Perceptive Intelligent Capture Connector

Installation and Setup Guide

Version: 1.0.x

Compatible with the following components:
ImageNow Version: 6.7.x
Perceptive Connect Runtime Version: 1.0.x
Intelligent Capture for Invoices Version: 2.3

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Overview

The Perceptive Intelligent Capture Connector (PIC Connector) allows you to create, configure, and enable channels that map data and functionality between ImageNow and Perceptive Intelligent Capture (PIC).

With a combination of channels, you can create a solution that outputs ImageNow files to PIC, routes processing documents according to their status code, and imports the extracted XML data into ImageNow eForm fields, document properties, or other objects.
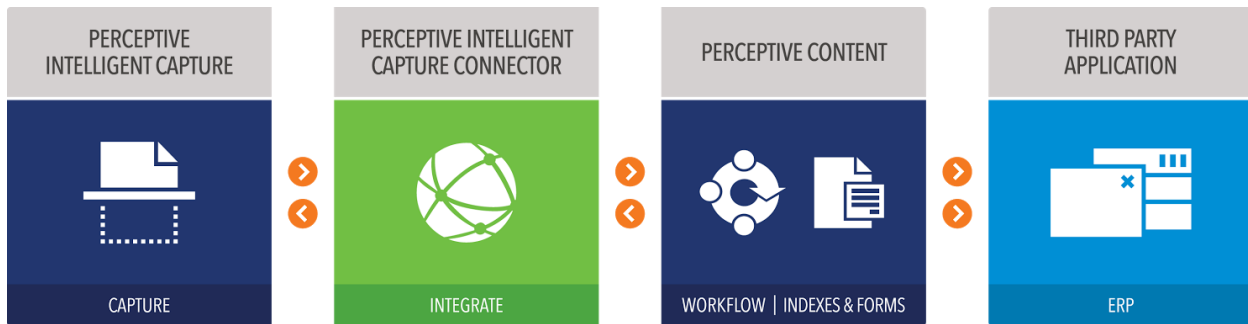
Each PIC Connector channel consists of a trigger, an action, and a results phase.

- A trigger is an event that initiates the channel. The PIC Connector provides two triggers. The Status Update Trigger allows you to create channels that trigger when PIC provides status codes during document processing. The Export Trigger creates channels that provide extracted XML data from PIC to ImageNow, which you can use in several ways.

- An action is a task that the channel performs when the trigger event occurs. The PIC Connector provides the following actions.

    - **File System Document Export**. This action allows you to create channels that, when triggered, create a copy of an ImageNow document in the TIFF format and place it on the file system. For example, you can use this action to create the TIFF files that PIC uses for data extraction.

    - **Route ImageNow Workflow Item**. The connector configuration uses this action, provided by the Content Connector, to route documents from one queue to the other queue in the PIC workflow.

- The results phase lets you specify what to do with the data that is available after the action completes. For example, you can output extracted XML values to ImageNow document keys, custom properties, eForm fields, or as the DCExport subobject.

This guide outlines the installation and configuration procedures for the PIC Connector. It also includes basic instructions for creating and configuring each channel type.

The PIC Connector files include several sample XML files to help you understand one way you can configure your channel mappings.

For more information about other required Perceptive Connect Runtime components, refer to the *Perceptive Connect Runtime Installation and Setup Guide.*

Prerequisites

You must have access to a working installation of the following products on your network before you install and use this connector.

- ImageNow 6.7.x

- Output Agent 6.7.x

- Intelligent Capture 5.5 SP2 or higher

- Intelligent Capture for Invoices 2.3, a custom Intelligent Capture solution, or project with web services integration

- Perceptive Connect Runtime 1.0

- Perceptive Content Connector 0.14 or higher (included within Perceptive Connect Runtime 1.0)

Overview of the setup process

To install the PIC Connector and set up File Output, PIC Status Code, and PIC Export channels, review or complete the following sections as needed.

- Install the PIC Connector

- Create File Output channels

- Create PIC Status Code channels

- Create PIC Export channels

Install the PIC Connector

To download the connector and install it with the Perceptive Connect Runtime Web Console, complete the following tasks.

Download the files

To download the PIC Connector ZIP folder and extract the files, complete the following steps.

1. Go to the Perceptive Software website at www.perceptivesoftware.com and log in to the Customer Portal.

2. In the **Product Downloads** page, search for the **Perceptive Intelligent Capture Connector** file.

3. Download the file and extract the contents to a temporary directory on your computer. Your computer must have access to the Perceptive Connect Runtime Web Console, located at **http://<*Perceptive Connect Runtime machine name*>:<*port*>/connect.**

Install the PIC connector

To install the PIC connector, complete the following steps.

1. In a browser, navigate to the **Perceptive Connect Runtime Web Console** URL in the format **http://<Perceptive Connect Runtime machine name or IP>:<port>/connect**.

   Example: `http://localhost:8080/connect`

2. In the browser dialog box, enter the Web Console user name and password.

   Note The default user name and password are **admin**. However, the administrator can change the defaults during the Perceptive Connect Runtime installation process.

3. On the **Perceptive Connect Web Console Bundles** page, click **Install/Update**.

4. In the **Upload/Install Bundles** dialog box, complete the following substeps.

   - Select the **Start Bundle** check box.

   - Clear the **Refresh Packages** check box.

     Note The **Start Level** remains at the default value.

5. To install the JAR files included in the connector ZIP file, complete the following substeps.

   1. Click **Browse** or **Choose File** and navigate to the connector in your temporary directory.

   2. Select the **PICC Writer**, **PICC Endpoint**, and **PICC Action JAR** files, one at a time, and click **Open**.

   3. Click **Install or Update**.

Create File Output channels

File Output channel exports copies of documents from ImageNow to a local or network directory, triggered by an Integration ASQ. PIC is configured to monitor the directory and pull incoming TIFF files, and then performs classification, extraction, and validation on each image.

This section provides the steps for creating and configuring a File Output channel by specifying the ASQ used for the trigger, the destination directory, the separator character, and the file name parameters. The file name always includes the Content document ID, and can include any of the following values.

- A separator character, such as ^

- Up to 99 value segments, as needed, using any of the following options

  - A literal string

  - An ImageNow document property, which can include the document name and document version number

  - An ImageNow document key value

  - An ImageNow custom property value

You can create multiple File Output channels with differing value segments or destination directories as needed for your solution. Before you begin configuring a channel, we recommend that you open the *Perceptive Connect Runtime Installation and Setup Guide* to use as reference material.

Configure ImageNow for the channel

File Output channels require you to configure an ImageNow workflow with an Integration ASQ and two additional queues for the success and failure routes. For information about creating a workflow process and queues, refer to the following help topics.

- Create a workflow process
- Create an Integration ASQ
- Create a work queue

After you create the Integration ASQ, save the queue ID for when you configure the channel. You can view the ID if you open the Queue Properties dialog box in Workflow Designer.

For an example workflow, refer to Appendix D: Example of File Output channel queues in .

Channel requirements

A File Output channel requires the following components.

- An Integration ASQ ID from ImageNow
- The Integration ASQ trigger and the Object Property reader provided by the Perceptive Content Connector
- The File System Document Export action provided by this connector
- The Trigger reader provided by the Perceptive Connect Runtime

Create and configure a File Output channel

To create and configure a File Output channel, complete the following steps.

1. In a browser, navigate to the channel wizard URL in the format **http://<Perceptive Connect Runtime machine>:<port>/ui/**.

   Example: `http://localhost:8080/ui/`

2. To create the channel, complete the following substeps.

   1. In the **Select a trigger** list, select **Integration ASQ Trigger**.

   2. To specify the queue that triggers the action, in the **Workflow Queue ID** box, type the ASQ ID, such as 301YW2R_0001LLH16000028, and click **Next**.

3. To set the channel action, in the **Select an action** list, select **FileSystemDocumentExport**.

4. From the temporary directory where you downloaded the PIC Connector files, open the sample **Export_Inputs.xml** file with a text editor.

5. To configure the inputs, in the **Configure the input mapping** XML editor, use the sample XML file and the information in the File System Document Export action section to configure the **DocId, ExportDirectory, Separator,** and extra file name segment parameters, as needed.

   Note Keep your file system file name character limits in mind as you configure the file name parameters.

6. Click **Next** and then click **Save Channel.**

7. When prompted to enable the channel, click **OK**.

   Important After you create a channel, you cannot modify the configuration.

Create PIC Status Code channels

PIC Status Code channels route documents in ImageNow workflow as they pass through different stages of Intelligent Capture processing.

These channels use the PIC project name, client ID, and the status code to route documents to specified queues. For example, you can create a channel that routes documents that failed the extraction process, such as status code 250, to a queue called IC Processing Error. Your users can then review documents in the queue and resubmit them for processing.

You can create one channel per combination of project name, client ID, and status code.

Warning You cannot replace or modify an enabled channel. For assistance with modifying an Intelligent Capture Status Code channel, contact your Perceptive Software representative.

Before you begin configuring a channel, we recommend that you open the *Perceptive Connect Runtime Installation and Setup Guide* to use as reference material. For information on the client ID, refer to the "BRWClient" section in the *Perceptive Intelligent Capture for Invoices Solution Guide 2.3.x* or contact your administrator for other Intelligent Capture solutions.

Channel requirements

A PIC Status Code channel requires the following components.

- A PIC project name, client ID, and status code

- Two ImageNow queue names

- The Status Code Update trigger, provided by this connector

- The RouteImageNowWorkflowItem action, provided by the Perceptive Content Connector

Create and configure a PIC Status Code channel

To create and configure a Status Update channel, complete the following steps.

1. In a browser, navigate to the channel wizard URL in the format **http://<*Perceptive Connect Runtime machine*>:<*port*>/ui/**.

   Example: `http://localhost:8080/ui/`

2. In the **Configure the channel trigger** page, complete the following substeps.

   1. In the **Select a trigger** list, select **Intelligent Capture Status Update**.

   2. In the **ProjectName** field, type the name of the PIC project that processes the documents you want to route, such as `DFI-BPO`. Do not include the file extension.

      Note The PIC project name is set in the GRL_VL_ProjectName setting in the PIC DFI.ini file.

   3. In the **ClientId** field, type the PIC client ID. Client IDs are non-negative integers.

   4. In the **StatusCode** box, type the PIC status code that you want this channel to handle, such as `550`. Status codes are numbers between 0-999.

   5. Click **Next**.

3. To set the channel action, in the **Select an action** list, select **RouteImageNowWorkflowItem**.

4. From the temporary directory where you downloaded the PIC Connector files, open **StatusCodeUpdateChannel_input mapping.txt** to use as configuration examples.

5. To configure the inputs, in the **Configure input mapping** XML text editor, use the sample XML files and the information in the Route ImageNow Workflow Item action section to configure the `WorkflowItemID, SuccessQueueName` and `FailureQueueName`.

6. Click **Next**, and then click **Save Channel**.

    Note You cannot configure any writer outputs for a PIC Status Code channel.

7. When prompted to enable the channel, click **OK**.

Create PIC Export channels

PIC Export channels pass XML data, extracted by Intelligent Capture, back to your original documents in ImageNow. With a PIC Export channel, you can write this XML data to document keys, custom properties, eForm fields, or the DCExport subobject. The channel uses the XML transformer, a specialized reader, to migrate the extracted data to an XML template or schema.

These channels use the PIC project name, client ID, and doc class to identify which data to export from PIC to ImageNow. For example, you can create a channel that uses extracted information from the image to populate an eForm or update indexes in ImageNow.

You can create one channel per combination of project name, client ID, and doc class.

Warning You cannot replace an enabled channel. For assistance with modifying an Intelligent Capture Export channel, contact your Perceptive Software representative.

For information on the PIC client ID, refer to the "BRWClient" section in the *Perceptive Intelligent Capture for Invoices Solution Guide 2.3.x* or contact your administrator for other Intelligent Capture solutions.

Channel requirements

A PIC Export channel requires the following components.

- A PIC project name, client ID, and doc class

- The Export trigger and DCExport Subobject writer, provided by this connector

- The XML reader and XML transformer, provided by the Perceptive Connect Runtime

- The RouteImageNowWorkflowItem action, eForm Data Definition reader, eForm writer, and Object Property writer, provided by the Perceptive Content Connector

Create and configure a PIC Export channel

This section provides a high-level overview of how to create PIC Export channels. When you create a PIC Export channel, you must configure the input and output XML data to map the extracted Intelligent Capture data to your specific data definition or schema. This process is highly variable depending on your target. As you read this overview, we recommend that you refer to the detailed appendices for the required components.

To create and configure a PIC Export channel, complete the following steps.

1. In a browser, navigate to the channel wizard URL in the format **http://<*Perceptive Connect Runtime machine*>:<*port*>/ui/**.

Example: `http://localhost:8080/ui`

2. On the **Configure the channel trigger** page, in the **Select a trigger** list, select **Intelligent Capture Export** and then complete the following substeps.

    1. In the **ProjectName** field, type the name of the Intelligent Capture project that processes the documents you want to route, such as `DFI-BPO`. Do not include the file extension.

        Note The PIC project name is set in the GRL_VL_ProjectName setting in the PIC DFI.ini file.

    2. In the **ClientId** field, type the Intelligent Capture client ID. The client ID consists of a non-negative integer.

    3. In the **DocClass** field, type the Intelligent Capture parent document class, such as `Invoices` or `Void`, and click **Next**.

3. On the **Configure the channel action** page, in the **Select an Action** list, select **RouteImageNowWorkflowItem**.

4. From the temporary directory where you downloaded the PIC Connector files, open the **Export_Invoice_Inputs.xml**, **Export_Void_Inputs.xml**, and **Export_Invoice_Outputs.xml** files. These files demonstrate how to map extracted data to the Perceptive AP Invoice eForm data definition. If you are mapping values to a different target, use these files as a general example of the overall process.

5. In the **Configure input mapping** XML text editor, configure the data sources with the following substeps. These steps assume you will map values to the AP Invoice eForm, and will vary for other targets.

    1. Configure the `WorkflowItemID`, `SuccessQueueName` and `FailureQueueName`.

    2. Configure the XML reader to extract the invalid reason code, **IC_InvalidReason**, from the PIC XML. You need the Xpath to the invalid reason value in the PIC XML.

    3. Configure the XML reader to extract additional values from the PIC XML, such as `InvoiceType` and `InvoiceNumber`, which you will use when you map the outputs.

    4. Configure the eForm Data Definition reader, `eFormDataDefinitionSource`, to extract the data definition from your form, such as AP Invoice eForm.

    5. Configure the XML transformer to map the extracted PIC values to your form's data definition. This maps the additional values extracted from the PIC XML to the data definition extracted from your form.

6. In the **Configure output mapping** XML text editor, configure the outputs with the following substeps.

    1. Configure the eForm writer to write the transformed XML values into your eForm fields. The writer references the name of the XML transformer. In the Export_Invoice_Inputs.xml file, this is `TransformedXml`.

    2. Configure the Object Property writer to write the `IC_InvalidReason` code to the `IC Invalid Reason` custom property.

    3. Optional. Configure the DCExport Subobject writer to write the PIC XML, `ic_xml`, to ImageNow's DCExport Subobject.

7. In the `<c:outputs ... />` element, remove the trailing backslash (`/`). Then, after the final `</c:parameter>` value, add a closing `</c:outputs>` element.

8. Click **Save**. When the UI prompts you to enable the channel, click **OK**.

Appendix A: Triggers

A trigger is an event that causes a channel to execute. Each channel has a single trigger, so the event defined by the trigger and its inputs is the only entry point into a given channel. Triggers can also bring data into the channel. This data is available for input mapping for the channel action or for the results output.

All of the triggers for the Perceptive Intelligent Capture Connector use REST calls. Each trigger includes output values that you can use in the channel data context for either input or output mappings.

The ImageNow Connector provides the following triggers and associated data.

Export trigger

The Export trigger allows you to create Intelligent Capture Export channels. Refer to the Create PIC Export channels section.

This trigger includes the following case-sensitive output values that you can use in the channel data context.

- **DocumentId**. The ImageNow document ID

- **ProjectName**. The project name, configured in the GRL_VL_ProjectName setting in the PIC DFI.ini file

- **ClientId**. The client ID, configured in the Intelligent Capture database

- **DocClass**. The document class, configured in the Intelligent Capture project

- **XMLDocument**. A W3C XML document consisting of the Intelligent Capture-extracted data

Status Code Update trigger

The Status Code Update trigger allows you to create Intelligent Capture Status Code channels. Refer to the Create and configure a PIC Status Code channel section.

This trigger includes the following case-sensitive output values that you can use in the channel data context.

- **DocumentId**. The ImageNow document ID

- **ProjectName**. The project name, configured in the GRL_VL_ProjectName setting in the PIC DFI.ini file

- **ClientId**. The client ID, configured in the Intelligent Capture database

- **StatusCode**. The Intelligent Capture document-processing status code, such as 550

Use trigger values in a channel input or output mapping

To use an Export trigger or Status Code Update trigger value in the input mapping, use the Perceptive Content Connector Trigger reader. In this instance, the `trigger` node contains the output value from the selected trigger and the `name` is any string that you use as a reference in another node.

Example

```
<c:parameter>
        <c:name>DocId</c:name>
        <c:trigger>DocumentId</c:trigger>
</c:parameter>
```

To use a trigger value in the output mapping, such as for the DCExport Subobject, reference the value directly.

Example

```
<c:parameter>
        <c:name>ICXmlDoc</c:name>
        <ic:DCExportTarget>DocumentId</ic:DCExportTarget>
</c:parameter>
```

Appendix B: Actions

An action is a connector-defined task configured in the channel that executes when the channel triggers. You configure the various inputs that the action requires when you create the channel. The action uses these inputs to complete its task in an application outside of Perceptive Connect Runtime, as defined in the connector.

The PIC Connector provides the following action.

File System Document Export action

This action copies any ImageNow documents in an Integration ASQ to a specific network location, such as the Intelligent Capture import directory. With this action, you configure the file name format. For example, you can pass ImageNow values or literal values to Intelligent Capture through the file naming convention.

When you select the FileSystemDocumentExport action, Perceptive Connect Runtime automatically populates the following XML configuration template in the Configure input mapping box.

```
<c:parameter>
    <c:name>DocId</c:name>
    <c:none/>
</c:parameter>
<c:parameter>
    <c:name>ExportDirectory</c:name>
    <c:none/>
</c:parameter>
<c:parameter>
    <c:name>Separator</c:name>
    <c:none/>
</c:parameter>
<c:parameter>
    <c:name>Segment1</c:name>
    <c:none/>
</c:parameter>
...
<c:parameter>
    <c:name>Segment99</c:name>
    <c:none/>
</c:parameter>
```

The action requires that you specify the `DocId` and `ExportDirectory` parameters. `DocId` retrieves the ID of the ImageNow document that the action is exporting. The ID is always the first element of the file name.

The Integration ASQ Trigger provides the Doc ID. However, if you use this action with another trigger that does not provide the doc ID, the Workflow Item Reader can use the workflow ID to retrieve the doc ID.

`ExportDirectory` sets the output location on the file system.

`Separator` sets the separator character for the file name. If you do not specify a character, the default is ^. Refer to the following list for acceptable separator characters.

~ ! @ # $ % ^ & ( ) - _ + [ ] { } ; ' , .

With the `Segment` parameters, you can configure up to 99 additional segments in the file name. Keep in mind your system file name character limits.

To insert an ImageNow document key value, custom property value, or ImageNow document name, complete the following steps.

1. In the `Segment` parameters, replace `<none\>` with the element `<objectPropertyReader>`. The element `<objectPropertyReader>` is described below.

```
<in:objectPropertyReader>
    <in:name>Field4</in:name>
    <in:objectIdRef>DocId</in:objectIdRef>
    <in:objectType>document</in:objectType>
    <in:propertyType>KEY</in:propertyType>
</in:objectPropertyReader>
```

2. Modify `<objectPropertyReader>` using any of the following options.

- To insert a literal string, use the literal reader from Perceptive Connect Runtime. For example, insert a company name or business unit.

  To insert an empty segment, use the literal reader from Perceptive Connect Runtime with an empty set.

  ```
  <c:literal></c:literal>
  ```

  Note You cannot use any of the following characters in the `Segment` values or as the separator.

  `< > : " / \ | ? *`

- To insert an ImageNow document key value, in the element `<in:propertyType>`, type `KEY`, and in the element `<in:name>`, specify a key value. Allowed values are `field1`, `field2`, `field3`, `field4`, `field5`, `folder`, `tab`, `drawer`, and `type`.

- To insert an ImageNow custom property, in the element `<in:propertyType>`, type `CUSTOMPROPERTY`, and in the element `<in:name>`, specify the name of the custom property.

- To insert the ImageNow document name, in the element `<in:propertyType>`, type `DOCPROPERTY`, and in the element `<in:name>`, specify the document name.

Example

```
<c:parameter>
    <c:name>DocId</c:name>
    <in:workflowItem>
        <in:reference>WfId</in:reference>
        <in:objectType>WORKFLOW</in:objectType>
        <in:objectField>OBJECT_ID</in:objectField>
    </in:workflowItem>
</c:parameter>
<c:parameter>
    <c:name>WfId</c:name>
    <c:trigger>WorkflowItemId</c:trigger>
</c:parameter>
<c:parameter>
    <c:name>ExportDirectory</c:name>
    <c:literal>C:\Program Files\Perceptive\Projects\AP\Export</c:literal>
</c:parameter>
<c:parameter>
    <c:name>Separator</c:name>
```

```
    <c:literal>#</c:literal>
</c:parameter>
<c:parameter>
    <c:name>Segment1</c:name>
    <c:literal>ID</c:literal>
</c:parameter>
<c:parameter>
    <c:name>Segment2</c:name>
    <in:objectPropertyReader>
        <in:name>Field4</in:name>
        <in:objectIdRef>DocId</in:objectIdRef>
        <in:objectType>document</in:objectType>
        <in:propertyType>KEY</in:propertyType>
    </in:objectPropertyReader>
</c:parameter>
```

Route ImageNow Workflow Item action

The connector configuration uses this action, provided by the Content Connector, to route documents from one queue to the other queue in the PIC workflow.

When you select the RouteImageNowWorkflowItem action, Perceptive Connect Runtime automatically populates the following XML configuration template in the Configure input mapping box.

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<c:inputs xmlns:c="http://www.perceptivesoftware.com/pif/mapping"
xmlns:in="http://www.perceptivesoftware.com/pif/imagenow"
xmlns:ic="http://www.perceptivesoftware.com/pif/ic">
   <c:parameter>
       <c:name>WorkflowItemId</c:name>
       <c:none/>
   </c:parameter>
   <c:parameter>
       <c:name>SuccessQueueName</c:name>
       <c:none/>
   </c:parameter>
   <c:parameter>
       <c:name>FailureQueueName</c:name>
       <c:none/>
   </c:parameter>
</c:inputs>
```

The action requires that you specify the `WorkflowItemId`, `SuccessQueueName`, `FailureQueueName`, and the `DocId`, parameters. To include `DocId`, you must replace the `WorkflowItemId` parameter with the following XML script in the XML configuration template.

```
<c:parameter>
    <c:name>DocId</c:name>
    <c:trigger>DocumentId</c:trigger>
</c:parameter>
<c:parameter>
    <c:name>WorkflowItemId</c:name>
    <in:workflowItem>
       <in:reference>DocId</in:reference>
       <in:objectType>DOCUMENT</in:objectType>
       <in:objectField>WORKFLOW_ID</in:objectField>
    </in:workflowItem>
</c:parameter>
```

The XML configuration template also enables you to map document keys and custom properties of an ImageNow document. To map document keys and custom properties, copy the relevant sections of the sample XML file. The sample XML files are available in the directory [*drive:*]\{*path*}\picc-distributable-1.0.1-PICC\Sample Configurations. The drive and path in the directory are based on where you extract the picc-distributable-1.0.1-PICC.zip file.

Appendix C: Writers

Writers are interfaces, provided by connectors, that let you configure channels to output data to applications outside of Perceptive Connect Runtime. You use writers to configure the results output mapping, which lets you specify what to do with any data resulting from the action execution. You can invoke writers using specific XML tags, defined per writer.

The Intelligent Capture Connector provides the following writers.

DCExport Subobject writer

This writer lets you save an XML document (w3c.Document Java type) to the DCExport subobject of a document in ImageNow. ImageNow uses the `workingName` parameter to identify objects attached to the DCExport subobject. The `workingName` value is the root node from the XML document to be stored, such as `BrainwareDocument`. If an object with the same `workingNam`e already exists, the writer replaces the data with the latest XML document.

To output an XML document from a channel to an ImageNow document, include the following XML template in the channel output mapping, and enter the appropriate values.

```
<name></name>
```

```
<ic:DCExportTarget></ic:DCExportTarget>
```

The `name` field references the name node of the Perceptive Content Connector Trigger reader. Refer to the "Trigger" section in the Perceptive Connect Runtime Installation and Setup Guide.

In the `DCExportTarget` field, reference the ImageNow document ID to which you want to attach the XML. For example, if you used the Status Code Update trigger from this connector, you can use the trigger's output value `DocumentId`. If you used the Integration ASQ Trigger, from the ImageNow Connector, you would reference the Workflow Item reader name, such as `DocId`.

DCExport subobjects only exist at the document level. You cannot write this subobject to an ImageNow folder, or to an individual page within an ImageNow document.

Example

```
<c:parameter>
      <c:name>ICXmlDoc</c:name>
      <ic:DCExportTarget>DocumentId</ic:DCExportTarget>
</c:parameter>
```

Appendix D: Example of File Output channel queues in ImageNow

The following image provides an example layout of the ImageNow queues provided for the Perceptive Intelligent Capture workflow. If you create a File Output channel, for example, you would use the IC Submit Integration ASQ to trigger the channel.