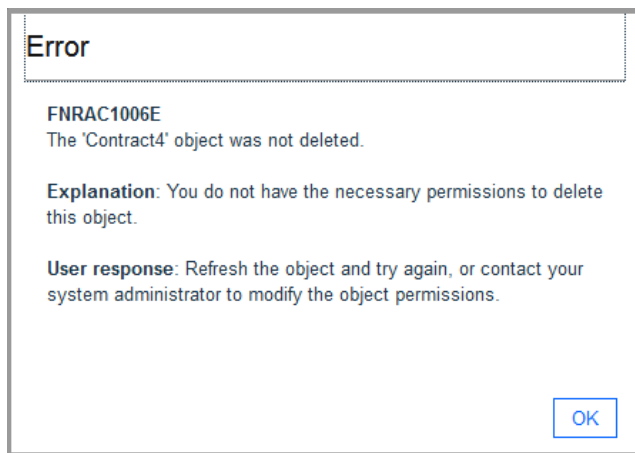
Now that you know how to apply retention, let's see how the logical deletion works.

First we need to create a recovery bin, to do that right click on Recovery Bins, as you see in the image below, and click on New Recovery Bin.
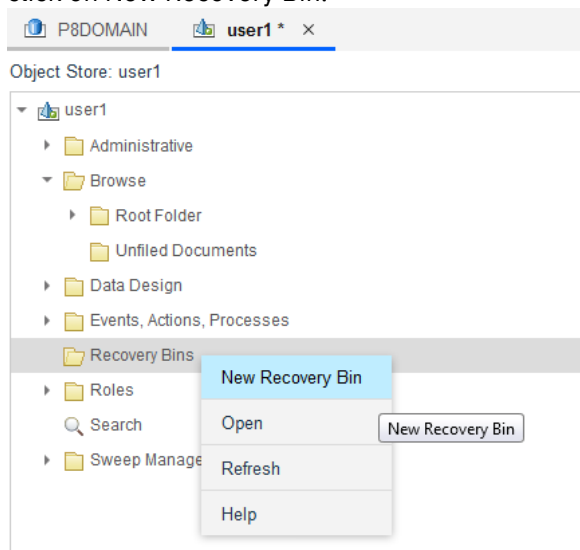
The wizard to create the recovery bin is showed in a new tab, fill in the Display name for the recovery bin, and click Next.
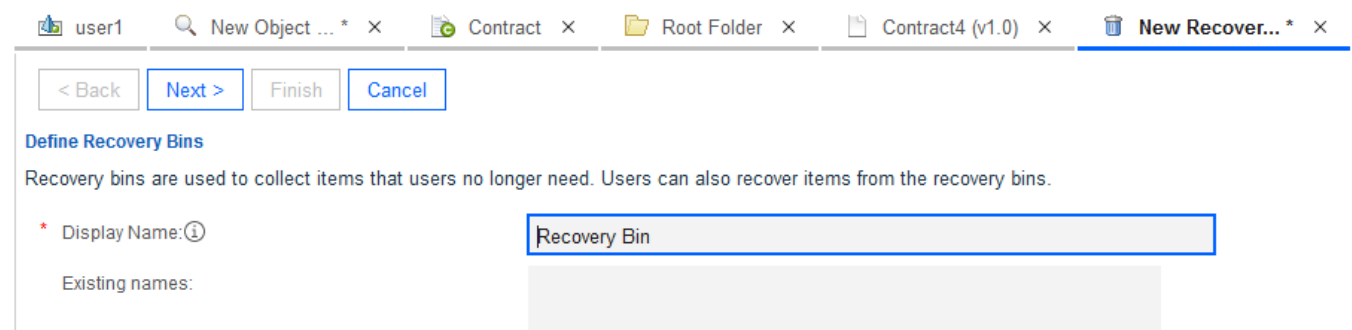
In the next step click Finish to create the recovery bin.
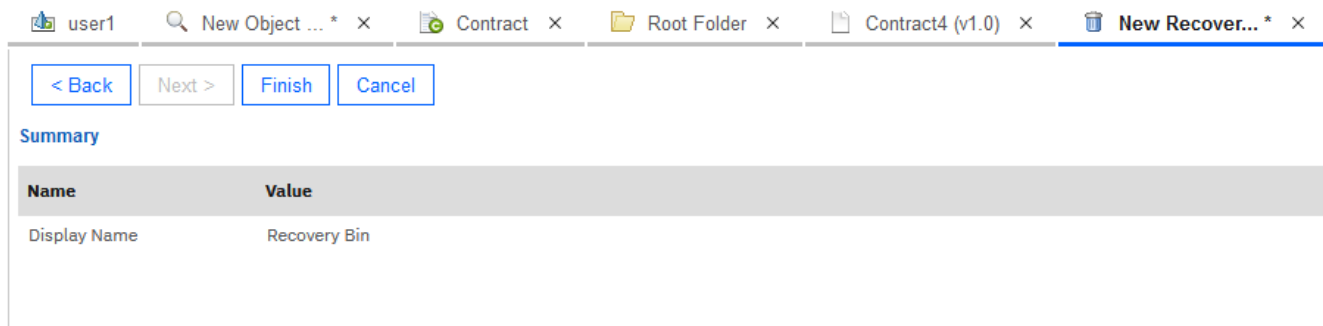
In the final step, click Open to display the recovery bin.
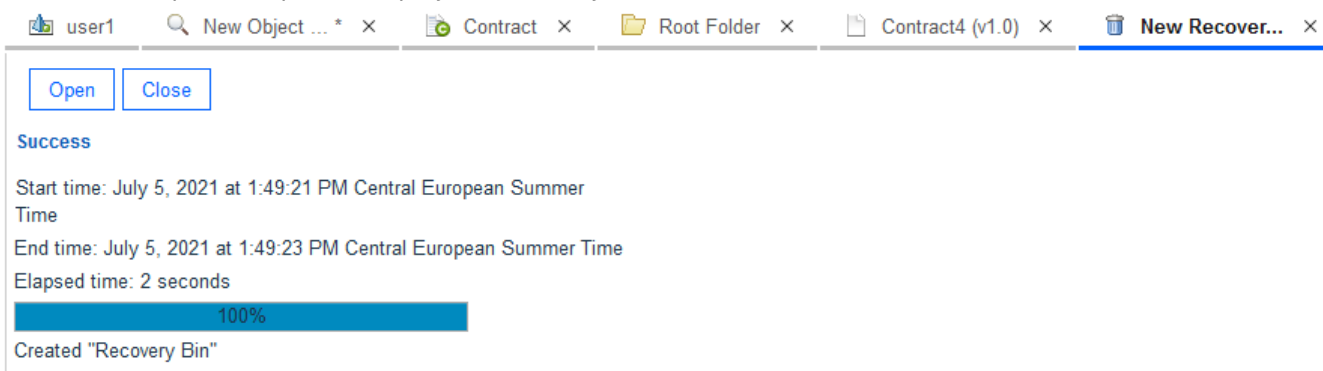
The recovery bin will be opened in a new tab and as you can see in the image below is empty.
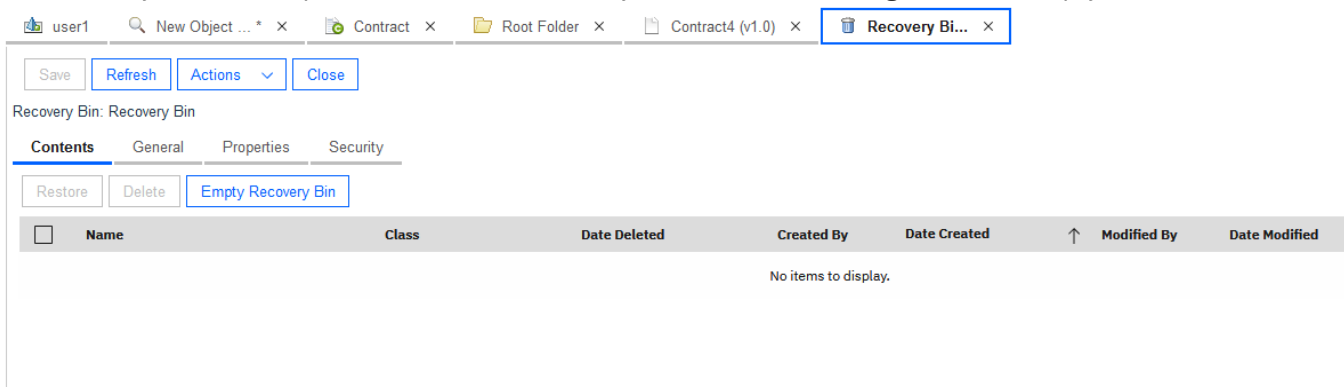
Now, go back to the Contract4 properties tab, this is the document that you created for the previous example about the retention period. Click on the Actions buttom and select Move To Recovery Bin.
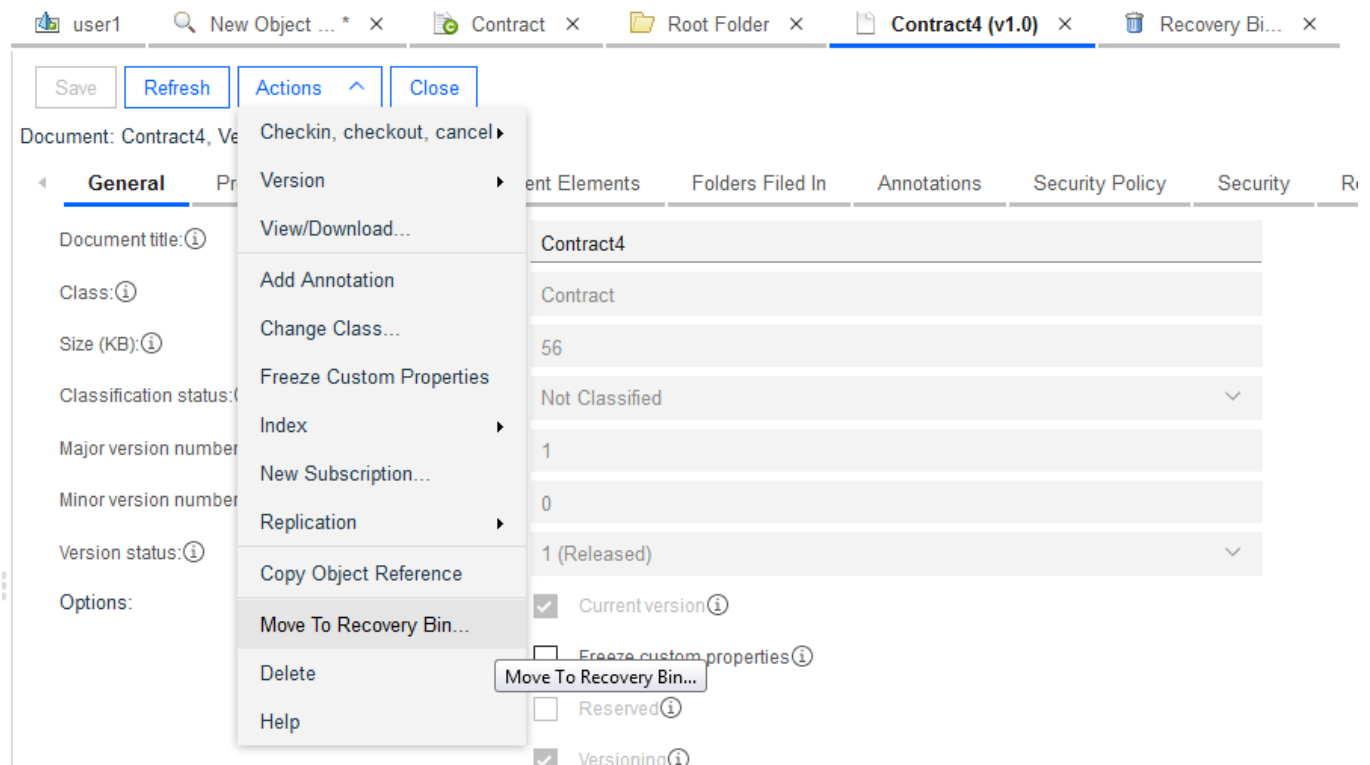
A dialog appears asking you to select the recovery bin that you want to use to move this document, select the recovery bin you have just created. Click Ok.

If you are still in the 15 minutes period that you defined for the Contract class, the following message will appear saying that you cannot send the document to the recovery bin, because the period has not expired yet, it the period expired you will be able to send the document to the recovery bin. If you couldn't send the document to the recovery bin, wait a few minutes till the retention period expires and you can send the document to the recovery bin.

Error

- Content Engine could not delete or move content because the retention period for the item has not expired. Current time: 7/5/21 11:51 AM; Retention time: 7/5/21 11:58 AM. Unable to delete object {807B767A-0000-C411-8A3E-A8E798B881D9} in enumeration property Versions.

OK
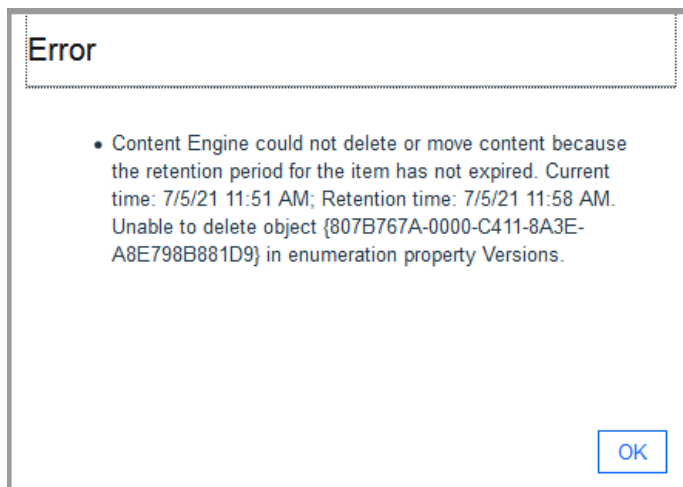
Once you sent the document to the recovery bin, go back to the recovery bin tab and click Refresh, you can see that the document Contract4 is now in here, this is a logical deletion.
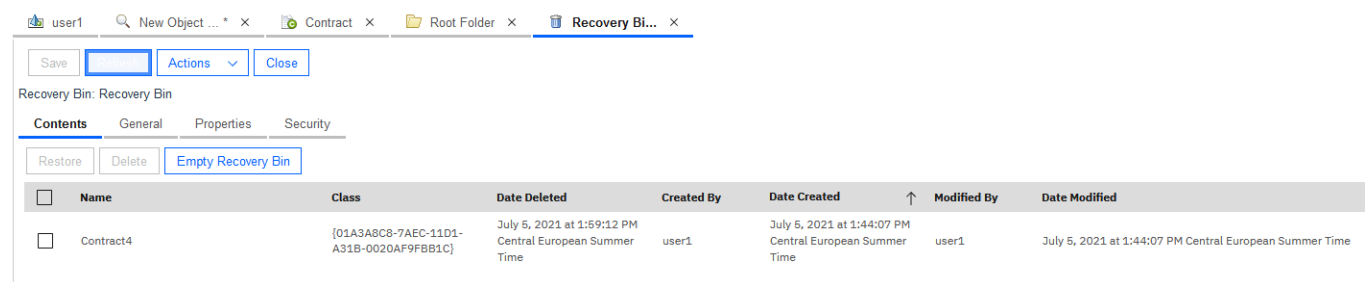
Open a new search to look for the documents of the Contract class, right click on Search and select New Object Store search. The search tab appears and select Contract as the class and in the Criteria section for the first property select ID and in the Condicion select Is Not Null, this search will look for all the documents of the class. Click Run.
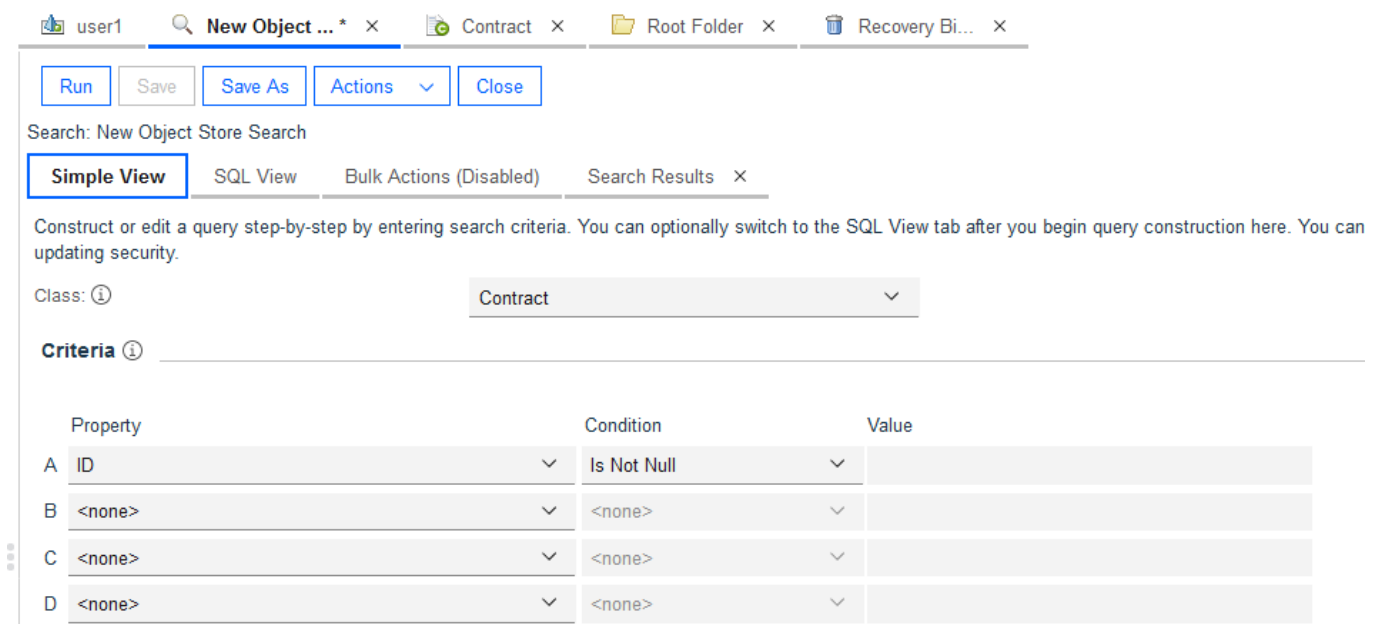
A seach results tab is opened showing you all the documents of the class Contract, as you can see in the image below only three documents appear, the Contract4 document is not displayed.

	Document Title	Class Description	Classification Status	Indexing Failure Code	Is Marked For Deletion	Retention Date	Component Binding Label
☐	Contract1	Contract	0		False		
☐	Contract2	Contract	0		False		
☐	Contract3	Contract	0		False		
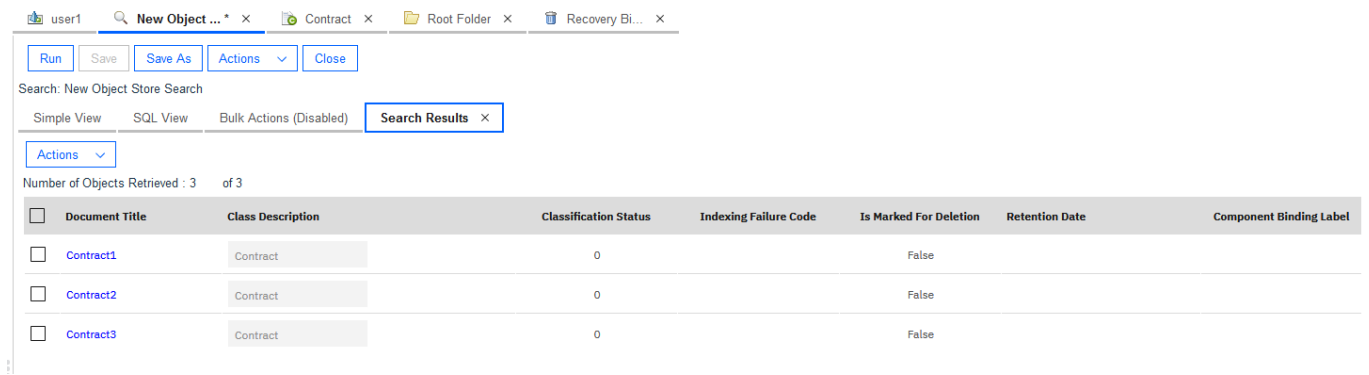
Go back to the recovery bin tab, select the Contract4 and click the Restore buttom.

	Name	Class	Date Deleted	Created By	Date Created ↑	Modified By	Date Modified
☑	Contract4	{01A3A8C8-7AEC-11D1-A31B-0020AF9FBB1C}	July 5, 2021 at 1:59:12 PM Central European Summer Time	user1	July 5, 2021 at 1:44:07 PM Central European Summer Time	user1	July 5, 2021 at 1:44:07 PM Central European Summer Time
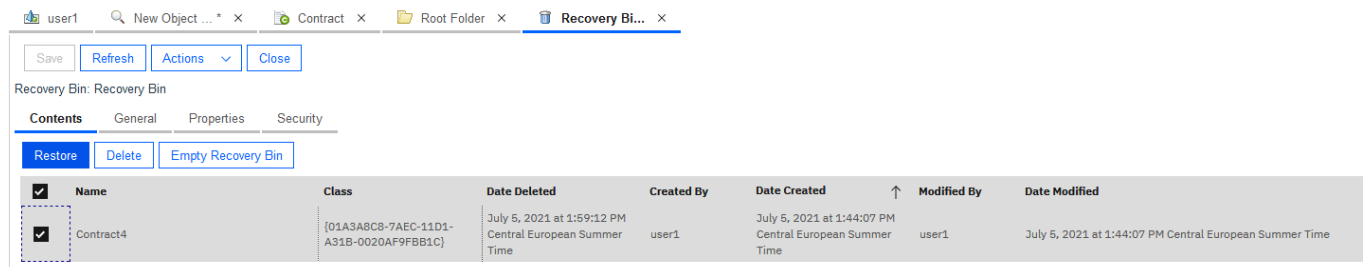
A confirmation message appears, click Ok.

Administration Console for Content Platform Engine

Do you want to restore the selected items?

OK   Cancel

Go back to the search tab, click on Simple View and click on Run to rerun the search again.

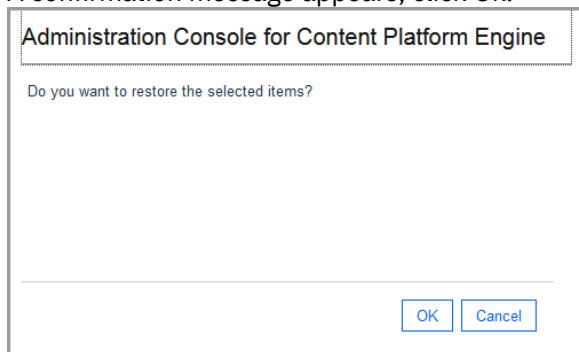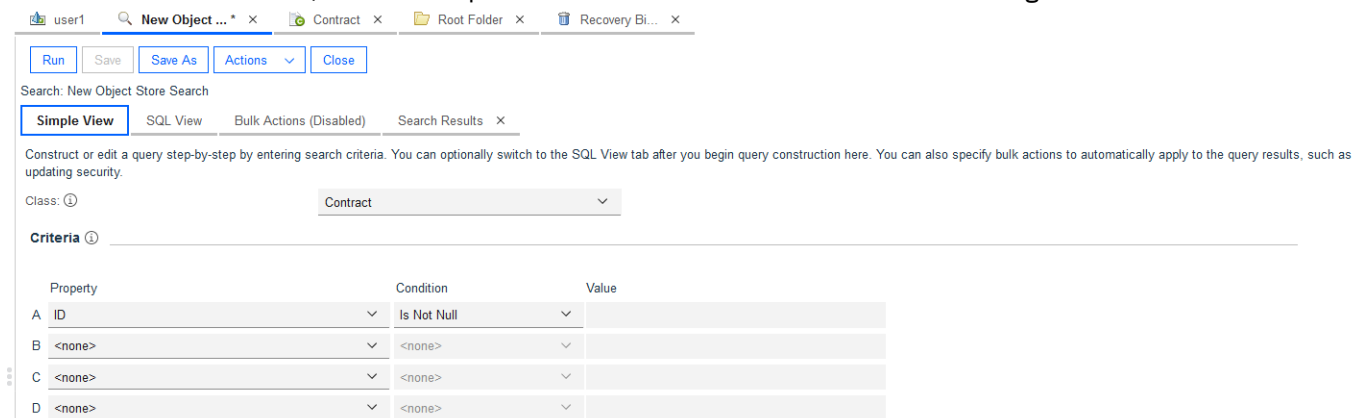Construct or edit a query step-by-step by entering search criteria. You can optionally switch to the SQL View tab after you begin query construction here. You can also specify bulk actions to automatically apply to the query results, such as updating security.

Class: ⓘ   Contract

Criteria ⓘ

	Property	Condition	Value
A	ID	Is Not Null	
B	<none>	<none>	
C	<none>	<none>	
D	<none>	<none>	

A second search results tab is opened, in this case all the four documents of our class are displayed, including Contract4 now that we have restored it from the recovery bin.

user1 | New Object ... * ✕ | Contract ✕ | Root Folder ✕ | Recovery Bi... ✕

Run | Save | Save As | Actions ⌄ | Close

Search: New Object Store Search

Simple View | SQL View | Bulk Actions (Disabled) | Search Results ✕ | **Search Results** ✕

Actions ⌄

Number of Objects Retrieved : 4   of 4

	Document Title	Class Description	Classification Status	Indexing Failure Code	Is Marked For Deletion	Retention Date	Component Binding Label
☐	Contract1	Contract	0		False		
☐	Contract2	Contract	0		False		
☐	Contract3	Contract	0		False		
☐	Contract4	Contract	0		False	July 5, 2021 at 1:58:15 PM Central European Summer Time	