

# webMethods Adapter for FileNet CE

Installation and User's Guide

Version 10.1

October 2017

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**WEBMETHODS**

This document applies to webMethods Adapter for FileNet CE 10.1 and to all subsequent releases.

Specifications contained herein are subject to change and these changes will be reported in subsequent release notes or new editions.

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## 1 About this Guide

This guide describes how to configure and use webMethods Adapter for FileNet CE (version 3.0; the adapter for later versions of FileNet CE will be available with the next release). It contains information for administrators and application developers who want to exchange data with FileNet CE system.

To use this guide effectively, you should be familiar with:

- The basic concepts and tasks for working with FileNet CE Content Engine
- Terminology and basic operations of your operating system
- The setup and operation of webMethods Integration Server
- How to perform basic tasks with Software AG Designer

### 1.1 Document Conventions

Convention	Description
<b>Bold</b>	Identifies elements on a screen.
Narrowfont	Identifies storage locations for services on webMethods Integration Server, using the convention <i>folder.subfolder:service</i> .
UPPERCASE	Identifies keyboard keys. Keys you must press simultaneously are joined with a plus sign (+).
<i>Italic</i>	Identifies variables for which you must supply values specific to your own situation or environment. Identifies new terms the first time they occur in the text.
Monospace font	Identifies text you must type or messages displayed by the system.
{ }	Indicates a set of choices from which you must choose one. Type only the information inside the curly braces. Do not type the { } symbols.
	Separates two mutually exclusive choices in a syntax line. Type one of these choices. Do not type the   symbol.
[ ]	Indicates one or more options. Type only the information inside the square brackets. Do not type the [ ] symbols.

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... Indicates that you can type multiple options of the same type.  
Type only the information. Do not type the ellipsis (...).

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## 1.2 Online Information

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### Software AG Documentation Website

You can find documentation on the Software AG Documentation website at <http://documentation.softwareag.com>. The site requires Empower credentials. If you do not have Empower credentials, you must use the TECHcommunity website.

### Software AG Empower Product Support Website

You can find product information on the Software AG Empower Product Support website at <https://empower.softwareag.com>.

To submit feature/enhancement requests, get information about product availability, and download products, go to [Products](#).

To get information about fixes and to read early warnings, technical papers, and knowledge base articles, go to the [Knowledge Center](#).

### Software AG TECHcommunity

You can find documentation and other technical information on the Software AG TECHcommunity website at <http://techcommunity.softwareag.com>. You can:

- Access product documentation, if you have TECHcommunity credentials. If you do not, you will need to register and specify "Documentation" as an area of interest.
- Access articles, code samples, demos, and tutorials.
- Use the online discussion forums, moderated by Software AG professionals, to ask questions, discuss best practices, and learn how other customers are using Software AG technology.
- Link to external websites that discuss open standards and web technology.



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## 2 Overview of the Adapter

### 2.1 About Adapter FileNet CE

FileNet CE, a company acquired by IBM, developed software to help enterprises manage their content and business processes. The FileNet CE P8 platform, their flagship system, is a framework for developing custom enterprise systems, offering much functionality out of the box and capable of being customized to manage a specific business process.

Based in Costa Mesa, California, the company markets Enterprise Content Management (ECM) and Business Process Management (BPM) solutions in more than 90 countries through its own global sales, services and support organizations, as well as via its ValueNet Partner network of resellers, system integrators and application developers. <sup>[1]</sup>

### 2.2 Architecture Overview

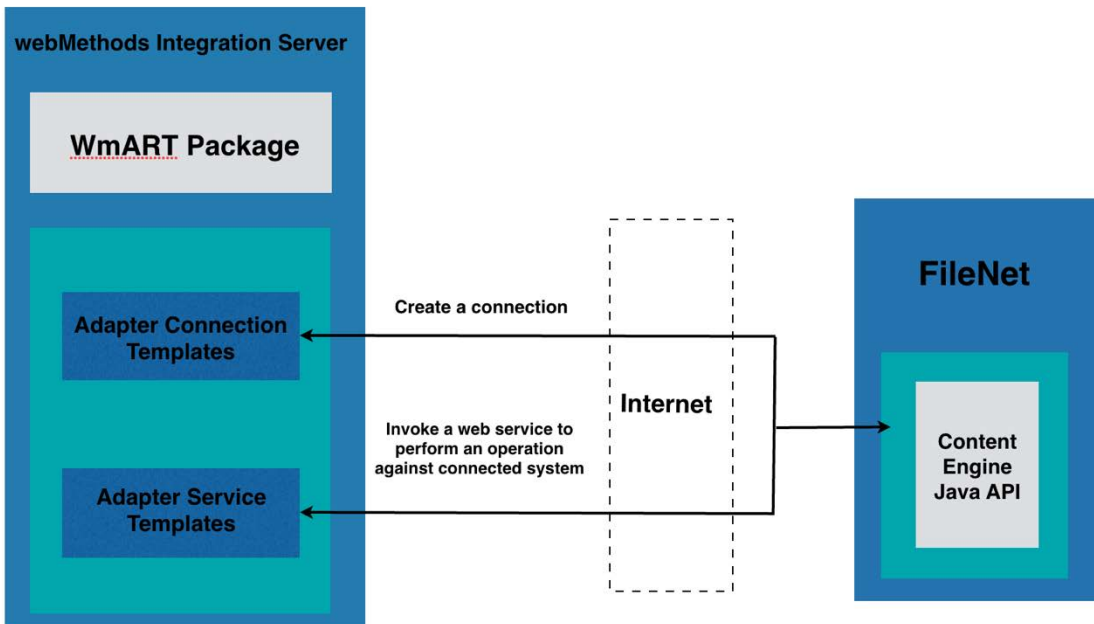
The Adapter for FileNet CE provides a set of user interfaces, services, and templates that enable you to create integrations with FileNet CE using FileNet CE's Content Engine API. The adapter is provided as a single package that must be installed on Integration Server. For detailed installation instructions, see ["Installing, Upgrading, and Uninstalling Adapter for FileNet CE"](#). For software requirements, see *webMethods Adapters System Requirements*.

Because the Adapter for FileNet CE uses FileNet CE's Content Engine API to communicate with the FileNet CE system, the adapter requires installing the FileNet CE JARs, which you can download. For more details, see ["Installing FileNet CE Content Engine API on Integration Server"](#).

Adapter for FileNet CE enables you to configure the following components:

- **Adapter connections.** Enable Integration Server to connect to FileNet CE systems at run time. You must configure an adapter connection before you can configure adapter services or adapter notifications. For a detailed description of adapter connections, see ["Adapter Connections"](#).
- **Adapter services.** Enable Integration Server to initiate and perform operations against a FileNet CE system. For example, an adapter service could upload an invoice document into FileNet CE and make it available for a trading partner later on see the original invoice document in PDF format. You configure adapter services using adapter services templates, which are provided with the FileNet CE Adapter. For a detailed description of adapter services, see ["Adapter Services"](#).

The following diagram shows at a high level how an adapter service uses an adapter connection and adapter services to connect and perform operations on a FileNet CE system.



## 2.3 Package Management

Adapter for FileNet CE is provided as a package called WmFileNet CEAdapter that you manage like any package on Integration Server.

There are several considerations regarding how you set up and effectively manage your packages on Integration Server:

- You must create user-defined packages for your connections, adapter services, and notifications. For details, see [“Adapter for FileNet CE Package Management”](#).
- You should understand how package dependencies work so you make the best decisions regarding how you manage your adapter services and notifications. For details, see [“Package Dependency Requirements and Guidelines”](#).
- You control which development groups have access to which adapter services and notifications. For details, see [“Group Access Control”](#).
- You should understand how clustering, an advanced feature of Integration Server, works to effectively manage your adapter services.

## 2.4 Adapter Connections

The FileNet CE Adapter connects to FileNet CE through FileNet CE Content Engine API at run time. You create one or more connections at design time to use in integrations. The number of connections you create depend on how many FileNet CE system repositories you are connecting to and your integration needs.

For example, if you are connecting to different FileNet CE repositories, you will need to create connections that are unique to those repositories. Additionally, if you have multiple installations of the same FileNet CE repositories in different stages (Development, Test, QA), you access each using different connections.

Adapter for FileNet CE connections contain parameters that Integration Server uses to manage connections to the system so that they can be used by the adapter to provide services. You configure connections using Integration Server Administrator. You must have Integration Server Administrator privileges to access FileNet CE Adapter's administrative screens.

For instructions on configuring, viewing, editing, enabling, and disabling the FileNet CE Adapters connections, see "[FileNet CE Connections](#)". For information about setting user privileges, see *Integration Server administrator's guide*.

### 2.4.1 Connection Pools

Integration Server includes a connection management service that dynamically manages connections and connection pools based on configuration settings that you specify for the connection. All adapter services use connection pooling.

A connection pool is a collection of connections with the same set of attributes. Integration Server maintains connection pools in memory. Connection pools improve performance by enabling adapter services to re-use open connections instead of opening new connections.

#### 2.4.1.1 Run-Time Behavior of Connection Pools

When you enable a connection, Integration Server initializes the connection pool, creating the number of connection instances you specified in the connection's **Minimum Pool Size** field when you configured the connection.

Whenever an adapter service needs a connection, Integration Server provides a connection from the pool. If no connections are available in the pool, and the maximum pool size has not been reached, the server creates one or more new connections (according to the number specified in the **Pool Increment Size** field) and adds them to the connection pool. If the pool is full (as specified in **Maximum Pool Size** field), the requesting service will wait for Integration Server to obtain a

connection, up to the length of time specified in the **Block Timeout** field, until a connection becomes available.

Periodically, Integration Server inspects the pool and removes inactive connections that have exceeded the expiration period that you specified in the **Expire Timeout** field.

If initialization of the connection pool fails because of a network connection failure or some other type of exception, you can enable the system to retry the initialization any number of times, at specified intervals. For information about configuring connections, see [“Configuring Adapter for FileNet CE Connections”](#).

#### 2.4.1.2 *Built-In Services for Connections*

Integration Server provides built-in services that enable you to programmatically control connections. You can use them to enable and disable a connection, and to return usage statistics and the current state (Enabled or Disabled) and error status for a connection. These services are located in the WmART package, in the `pub.art.connection` folder.

The `setAdapterServiceNodeConnection` and `setPollingNotificationNodeConnection` built-in services enable you to change the connection associated with an adapter service.

For details, see the *Integration Server built-in services reference guide*.

## 2.5 Adapter Services

To use Adapter for FileNet CE, you create adapter services. Adapter services allow you to connect to the adapter's resource and initiate an operation on the resource from Integration Server.

You call adapter services from flow or Java services to interact with FileNet CE document types.

Adapter services are based on templates provided with Adapter for FileNet CE. Each template represents a specific technique for doing work on a resource, such as using the Create Document template to upload a new document into FileNet CE system.

An adapter service template contains all the code necessary for interacting with the resource but without the data specifications. You provide these specifications when you create a new adapter service.

Creating a new service from an adapter service template is straightforward. Using Software AG Designer, you assign the service a default adapter connection.

After you select the connection for the adapter service, you select the adapter service template and supply the data specifications using Designer. Some familiarity with using Designer is required. For more information, see *Designer Service Development Help*.

Adapter for FileNet CE provides the following adapter service templates:

Adapter Type	Service	Adapter Template	Service Description
Create		Create Document	Creates a new document in FileNet CE.
Update		Update Document	Updates metadata of a document in FileNet CE.
Delete		Delete Document	Deletes a document in FileNet CE.
Read		Get Document	Gets metadata for a document in FileNet CE.
Search		Search Document (Basic)	
Search Documents (Pass Through)			
Create		Create Folder Path	Creates a folder path in FileNet CE.
Delete		Delete Folder Path	Deletes a folder path in File Net.

### 2.5.1 Using Adapter Services

The following table lists the tasks required to use adapter services.

For this task...	Use these tools...
1. Create an adapter connection. For details, see <a href="#">“The Adapter for FileNet CE Connections”</a>	Integration Server Administrator
2. Select the appropriate adapter service template and configure the adapter service. Depending	Designer

on the type of adapter service, you specify:

- The adapter connection
- The document type
- The query expression used to modify or select data, attributes to choose from a document type.
- The input fields and types as needed
- The output fields and types as needed

The adapter allows you to dynamically configure the data type mapping for a particular database in an XML configuration file.

For more information about configuring adapter services, see [Adapter Services](#) .

3. If you plan to use an Integration Designer Server flow or Java service to invoke the adapter service, design the flow or Java service to use this adapter service.

4. Manage the adapter service. [Integration Designer](#) and [Integration Server Administrator](#)

For details, see [“Package Management”](#) , and [“Adapter Services”](#) .

### ***2.5.2 Changing the Connection Associated with an Adapter Service at Run Time***

Integration Server enables you to dynamically select the connection a service uses to interact with the adapter's resource. This feature enables one service to interact with multiple, similar backend resources.

For example, a service can be defined to use a default connection that interacts with your company's production FileNet CE system. However, at run time you can override the default connection and instead use another connection to interact with the company's test FileNet CE system.

## 3 Installing, Upgrading, and Uninstalling Adapter for FileNet CE

### 3.1 Overview

This chapter explains how to install, upgrade, and uninstall webMethods Adapter for FileNet CE. The instructions use the Software AG Installer and the Software AG Uninstaller wizards. For complete information about the wizards or other installation methods, or to install other webMethods products, see *webMethods installation guide*.

### 3.2 Requirements

For a list of operating systems, RDBMSs, and webMethods products supported by the FileNet CE Adapter, see *webMethods Adapters System Requirements*.

The Adapter for FileNet CE connects to FileNet CE P8 Platform via FileNet CE's Content Engine JAR libraries meaning that these libraries must be installed to the same location as the FileNet CE Adapter.

Adapter for FileNet CE has no hardware requirements beyond those of its host Integration Server.

### 3.3 The Integration Server Home Directory

Beginning with Integration Server 9.6, you can create and run multiple Integration Server instances under a single installation directory. Each Integration Server instance has a home directory under *Integration Server\_directory\instances\instance\_name* that contains the packages, configuration files, log files, and updates for the instance.

For more information about running multiple Integration Server instances, see the *webMethods Integration Server Administrator's Guide*.

If you are using Integration Server 9.5 and lower, the Integration Server home directory is *Integration Server\_directory*. For example, on Integration Server 9.5 the adapter package is installed in the *Integration Server\_directory\packages* directory.

This guide uses the *packages\_directory* as the home directory in Integration Server classpaths. For Integration Server 9.6 and above, the *packages\_directory* is

*Integration Server\_directory\instances\instance\_name\packages* directory. For Integration Server 9.5 and lower, the *packages\_directory* is *Integration Server\_directory\packages* directory.

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### 3.3.1 Installing Adapter for FileNet CE

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**Note:** If you are installing Adapter for FileNet CE in a clustered environment, you must install the adapter on each Integration Server in the cluster, and each installation must be identical.

---

#### To install Adapter for FileNet CE

- 1 Download Installer from the [Empower Product Support website](#).
- 2 If you are installing the adapter on an existing Integration Server, shut down the Integration Server.
- 3 Start the Installer wizard.
- 4 Choose the webMethods release that includes the Integration Server on which you want to install the adapter. For example, if you want to install the adapter on Integration Server 9.8, choose the 9.8 release.
- 5 Specify the installation directory as follows:
  - If you are installing on an existing Integration Server, specify the webMethods installation directory that contains the host Integration Server.
  - If you are installing both the host Integration Server and the adapter, specify the installation directory to use.
- 6 In the product selection list, select **Adapters >webMethods Adapter 10.1 for FileNet CE**.

If you are using Integration Server 9.6 and above, you can choose to install the package in the default instance. In this case, Software AG Installer installs the adapter in both locations, *Integration Server\_directory*\packages and the default instance packages directory located in *Integration Server\_directory*\instances\default\packages.
- 7 To download the documentation for the adapter, go to [Software AG Documentation website](#).
- 8 After the installation completes, close the Installer and start the host Integration Server.

### 3.4 Uninstalling Adapter for FileNet CE

#### To uninstall Adapter for FileNet CE

- 1 Shut down the host Integration Server. You do not need to shut down any other webMethods products or applications that are running on your machine.
- 2 Start Software AG Uninstaller, selecting the webMethods installation directory that contains the host Integration Server.



- 3 In the product selection list, select **Adapters > webMethods Adapter for FileNet CE**.
- 4 . You can also choose to uninstall documentation.
- 5 After Uninstaller completes, restart the host Integration Server.

Uninstaller removes all Adapter for FileNet CE-related files that were installed. However, Uninstaller does not delete files created after you installed the adapter (for example, user created or configuration files), nor does it delete the adapter directory structure.

You can go to the *Integration Server\_directory*\packages directory and *Integration Server\_directory*\instances\default\packages directory. Delete the WmFileNet CEAdapter directory.

## 4 Package Management

### 4.1 Overview

The following sections describe how to set up and manage your Adapter for FileNet CE packages, set up Access Control Lists (ACLs), and use the adapter in a clustered environment.

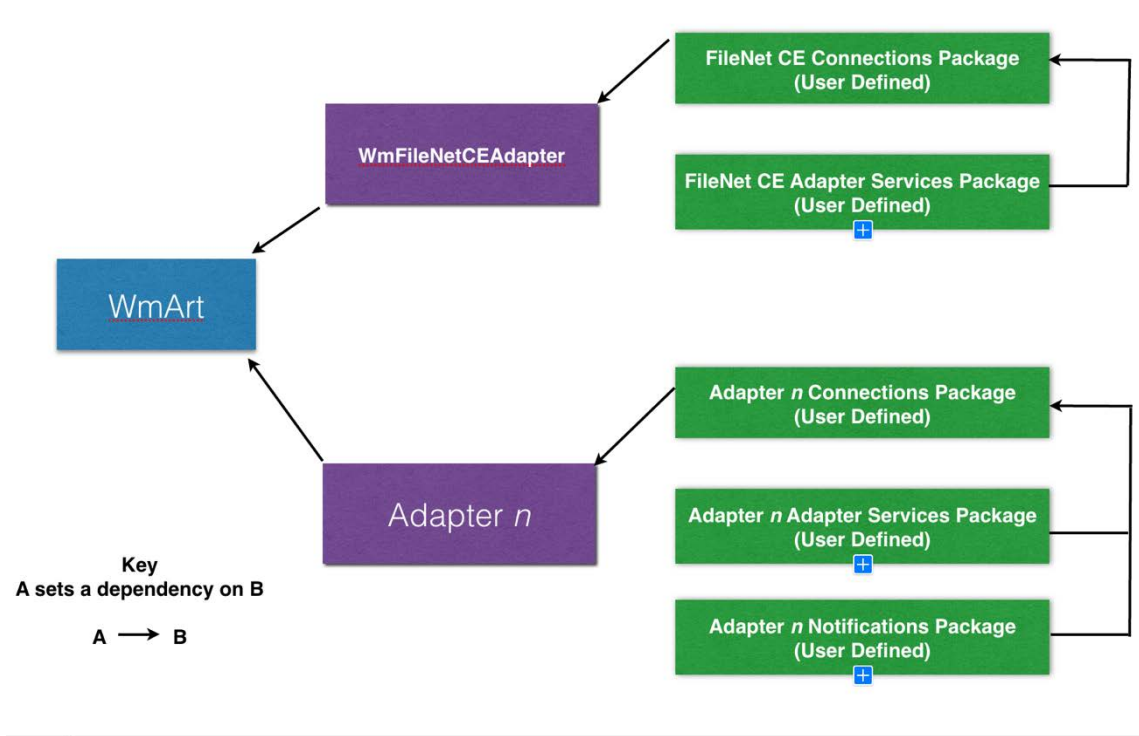
### 4.2 Adapter for FileNet CE Package Management

Adapter for FileNet CE is provided as a package called `WmFileNet_CECEAdapter`.

You manage the `WmFileNet_CECEAdapter` package as you would manage any package on webMethods Integration Server.

When you create connections, adapter services, and adapter notifications, define them in user-defined packages rather than in the `WmFileNet_CECEAdapter` package. Doing so will allow you to manage the package more easily.

As you create user-defined packages in which to store connections, adapter services, and adapter notifications, use the package management functionality provided in Software AG Designer and set the user-defined packages to have a dependency on the `WmFileNet_CECEAdapter` package. That way, when the `WmFileNet_CECEAdapter` package loads or reloads, the user-defined packages load automatically. See the following diagram:



Package management tasks include:

- [Setting package dependencies \(see “Package Dependency Requirements and Guidelines”\)](#)
- [“Enabling Packages”](#)
- [“Importing and Exporting Packages”](#)
- [“Group Access Control”](#)

#### 4.2.1 Package Dependency Requirements and Guidelines

This section contains a list of dependency requirements and guidelines for user-defined packages. For instructions for setting package dependencies, see the *Designer Service Development online help*.


- A user-defined package must have a dependency on its associated adapter package, `WmFileNet CECEAdapter`. (The `WmFileNet CECEAdapter` package has a dependency on the `WmART` package.)
- Package dependencies ensure that at startup the Integration Server automatically loads or reloads all packages in the proper order: the `WmART` package first, the adapter package next, and the user-defined packages last. The `WmART` package is automatically installed when you install Integration Server. You should not need to manually reload the `WmART` package.

- If the connections and adapter services of an adapter are defined in different packages, then:
  - A package that contains the connections must have a dependency on the adapter package.
  - Packages that contain adapter services must have a dependency on their associated connection package.
- Keep connections for different adapters in separate packages so that you do not create interdependencies between adapters. If a package contains connections for two different adapters, and you reload one of the adapter packages, the connections for both adapters will reload automatically.
- Integration Server will not allow you to enable a package if it has a dependency on another package that is disabled. That is, before you can enable your package, you must enable all packages on which your package depends. For information about enabling packages, see [“Enabling Packages”](#).
- Integration Server will allow you to disable a package even if another package that is enabled has a dependency on it. Therefore, you must manually disable any user defined packages that have a dependency on the adapter package before you disable the adapter package. For information about disabling packages, see [“Disabling Packages”](#).
- You can name connections, adapter services, and notifications the same name provided that they are in different folders and packages.

### 4.2.2 Enabling Packages

All packages are automatically enabled by default. Use the following procedure when you want to enable a package that was previously disabled.

#### To enable a package

- 1 Open Integration Server Administrator if it is not already open.
- 2 In the **Packages** menu of the navigation area, click **Management**.
- 3 Click **No** in the **Enabled** column. The server displays a  and **Yes** in the **Enabled** column.

---

**Note:** Enabling an adapter package will not cause its associated user-defined packages to be reloaded. For information about reloading packages, see *Designer Service Development online help*.

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**Important!** Before you manually enable a user-defined package, you must first enable its associated adapter package (WmFileNet CECEAdapter).

---

### 4.2.3 Disabling Packages

When you want to temporarily prohibit access to the elements in a package, disable the package. When you disable a package, the server unloads all its elements from memory. Disabling a package prevents Integration Server from loading that package at startup.

---

**Important!** If your adapter has multiple user-defined packages, and you want to disable some of them, disable the adapter package first (WmFileNet CECEAdapter). Otherwise, errors will be issued when you try to access the remaining enabled user-defined packages.

---

#### To disable a package

- 1 Open Integration Server Administrator if it is not already open.
- 2 In the **Packages** menu of the navigation area, click **Management**.
- 3 Click **Yes** in the **Enabled** column for the package that you want to disable. The server issues a prompt to verify that you want to disable the package. Click **OK** to disable the package. When the package is disabled, the server displays **No** in the **Enabled** column.

A disabled adapter will:

- Remain disabled until you explicitly enable it using Integration Server Administrator.
- Not be listed in Designer.

### 4.2.4 Importing and Exporting Packages

You import and export packages using Designer. Exporting allows you to export the package to a .zip file and save it to your hard drive. The .zip file can then be imported for use by another package.

---

**Important!** Do not rename packages you export; the rename function is comparable to moving a package, and when you import the renamed package, you lose any triggers, connections, and notifications associated with this package.

---

For details about importing and exporting packages, see *Designer Service Development online help*.

### 4.3 Group Access Control

To control which groups have access to which adapter services, use access control lists (ACLs). For example, you can use ACLs to prevent one development group from inadvertently updating the work of another group, or to allow or deny access to services that are restricted to one group but not to others.

For information about assigning and managing ACLs, see *Designer Service Development online help* for your release.

## 5 Adapter for FileNet CE Connections

### 5.1 Overview

This chapter describes how to configure and manage Adapter for FileNet CE connections. For more information about how adapter connections work, see [Adapter Connections](#).

### 5.2 Before Configuring or Managing Adapter Connections

Perform the following steps before configuring or managing adapter connections.

#### To prepare to configure or manage adapter connections

- 1 Install webMethods Integration Server and Adapter for FileNet CE on the same machine.
- 2 Install FileNet CE Content Engine API libraries to Integration Server

### 5.3 Installing FileNet CE API Libraries on Integration Server

The adapter comes pre-packaged as zip file (Example, WmFileNet CECEAdapter\_###.zip) and must be extracted into webMethods Integration Server packages directory at location:

```
<webmethods    home>/IntegrationServer/instances/<integration    server  
instance>/packages
```

This gives you a directory:

```
<webMethods  
home>/IntegrationServer/instances/default/packages/WmFileNet  
CECeAdapter
```

for the IS installation in default profile.

The adapter Content Engine APIs (and therefore the relevant JAR libraries need to be installed to the adapter. The JAR libraries needed are as follows:

- activation.jar
- javaapi.jar
- mailapi.jar

- pc8jares.jar
- soap.jar
- xerces.jar
- apis.jar

Also, these libraries must be copied into the adapter directory at location, `WmFileNetCECeAdapter\code\jars`

---

**Note:** The adapter runs with package classloader (to avoid library clashed with the Integration Server), as can be seen from the line `<value name="classloader">package</value>`, in the adapter service manifest file `manifest.v3`.

So, if you want to create Integration Server services then you also need to set this package classloader directive in your package!

---

## 5.4 Configuring Adapter for FileNet CE Connections

You can configure an adapter's connections from the Integration Server Administrator and Designer.

Perform the following steps to configure the adapter's connections in Integration Service Administrator.

1. In the Adapters menu in Integration Server Administrator's navigation area, click FileNet CE Adapter.
2. The Connections screen displays all connections that have been created. If no connections have been created for the current package, "No connections found" is displayed.
3. Click **Configure New Connection**
4. The Configure Connection Type is displayed. Enter the parameters that are required for this connection. The screenshot below shows an example configuration. See "Run-Time Behavior of Connection Pools" for information of the connection settings.
5. Once the information for the new connection is complete, click Save Connection.
6. The new connection is saved and can be used when creating a new service from the service template. See "[Adapter Services](#)"



Example configuration for a new connection is depicted in the following screenshot:

Adapters > Filenet Adapter > View Connection	
<ul style="list-style-type: none"> <li><a href="#">Return to Filenet Adapter Connections</a></li> </ul>	
Connections:Filenet Details	
Connection Type	Filenet Server Connection
Package Name	WmFilenetCEAdapter
Connection Properties	
Application engine root url	http://192.168.4.126:8008/ApplicationEngine
Respository Name	Braintribe
Username	rbohnsack@P8.com
Password	*****
Local Transaction Control?	true
Connection Management Properties	
Enable Connection Pooling	true
Minimum Pool Size	1
Maximum Pool Size	10
Pool Increment Size	1
Block Timeout (msec)	1000
Expire Timeout (msec)	1000
Startup Retry Count	0
Startup Backoff Timeout (sec)	10

## 5.5 Connection Properties

The section above shows you how to create a new connection to your FileNet CE system. This next section describes the parameters for the defining a connection.

### Adapter Properties

Attribute	(Example) Value	Description
Connection Type	FileNet CE Server Connection	The connection type that you want to establish

Attribute	(Example) Value	Description
		with FileNet CE.
Package Name	WmFileNet CECEAdapter	The Integration Server package you want to use.
Connection Name	wmFileNet CECEConnectionBT	The name of the connection acting as default.
Application Engine Root URL	http://192.168.4.126:8008/Application Engine	The FileNet CE service application root URL. This is where all the FileNet CE services are hosted via HTTP/HTTPS.
Repository Name	Braintribe	The name of the FileNet CE repository you wish to connect to.
Username	User	The username for connecting.
Password	secret	The user's password.
Retype Password		The user's password retyped.
Local Transaction Control?	true	Whether Local Transaction Control should be used on FileNet CE connection.

## Connection Management Properties

Field	Description/Action
Enable Connection Pooling	<p>Enables the connection to use connection pooling. For more information about connection pooling see the Integration Server connection pool documentation.</p> <p>Note: If you plan to enable connection pooling in a clustered environment, consider the connection pool size.</p>
Minimum Pool Size	<p>If connection pooling is enabled, this field specifies the number of connections to create when the connection is enabled. The adapter will keep open the number of connections you configure here regardless of whether these connections become idle.</p>
Maximum Pool Size	<p>If connection pooling is enabled, this field specifies the maximum number of connections that can exist at one time in the connection pool.</p>
Pool Increment Size	<p>If connection pooling is enabled, this field specifies the number of connections by which the pool will be incremented if connections are needed, up to the maximum pool size.</p>
Block Timeout	<p>If connection pooling is enabled, this field specifies the number of milliseconds that the Integration Server will wait to obtain a connection with FileNet CE before it times out and returns an error.</p> <p>For example, you have a pool with Maximum Pool Size of 20. If you receive 30 simultaneous requests for a connection, 10 requests will be waiting for a connection from the pool. If you set the Block Timeout to 5000, the 10 requests will wait for a connection for 5 seconds before they time out and return an error. If the services using the connections require 10 seconds to complete and return connections to the pool, the pending requests will fail and return an error message stating that no connections are available. If you set the Block Timeout value too high, you may encounter problems during error conditions. If a request contains errors that delay the response, other requests will not be sent.</p> <p>This setting should be tuned in conjunction with the Maximum Pool</p>

Field	Description/Action
	Size to accommodate such bursts in processing.
Expire Timeout	<p>If connection pooling is enabled, this field specifies the number of milliseconds that an inactive connection can remain in the pool before it is closed and removed from the pool. The connection pool will remove inactive connections until the number of connections in the pool is equal to the Minimum Pool Size. The inactivity timer for a connection is reset when the connection is used by the adapter. If you set the Expire Timeout value too high, you may have a number of unused inactive connections in the pool. This consumes local memory and a connection on your backend resource. This could have an adverse effect if your resource has a limited number of connections. If you set the Expire Timeout value too low, performance could degrade because of the increased activity of creating and closing connections.</p> <p>This setting should be tuned in conjunction with the Minimum Pool Size to avoid excessive opening/closing of connections during normal processing.</p>
Startup Retry Count	The number of times that the system should attempt to initialize the connection pool at startup if the initial attempt fails. The default is 0.
Startup Backoff Timeout	The number of seconds that the system should wait between attempts to initialize the connection pool.

## 5.6 Viewing Adapter Connection Parameters

You can view a connection's parameters from Integration Server Administrator and Designer.

### 5.6.1 Using Integration Server Administrator to View Adapter Connection Parameters

Perform the following steps to view adapter connection parameters in Integration Server Administrator.

#### To view the parameters for a connection using Integration Server Administrator

- 1 In the **Adapters** menu in Integration Server Administrator's navigation area, click **FileNet CE**.

When using the adapter with Integration Server 8.0 and later, you can sort and filter the list of connections that appears on the Connections screen.

- To sort information on the Connections screen, click the **Up** and **Down** arrows at the top of the column you want to sort.
- To filter the list of connections:
  - i On the Connections screen, click **Filter Connections**.
  - ii Type the criterion by which you want to filter into the **Filter criteria** box. Filtering is based on the node name, not the connection alias. To locate all connections containing specific alphanumeric characters, use asterisks (\*) as wildcards. For example, if you want to display all connections containing the string "abc", type \*abc\* in the **Filter criteria** box.
  - iii Click **Submit**. The Connections screen displays the connections that match the filter criteria.
  - iv To re-display all connections, click **Show All Connections**.  
The Connections screen appears, listing all the current connections. You can control the number of connections that are displayed on this screen.

- 2 On the Connections screen, click the  icon for the connection you want to see.

The View Connection screen displays the parameters for the connection. For descriptions of the connection parameters, see ["Configuring Adapter for FileNet CE Connections"](#).

- 3 Click **Return to FileNet CE connections** to return to the main connections screen.

### 5.6.2 Using Designer to View Adapter Connection Parameters

Perform the following steps to view adapter connection parameters in Designer.

#### To view the parameters for a connection using Designer


- 1 From the Designer navigation area, open the package and folder in which the connection is located.
- 2 Double-click the connection you want to view.

The parameters for the connection appear on the **Connection Information** tab. For descriptions of the connection parameters, see [“Connection Properties”](#).

## 5.7 Editing Adapter Connections

If the login information for a database changes, or if you want to redefine parameters that a connection uses when connecting to a database, you can update a connection's parameters using Integration Server Administrator.

### To edit a connection

- 1 In the **Adapters** menu in Integration Server Administrator's navigation area, click **FileNet CE Adapter**.
- 2 Make sure that the connection is disabled before editing it. For instructions, see [“Disabling Adapter Connections”](#).
- 3 On the Connections screen, click the  icon for the connection you want to edit.  
The Edit Connection screen displays the current parameters for the connection. Update the connection's parameters by typing or selecting the values you want to specify.


For descriptions of the connection parameters, see [“Configuring Adapter for FileNet CE Connections”](#).

- 4 Click **Save Changes** to save the connection and return to the Connections screen.

## 5.8 Copying Adapter Connections

You can copy an existing FileNet CE connection to configure a new connection with the same or similar connection properties without having to re-type all of the properties for the connection. You copy adapter connections using Integration Server Administrator.

### To copy a connection

- 1 In the **Adapters** menu in Integration Server Administrator's navigation area, click **FileNet CE**.
- 2 On the Connections screen, click the  icon for the connection you want to copy.  
The Copy Connection screen displays the current parameters for the connection you want to copy. Name the new connection, specify a package name and folder name, and edit any connection parameters as needed by typing or selecting the values you want to specify.

---

**Note:** When you copy a connection, the new connection does not save the password of the original connection. You must enter and then retype the password before you can save the new connection.

---

For descriptions of the connection parameters, see [“Configuring Adapter for FileNet CE Connections”](#).


- 3 Click **Save Connection Copy** to save the connection and return to the Connections screen.

## 5.9 Deleting Adapter Connections

If you no longer want to use a particular FileNet CE connection, you can delete it. You delete adapter connections using Integration Server Administrator.

If you delete a Adapter for FileNet CE connection, the adapter services that are defined to use the connection will no longer work. However, you can assign a different connection to an adapter service and re-use the service. To do this, use the `setAdapterServiceNodeConnection` built-in service.

### To delete a connection

- 1 In the **Adapters** menu in the Integration Server Administrator navigation area, click **FileNet CE**.
- 2 Make sure that the connection is disabled before deleting. To disable the connection, click **Yes** in the **Enabled** column and click **OK** to confirm. The **Enabled** column now shows **No** (Disabled) for the connection.
- 3 On the Connections screen, click  for the connection you want to delete. Integration Server deletes the adapter connection.

## 5.10 Enabling Adapter Connections

A FileNet CE connection must be enabled before you can configure any adapter service using the connection, or before an adapter service can use the connection at run time. You enable adapter connections using Integration Server Administrator.


---

**Note:** When you reload a package that contains enabled connections, the connections will automatically be enabled when the package reloads. If the package contains connections that are disabled, they will remain disabled when the package reloads.

---

**To enable a connection**

- 1 In the **Adapters** menu in the Integration Server Administrator navigation area, click **FileNet CE**.
- 2 On the Connections screen, click **No** in the **Enabled** column for the connection you want to enable.

Integration Server Administrator enables the adapter connection and displays a  and **Yes** in the **Enabled** column.

## 5.11 Disabling Adapter Connections

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**Note:** FileNet CE connections must be disabled before you can edit or delete them. You disable adapter connections using Integration Server Administrator.

---

**To disable a connection**

- 1 In the **Adapters** menu in the Integration Server Administrator navigation area, click **FileNet CE**.
- 2 On the Connections screen, click **Yes** in the **Enabled** column for the connection you want to disable.

The adapter connection becomes disabled and you see a **No** in the **Enabled** column.



## 6 Adapter Services

### 6.1 Overview

The following services are available with the FileNet CE Adapter:

Service	Description
Create Document	Creates a new document in FileNet CE.
Update Document	Updates metadata of a document or the content in FileNet CE.
Delete Document	Deletes a document in FileNet CE.
Get Document	Gets metadata of a document in FileNet CE.
Search Document (Basic)	Queries documents in FileNet CE according to the parameters defined in the service template.
Search Document (Pass Through)	Queries documents found in FileNet CE. The query is defined by a string representing FileNet CE's own native querying language passed to the service template as an input.
Create Folder Path	Creates a folder path in FileNet CE.
Delete Folder Path	Deletes a folder path in FileNet CE.

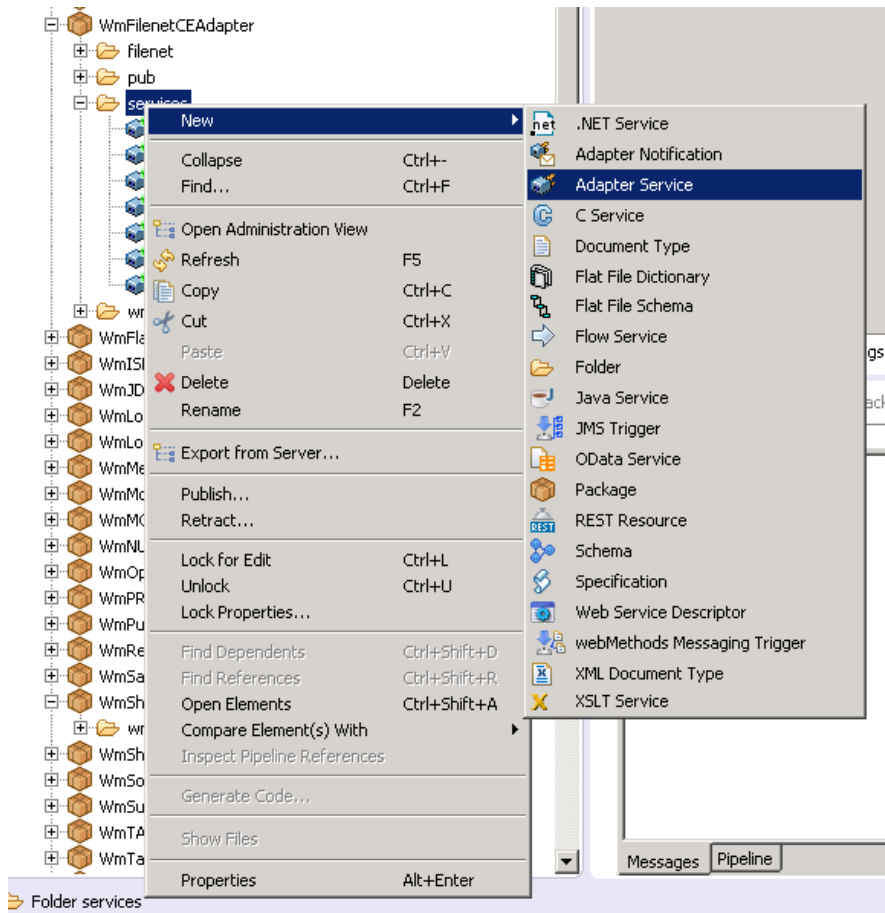
## 6.2 Creating a New Service

The initial steps to create a new adapter service are the same regardless of the services being created.

Open the Software AG Designer and navigate to the package you want to create the service in. In the example below, we will create new services in the `WmFileNetCESample` under the folder `services`

To create a new service

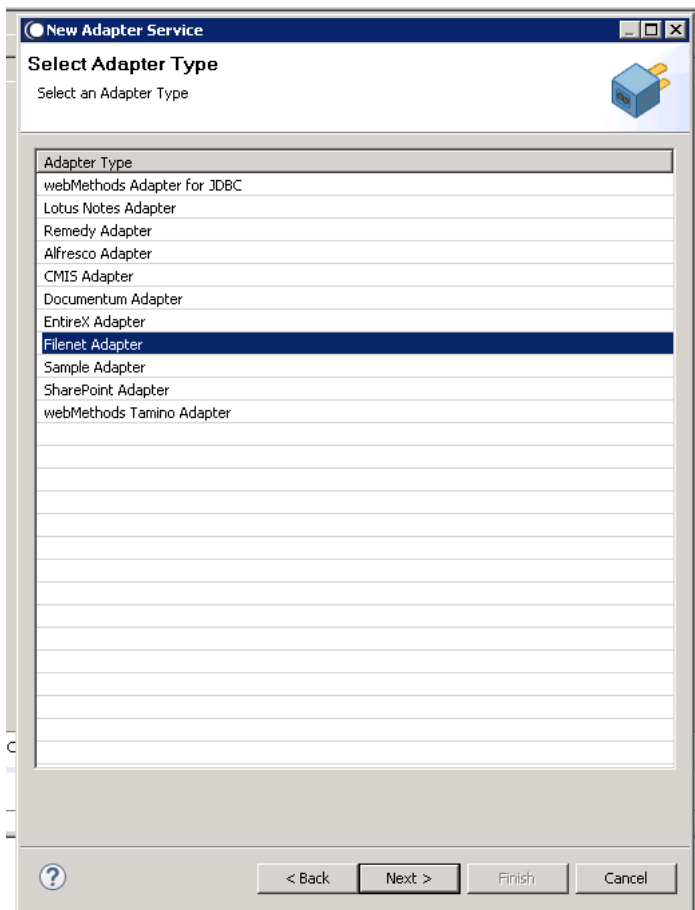
1. Right-click -> New -> Adapter Service just as depicted in the following screenshot



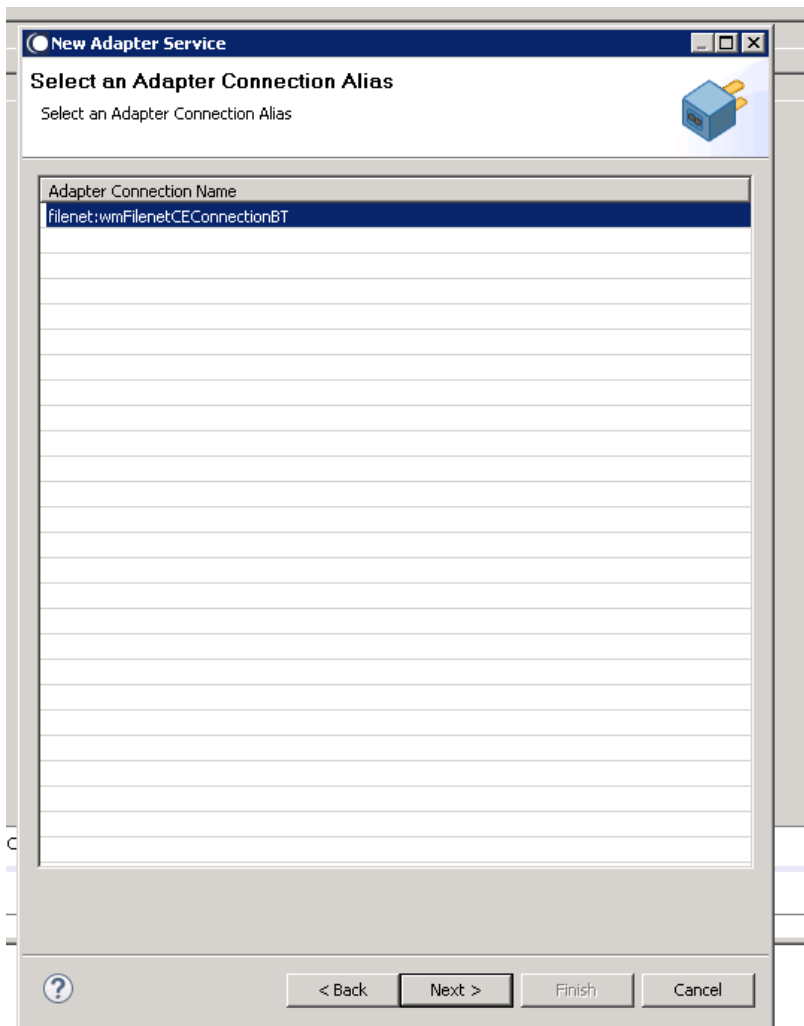
2. Enter the name of the service you want to create in the Element name field.

**Note:** The created service names should be unique within the folder. Example, the name given for service in Element name field can be `ExampleService`.

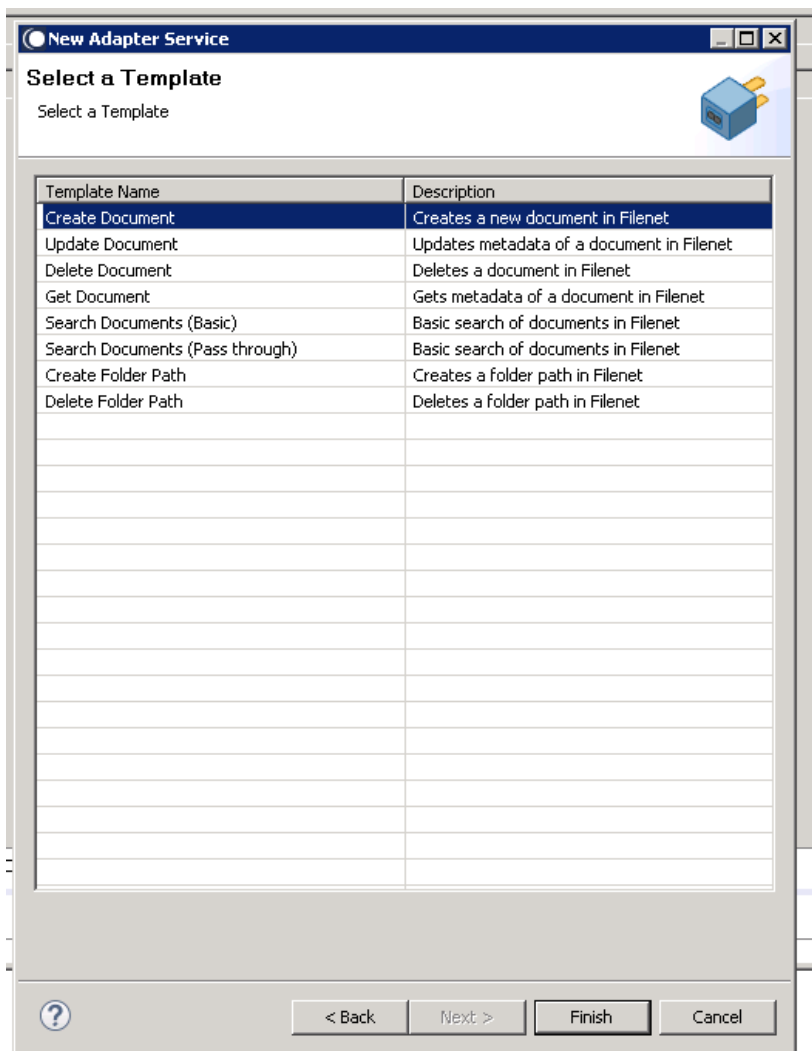
3. Select your adapter type and click **Next**.



4. Select your preconfigured connection that is associated with the service and click **Next**.



5. Finally, the service templates screen appears, showing the templates that are contained in the package. Each service has a corresponding template.



The next section describes how to create each service provided by the FileNet CE Adapter.

## 6.3 Create Document

### 6.3.1 Description

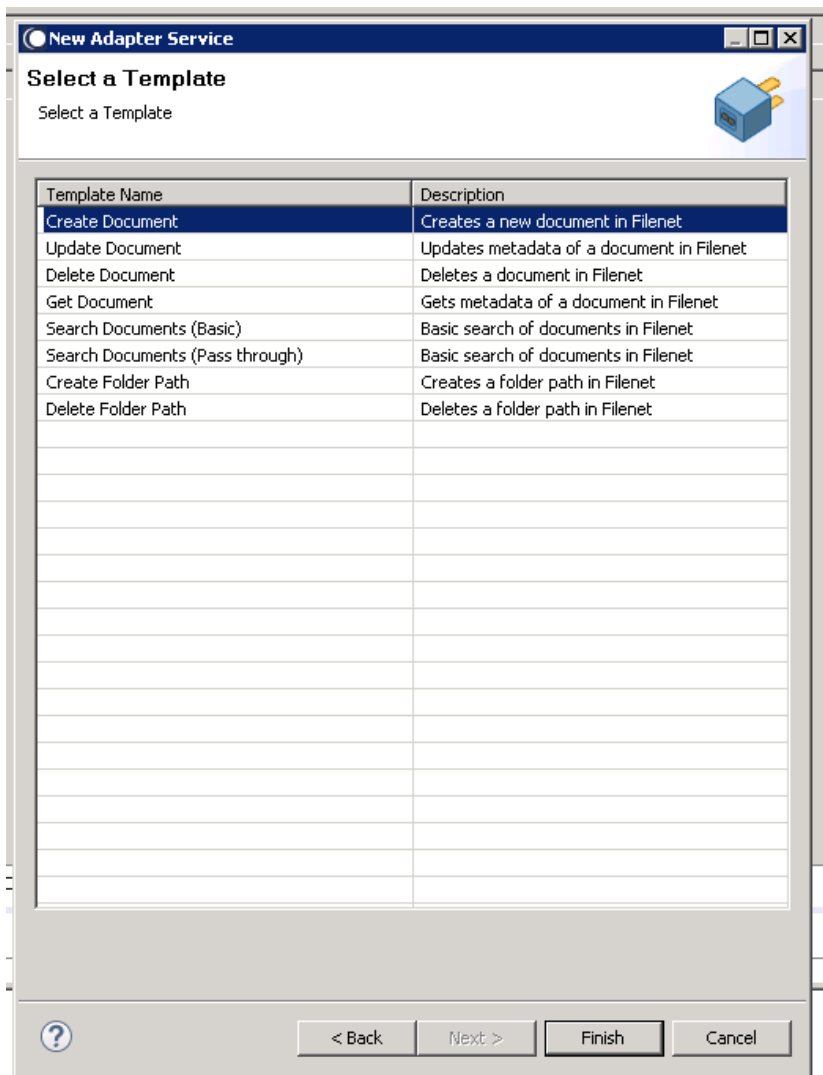
Creates a new document in FileNet CE.

### 6.3.2 Configure the Service

After the initial configuration of the service, as shown above, the **Select a Template** screen is displayed.

Perform the following steps to configure the service:

1. Select **Create Document** and click **Finish**.



You can now configure the template. The service template contains a series of tabs along the bottom of the panel. The **Create Document** tab contains three fields that allow you to define the service, along with two panels. The two panels are similar to the information displayed on the **Input/Output** tab. Use the following fields:

- **Select Type**- Defines the document type being uploaded.
- **Folder Location**- Defines the location where the document should be stored.
- **Document URL** - The URL location of the file to be uploaded.

Select Type:

Folder Location:

Document URL:

Input Field	Input Field Type
attributes.TELOS_Document.Customernumber	java.lang.String
attributes.TELOS_Document.DocLink2	java.lang.Object
attributes.TELOS_Document.DocumentTitle	java.lang.String
attributes.TELOS_Document.Dokumentenart	java.lang.String
attributes.TELOS_Document.Geschaeftsnummer	java.lang.String
attributes.TELOS_Document.GvkName	java.lang.String
attributes.TELOS_Document.MimeType	java.lang.String
attributes.TELOS_Document.SourceDocument	java.lang.Object
location.folder	java.lang.String
document.url	java.lang.String

Output Field	Output Field Type
oid	java.lang.String

Create Document | Adapter Settings | Input/Output | Logged Fields | Comments

2. Once you have entered the relevant information, click **Input/Output** tab.

Specification Reference:

Input:  Output:

Validate input  Validate output

CreateDocumentServiceBTInput

- location
  - Folder
- document
  - url
- attributes
  - TELOS\_Document
    - Customernumber
    - DocLink2
    - DocumentTitle
    - Dokumentenart
    - Geschaeftsnummer
    - GvkName
    - MimeType
    - SourceDocument

CreateDocumentServiceBTOutput

- oid

Create Document | Adapter Settings | Input/Output | Logged Fields | Comments

This tab shows the input and output values of **Create Document** service such as, what is the required information and what is provided after the document is created.

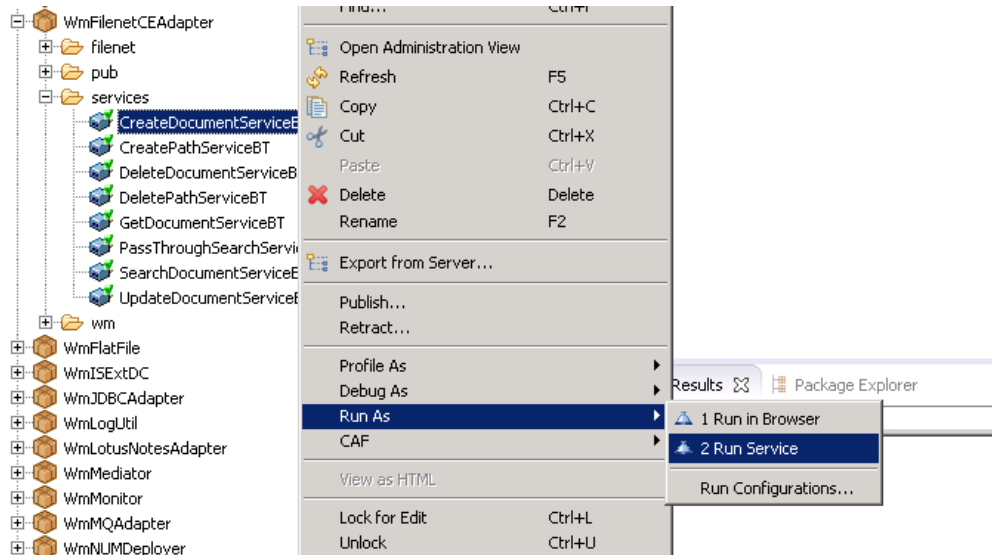
- On the left-hand side of the panel are the parameters that are taken as input. The inputs will depend on the document type being uploaded.
- On the right-hand side, appears the output returned after the service is executed. In this case, there is only one output which is as follows
  - The object ID of the newly created document.

3. Save the new service and it will be available under services.

### 6.3.3 Execute the Service

Perform the following steps to execute the service:

1. Right-click your newly created service and select Run -> Run As Service.



2. Enter the relevant input information in the resulting panel.
3. Click OK.

The service is executed and the resulting output is displayed.

## 6.4 Update Document

### 6.4.1 Description

Updates metadata and content of a document in FileNet CE.

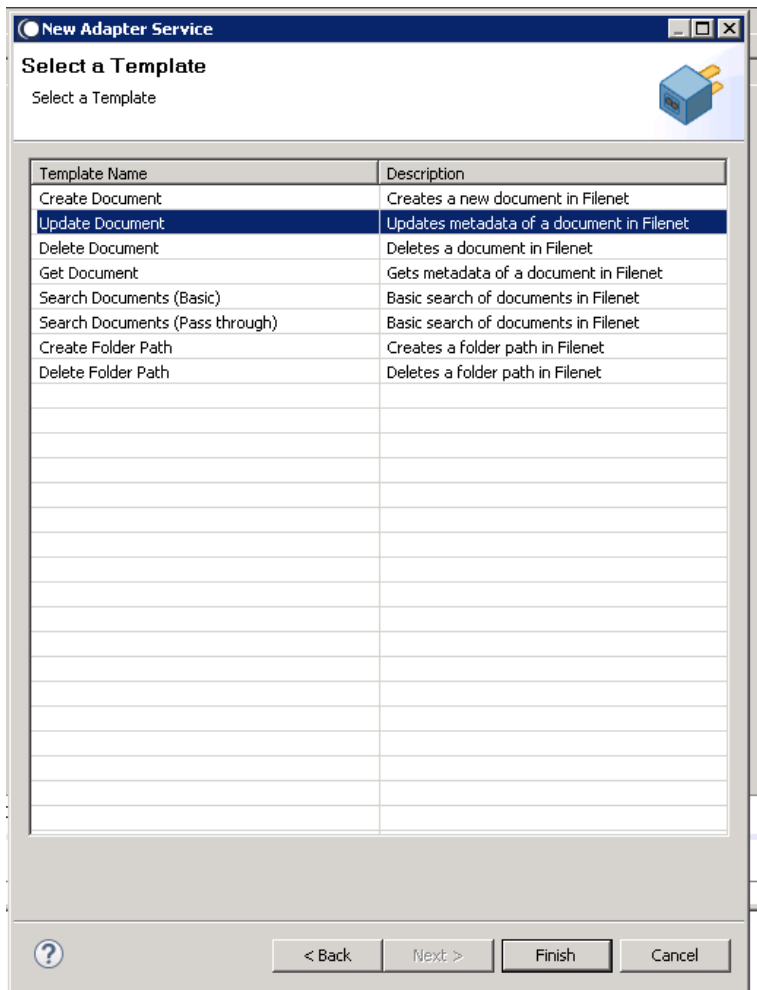
### 6.4.2 Configure the Service

After the initial configuration of the service as shown above, the **Select a Template** screen is displayed.

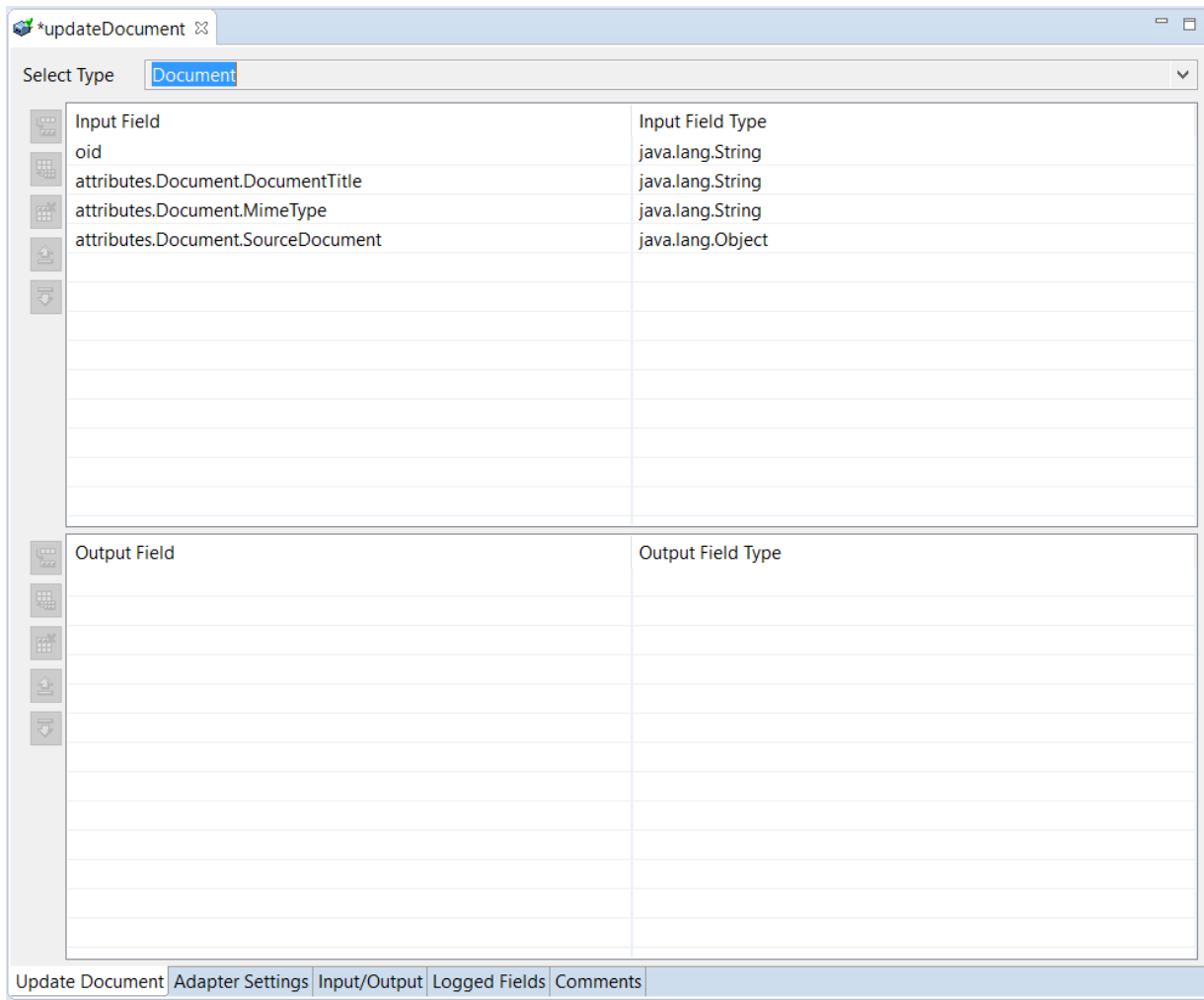
Perform the following steps to configure the service:

1. Select **Update Document** and click **Finish**.

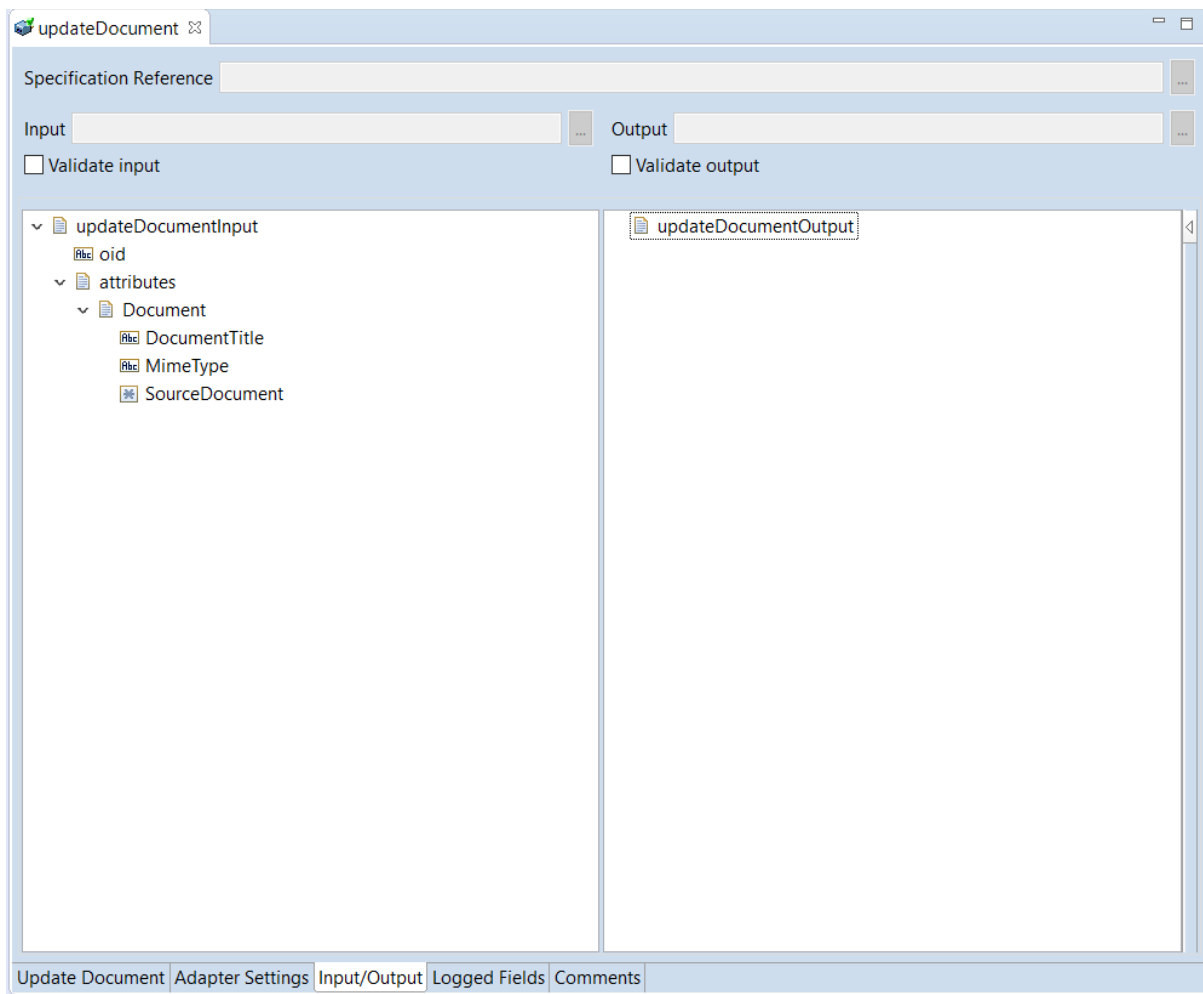




You can now configure the template. The service template contains a series of tabs along the bottom of the panel. The **Update Document** tab contains a dropdown list along with two panels. The dropdown list determines the document type that you want to update, while underneath the two panels shows the input and output values required when the service is executed.



2. Click **Input/Output** tab, after selecting the document type to be updated.



- This tab shows the input and output values of **Update Document** service such as, what is the required information and what is provided after the document is updated.
- On the left-hand side of the panel are the parameters that are taken as inputs.
  - In the case of this service, the inputs will differ depending on the document type selected.

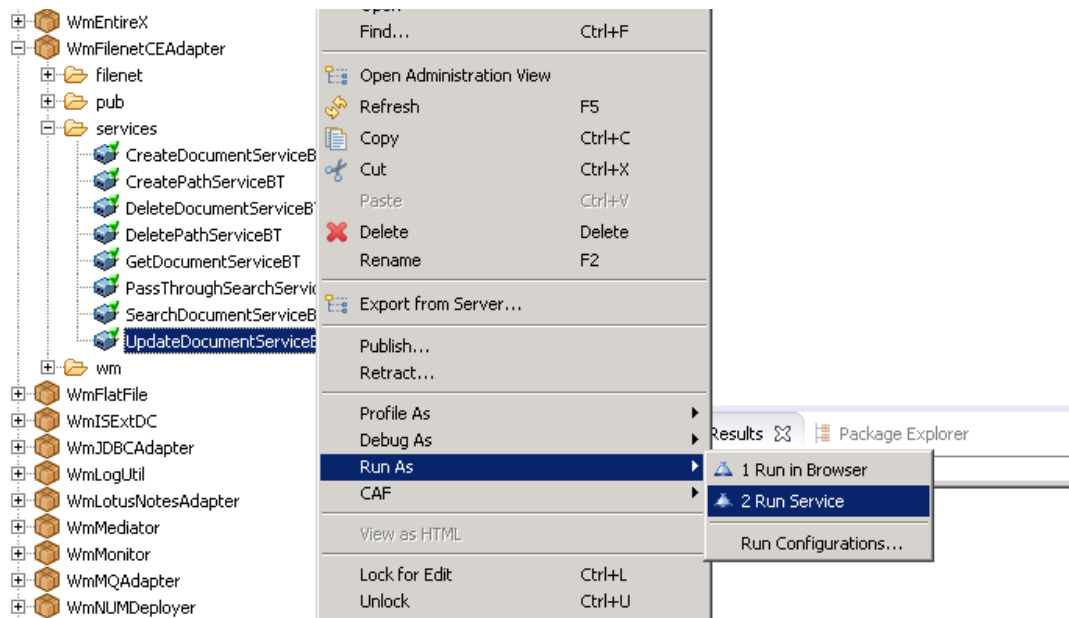
However, there are constant inputs which are `oid`, the object ID for the document that you want to update, mime type and `SourceDocument` that contains `InputStream` of new document content.

- On the right-hand side, the outputs are displayed. As can be seen from the screenshot above, no output values are returned for this service.
3. Save the new service and it will be available under services.

### 6.4.3 Execute the Service

Perform following to execute the service:

1. Right-click your newly created service and select **Run -> Run As Service**.



2. Enter the relevant input information in the resulting panel.
3. Click **OK**.
4. The service is executed and the resulting output is displayed

## 6.5 Delete Document

### 6.5.1 Description

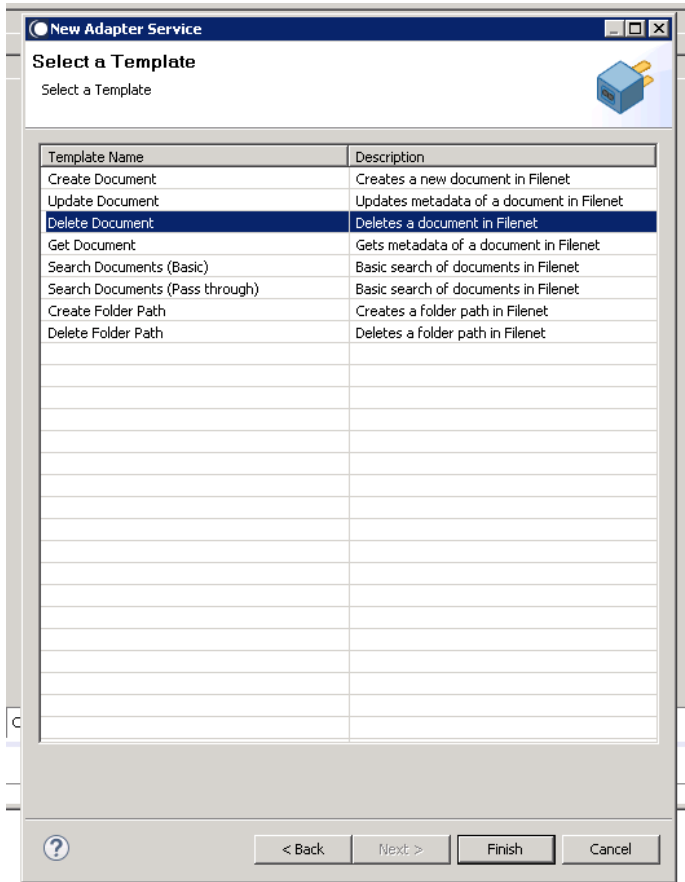
Deletes a document in FileNet CE.

### 6.5.2 Configure the Service

After the initial configuration of the service, as shown above, the **Select a Template** screen is displayed.

Perform the following steps to configure the service:

1. Select **Delete Document** and click **Finish**.



You can now configure the template. The service template contains a series of tabs along the bottom of the panel. The **Delete Document** tab has no properties that require configuration. However, it does contain two panels, the upper panel showing the required input for the service, while the lower panel displays any output.

Input Field	Input Field Type
oid	java.lang.String

Output Field	Output Field Type

## 2. Click **Input/Output** tab.

Specification Reference

Input  Output

Validate input  Validate output

DeleteDocumentServiceBTInput

- oid

DeleteDocumentServiceBTOutput

This tab shows the input and output values of **Delete Document** service such as, what is the required information and what is provided after the document is deleted.

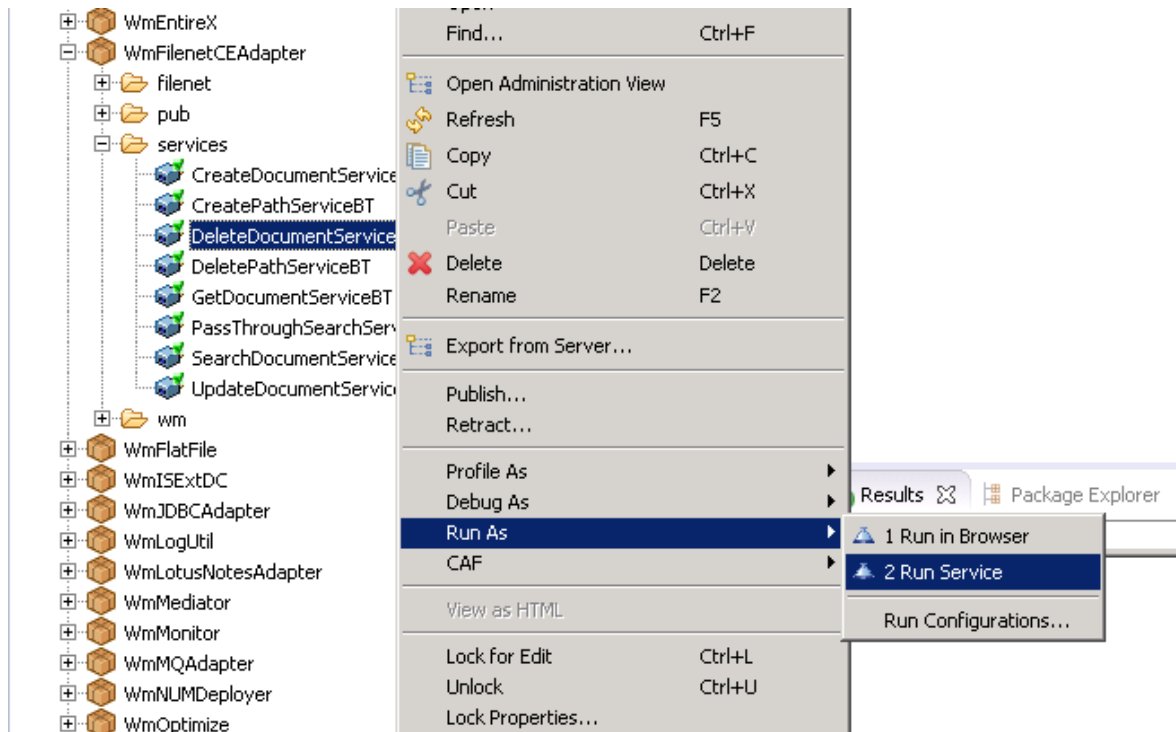
- On the left-hand side of the panel are the parameters that are taken as input. In this case, there is only one input required and that is the objectId of the document which must be deleted.

- On the right-hand side of the panel shows the output for the service. As shown in the screenshot above, no output values are returned for this service.
3. Save the new service and it will be available under services.

### 6.5.3 Execute the Service

Perform the following steps to execute the service:

1. Right-click your newly created service and select **Run -> Run As Service**.



2. Enter the relevant input information in the resulting panel.
3. Click OK.
4. The service is executed and the resulting output displayed

## 6.6 Get Document

### 6.6.1 Description

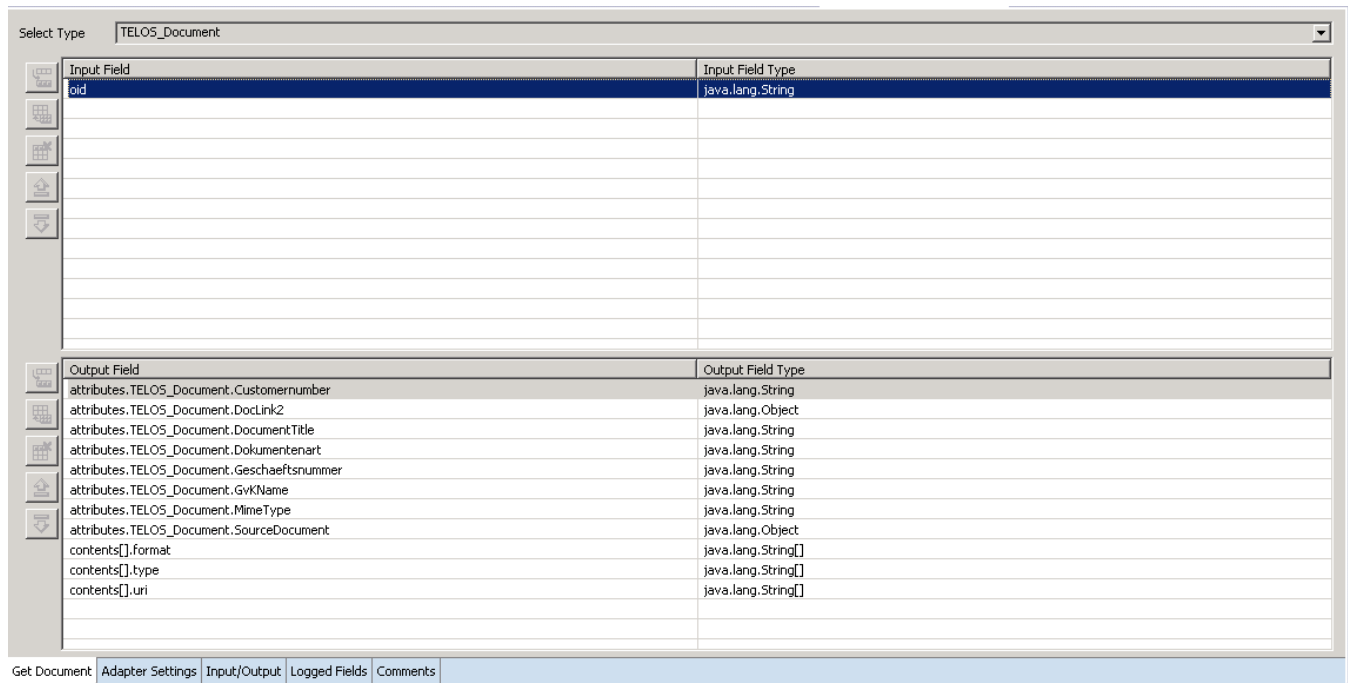
Gets metadata of a document in FileNet CE

## 6.6.2 Configure the Service

After the initial configuration of the service, as shown above, the **Select a Template** screen is displayed.

Perform the following steps to configure the service:

1. Click **Get Document** and click **Finish**.



Input Field		Input Field Type	
id		java.lang.String	
Output Field		Output Field Type	
attributes.TELOS_Document.CustomerNumber		java.lang.String	
attributes.TELOS_Document.DocLink2		java.lang.Object	
attributes.TELOS_Document.DocumentTitle		java.lang.String	
attributes.TELOS_Document.Dokumentenart		java.lang.String	
attributes.TELOS_Document.Geschaeftsnummer		java.lang.String	
attributes.TELOS_Document.GvkName		java.lang.String	
attributes.TELOS_Document.MimeType		java.lang.String	
attributes.TELOS_Document.SourceDocument		java.lang.Object	
contents[].format		java.lang.String[]	
contents[].type		java.lang.String[]	
contents[].uri		java.lang.String[]	

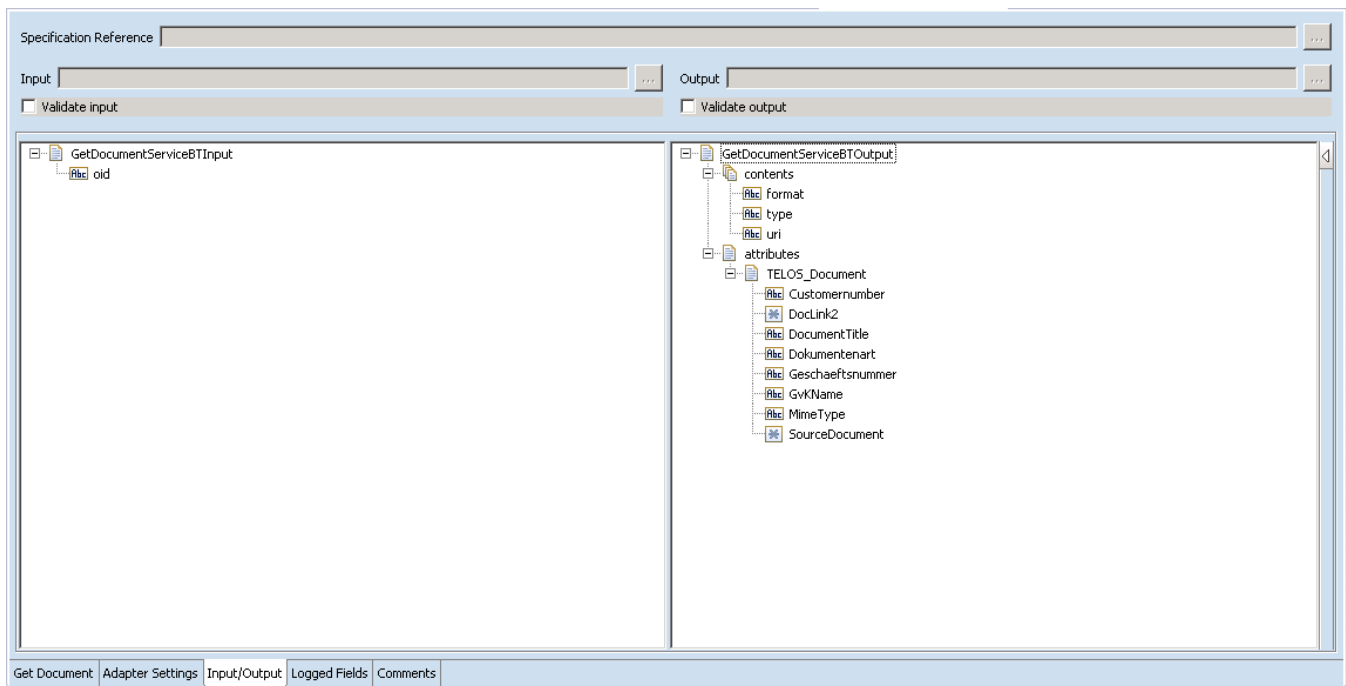
Get Document Adapter Settings Input/Output Logged Fields Comments

You can now configure the template. The service template contains a series of tabs along the bottom of the panel. The **Get Document** tab contains a dropdown list and two panels.

The dropdown list determines the document type that is returned by the service, while the two panels below show the inputs and outputs required for this service.

2. Click **Input/Output** tab, after selecting the document type that you want to be returned.





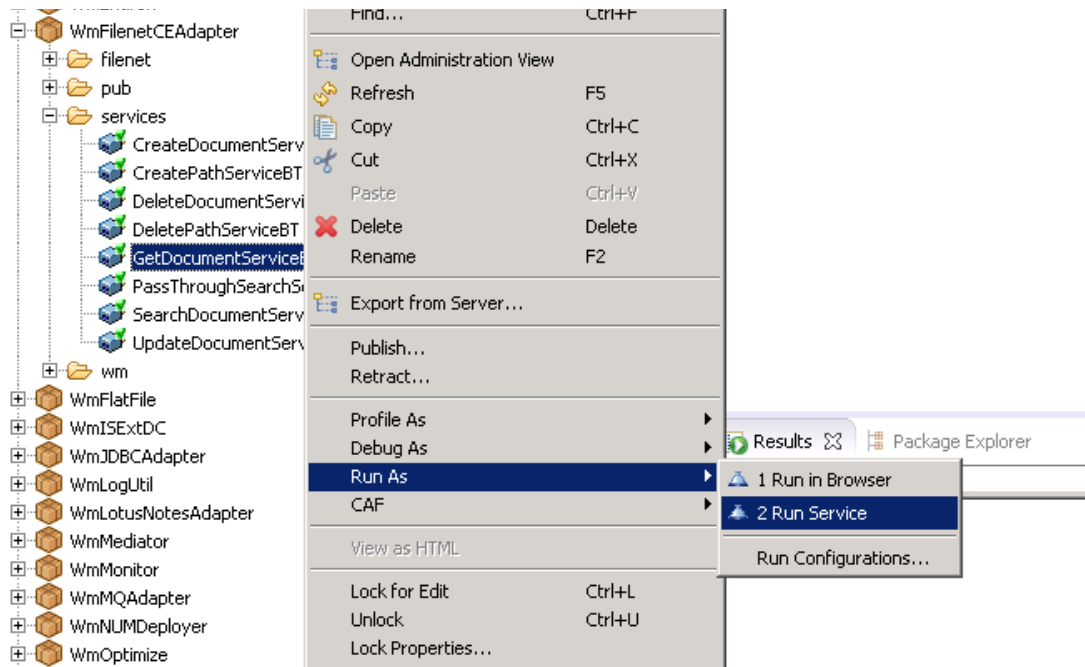
This tab shows the input and output values of **Get Document** service such as, what is the required information and what is provided after document is returned.

- On the left-hand side of the panel are the input parameters required for the execution of the service.
    - In the case of Get Document, only a single input is required which is the object ID (`oid`) of the document to be retrieved.
  - The outputs are displayed on the right-hand side of the template, and the actual information will depend on the document type selected in the **Get Document** tab.
3. Save the new service and it will be available under services.

### 6.6.3 Execute the Service

Perform the following steps to execute the service:

1. Right-click your newly created service and select **Run -> Run As Service**.



2. Enter the relevant input information in the resulting panel.
3. Click OK.
4. The service is executed and the resulting output displayed.

## 6.7 Search Document (Basic)

### 6.7.1 Description

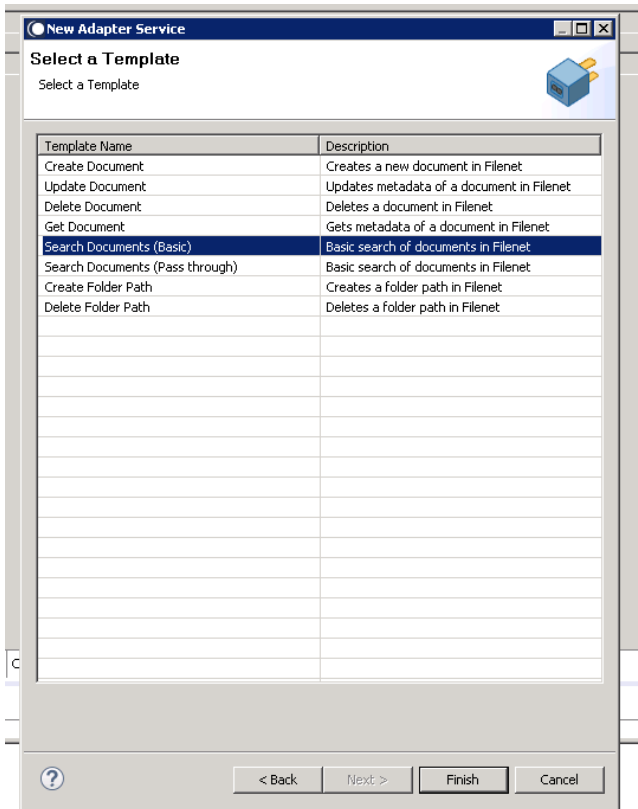
Query documents in FileNet CE according to the parameters defined in the service template.

### 6.7.2 Configure the Service

After the initial configuration of the service, as shown above, the **Select a Template** screen is displayed.

Perform the following steps to configure the service:

1. Select **Search Documents (Basic)** and click **Finish**.



You can now configure the template. The service template contains a series of tabs along the bottom of the panel. The **Document Type** tab contains only one dropdown list. This is used to define the document type to be queried.



2. Select the document type to be queried and click the **WHERE** tab.

Expression Operator: AND

Property name	Operator	Value
DocumentTitle	EQUAL	?

Parameter	Property Name	Input Field Type	Input Field
1	DocumentTitle	java.lang.String	Document Title

Document Type SELECT **WHERE** Search Documents (Basic) Adapter Settings Input/Output Logged Fields Comments

This tab allows you to define conditions for which documents should be returned.

The buttons displayed to the left of the **WHERE** tab allow you to add new rows for conditions, add a condition for each field in the content type, delete rows, and order the different rows. Additionally, above the Where panel is a dropdown lists allowing you to determine the expression operation of the conditions. You can select from a disjunction (OR) or conjunction (AND).

You can click on the various columns to edit the conditions. Some, such as Field Name, will display a dropdown list where elements can be selected, while others, such as Query Value, allow you to enter your own values. If you want to have dynamic conditions such as, condition whose values are defined by a user, then use the '?' character, as shown in the screenshot above. It is also possible to use wildcards, using the '\*' character.

The lower of the two panels allows you to define the input fields. Only properties whose Value column is defined with a question mark will appear here.

3. Select the 'Search Documents (Basic)' tab.

This tab allows you to set FileNet CE query specific properties, including defining the amount of max results per source, caching strategy, and so on.

#### 4. Finally, click the **Input/Output** tab.

This tab shows the input and output values of **Simple Search** service such as, what is the required information and what is then provided after the query is executed.

On the left-hand side of the panel are the parameters that are taken as inputs. The actual inputs and outputs will depend on how you have configured the query in the **Select** tab and **WHERE** tab. In the

example above, the two inputs are defined by the conditions set in **Simple Search Select**, where two conditions were created with the value '?', meaning user input is required.

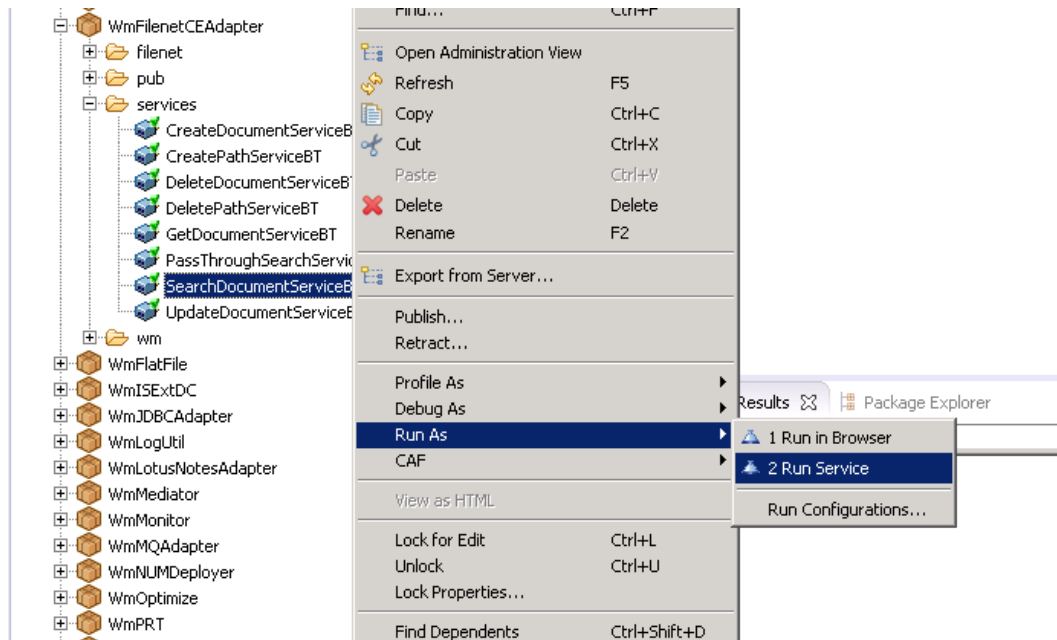
The outputs are determined by the properties selected in the **Simple Search Select**.

5. Save the new service and it will be available under services.

### 6.7.3 Execute the Service

Perform the following steps to execute the service:

1. Right-click your newly created service and select **Run -> Run As Service**.



2. Enter the relevant input information in the resulting panel.
3. Click OK.
4. The service is executed and the resulting output displayed.

## 6.8 Search Document (Pass Through)

### 6.8.1 Description

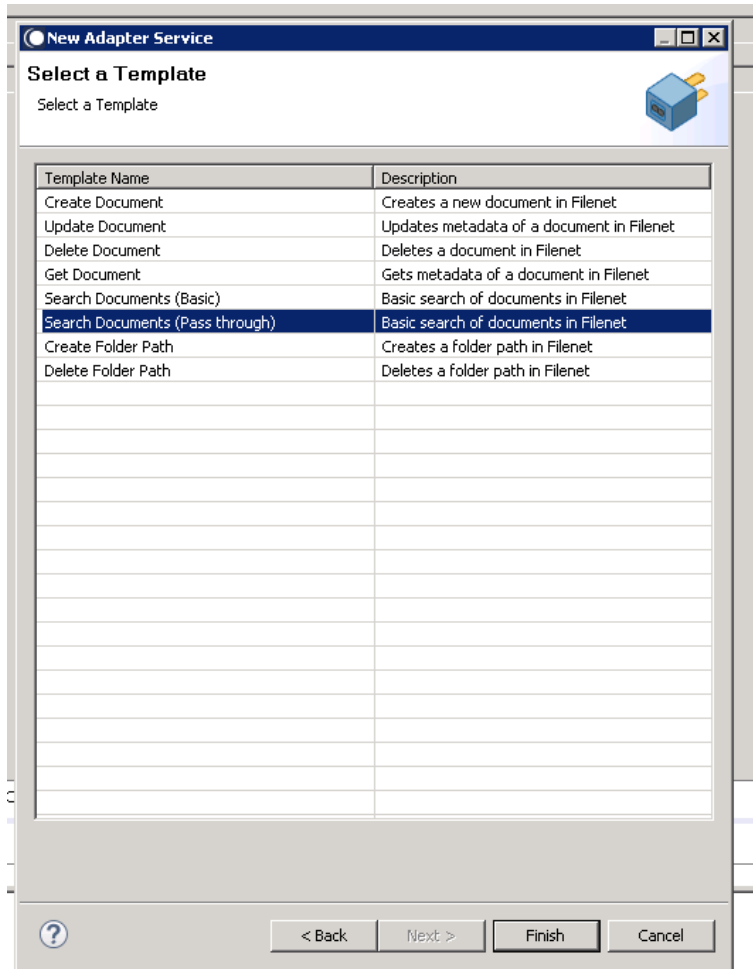
Query documents found in FileNet CE. A string representing FileNet CE's own native querying language passed to the service template as an input defines the query.

### 6.8.2 Configure the Service

After the initial configuration of the service, as shown above, the select a template screen is displayed.

Perform the following steps to configure the service:

1. Select **Pass Through Search** and click **Finish**.



You can now configure the template. The service template contains a series of tabs along the bottom of the panel. The **Pass-Through Search** tab contains no configurable elements. However, it does contain two panels showing the required input and outputs.

Input Field	Input Field Type
searchXML	java.lang.String

Output Field	Output Field Type
resultXML	java.lang.String

## 2. Click the **Input/Output** tab.

Specification Reference

Input  Output

Validate input  Validate output

PassThroughSearchServiceInput

- searchXML

PassThroughSearchServiceOutput

- resultXML

This tab shows the input and output values of **Pass-Through Search** service such as, what is the required information and what is then provided after the query is executed.

- On the left-hand side of the panel are the parameters that are taken as inputs.
  - There is only one input required for this service and it is the string representation of the query to be executed.
  - This should be an XML formatted according to FileNet CE's querying language structure.

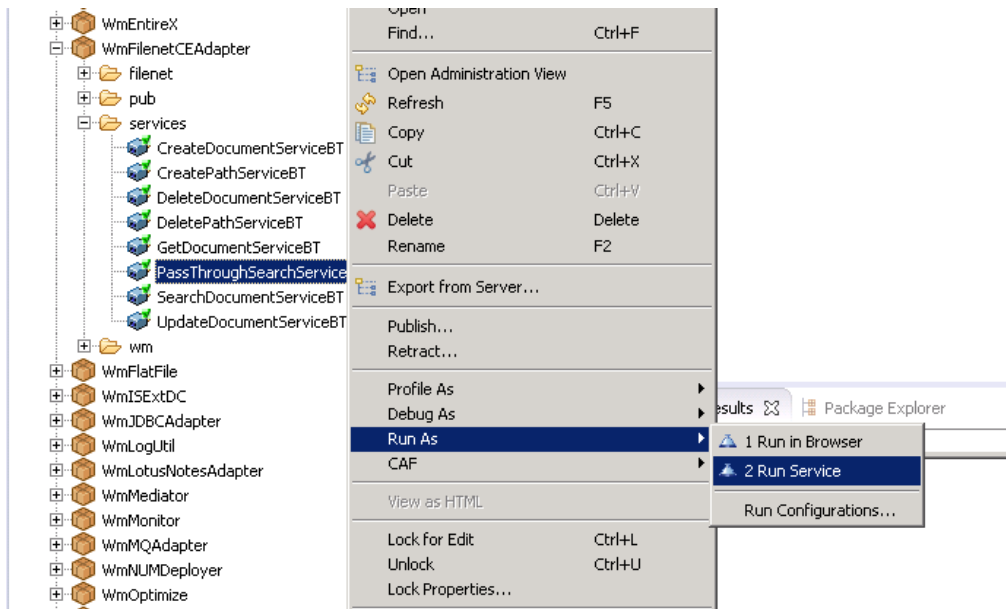


- On the right-hand side shows the output. In this case, an XML of the results are returned when the service is executed.
3. Save the new service and it will be available under services.

### 6.8.3 Execute the Service

Perform the following steps to execute the service:

1. Right-click your newly created service and select **Run -> Run As Service**.



2. Enter the relevant input information in the resulting panel.
3. Click OK.
4. The service is executed and the resulting output displayed.

## 6.9 Create Folder Path

### 6.9.1 Description

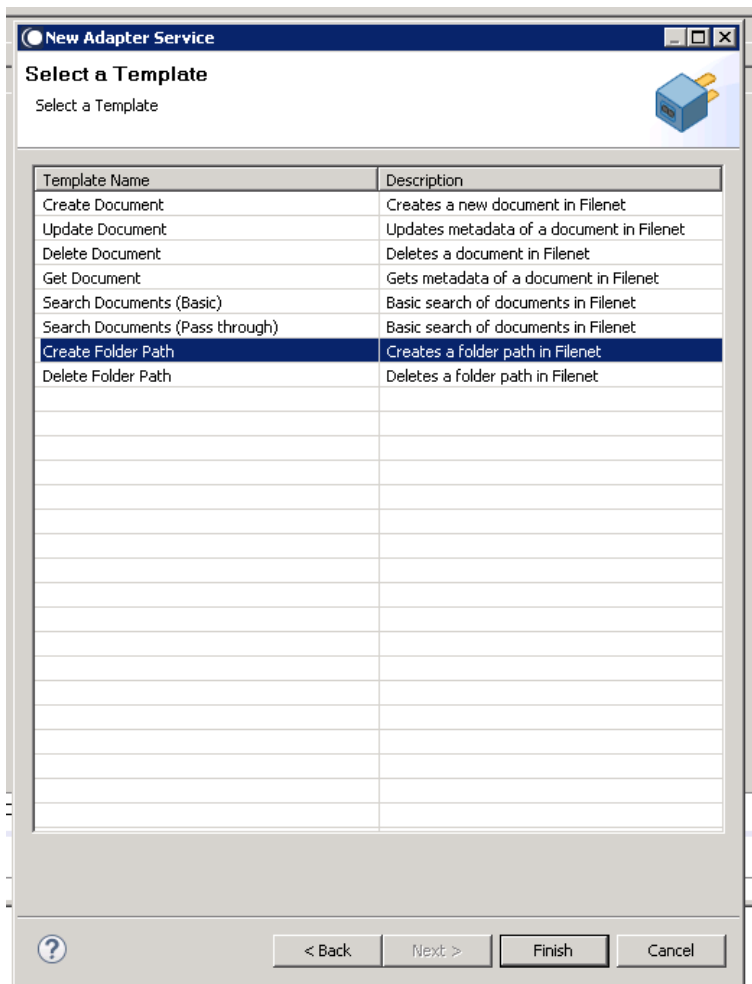
Creates a folder path in FileNet CE

### 6.9.2 Configure the Service

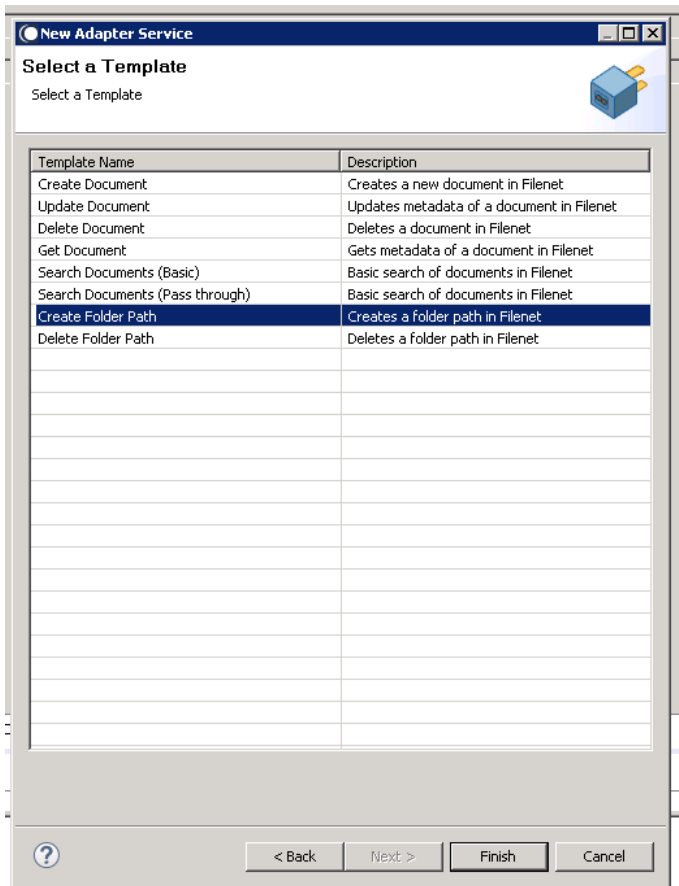
After the initial configuration of the service, as shown above, the select a template screen is displayed.

Perform the following steps to configure the service:

1. Select **Create Folder Path** and click **Finish**.



You can now configure the template. The service template contains a series of tabs along the bottom of the panel. The **Create Folder** tab contains no configurable properties. However, there are displayed two panels showing the inputs and outputs required for the execution of the service.



You can now configure the template. The service template contains a series of tabs along the bottom of the panel. **Create Folder** tab contains no configurable elements. However, there are two panels displayed that give information as to the inputs and outputs required for the execution of the service. This information is similar to the information displayed in the **Input/Output** tab.

Input Field	Input Field Type
folder	java.lang.String

Output Field	Output Field Type
oid	

## 2. Click Input/Output tab.

Specification Reference

Input  Output

Validate input  Validate output

Left pane: CreatePathServiceBTInput  
- folder

Right pane: CreatePathServiceBTOutput  
- oid

This tab shows the input and output values of **Create Folders** service such as, what is the required information and what is then provided after the folder is created.

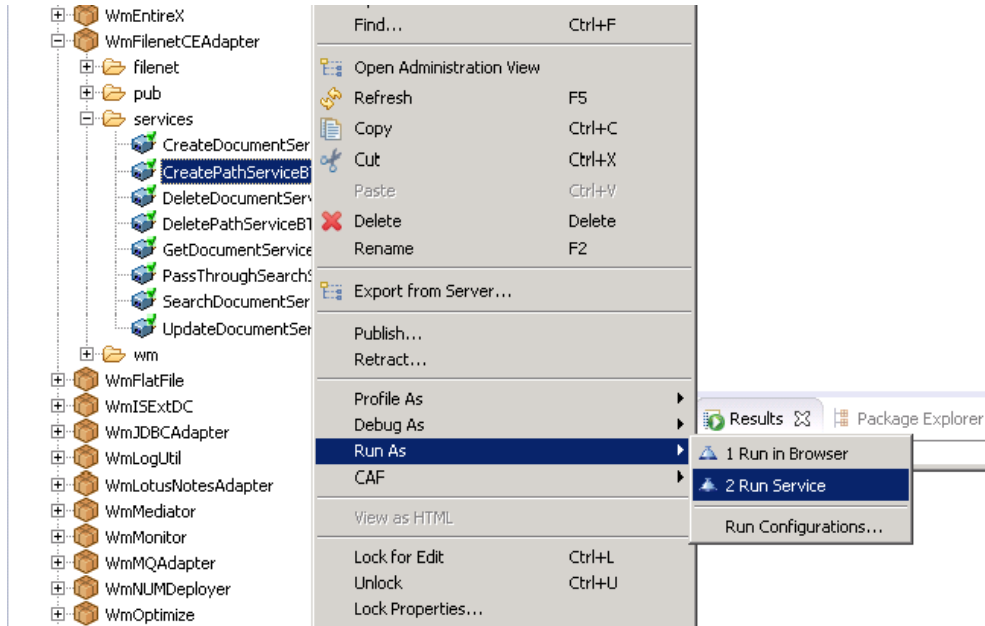
- On the left-hand side of the panel are the parameters that are taken as inputs. In this case, only a single input is required and which is, the name of the folder.
- On the right-hand side, only one output is returned after the execution of the service which is the Object ID (oid) of the newly created folder.

3. Save the new service and it will be available under services.

### 6.9.3 Execute the Service

Perform the following steps to execute the service:

1. Right-click your newly created service and select **Run -> Run As Service**.



2. Enter the relevant input information in the resulting panel.
3. Click **OK**.
4. The service is executed and the resulting output displayed.

## 6.10 Delete Folder Path

### 6.10.1 Description

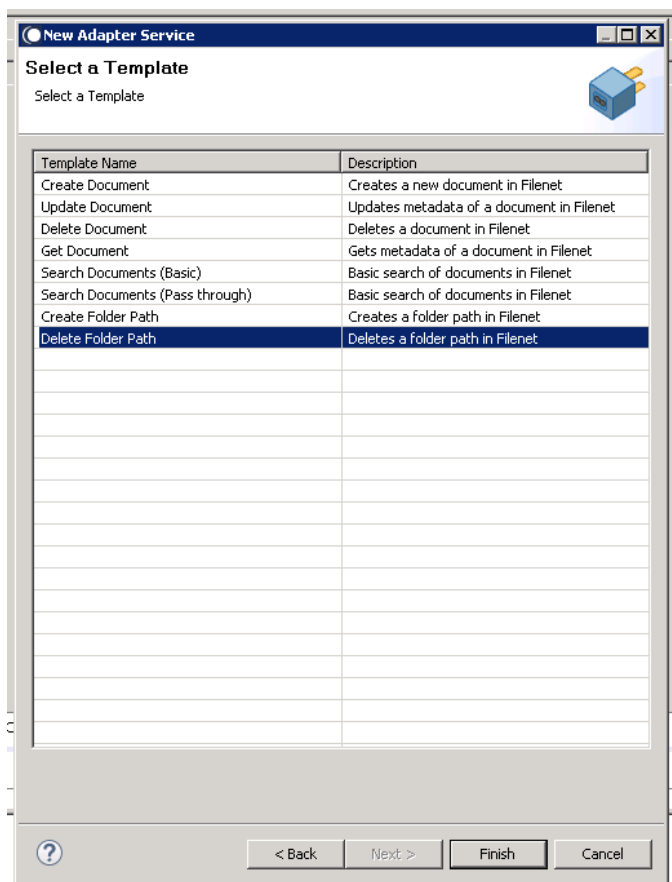
Deletes a folder path in FileNet CE.

### 6.10.2 Configure the Service

After the initial configuration of the service, as shown above, the **Select a Template** screen is displayed.

Perform the following steps to configure the service:

1. Select **Delete Folder Path** and click **Finish**.



You can now configure the template. The service template contains a series of tabs along the bottom of the panel. The **Delete Folder** tab contains no configurable elements. However, it does contain two panels that give information as to the inputs and outputs for the execution of the service.

Input Field	Input Field Type
folder	java.lang.String
deleteFolders	java.lang.Boolean
deleteChildren	java.lang.Boolean
Output Field	Output Field Type

Delete Folder | Adapter Settings | Input/Output | Logged Fields | Comments

## 2. Click Input/Output tab.

Specification Reference ...

Input  ... Output  ...

Validate input  Validate output

DeletePathServiceBTInput

- [-] folder
- [-] deleteFolders
- [-] deleteChildren

[-] DeletePathServiceBTOutput:

Delete Folder | Adapter Settings | Input/Output | Logged Fields | Comments

This tab shows the input and output values of **Delete Document** service such as, what is the required information and what is then provided after the folder is deleted.

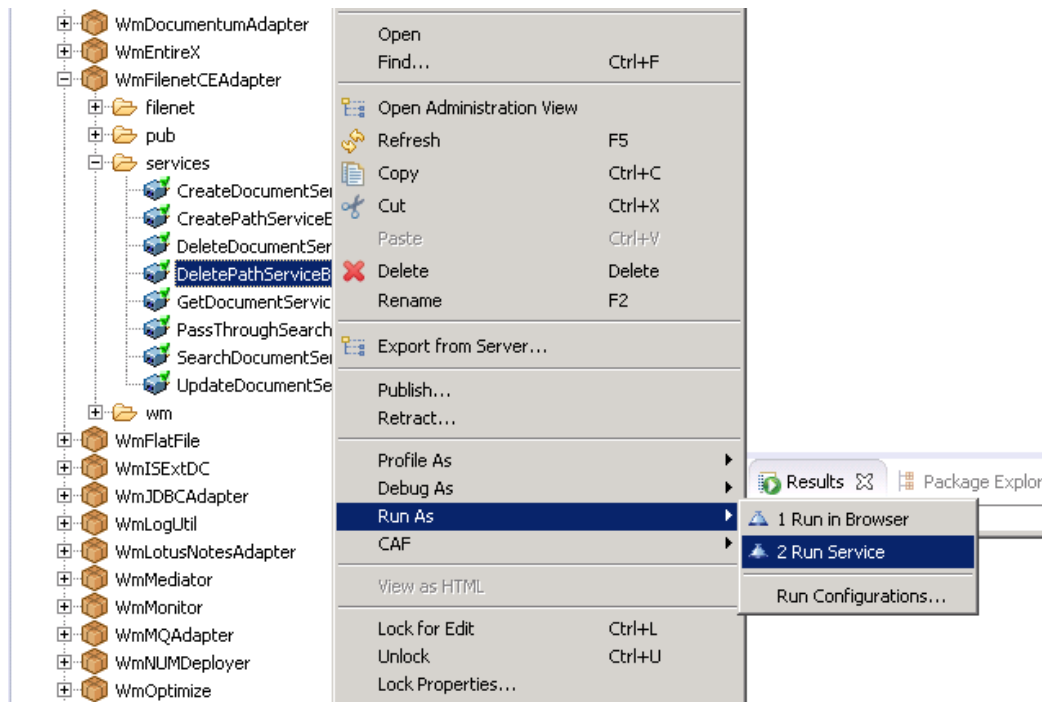
- On the left-hand side of the panel are the parameters that are taken as inputs. In this case, the inputs that should be defined are as follows:
  - The name of the folder to be deleted.
  - Whether folders should be deleted.
  - Whether any children of the folder should be deleted.

- On the right-hand side are the outputs. From the screenshot above you can see, no outputs are returned after the execution of the service.
3. Save the new service and it will be available under services.

### 6.10.3 Execute the Service

Perform the following steps to execute the service:

1. Right-click your newly created service and select **Run -> Run As Service**.



2. Enter the relevant input information in the resulting panel.
3. Click OK.
4. The service is executed and the resulting output displayed.