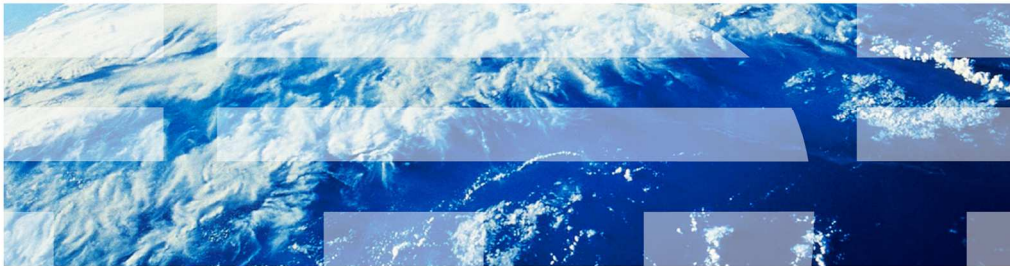


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# IBM Business Process Manager V8.5

## Working with documents in business processes



This presentation introduces the new capabilities for working with business process documents in IBM Business Process Manager V8.5.



## Table of contents

- Existing document features before the IBM Business Process Manager V8.5 release
- New document features in the IBM Business Process Manager V8.5 release
- Content operations and IBM BPM Document objects
- ECM events for IBM BPM Documents
- ECM Coach View updates

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First is a review of the functionality related to documents and business processes that is available in previous releases of IBM Business Process Manager. Then, the new capabilities in V8.5 are introduced, followed by a detailed description of the new capabilities and how to use them.



Section

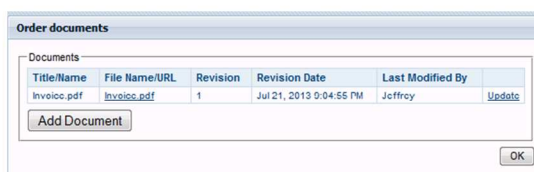
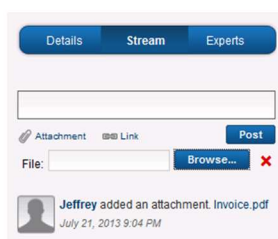
## Document features in previous releases

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This section covers some of the document features that are available in previous releases.

## Documents in business processes

- Before V8.5, IBM Business Process Manager supported documents for business processes
  - In the Process Portal sidebar
  - Using the Document Attachment control in Heritage Coaches
  - Using JavaScript, REST or web API
- The documents are stored in the local IBM Business Process Manager database



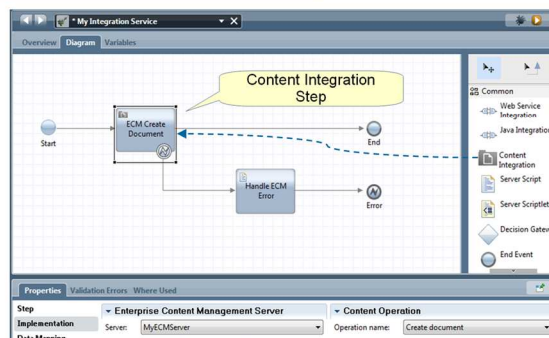
**Request:** `http://localhost:9080/rest/bpm/wle/v1/process/253?action=addDocument&name=Invoice&docType=file&parts=none&accept=application/json&override-content-type=text/plain`

**Method:** POST

In IBM Business Process Manager releases before V8.5, documents can be attached to business processes in four ways. As seen in the screen capture on the left, in Process Portal, the instance stream shows attached documents and allows the addition of extra documents. As seen in the screen capture on the right, in Heritage Coaches, the Document Attachment control is available to display documents and allow you to attach new documents. In server scripts, a JavaScript API is available to add documents to business processes. And finally, as seen in the sample Request statement here, in external clients, the REST or web API can be used to work with documents.

## Accessing documents in external ECM systems

- Starting in IBM Business Process Manager V8.0, external Enterprise Content Management (ECM) systems can be accessed using the Content Management Interoperability Services (CMIS) standard
  - Content integration steps can be used in services to query, create, read, update and delete documents and folders
  - Document List and Document Viewer coach views can be used to list, display and upload documents
- See the [IBM Education Assistant sessions for V8.0](#) for details



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Beginning in IBM Business Process Manager V8.0, you can access documents in external Enterprise Content Management, or ECM, systems that support the Content Management Interoperability Services standard.

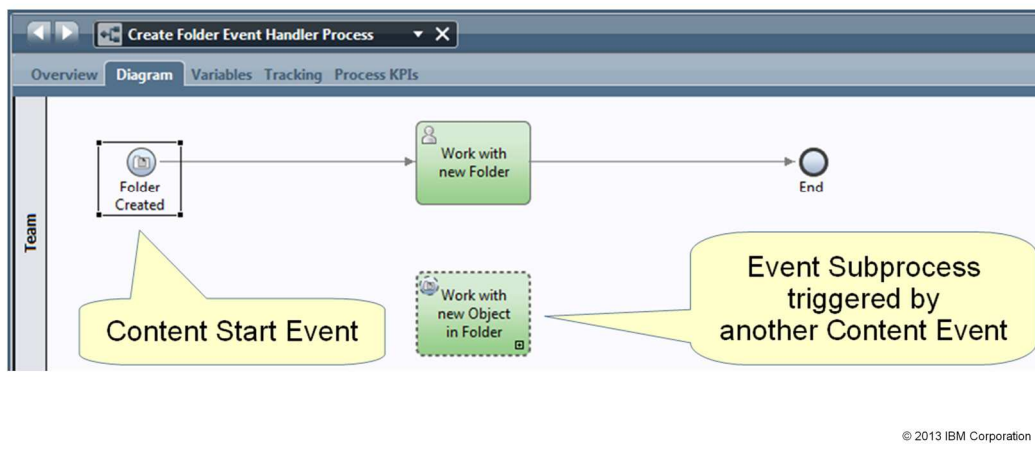
Content Integration steps can be used in services to query, create, read, update and delete documents in external ECM systems.

The Document List and Document Viewer coach views are available to display and upload documents.

Detailed instructions on how to access external ECM systems can be found in the IBM Education Assistance sessions for IBM Business Process Manager V8.0. See the “ECM integration” category under Process Designer.

## Reacting to document events in external ECM systems

- Starting in IBM Business Process Manager V8.0.1, business processes can use inbound events to react to changes made to documents in external ECM systems
- See the [IBM Education Assistant sessions for V8.0.1](#) for details



Beginning in V8.0.1, IBM Business Process Manager supports business processes for reacting to document events for documents that are stored in external ECM systems. This allows, for example, the modeling of a business process that is started when a document or folder is created.

Detailed instructions on how to configure and model inbound events from external ECM systems can be found in the IBM Education Assistant sessions for IBM Business Process Manager V8.0. See the "Process Designer enhancements for V8.0.1" category under Process Designer.



Section

## **New document features**

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This section provides information on the new document features in IBM Business Process Manager V8.5.

## New document features in V8.5

- IBM Business Process Manager V8.5 introduces IBM BPM document store, which provides consistent document management for external and internal IBM BPM Document objects
  - Content integration steps can be used in services to access IBM BPM Document objects
  - Document List and Document Viewer coach views can display IBM BPM Document objects
  - Inbound events can be handled for IBM BPM Document objects
- The same functionality can be used to access either IBM BPM Document objects or external documents
- The JavaScript, REST, and web API interfaces for IBM BPM Document objects continue to work the same way
  - Now also access IBM BPM document store

In prior releases, the tools for internal documents, which are known as IBM BPM Document objects, and the tools for documents in external ECM systems differed in terms of technology and access concepts. IBM Business Process Manager V8.5 introduces the internal IBM BPM document store, which supports the Content Management Interoperability Services standard interface for consistent management of both internal and external documents.

Content integration steps can be configured against the IBM BPM Document objects to access them in the same way that documents in an external ECM system are accessed. The Document List and Document Viewer coach views can be configured to work with internal IBM BPM Document objects. Inbound events for IBM BPM Document objects can be handled in business processes. IBM BPM Document objects and external documents can be accessed using the same functionality. The existing Heritage Coach controls, and the JavaScript, REST and web API interfaces, continue to work the same way, but they now access the documents in IBM BPM document store.





Section

## **Content operations and IBM BPM Document objects**

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This section provides details on available content operations and IBM BPM Document objects in the V8.5 release.

## Enhanced Content Integration step

- Integration, Human, and Ajax services can be used to work with IBM BPM Document objects through the Content Integration node
- The Content Integration node:
  - Allows IBM BPM document store to be targeted
  - Exposes a limited set of CMIS operations that can be used to work with IBM BPM Document objects in a service
- Document operations can only be run against the IBM\_BPM\_Document document type

IBM Business Process Manager V8.5 offers an enhanced Content Integration step. It can still target an external ECM server to perform folder and document content operations. In addition, it can now also target IBM BPM document store, which supports a limited set of document operations.

The Content Integration step continues to be available in the same service types, mainly Ajax, human services, and integration services.

## IBM BPM document store only supports IBM BPM Document

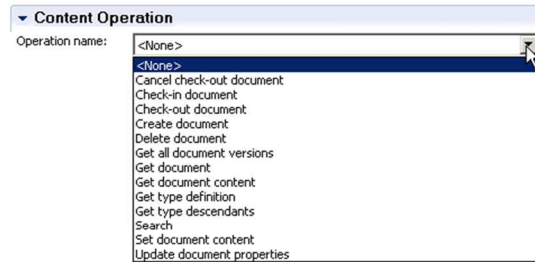
▪ *Only **Document** operations are available when targeting IBM BPM document store*

▪ **Document operations**

- Create document
- Delete document
- Get document
- Get document content
- Get type definition
- Get type descendants
- Set document content
- Update document properties

▪ **Document version handling operations**

- Cancel check-out document
- Check-in document
- Check-out document
- Get all document versions



▪ **Search operation**

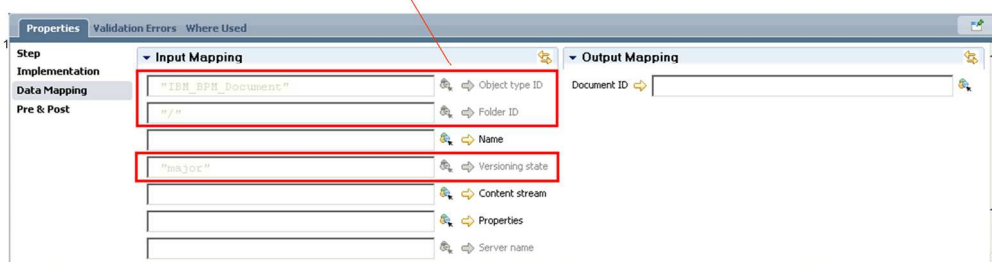
- Search

IBM BPM document store only supports a single document type -- **IBM BPM Document** -- and does not support folders. As a result, when you author a Content Integration step that targets IBM BPM document store, you will find that only a subset of the content operations are available for use.

None of the folder operations are available. And none of the document operations that relate to folders are available, such as the **move document** operation. However, the operations that are available behave in the same way as they do for an external ECM server.

## Input mapping

- Some of the available operations are limited when working with IBM BPM Document objects. Some input values are pre-set and cannot be changed
- **Document operations**
  - Create document
  - Get type definition
  - Get type descendants
- **Document version operations**
  - Check-in document
- **Search operation**
  - Search



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After you implement a Content Integration node with a document store and content operation, the next step is to configure the data mapping for the node with the appropriate input and output parameters.

For a typical external ECM server, you can specify the input of every operation. However, when targeting IBM BPM document store, there are some exceptions. Since this document store only supports a single document type and does not support folders, the inputs to some of the operations are pre-set and cannot be changed. This slide shows the content operations that have at least one predefined input when IBM BPM document store is targeted. The **create document** operation is shown as an example.



Section

## IBM BPM Document events

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This section provides details about IBM BPM Document events.

## IBM BPM Document events

- Event subscriptions can be created against IBM BPM document store
- IBM BPM document store supports:
  - A subset of the content event types supported by external ECM systems
  - The single document type IBM\_BPM\_Document

Content events allow you to create an *event subscription* for a document store. This subscription can then be used to trigger an undercover agent.

In V8.5, IBM BPM document store can now be targeted when creating an event subscription. There are some limitations in what you can select when configuring the event subscription for IBM BPM document store, for the same reasons mentioned previously

## Available event types

### ▪ Event types

- Created
- Checked In
- Checked Out
- Check Out Canceled
- Deleted
- Updated

The screenshot shows a configuration window with the following fields and options:

- Details** (expanded)
- ECM Server: IBM BPM document store
- Event Class: Document
- Object Type: BPM Document Attachment
- Include Subtypes:
- Event Type: A dropdown menu is open, showing a list of event types: Created, Checked In, Checked Out, Check Out Canceled, Created, Deleted, and Updated. The 'Created' option is currently selected.
- Attached Service: (empty)
- Test Subscription... (button)
- Exposing** (expanded)
- Expose Event Subscription: All Users, System Data, Select..., New..., X

Only a subset of events are available when targeting IBM BPM document store. Since IBM BPM document store does not support folders, folder events are not an option. Similarly, you can only subscribe to the set of document events that are associated with the create, update, delete, check-in, and check-out operations. This is due to the single document type that is supported by this document store.

## Event subscription for IBM BPM Document objects

- As with an external ECM server, event subscriptions can be created against IBM BPM document store

The screenshot shows the configuration page for an event subscription. The 'Details' section is expanded, showing the following fields:

- ECM Server:** A dropdown menu with 'IBM BPM document store' selected.
- Event Class:** A dropdown menu with 'Document' selected.
- Object Type:** A dropdown menu with 'IBM BPM Document' selected.
- Include Subtypes:** A checkbox that is unchecked.
- Event Type:** A dropdown menu with 'Created' selected.
- Attached Service:** A text field containing '<none>' with 'Select...' and 'New...' buttons.

The 'Exposing' section is also expanded, showing:

- Expose Event Subscription:** A dropdown menu with 'All Users' selected, and 'System Data' as an option. There are 'Select...', 'New...', and a close button (X).

Seven numbered callouts provide additional context:

- Target IBM BPM document store
- The Event class is always Document and cannot be changed
- IBM BPM Document is the only object type available
- No subtypes are available for IBM BPM Document
- Pick from the available event types
- Attach a service to handle the event
- IBM BPM document store always exposes events to All Users

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There are also some configuration differences when targeting the IBM BPM document store, rather than an ECM server. For example, when you select the IBM BPM document store as the target server, most configuration fields are disabled and are set to a default value.

The event class is set to **Document** by default and it cannot be modified. This is because IBM BPM document store only supports document operations.

The object type is set to the only supported document type -- **IBM BPM Document**. Since this object type does not have any subtypes defined, the **Include Subtypes** option is disabled and set to false. Event type choices are limited, as described on the previous slide.

You can define an attached service as you do for an external ECM server. This configuration is the same.

The events broadcast by IBM BPM document store are always exposed to all users. As a result, the team selection is disabled and is set to **All Users** by default.



## Event correlation

- Correlation authoring has been improved. You can now correlate on the fields of a complex business object that implements a given undercover agent

### Undercover agent details

The screenshot displays the 'Undercover agent details' configuration window. The 'Details' section shows the 'Queue Name' as 'Async Queue', 'Implementation' as 'Variable', and 'Variable Type' as 'ECMContentEvent'. The 'Enabled' checkbox is checked. A red arrow points from the 'Variable Type' dropdown to the 'Correlation and Output Mapping' section of the 'Properties' window.

The 'Properties' window has tabs for 'General', 'Validation Errors', and 'Where Used'. The 'Correlation and Output Mapping' section is active, with the instruction: 'Select one variable to be used for correlation. Specify data mappings from the UCA output data to the BPD variables:'. Below this, there is a list of fields with radio buttons and arrows pointing to input boxes:

Field	Radio Button	Input Box
Output (ECMContentEv...	<input type="radio"/>	
serverName (String)	<input type="radio"/>	
repositoryId (ECMID)	<input type="radio"/>	
eventClass (ECMEvent...	<input type="radio"/>	
objectTypeId (ECMID)	<input type="radio"/>	
eventType (ECMEventT...	<input type="radio"/>	
objectId (ECMID)	<input checked="" type="radio"/>	fw.local.objectID

A yellow callout box on the left states: 'Correlation can be specified for individual fields of the corresponding type'. A red box highlights the 'objectId (ECMID)' row in the table. The text 'BPD intermediate event data mapping' is written to the right of the Properties window.

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There are some improvements in the way event correlation is authored in IBM Business Process Manager V8.5.

In previous releases, when the attached undercover agent was implemented by a variable type, the correlation had to be performed by providing a variable of that type. This was difficult for complex business objects, because it required the business process definition to populate the complete data structure for the variable.

In this release, correlation is now permitted at both the type level and at the level of an individual property of the type. This slide shows the correlation of a content undercover agent that, by default, is associated with an ECMContentEvent type. But, in this example, you only want to correlate on the objectId field of the event. So, you only specify a variable for that field and select the radio button next to it, to indicate that it is the correlated value.

You can also map other fields, or the root type, to local variables so that you can process the event.

This new capability does not just apply to content undercover agents. It also applies to the correlation of any event that has an undercover agent that is implemented by a complex business object.

## ECM coach views and IBM BPM Document objects

- ECM user interface controls include the Document List and Document Viewer coach views
- The Document List coach view has been enhanced to:
  - Work against IBM BPM Document objects
  - Allow you to specify search criteria in the View configuration
  - Allow you to specify Upload Document criteria in the View configuration

IBM Business Process Manager ships with two coach views that are designed to work with documents. The Document List coach view and the Document Viewer coach view are included in the Content Management Toolkit. In V8.5, the Document List coach view now supports IBM BPM Document objects. It offers the same functionality that was available in the Document Attachment Heritage Coach control.

Like its predecessor, you are able to configure the Document List coach view with Search and Upload criterion. Aside from the configuration options, the view still behaves the same at run-time, regardless of whether it targets IBM BPM document store or an external ECM server.

## Document List coach view configuration

- At runtime, the Document List coach view behaves the same, whether configured for BPM Documents or ECM Documents. At design time, the configuration is very different.

Configure the view to work with **BPM Documents** or **ECM Documents**

**BPM document options** are honored if configured for use with **BPM Documents**

**ECM document options** are honored if configured for use with **ECM documents**

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In IBM Business Process Manager V8.5, the Document List configuration page includes a few new options, such as the **Configure for use with** option. This option can be set to either **ECM Documents** (which is equivalent to pre-V8.5 functionality) or **BPM Documents**. The value selected for this configuration option determines whether the view will use the ECM Document option or the BPM Document option at run time.

## Document List coach view configuration - ECM Documents

- When working with an external ECM server, select ECM Documents

Configuring for use with **ECM Documents** causes the view to behave as in previous releases

The screenshot shows a configuration window with tabs for 'Properties', 'Validation Errors', and 'Where Used'. The 'General' tab is active, showing a 'Configure for use with:' dropdown menu set to 'ECM Documents'. Below this, there are two sections: 'BPM document options' and 'ECM document options'. The 'ECM document options' section is expanded, showing two input fields: 'Parent folder path:' and 'Cmis query:'. Three callout boxes point to these elements: one to the dropdown menu, one to the 'Parent folder path' field, and one to the 'Cmis query' field.

Optionally, for **ECM Documents**, specify a parent folder path for uploading new documents

Similarly, you can also specify an optional CMIS query

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When the Document List is configured to work with ECM Documents, it behaves the same as it did in previous releases.

Since the **Parent folder path** and **CMIS query** options only apply to ECM documents, they are now located in the new **ECM document options** section of the Document List configurations page.

## Document List coach view configuration - BPM Documents

- When working with BPM Documents, configure appropriately

Configure for use with **BPM Documents** and specify **BPM document options**

**Display options:** Allow you to specify which documents are displayed

Display only those documents associated with the process instance that invoked this coach

Display only those documents that meet the specified search criteria: match **all**, **any** or **none** of the **Display properties** specified

**Upload options:** Allow you to specify the kind of information to attach to a new document

You can choose whether created documents are exposed in Process Portal

You can specify a default name for new documents and specify whether the name can be edited by the user

You can also add properties, with a given value, to a new document as specified in the **Upload properties** table

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When the Document List is configured to work with BPM Documents, it will honor the values specified in the new **BPM document options** section of the configurations page. This section is divided into several sub-levels. It resembles the configuration properties of the Heritage Document Attachment coach control.

There are two main categories of BPM document options: **Display options** and **Upload options**.

Display options allow you to specify the query that is used to populate the Document List. You can specify whether to display only documents that belong to the process instance that instantiates the current task or documents that belong to all processes in the system. Display options also allow you to specify a set of property name-value pairs and whether **None**, **All** or **Any** is the match criteria when searching for documents to display.

Upload options are used to control documents that are created by the Document List view. As a result, these options are only relevant if the view is configured to allow a Create operation. The Upload options allow you to specify a default document name and whether the name is user-editable. They also allow you to specify whether properties are added to newly created documents and, if so, which specific properties are to be added. The Upload options also let you configure whether new documents should be visible in Process Portal.



Section

## Summary

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The next slide summarizes the topics covered by this presentation.

## Summary

- Reviewed document support features available before the IBM Business Process Manager V8.5 release
- Introduced to the document support enhancements in the IBM Business Process Manager V8.5 release
- Learned about the use of content operations with IBM BPM Document objects
- Learned about the configuration of ECM events for IBM BPM Document objects
- Learned about the configuration of the ECM coach views for IBM BPM Document objects

You received an introduction to the document support enhancements in the IBM Business Process Manager V8.5 release. These enhancements were compared to existing functionality in previous releases. You also learned about the different configuration and authoring options for the Content Integration step, Event Subscriptions, and the Document List coach view.



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