

# Core Connectors and Document Transformation

## COURSE MANUAL AND ACTIVITY GUIDE

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<https://community.workday.com/training/km>



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## CORE CONNECTORS AND DOCUMENT TRANSFORMATION

### DESCRIPTION

This course examines Workday's Core Connectors and Documentation Transformation technology.

Workday Connectors are pre-built integration templates that extend Workday functionality to external vendors for Human Capital Management (HCM), Payroll, Payroll Interface, Financial Management, and Spend Management. Connectors address the majority of the effort required to integrate with third-party endpoints. Core Connector usage provides a rapid, flexible and reusable method for integrating with Workday, ensuring that external systems receive only the data that you want to expose.

Document Transformation templates incorporate XSLT code providing the developer the capability to transform both data structure and content of the XML document to meet client requirements. As part of Document Transformation this class will cover Workday specific processing instructions known as Element Transformation and Validation (ETV) and XML To Text (XTT). Finally, this course will explore the security considerations required to build, launch, monitor and maintain Workday integration systems.

This course will cover the following topics:

- Integration Architecture Review
  - Integration System Tools
  - Integration Cloud Connect
- Integration System Building Blocks
- Core Connectors
  - Overview Core Connectors
  - Core Connector: Worker
  - Core Connector: Inbound Organization
  - Integration System Security
- Document Transformation
  - XTT (XML To Text)
  - ETV (Element Transformation and Validation)



Note: Please note that both EIB and Workday Studio are outside scope and as such, will not be addressed in class.

## GOAL & OBJECTIVES

In this class, you will be stepping into the role of Logan McNeil, the Chief Human Resources Officer (CHRO) who is responsible for creating integrations for the HCM side of the business. Throughout this class you will help Logan build connector based integrations to export worker data and import organization data. In addition you will implement document transformation systems so as to meet the unique file format requirements of the involved systems.

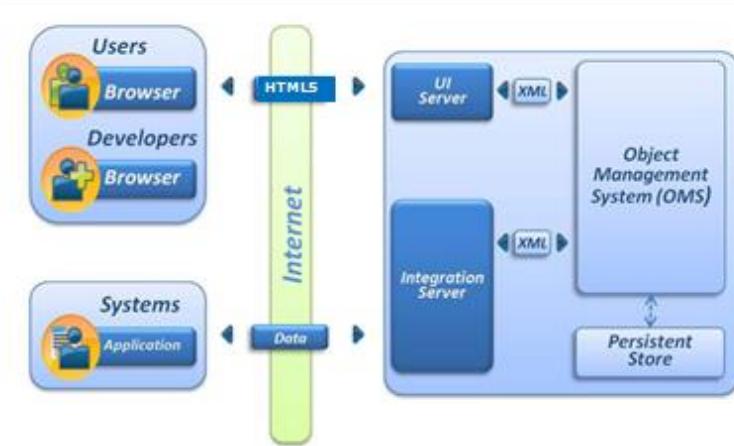
By the end of this two day course, students will be able to:

- Define the key building blocks of Workday Connector Integrations.
- Create and configure an outbound Core Connector integration.
- Create and configure an inbound Core Connector integration.
- Configure security for connector based integrations.
- Leverage document transformation to transform the output of an integration to meet unique third party system file requirements while leveraging ETV and XTT.

# CHAPTER 1 – INTEGRATION ARCHITECTURE

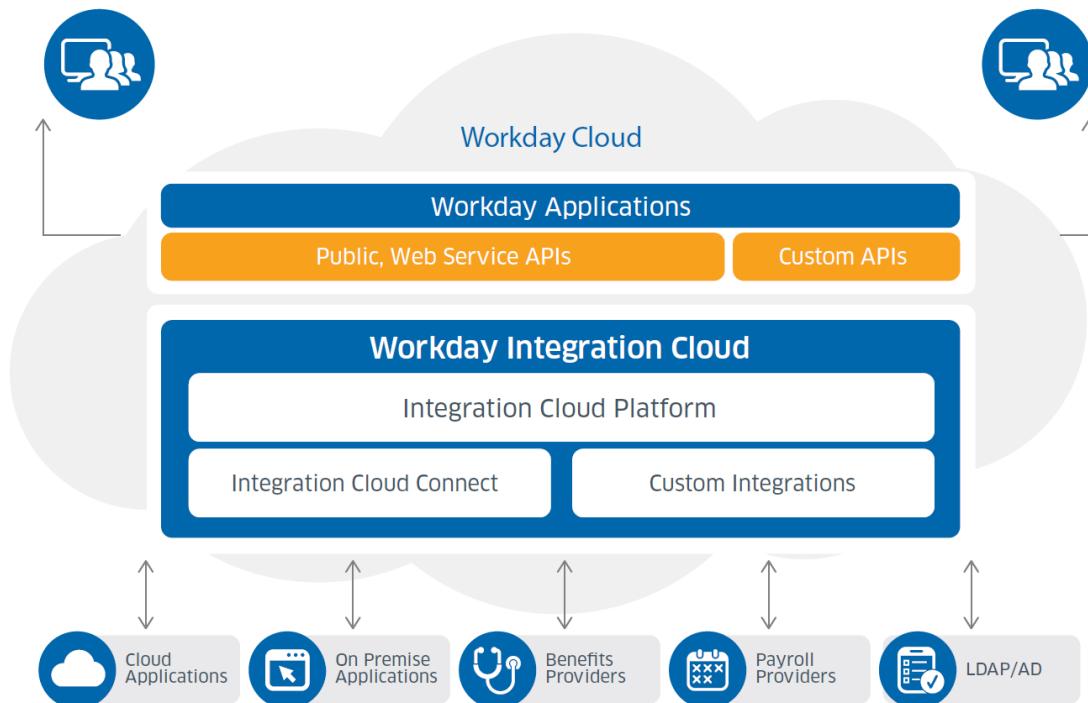
## INTEGRATION ARCHITECTURE REVIEW

Workday's suite of business services are hosted within the Object Management System (OMS). All customer data is stored within the persistent store and the only way to access this is through the OMS. This is an important aspect of how Workday addresses issues such as security and performance. All communication with the OMS is via XML over HTTPS. Users access Workday through Web browsers. The User Interface Server (UI Server) handles these requests.



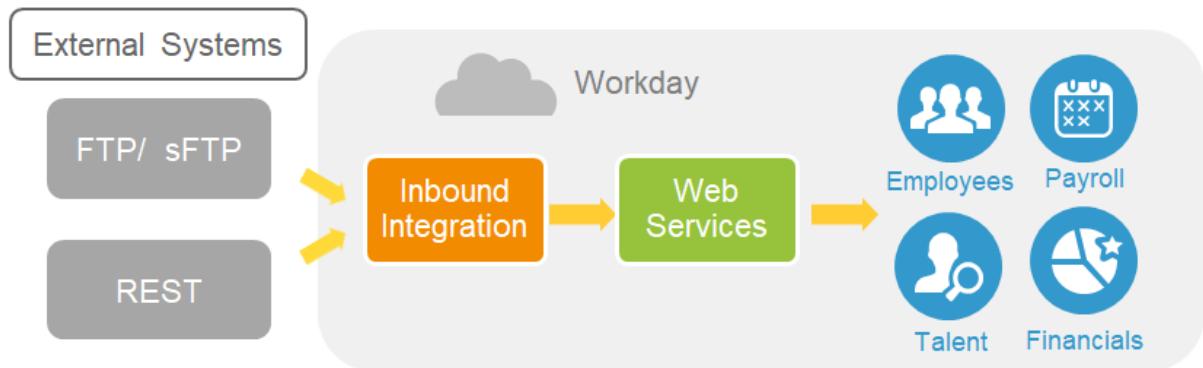
Developers also connect to the OMS via the UI Server to make use of the browser-based tools, for example, when configuring Integration Systems or building integrations using the EIB.

There are three ways to access the web services to get and update data via an integration system to your Workday tenant. You may use the delivered configurable integrations (Cloud Connect), the integration tools to create integration systems (EIB and Workday Studio) or your own existing middleware.



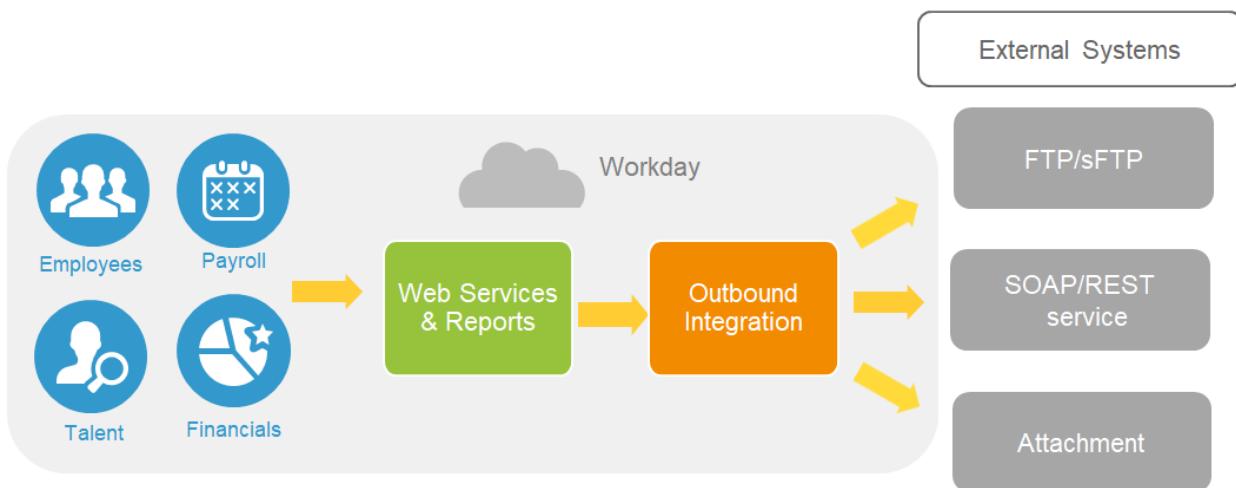
## INBOUND INTEGRATION WORKFLOW

Workday supports inbound integrations through a variety of tools however they all share the same general workflow pattern. When dealing specifically with inbound connectors, the inbound integration begins by retrieving a source file containing the inbound records. The most common endpoint for retrieving a file from is a centrally located sFTP server that both the third party system and Workday both have access to, however there are additional retrieval options beyond sFTP. Ideally the file coming in will already be in a Workday compliant format, which is the format of a Workday web service request for the underlying Workday web service operation the integration uses. Once the file is retrieved, the file can be transformed if it is not in the correct format using a document transformation integration system. Lastly the file is handed off to the underlying web service operation to be processed and populate the data into Workday.



## OUTBOUND INTEGRATION WORKFLOW

Workday supports outbound integrations through a variety of tools however they all share the same general workflow pattern. When dealing specifically with outbound connectors, the outbound integration begins by retrieving data from Workday via a Workday web service request. This request produces an output file that is in a Workday XML format. If the third party system being integrated with requires an alternate format the file can be handed off to a document transformation integration system to produce a transformed output. Once the final format file is produced, the file can be delivered to an external endpoint that is centrally located and accessible by both Workday and the third party system. The most common endpoint for delivering a file to is an sFTP server, however there are additional endpoint options available.



## WORKDAY CONNECTORS

Workday Connectors are pre-built integration templates that extend Workday's functionality to external systems for Human Capital Management (HCM), Payroll, Payroll Interface, Financial Management, and Spend Management. All integrations are hosted and maintained by Workday.

Workday provides two types of Connectors:

- *End-to-end Connectors* support a specific named third party application or service. When a Connector is deployed, the specific business functions between the two systems are configured with no additional coding required.
- *Connectors* are pre-built integrations that address the majority of the integration effort required to connect to third-party end points.

All Connectors require some level of tenant configuration and testing. Each customer may have specific mapping requirements and different endpoint configurations. These differences in customer configurations can be accommodated with Workday's integration templates and mapping capabilities.

Workday Connectors are currently available for:

- Benefits
- HCM
- Workday Payroll
- Third-Party Payroll
- Financials
- Spend Management
- Student

For more information on available connectors, navigate to the following documentation section:

### [Getting Started with Workday Connectors](#)

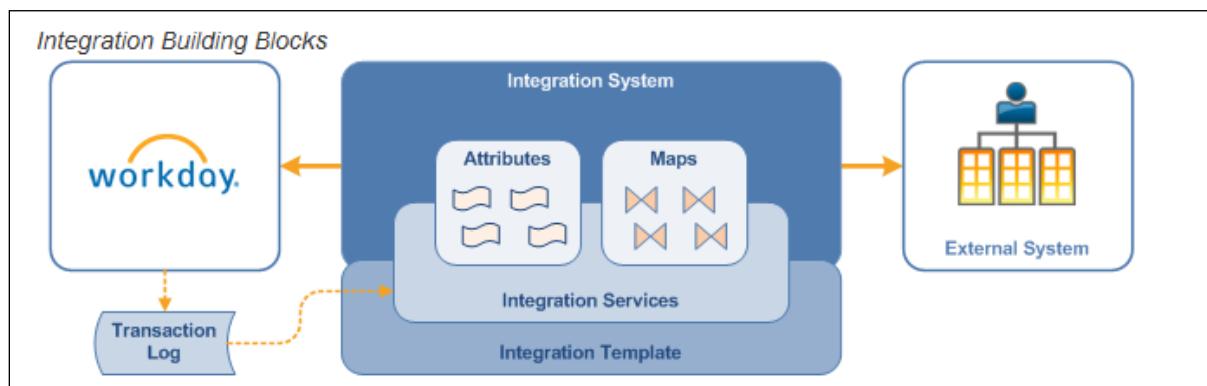
Each Workday Connector is a packaged integration template with a configurable set of data across a range of categories. Core Connectors let you specify which data elements to include in integration output files. When launched, the integration collects a snapshot of all data and creates an output file in XML format based on your specifications.

All Workday Connector integrations create integration output files in a Workday-defined XML format. This output can be configured for delivery, or further transformation.

## INTEGRATION BUILDING BLOCKS

Workday's Connectors share a common design pattern that makes it easy to connect Workday to complementary applications and services, yet provides the flexibility to configure a tenanted solution to fit your needs.

Many Workday integrations are simple enough to set up on your own. You start with an integration template that provides a framework for Workday to communicate with an external system. Each integration template contains a set of integration services, comprised of integration attributes and maps that define specific connection points. To reduce complexity, many integration templates have factory default settings for common definitions and system requirements. By building in default values for the technical aspects of an integration, Workday lets you focus on the functional setup tasks related to your data.



*Integration systems* are tenanted definitions of a Workday integration. An integration system has the following building blocks:

### Integration Template

An integration template is a collection of integration services that enables communication between Workday and an external system. Workday provides integration templates in categories such as Benefits, Financials, HCM, Payroll, Payroll Interface, Procurement, Recruiting, Security, and Settlement. Many of the delivered templates contain default values for attributes, as well as prompt values for attributes and maps, to define the integration further.

### Integration Service

Contains a set of attributes and maps related to a specific integration function. Integration services use XSLT (eXtensible Stylesheet Language Transformations) to convert Workday XML into a format that an external system can read. Integration services focus on functional areas (such as account provisioning and health insurance), as well as integration behavior (such as document retention, field overrides, and file delivery).

### Integration Attribute

Integration Attributes are an integration component that specifies the tenanted value of a data element in Workday.



Example: The Core Connector Worker template provides attributes to define address types, name types and country code types. In addition there are general attributes to control behavior such as including prior values.

### Integration Map

An integration map is an integration component that specifies how values in Workday map to values in an external system.



Example: The Core Connector Worker template provides integration maps for a variety of fields such as marital status, gender, hire reason and worker type.

### Transaction Log

Provides a record of business processes and events in Workday. Integrations can subscribe to specific transaction log events to capture the changes to employee data that are relevant to an external system.



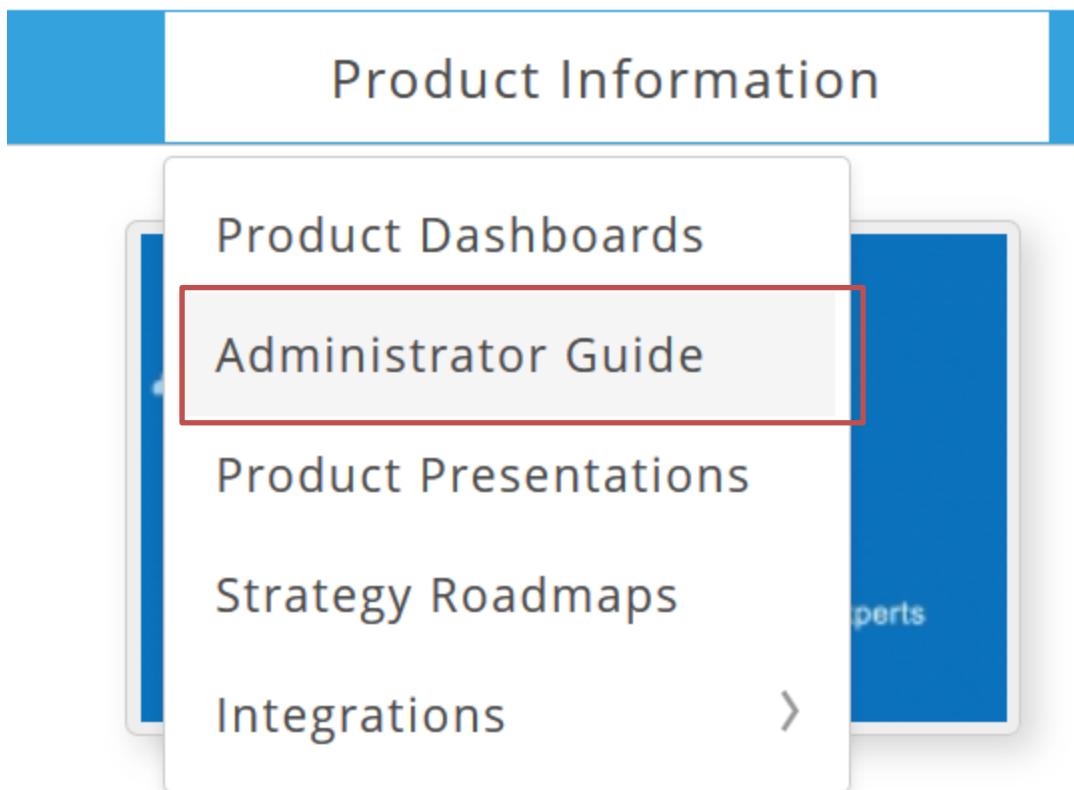
Note: Some Connectors, including job posting, location, and competency, do not include a Transaction Log service, as the underlying Workday web services (get\_location) do not include it.



## ACTIVITY 1.1 – EXPLORE CONNECTOR TEMPLATES ON WORKDAY COMMUNITY

Business Case: Logan McNeil has been tasked with building a new connector based integration system. Before beginning Logan would like to explore the templates that are available. Navigate to the administrator guide on Workday Community and explore with her.

1. Navigate to the administrator guide
2. In your web browser, navigate to <https://community.workday.com> and login.
3. In the menu bar at the top of the page, mouse over **Product Information** and then select **Administrator Guide**. This will redirect you to the administrator guide found at <https://doc.workday.com/>



4. In the search bar enter **Workday Connectors** and select the first option **Getting Started with Workday Connectors** to execute the search. Within the listed search results, select the Getting Started with Workday Connectors page.

English ▾ Workday Connectors

- [Concept: Building Blocks for Workday Connectors](#)
- [Concept: Workday Connectors](#)
- [\*\*Getting Started with Workday Connectors\*\*](#)
- [Workday Payroll Connectors](#)
- [Workday Benefits Connector](#)

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## EXPLORE THE AVAILABLE TEMPLATES

5. In the left pane navigation you will see reference pages for the various connector catalogs. Over the course of the next two days we will be working with templates found in the HCM Connectors Catalog. Take a few minutes to investigate the list of available templates within the HCM Connectors Catalog.

Reference: HCM Connectors Catalog

Connector
<a href="#">Account Provisioning Integration</a>
<a href="#">Account Provisioning Connector</a>
<a href="#">Affordable Care Act (ACA) Connector</a>
<a href="#">AngelPoints</a>
<a href="#">Assign Organizations Inbound Connector</a>
<a href="#">Core Connector: Background Check Order Inbound</a>

6. Take a few moments and drill into some of the other catalogs and explore the list of available templates, there are well over 200!



## CHAPTER 2 – CORE CONNECTOR: WORKER

### CORE CONNECTOR: WORKER

The Core Connector: Worker integration system exports worker data changes from Workday in simple XML format. Workday also supports output in CSV (Comma Separated Value) format, with certain limitations. As you hire, promote, transfer, terminate, or update worker data, the integration generates a text file containing the changes.

Using configurable data sections or Workday-delivered report fields and calculated fields that you create, you can export any worker data, in any combination.

#### CHANGE DETECTION

The Core Connector: Worker detects changes to worker data by monitoring a transaction log. When you set up the integration system, you may select which business processes and transaction types that the integration system should subscribe to. However, if your integration system does not subscribe to a transaction type that affects your worker's profile, Workday will not include changes triggered by that transaction type.

The Core Connector: Worker integration uses a three-step process to detect and report changes:

1. When the Core Connector: Worker integration checks the transaction log, the integration determines which workers have had changes which resulted in the generation of at least one of the configured transaction events.
2. For each worker with a matching transactional change, the integration compares their report fields for the time at which the integration was run and the time at which it was last successfully run. It identifies which, if any, of the values of interest have been modified.
3. If the worker has any changes in field values or eligibility, Workday generates an appropriate creation, change or deletion message.

#### FULL-DIFF EXTRACT

You can configure your Core Connector: Worker integration to select all workers who meet the eligibility criteria, then determine changes for the returned data. To enable this option, disable the Transaction Log service. When you run the integration, Workday extracts all applicable data for the defined population of employees. If any data for an employee changed during the defined date range, Workday includes all data for that employee.

#### WORKER ELIGIBILITY

For each integration system, you define a group of workers that belongs to the integration system. Membership is defined by a single Boolean report field or calculated field. If the field value is true for a worker, that worker is a member of the group, and changes for that worker are included in the integration. If the field value is false, the integration system ignores that worker.

## INTEGRATION SYSTEM SERVICES

Integration services manage each category of employee data that is available for output. Before you can configure fields, you must enable the integration services that manage those fields. To change which services are enabled, select **Integration System > Configure Integration Services** as a related action on the integration system.

**Configure Integration Services WICT\_HCM\_Workers** ([Actions](#))

Integration Template	Core Connector: Worker	Initial Service to Invoke	Optional	Enabled
Enable All Services	<input type="checkbox"/>			
<b>Integration Services</b> 24 items				
Integration Template Service				
Core Connector: Worker / Integration Document Retention	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Core Connector: Worker / Worker Profile Photo	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Core Connector: Worker / Worker Personal Data Section Fields	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Core Connector: Worker / Worker Status Data Section Fields	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Core Connector: Worker / Worker Position Data Section Fields	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Core Connector: Worker / Worker Contract Data Section Fields	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Core Connector: Worker / Worker Leave of Absence Data Section Fields	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Core Connector: Worker / Worker Compensation Data Section Fields	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

This connector is being driven by the **GetWorkers** Web Service Operation. This service operation can also be accessed directly by EIB and Workday Studio. The Core Connector abstracts the web service providing the ability to configure the integration using the tenant, rather than writing a custom request. Notice the **Worker\_Response\_Group** of the **Get\_Workers\_Request** matches the services selectable in the Integration Services of the Worker Connector.

**Web Service**

- Human\_Resources (n17)

**Request**

- Element **Get\_Workers\_Request**

**Response**

- Element **Get\_Workers\_Response**

**Element(s)**

- Request Element: **Get\_Workers\_Request**

Request element used to find and get workers and their associated data.

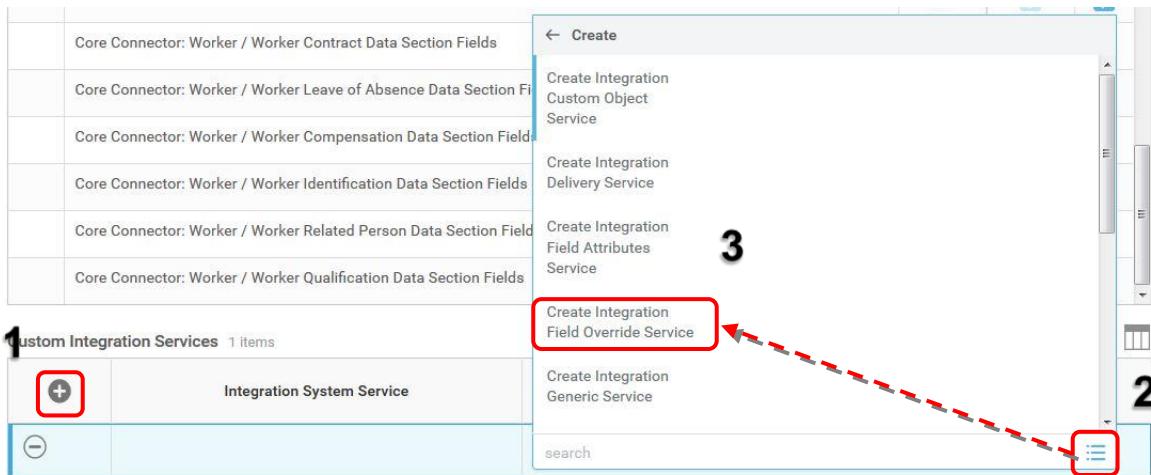
Parameter name	Type/Value	Cardinality	Description
Version	string	[0..1]	Workday version
Request References	Worker_Request_References	[0..1]	Utilize the Request References element to retrieve a specific instance(s) of Worker and its associated data.
Request Criteria	Worker_Request_Criteria	[0..1]	The Request Criteria element lets you apply additional criteria to identify the specific instance(s) of a Worker.
Response Filter	Response_Filter	[0..1]	Parameters that let you filter the data returned in the response. You can filter returned data by dates and page attributes.
Response Group	Worker_Response_Group	[0..1]	Use the response group to limit the response to the data you are interested in. If the request does not set any values for the response group, then the response by default returns the following elements: Reference, Personal Data, Employment Data, Compensation Data, Organization Data, and Role Data.

**Worker\_Response\_Group**  
part of: **Get\_Workers\_Request**, **Get\_Workers\_Response**  
Use the response group to limit the response to the data you are interested in. If the request does not set any values for the response group, then the response by default returns the following elements: Reference, Personal Data, Employment Data, Compensation Data, Organization Data, and Role Data.

Parameter name	Type/Value
Include_Reference	boolean
Include_Personal_Information	boolean
Include_Employment_Information	boolean
Include_Compensation	boolean
Include_Organization	boolean

## CUSTOM INTEGRATION SYSTEM SERVICE

Many times an external system may need a piece of data that is not available in the Web Service Operation. While you cannot change the Workday Web Service, by using Core Connector you have the ability to add a Custom Integration Service to bring additional fields to the output file. These fields can be Delivered Report Fields, Calculated Fields and even Custom Fields.



When you are defining which services to include, you can add a custom service. For example, to add a group of fields not included in the underlying web service operation, create a new Integration Field Override Service.

When you create the service, you give the service a name, associate it to a Business Object and define the fields. These fields will be mapped later in the Integration System Field Override Service.

Fields			
2 items			
	Order	*Name	Description
<input type="button" value="+"/>	▼ ▲	INIT	Initials
<input type="button" value="+"/> <input type="button" value="-"/>	▲ ▼	UNAME	User Name

## INTEGRATION ATTRIBUTES

Integration attributes provides one or more tenanted values for a data element in Workday. For example, attributes define deduction codes, pay rate types, benefit plan names, and citizenship status. These attributes are configurable and can be required for launch.

### Error

#### 1. Page Error

There are Integration Attributes enabled for this Integration System that are marked as "Required for Launch", but do not have a Value assigned to them. Please use the Related Menu Item (Integration System > Configure Integration Attributes) to complete the configuration.

Attributes:

Core Connector: Worker Integration Configuration / Version (WICT\_HCM\_Workers)

Integration attributes are configurable constants that may need to be changed occasionally in Workday. To modify attributes for an integration navigate to the related action **Integration System > Configure Integration Attributes** on the integration system.

Integration Attributes 1 items					
Attribute Provider	Attribute	Description	Options	Override Default Values	Attribute Value(s)
					Valid Values
Core Connector: Worker Integration Configuration	Output Filename	Assigns the name to the output file. If you enabled the filename sequence generator, leave this value empty otherwise it must be populated with a valid filename.		<input type="checkbox"/> <span style="color: #0070C0;">+</span>	<span style="color: #0070C0;">17</span> <span style="color: #0070C0;">18</span> <span style="color: #0070C0;">19</span> <span style="color: #0070C0;">20</span> <span style="color: #0070C0;">21.0</span> <span style="color: #0070C0;">22.0</span> <span style="color: #0070C0;">23.0</span> <span style="color: #0070C0;">24.0</span> <span style="color: #0070C0;">25.0</span>
	Output Document Tags	These values are tagged to the document output by the integration system		<input type="checkbox"/> <span style="color: #0070C0;">+</span>	
	Version	Controls the version of the output file.	Required for Launch	<input type="checkbox"/> <span style="color: #0070C0;">+</span>	<span style="color: #0070C0;">-</span>

For Cloud Connect Integration templates the configurable attributes are defined in the documentation on Workday Community. To see a full list of Core Connector: Worker integration attributes view the following documentation page: [Create Core Connector: Worker Integration System](#)

## INTEGRATION FIELD ATTRIBUTES

Field attributes enable you to configure the contents of an integration output file field by field. You can select which fields to include in the integration, specify whether the fields are required, and specify maximum field length. When the integration runs, Workday searches for changes to the selected fields, validates that the required fields are present in the output file, truncates values that exceed the maximum field length, and reports any errors or warnings in the audit files.

**Configure Integration Field Attributes WICT\_HCM\_Workers** (Actions)

Configuration	WICT_HCM_Workers / Worker Personal Data Section Fields*			
Description	This configuration defines the set of fields that will be included in the Personal Data section of the output file. Fields with a tick in the "Include in Output" column will be included in the output file. The "Required Field" and "Maximum Length" columns provide control over the validation rules that are applied to the worker data.			
Include All Fields in Output	<input type="checkbox"/>			
<b>Field Configuration</b> 74 items				
Field(s)	Description	Include in Output	Required Field	Maximum Length
Name Data	This field encompasses the logical grouping of fields associated with a worker's Name data. The "Required" option may be checked on this field attribute to validate for each worker that at least one instance of Name data is present in the output.	<input type="checkbox"/>	<input type="checkbox"/>	0
Name Data / Name Type	This field is mapped using the Integration Map called Name Type.	<input type="checkbox"/>	<input type="checkbox"/>	0
Name Data / First Name		<input checked="" type="checkbox"/>	<input type="checkbox"/>	0
Name Data / Middle Name		<input type="checkbox"/>	<input type="checkbox"/>	0

To modify field attributes for an integration, as a related action on the integration system, select **Integration System > Configure Integration Field Attributes**.

Before building an integration with the Core Connector:Worker template, familiarize yourself with each data section to understand which fields are available for output and how the configuration options affect integration behavior. For more information on data sections, navigate to the following documentation section:

[Reference: Core Connector: Worker Integration Data Sections](#)

### Reference: Core Connector: Worker Integration Data Sections

#### Reference: Core Connector: Worker Integration Data Sections

Before you build an integration with the Core Connector: Worker template, familiarize yourself with each data section to understand which fields are available for output and how the configuration options affect integration behavior.

During integration setup, you enable integration services for each data section that you want to include in the output file.

Some sections also have an *Operation* field that indicates whether a row of data is new, changed, or deleted. *Operation* codes are: ADD, REMOVE, MODIFY, or NONE.

During integration setup, enable the integration services for each data section that you want to include in the output file. All enabled data sections will be available to configure via the *Configure Integration Field Attributes* related action.

**Configure Integration Field Attributes WICT\_HCM\_Workers** Actions

<ul style="list-style-type: none"><li><span style="color: #ccc;">[document]</span> Worker Personal Data Section Fields Document</li><li><span style="color: #ccc;">[document]</span> Worker Status Data Section Fields Document</li><li><span style="color: #ccc;">[document]</span> Worker Position Data Section Fields Document</li><li><span style="color: #ccc;">[document]</span> Worker Compensation Data Section Fields Document</li></ul>	<p><b>Configuration</b> WICT_HCM_Worke</p> <p><b>Description</b> This configuration section of the output file includes the data sections that are included in the output file. You can control over the values by selecting the checkboxes.</p> <p><b>Include All Fields in Output</b> <input type="checkbox"/></p> <p><b>Field Configuration</b> 74 items</p> <table border="1"><thead><tr><th>Field(s)</th><th></th></tr></thead><tbody><tr><td>Name Data</td><td>This field is required and must have a value.</td></tr></tbody></table>	Field(s)		Name Data	This field is required and must have a value.
Field(s)					
Name Data	This field is required and must have a value.				

## INTEGRATION FIELD OVERRIDES

Field overrides are a flexible tool to customize your integration system. Use field overrides to map tenanted data to an external system and add custom values to integration output files. Field overrides use report fields or calculated fields to supply the values that are required by the external system.

To configure integration field overrides, as a related action on the integration system, select **Integration System > Configure Integration Field Overrides**.

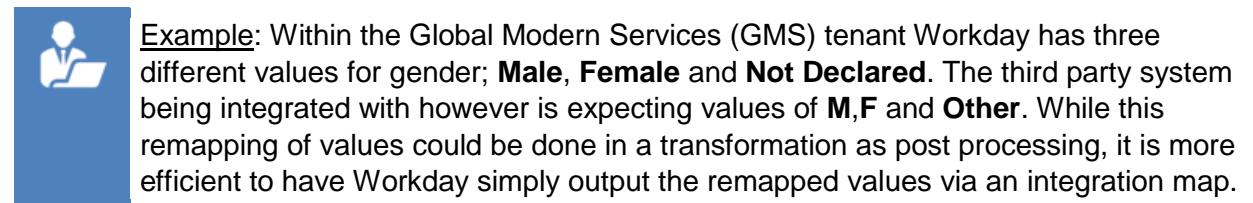
The Core Connector: Worker integration template includes the Define Eligibility/ Eligibility criterion field override. Designate a report field or calculated field that identifies if a worker is or is not eligible for the integration. The report field or calculated field must be based on the Worker business object, and it must return a Boolean true or false. A Boolean true includes the worker in the integration, a Boolean false excludes the worker.

Field(s)	Description	Override External Field
Eligibility criterion	Used to determine whether a worker is eligible for inclusion in the integration output. The field should return a boolean value.	X Exempt

Field(s)	Description	Override External Field
INIT	Initials	Initials
UNAME	User Name	User Name
WID	Workday ID of the Worker	X Workday ID

## INTEGRATION MAPS

An integration map is an integration component that is used to specify how values in Workday map to values in an external system.



Configure Integration Maps for Integration System WICT\_HCM\_Workers [Actions](#)

Integration Template Core Connector: Worker

Integration Maps

Map Provider Core Connector: Integration Maps - Worker

22 items

	Gender	Maps the Workday values for Gender to the values that will be used in the output file. If this map is empty the Gender_Code will be used.		<a href="#">+</a>	
				<a href="#">+</a>	
				<a href="#">-</a>	Female F
				<a href="#">-</a>	Male M
				<a href="#">-</a>	Not Declared Other

In addition to the maps that are provided by default on a template by template basis Workday provides the ability to create your own custom map. This is particularly useful when your integration is leveraging integration field overrides and those fields being brought in need to be remapped. Access the integration system's **Related Actions** icon, and select **Integration System > Maintain Integration Maps** to create a new custom map.

Maintain Integration Maps WICT\_HCM\_Workers [Actions](#)

Integration Maps 1 item

<a href="#">+</a>	Map	Order	*Name	Description	*Internal Value Type	*External Value Type
<a href="#">+</a> <a href="#">-</a>		<a href="#">▼ ▲</a>			<input type="radio"/> Enumeration <a href="#">[ ]</a> <input type="radio"/> Data Type <a href="#">[ ]</a> Option(s) <a href="#">[ ]</a>	<input type="radio"/> Enumeration <a href="#">[ ]</a> <input type="radio"/> Data Type <a href="#">[ ]</a> Option(s) <a href="#">[ ]</a>



## ACTIVITY 2.1 – CREATE AN INTEGRATION SYSTEM

**Business Case:** You will create a new integration system based on the Core Connector: Worker integration system template. This integration system will be used to extract Worker data including Personal Data, Status Data, Position Data and Compensation Data. In this activity you will create the integration system and then configure the integration services, integration attributes, integration field attributes, integration overrides and the integration maps.

### ➡ Sign in as Logan McNeil (lmcneil)

#### TASK #1: CREATE THE INTEGRATION SYSTEM

1. Run the **Create Integration System** task, and enter the following information:
2. Enter a **System Name** of **WICT\_HCM\_Workers**
3. In the **Comment** box enter a simple description for the integration system
4. In the **New using Template** box, select the By Integration Template Category>Cloud Connect for HCM > **Core Connector: Worker**
5. Click **OK**

#### TASK #2: CONFIGURE INTEGRATION SERVICES

1. On the Configure Integration Services page, select the **Enabled** checkbox for the following **Integration Services**:
  - A. Core Connector: Worker/Worker Personal Data Section Fields
  - B. Core Connector: Worker/Worker Status Data Section Fields
  - C. Core Connector: Worker/Worker Position Data Section Fields
  - D. Core Connector: Worker/Worker Compensation Data Section Fields
2. Scroll down past the default integration template services and add a row under **Custom Integration Services** by clicking the plus sign.
3. In the **Integration Service** prompt select **Create > Create Integration Field Override Service**
4. Enter a name of **WICT\_HCM\_Workers\_Custom**
5. Select a Business Object of **Worker**



**Note:** The search functionality is not enabled for the Business Object field. Locate Worker by clicking into the prompt and scrolling through the list.

6. Under fields click the plus sign twice to add two additional rows. **Name** the rows **INIT**, **UNAME**, and **WID**. Enter corresponding **Descriptions** of **Initials**, **User Name** and **Workday ID of the Worker**

Integration System: WICT\_HCM\_Workers

Business Object: Worker

Fields			
3 items			
	Order	*Name	
<span style="color: blue;">+</span>	▼ ▼	INIT	Initials
<span style="color: blue;">+</span>	▲ ▼	UNAME	User Name
<span style="color: blue;">+</span>	▲ ▲	WID	Workday ID of the Worker

7. Click **OK** to save your Integration Field Override Service and return to the Configure Integration Services page.
8. Review the list of services to ensure the previously selected services are correctly enabled.
9. Click **OK** to save your Integration Services and return to the *View Integration System* page.



**Note:** Upon returning to the *View Integration System* page, notice the red error on the right hand side of the page indicating that there is an Integration Attribute marked as “**Required for Launch**” that has no value assigned.

### TASK #3: CONFIGURE INTEGRATION ATTRIBUTES

1. From the integration system's **Related Actions** icon, select **Integration System > Configure Integration Attributes**
2. Under Integration Attributes enter the following information:

Field Name	Entry Value
Output Filename	WICT_HCM_Workers_Output.xml
Version	25.0

3. Click **OK** to save your Integration Attributes and return to the *View Integration System* page. The red error will now be gone.

### TASK #4: CONFIGURE INTEGRATION FIELD ATTRIBUTES

1. From the integration system's **Related Actions** icon, select **Integration System > Configure Integration Field Attributes**
2. In the **Worker Personal Data Section Fields** select **Include in Output** for the following fields:
  - A. Name Data / First Name
  - B. Name Data / Last Name
  - C. Gender
  - D. Marital Status
  - E. Email Data / Email Address
3. In the **Worker Status Data Section Fields** select:
  - A. Hire Date
  - B. Original Hire Date
4. In the **Worker Position Data Section Fields** select:
  - A. Business Title
  - B. Worker Type
5. In the **Worker Compensation Data Section Fields** select:
  - A. Total Annual Base Pay

- B. Base Pay Currency
6. Click **OK** to save your field selections.



Note: If you are not returned to your integration system navigate back to it by searching for *intsys:WICT* and selecting the **WICT\_HCM\_Workers** integration system.

## TASK #5: CONFIGURE INTEGRATION FIELD OVERRIDES

1. From the integration system's **Related Actions** icon, select **Integration System > Configure Integration Field Overrides**
2. Configure the **Define Eligibility** section **Eligibility criterion** by setting the **Override External Field** to **Exempt** (Workday Delivered T/F field)

Field(s)	Description	Override External Field
Eligibility criterion	Used to determine whether a worker is eligible for inclusion in the integration output. The field should return a boolean value.	X Exempt

3. Configure the **WICT\_HCM\_Workers\_Custom** section as follows:
  - A. Map the **INIT** field to an Override External Field of **Initials**
  - B. Map the **UNAME** field to an Override External Field of **User Name**
  - C. Map the **WID** field to an Override External Field of **Workday ID**

The screenshot shows the 'Integration Service' configuration page for 'WICT\_HCM\_Workers / WICT\_HCM\_Workers\_Custom\*'. It includes sections for 'Business Object' (Integration System Worker), 'Field Overrides' (3 items), and a table mapping internal fields to external Workday fields.

Field(s)	Description	Override External Field
INIT	Initials	Initials
UNAME	User Name	User Name
WID	Workday ID of the Worker	X Workday ID <span style="float: right;">⋮</span>

4. Click **OK**.

#### TASK #6: CONFIGURE INTEGRATION MAPS

- From the integration system's **Related Actions** icon, select **Integration System > Configure Integration Maps**
- Within the **Core Connector: Integration Maps – Worker** map provider locate the **Gender** map. Click the **+** sign three times to add three rows.
- Configure the map as follows:

Internal Value	External Value
Female	F
Male	M
Not Declared	Other

4. Click **OK**



## LAUNCHING AN INTEGRATION SYSTEM

To launch an integration, run the Launch / Schedule Integration task. This task can be run directly, or it can be accessed via an integration system's related action icon and selecting **Integration > Launch/Schedule**. The Launch / Schedule Integration task has the following parameters:

- Integration
  - This parameter specifies the integration system you wish to launch. Integration systems that currently have critical errors in their configuration cannot be selected. If accessing this task via the related actions of an integration system, the integration parameter will be pre-populated.
- Organization
  - If you intend to run the integration immediately, select the organization for which you want to run the integration. The prompt varies depending on the Integration Process Event and on your security access:
    - Owning Organization displays if the Integration Process Event for this integration is associated with a specific organization. You can select the organization or any of its subordinate organizations of which you're a member or have an organization role.
    - Organization By Type displays if the Integration Process Event for this integration has no associated organization. You can select any organization and subordinate organization of which you're a member or have an organization role.
- Run Frequency
  - The Run Frequency parameter defaults to Run Now which represents an ad-hoc run at that moment. This would be considered a manual launch. Selecting any other frequency would be used to configure a scheduled launch. The scheduled frequencies are Run Once in the Future, Minute Recurrence, Hourly Recurrence, Daily Recurrence, Weekly Recurrence and Monthly Recurrence.

## Launch / Schedule Integration

Integration *	<input type="text" value="WICT_HCM_Workers"/>	<input type="button" value="X"/>	<input type="button" value="≡"/>
Organization	<input type="text"/>		
Run Frequency *	<input type="text" value="Run Now"/>	<input type="button" value="▼"/>	

After providing parameters to the Launch / Schedule Integration task and clicking OK you will be taken to the Schedule an Integration page. For Core Connector Worker integrations there are seven launch parameters. The **Core Connector: Date Launch Parameters** extract records that are current as of the specified **As Of Entry Moment** and **Effective Date** parameters. If **Full File** is not selected, then the extract includes only those records that are detected to have changed in one or more output fields as compared to what was current as of the **Last Successful As Of Entry Moment** and **Last Successful Effective Date** parameters.

- **As Of Entry Moment**

- The As of Entry Moment launch parameter defines the end of a date range during which changes were entered. This parameter defaults to the current moment.

- **Effective Date**

- The Effective Date launch parameter defines the end of a date range during which changes became effective. The integration extracts all changes with effective dates on or before this date. This parameter defaults to the current date.

- **Last Successful As of Entry Moment**

- This launch parameter defaults to the **As of Entry Moment** (date and time) used in the last successful integration system launch. You can override this date and time in order to force the integration to search for and retrieve data changes over a wider period.

- **Last Successful Effective Date**

- This launch parameter defaults to the **Effective Date** (date) used in the last successful integration system launch. The parameter defines the beginning of a date range during which changes became effective.

Core Connector: Date Launch Parameters				
	<input type="checkbox"/> As Of Entry Moment		Specify Value	03/29/2018 12:53:32 PM
	<input type="checkbox"/> Effective Date		Specify Value	03/29/2018
	<input type="checkbox"/> Last Successful As Of Entry Moment		Specify Value	03/29/2018 11:13:58 AM
	<input type="checkbox"/> Last Successful Effective Date		Specify Value	03/29/2018

In addition to the Core Connector: Date Launch Parameters, Core Connector Worker provides three additional launch parameters under **Core Connector: Worker Integration Configuration** as follows:

- **Workers**

- This launch parameter enables you to restrict the integration to only considering those workers selected in this list. This parameter is unset by default.

- **Restrict Results By Orgs**

- This launch parameter enables you to restrict the integration to only considering workers within an Organization as well as any subordinates. This parameter is unset by default.

- **Full File**

- This launch parameter is used to extract all data, regardless of how recently it was changed. Workers must still fulfill the eligibility rule to be included in the output. This parameter is unset by default.

Core Connector: Worker Integration Configuration			
	<input checked="" type="checkbox"/> Workers	Extracts only the specified Worker(s).	Specify Value
	<input checked="" type="checkbox"/> Restrict Results By Orgs	Extracts Workers for only the specified Organization(s) and all subordinates.	Specify Value
	<input checked="" type="checkbox"/> Full File	Extracts Workers as of the As Of Entry Moment and Effective Date, regardless of whether or not they have changed.	Specify Value



## ACTIVITY 2.2 – LAUNCH THE INTEGRATION SYSTEM

**Business Case:** In this activity, you will launch your integration system a total of three times. The first run will use the full file check box to get a base line starting point. To see the impact of a data change you will modify personal data information for Logan McNeil between the second and third run. The resulting file will contain only changed worker data.

### TASK #1: LAUNCH THE INTEGRATION SYSTEM THE FIRST TIME

1. To launch the integration system use the integration system's **Related Actions** icon to select **Integration > Launch/Schedule**
  - A. Specify a Run Frequency of **Run Now** and click **OK**.

The screenshot shows a modal dialog titled "Launch / Schedule Integration". It has three input fields: "Integration" with a value of "WICT\_HCM\_Workers", "Organization" which is empty, and "Run Frequency" set to "Run Now".

2. Specify the following Integration Criteria Launch parameters and click **OK**.

Field Name	Entry Value
As of Entry Moment	Use the Default Value
Effective Date	Use the Default Value
Full File	Checked

3. While viewing the background process click **Refresh** to manually refresh the page. It will take a few moments for the integration system to complete.
4. Once the Status of the Background Process shows **Completed**, click the **Output Files** tab.
5. Open the **WICT\_HCM\_Workers\_Output.xml** output file and review the results
  - A. How many Workers are returned?

**TASK #2: LAUNCH THE INTEGRATION A SECOND TIME**

1. Search for and run the **Launch/Schedule Integration** task, entering the following information:

Field Name	Entry Value
Integration	WICT_HCM_Workers
Run Frequency	Run Now

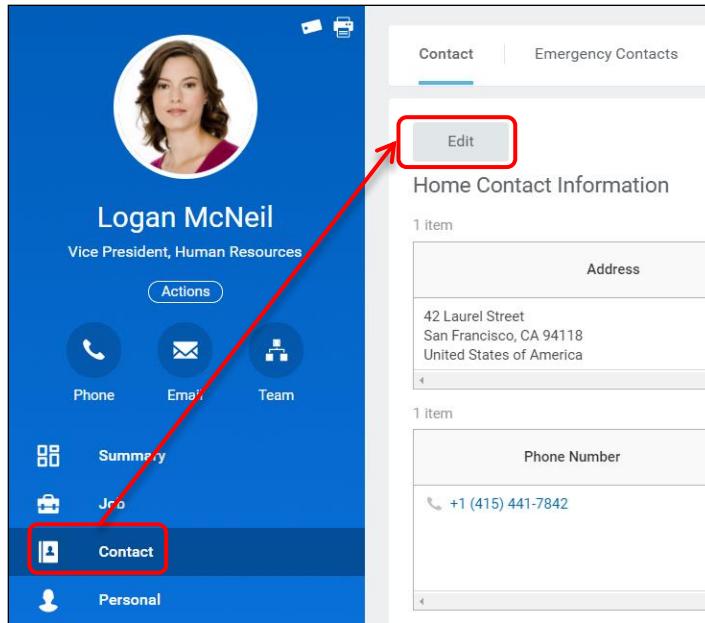


**Note:** When running the Launch/Schedule Integration task directly there is no context so the integration system name will not be prepopulated. However when the task is run via the related actions on an integration system the integration system name will be populated for you as the system understands the context from which the task was launched.

2. Click **OK**
3. Leave all Integration Criteria Launch parameters set to the values defaulted in and click **OK**.
4. Once the Status of the Background Process shows **Completed**, click the **Output Files** tab.
5. Open the **WICT\_HCM\_Workers\_Output.xml** output file and review the results
  - A. How many Workers are returned?

**TASK #3: COMPLETE A DATA CHANGE THEN RUN THE INTEGRATION SYSTEM A THIRD TIME**

1. Navigate to the profile of Logan McNeil by clicking on her name in the top right corner of the screen and then click **View Profile**.
2. Select **Contact** and click the **Edit** button.



3. Scroll down and change Logan's **Work - Primary Email** to **lmcneil2@workday.net** and click **Submit**
  4. Search for and run the **Launch/Schedule Integration** task, entering the following information:
- | Field Name    | Entry Value      |
|---------------|------------------|
| Integration   | WICT_HCM_Workers |
| Run Frequency | Run Now          |
5. Click **OK**
  6. Leave all Integration Criteria Launch parameters set to the values defaulted in and click **OK**.
  7. Once the Status of the Background Process shows **Completed**, click the **Output Files** tab.
  8. Open the **WICT\_HCM\_Workers\_Output.xml** output file and review the results
    - A. How many Workers are returned?
    - B. Which workers are returned and why?



## CHANGE DETECTION

Core Connector: Worker detects changes to worker data by monitoring a transaction log. When you set up the integration system, you select which business process and transaction types to which the integration system should subscribe. Excluding business process and transaction types that are irrelevant to your needs improves performance. However, if your integration system does not subscribe to a transaction type that affects your worker's profile, Workday would not include changes triggered by that transaction type. Workday recommends that if you are not sure if the integration system should subscribe to a given transaction or business process type, you should not exclude it.

- Instead of always sending a full file, we are now able to send just new and/or changed records since the last successful integration run
- Extensive coding is not required
- Changes are detected by monitoring the transaction log
- You can determine which changes are detected by configuring specific business process and/or transaction types. (i.e. *Marital status changes*)

Workday day uses a complex algorithm to determine which changes to capture.

- Which changes should be detected?
  - This is determined by the field(s) you chose to be on the output file as well as any events you configured to be detected (i.e. business title change)
- A change is made in the system
  - (i.e. Jack Lee's business title is changed )
- Integration is Launched
  - Did the change's entry date happen within the entry date range?
  - Did the effective date of the change happen within the effective date range?

There are however limitations to change detection. Indirect changes will not be picked up by change detection. A few examples of indirect changes include:

- Changes to the Classification of a Job
- Changes to the manager assignable role

The underlying cause for this limitation is due to the fact that the context of the changes is an object other than worker, and there is in turn a downstream impact to the worker. To pick up these indirect changes you need to disable the transaction log service and perform a full diff extract.

## TRANSACTION LOG

The Transaction Log service enables your integration system to subscribe to events that take place in Workday. This option enables your integration to first identify a relevant population of workers that have had the subscribed transaction and then evaluate the data for those workers.

If disabled, your integration first extracts all data for all workers, and then evaluates the data for changes. Using this option can adversely affect performance.

When configuring the Integration Transaction Log you have the following options available:

- **Subscribe to all Business Processes** - This option subscribes to all events that have a business process associated to them.
- **Subscribe to all Business Process Types except** – This option leverages an exclusion list to filter out specific events from your subscription.
- **Subscribe to all Transaction Types** – This option subscribes to all event types in Workday (Business Process, Event Lite and Reorganization Activities) not just those with a business process associated to them. This is the default setting unless you Override Default Values.
- **Subscribe to all Transaction Types except** – This option also leverages an exclusion list to filter out specific transactions from your subscription, but it is not limited to just events with a business process associated.
- **Subscribe to specific Transaction Types** - This option is used to provide an explicit inclusion list of transactions to which you want to subscribe.

The screenshot shows a configuration interface for a Transaction Log Service. At the top, it displays the service name: "Transaction Log Service" and "WICT\_HCM\_Workers / Core Connector: Worker Transaction Log Service\*". Below this is a checkbox labeled "Override Default Values". A note indicates there is "1 item" in the list. The list itself contains five options, each represented by a radio button and text: "Subscribe to all Business Processes", "Subscribe to all Business Process Types except", "Subscribe to all Transaction Types" (which is selected), "Subscribe to all Transaction Types except", and "Subscribe to specific Transaction Types".



Note: It is recommended that you select Subscribe to all Transaction Types except, then filter out only transaction types that you know have no relevance to your needs. If in doubt, don't filter out a transaction type.



## ACTIVITY 2.3 – CONFIGURE THE TRANSACTION LOG SERVICE AND LAUNCH

**Business Case:** In this activity, you will enable and configure the Transaction Log service. You will then run the integration and view the resulting file. You will then change the configuration of the Transaction Log service and then launch the integration once more. Comparing the two runs will illustrate the impact of the Transaction Log service.

### TASK #1: ENABLE THE TRANSACTION LOG SERVICE

1. If you are currently not on View Integration System, navigate back to your integration system by searching for *intsys:WICT* and select the **WICT\_HCM\_Workers** integration system
2. To enable the Transaction Log Service use the integration system's **Related Actions** to select **Integration System > Configure Integration Services**
3. On the Configure Integration Services page, select the **Enabled** checkbox for the **Core Connector: Worker/Core Connector: Worker Transaction Log Service**.
4. Click **OK**

### TASK #2: CONFIGURE THE TRANSACTION LOG SERVICE

1. To configure the Transaction Log Service use the integration system's **Related Actions** to select **Integration System > Configure Integration Transaction Log**
2. Select the **Override Default Values** checkbox.
3. Select the **Subscribe to specific Transaction Types** option
4. Click the prompt and search for **Hire Event** and select **Hire – Hire Employee Event**
5. Click **OK**

### TASK #3: LAUNCH THE INTEGRATION SYSTEM

1. To launch the integration system use the integration system's **Related Actions** icon to select **Integration > Launch/Schedule**
  - A. Specify a Run Frequency of **Run Now** and click **OK**.

2. Specify the following Integration Criteria Launch parameters and click **OK**.

Field Name	Entry Value
As of Entry Moment	Use the Default Value
Effective Date	Use the Default Value
Last Successful As of Entry Moment	Current Date* 12:00:00 AM
Last Successful Effective Date	Current Date*

\*Where current date represents the day you are doing the activity

3. While viewing the background process click **Refresh** to manually refresh the page. It will take a few moments for the integration system to complete.
4. Once the Status of the Background Process shows **Completed**, click the **Output Files** tab.
5. Open the **WICT\_HCM\_Workers\_Output.xml** output file and review the results
  - A. How many Workers are returned?

#### TASK #4: RECONFIGURE THE TRANSACTION LOG SERVICE

1. Navigate to your integration system by searching for **intsys:WICT** and selecting the **WICT\_HCM\_Workers** integration system.
2. To change the Transaction Log Service configuration use the integration system's **Related Actions** icon to select **Integration System > Configure Integration Transaction Log**
3. In the **Subscribe to specific Transaction Types** option, click the prompt and search for **Contact Change** and select **Contact Change – Contact Information**. You will now be subscribed to two transactions, both Hire – Hire Employee Event and Contact Change – Contact Information.
4. Click **OK**

#### TASK #5: LAUNCH THE INTEGRATION SYSTEM A SECOND TIME

1. To launch the integration system use the integration system's **Related Actions** icon to select **Integration > Launch/Schedule**
  - A. Specify a Run Frequency of **Run Now** and click **OK**.
2. Specify the following Integration Criteria Launch parameters and click **OK**.

Field Name	Entry Value
As of Entry Moment	Use the Default Value (Current Moment)
Effective Date	Use the Default Value (Current Date)
Last Successful As of Entry Moment	Current Date* 12:00:00 AM
Last Successful Effective Date	Current Date*

\*Where current date represents the day you are doing the activity



**Note:** By running the integration with the same launch parameters as the previous run, we are isolating the change to the Transaction Log service configuration as the only difference between the two runs. Any change in the resulting output is then able to be directly contributed to the transaction log change.

3. While viewing the background process click **Refresh** to manually refresh the page. It will take a few moments for the integration system to complete.
4. Once the Status of the Background Process shows **Completed**, click the **Output Files** tab.
5. Open the **WICT\_HCM\_Workers\_Output.xml** output file and review the results
  - A. How many Workers are returned?
  - B. How are the results different from the first run?
  - C. Why are the results different between the two runs?



## INTEGRATION AUDIT FILES

Every time an integration runs, Workday generates the following files:

- The **DATA CHANGES AUDIT** is a readable version of the integration output file.
- The **DIAGNOSTIC AUDIT** is designed to help you troubleshoot integration errors.
- The **SCHEMA XSD** file defines the content and the structure of the output file. It includes only those fields that you have enabled for your integration system.
- The **MESSAGES AUDIT** zip files contain all web service requests that were made as well as the corresponding web service responses.

You can find these files in the Reports and Other Output Files section of the Integration Event for each integration run.

Integration Details	Process Info	Process History	Output Files (6)	Messages (7)	Child Processes (2)
<b>Reports and Other Output Files</b>					
6 items					
Date and Time Created	File	Type			
03/29/2018 02:18 PM	 DataChangesAudit.html	HTML Document (HTML)			
03/29/2018 02:18 PM	 DiagnosticAudit.html	HTML Document (HTML)			
03/29/2018 02:18 PM	 MessagesAudit_1_1.zip	Compressed Archive (ZIP)			
03/29/2018 02:18 PM	 MessagesAudit_1.zip	Compressed Archive (ZIP)			
03/29/2018 02:18 PM	 WICT_HCM_Workers_Output.xml	XML Document (XML)			
03/29/2018 02:18 PM	 worker.xsd	XML Document (XML)			

## INTEGRATION SEQUENCE GENERATORS

Integration sequence generation enables your integration to generate a unique sequenced file name each time it runs. When a Filename Sequence Generator has been configured the system will ignore the static output filename attribute. To create a sequence generator select the **Integration System > Configure Integration Sequence Generators** related action. The following options are available:

- **Last Number Used** - Manually sets the last sequence number. When you set the number, the initial sequence number will be your number plus the **Increment by** value.
- **Last Used Date** - Specify this date, plus an interval for **Restart Every** to determine whether the date is before or after the last restart interval. The sequence number is then set based on the date.
- **Increment By** - Specify the value to increment sequence numbers by.
- **Restart Every** - Specify how often Workday resets the sequence numbers.
- **Restart Based on Time Zone** - To specify the time zone for the file generation date and time used in the **Format/Syntax** field, select the time zone from the prompt.
- **Restart at Number** - Specify the number Workday uses when restarting sequence numbers. To use this field, you set the **Restart Every** value.
- **Padding with '0'** - To pad sequence numbers, specify the number of zeros that Workday uses to pad each sequence number.
- **Format/Syntax** - Define the file name format by entering a string constant, a pattern for the date, time, and sequence, and the file extension. Hover your mouse cursor over the Format/Syntax field to see a help tool tip on available patterns.

Integration Sequencer	Sequence Generator
Workers Output Filename	<p><b>Sequence Generator</b></p> <p>Most Recent Sequence</p> <p>Last Number Used <input type="text" value="0"/> Example Sequence <input type="text" value="JS_HCMWorkerOutput_0.xml"/></p> <p>Last Date Used <input type="text" value="MM / DD / YYYY"/> <input type="text" value="-- : -- : -- AM"/></p> <p>Last Date Used With Time Zone</p> <p>Sequence Definition</p> <p>Increment by <input type="text" value="1"/></p> <p>Restart Every <input type="text"/></p> <p>Use Time Zone <input type="text"/></p> <p>Restart at Number <input type="text"/></p> <p>Padding with '0' <input type="text"/></p> <p>Format/Syntax <input type="text" value="JS_HCMWorkerOutput_[Seq].xml"/> <span style="border: 1px solid #ccc; padding: 2px;">Define the Format using any string constant plus any of the following Patterns. (Note: each Pattern needs to be surrounded by square brackets. Example: FILE[Seq] [yyyy][MM][dd].csv)</span></p> <p>Sequence Generator ID <input type="text"/></p> <div style="border: 1px solid #ccc; padding: 5px; margin-top: 10px;"> <b>Sequence Generator Patterns:</b>          Seq - next Sequence Number   <b>Date/Time Patterns:</b>          y - Year (e.g. 08; 2008)          M - Month in Year (e.g. 07; Jul; July)          w - Week in Year          W - Week in Month          D - Day in Year          d - Day in Month          F - Day of Week in Month          E - Day in Week (e.g. Tue; Tuesday)          a - Am/pm marker          H - Hour in day (0-23)          h - Hour in am/pm (1-12)          m - Minute in Hour          s - Second in Minute          S - Millisecond       </div> <p>For more details, see: <a href="http://java.sun.com/javase/6/docs/api/java/text/SimpleDateFormat.html">http://java.sun.com/javase/6/docs/api/java/text/SimpleDateFormat.html</a></p>

## INTEGRATION BUSINESS PROCESS

Workday supports integration-specific business processes using the Integration Process Event business process type. This business process type allows you to:

- Separate the execution of the integration itself from the act of retrieving or delivering files. Configuring the retrieval or delivery action separately allows you to add additional steps between these actions and the integration execution, or add multiple retrieval or delivery actions before or after the integration execution.
- Chain together several integration systems, allowing a subsequent integration system to consume the integration file(s) produced by 1 or more earlier integration systems. This enables you to create new integrations using Workday Studio that leverage existing integrations such as Payroll Interface.

The Integration Process Event default definition is usually delivered with your tenant. The default Integration Process Event consists of 2 steps, *Initiation* and *Service (Fire Integration)*. If this default definition has not been defined in your tenant, you must create the default definition, including the 2 steps. If this default definition and the Initiation and Fire Integration steps aren't present, you will be unable to:

- Create an Integration Process Event for any integration system.
- Launch any integration system, including EIBs.

## INTEGRATION PROCESS EVENT ELEMENTS

The Integration Process Event provides the following step types:

- **Initiation:** This step launches the integration system to which the Integration Process Event is associated.
- **Approval:** This step sends a notification to a designated worker or role requesting that they approve the event.
- **To Do:** You can add additional non-Workday tasks to the process.
- **Integration:** This step triggers an additional integration process. This process can be of any type, including an EIB, packaged integration, tailored integration, or a custom integration built using Workday Studio.
- **Service:** The Integration Process Event supports 3 service types:
  - **DOCUMENT DELIVERY** delivers integration files from outbound integration systems to external endpoints. You can choose to deliver all integration output files (referred to as Documents) produced by the current Integration Process Event, or Documents that are tagged based on your specification.
  - **Document Retrieval** imports integration files either from an external endpoint or by routing a request to a Workday user so that the user can manually upload files for use by the integration.
  - **FIRE INTEGRATION** executes the integration system itself, to either generate an output file or load data from a file into Workday. This step is always included by default in any Integration Business Process Event.

## MULTIPLE INTEGRATION SUPPORT

You can include additional Integration steps in an Integration Process Event. You can have 2 or more Integration steps share the same order in the Integration Process Event. Workday then executes the steps in parallel. Workday executes the Integration Process Event for each additional integration before continuing to the next step in the parent Integration Process Event.

You can also have more than one Integration step in sequential order. For example, you could add a second integration system, created in Workday Studio that accepts the reference of an output document as a launch parameter. You would then configure the second integration step's launch parameters to assign the output of the first integration system to be the input of the second. The second integration system consumes the output file from the previous integration and produces a new integration output file. This is not limited to a 1-to-1 relationship. For example, you could create an Integration Process Event with 1 Initiation step and 2 Integration steps, each of which is Step a, followed by a single Integration Step b that consumes both files produced by the 2 Step a integrations.

## TROUBLESHOOTING INTEGRATION PROCESS EVENTS

The Integration Process Event by design separates the generation of an integration file (or multiple files) and the delivery of the file(s) to an external system. If the external system doesn't receive an expected integration file, use the following reports to determine what did not work as expected:

- The Process Monitor lists all integration-related events. Any Integration Process Event that concludes by sending an integration file outside of Workday will generate at least 2 integration-related events in the Process Monitor, 1 for the Integration step and 1 for the Deliver Document step. Both events must succeed in order for the external system to receive an integration file. If the Process Monitor shows the integration as completing successfully, but the external system didn't receive a file, check for failed Deliver Document events. When you find a failed Deliver Document event, use its related action menu to determine which Integration Process Event it belongs to. Then use the Full Process Record report to determine what happened.
- The Full Process Record displays the results of each step in a business process instance. This allows you to determine if the external system did not receive an integration file due to the Document Delivery step failing, or due to an Integration step failing to produce a file for the Document Delivery step.

## CONFIGURE THE INTEGRATION PROCESS EVENT

Before you can create an Integration Process Event your tenant must have a default definition for the *Integration Process Event* business process. If this default definition does not exist in your tenant, you will be unable to access the Launch/Schedule Integration task for any integration system in your tenant. You must have created the integration system that will use the *Integration Process Event* business process. To create the business process, use the **Business Process > Create, Copy, or Link Definition** related action on the integration system.

**View Integration System WICT\_HCM\_Workers**

**Basic Details**

System Name: WICT\_HCM\_Workers

System ID: [Create, Copy, or Link Definition](#)

**Actions**

- Integration System >
- Audits >
- Business Process >
- Favorite >

**Integration System**

System ID: WICT\_HCM\_Workers

**Create, Copy, or Link Definition**

**View Business Process Definition Integration Process Event for WICT\_HCM\_Workers (TOP LEVEL)**

Effective Date: 10/03/2017

Time Zone: GMT-08:00 Pacific Time (Los Angeles)

Business Object: WICT\_HCM\_Workers (TOP LEVEL)

Most Recent Used Date: 10/03/2017

[View Diagram](#)

**Business Process Steps** 5 items

Step	Order	If	Type	Specify	Optional	Group	All
Q	a		Initiation		No		
Q	b		Service	Fire Integration	No		

## DELIVERY SERVICE

Configure a business process to deliver one or more integration files to an external location by configuring a *Document Delivery Service* step which describes file selection, transport, and encryption options for the integration file.

**Business Process Steps** 3 items

Step	Order	If	Type	Specify	Optional	Group	All	Run As User
Q	a		Initiation		No			
Q	b		Service	Fire Integration	No			
Q	c	Configure Document Delivery	Service	Document Delivery	No			

The screenshot shows the 'Configure Document Delivery' interface. At the top, it displays the workflow step: 'Integration Process Event for WICT\_HCM\_Workers (TOP LEVEL) step c - Service [Document Delivery]'. Below this, it shows the event service: 'Document Delivery' and the effective date: '10/14/2015'. The main sections include:

- Document(s):** Options to select from 'From this Integration Process' or 'Derived Using'.
- Delivery Settings:** Set 'Delivery Attempts' to 3. Options include 'Existing Transport from' or 'Derive Transport using', and 'Define Transport Explicitly' (which is selected).
- Transport:** Set 'Transport Type' to 'SFTP'. Fields include 'SFTP Address' and 'Directory'.
- Payload:** Options for 'Compressed' and 'Encrypt using'.
- Environment Restrictions:** Set 'Restricted To'.

In the **Document(s)** section, select the source of the document to be delivered. In the **Document Filter(s)** section, specify tags that Workday should filter on when selecting documents to deliver. Available tags are specific to the integration template. In the **Delivery Settings** section, specify the delivery configuration. In the **Transport** section, select a transport protocol and specify details about the endpoint.

## RETRIEVAL SERVICE

Configure a business process to retrieve an integration document from an external location by configuring a *Document Retrieval* Service step which describes file selection, transport, and decryption options for the integration file.

Document Retrieval also enables you to retrieve the output of a custom report. In this case, Document Retrieval retrieves the data from within Workday and stores the report output in the W: Drive for use by a subsequent integration step.

## TEST TRANSPORT

Use the Test Transport task to test the configured Delivery Service or Retrieval Service for an integration system to verify and troubleshoot connectivity to the external endpoint. When testing your integration system's configured transport, you can either use a 10KB test file, or select a file from a previous integration event.

Navigate to **Integration > Test Transport** as a related action on the integration system. Select a Transport to test and then one of the following available actions:

- Connect
- List Files
- Deliver Files

Test Transport for Integration System

Transport (SFTP) sftp://wd2-sales-sftp.workday.net:3022 (/home)

Available Actions

Connect  
 List Files  
 Deliver Files

List Files Pattern

Deliver Files Options

Block Size 32K

Use Default Test File

Deliverable Repository Document (empty)

Include Debugging Information in Logs

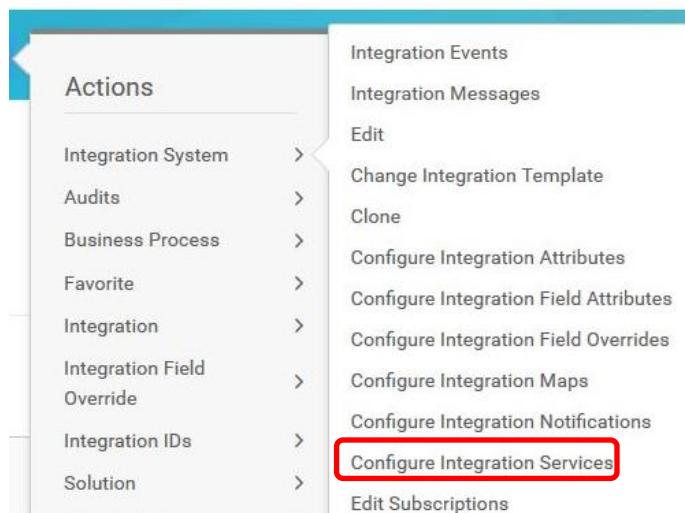


## ACTIVITY 2.4 – CREATE AN INTEGRATION BUSINESS PROCESS

**Business Case:** In this activity, you will enable and configure the filename sequence generator. In addition you will create an integration business process for WICT\_HCM\_Workers. You will add a Document Delivery step to deliver the output xml file to an SFTP server.

### TASK #1: ENABLE THE FILENAME SEQUENCE GENERATOR

1. If you are currently not viewing your integration system, navigate back to your integration system by searching for *intsys:WICT* and selecting the **WICT\_HCM\_Workers** integration system
2. To enable the Filename Sequence Generator use the integration system's **Related Actions** icon to select **Integration System > Configure Integration Services**



3. On the *Configure Integration Services* page, check the **Enabled** checkbox for the **Core Connector: Worker/Core Connector: Worker Filename Sequence Generator** service.
4. Click **OK**



Note: After enabling the Filename Sequence Generator service, you will have a new alert on your integration system informing you that the service has not been configured.

**TASK #2: CONFIGURE THE FILENAME SEQUENCE GENERATOR**

1. To configure the Filename Sequence Generator use the integration system's **Related Actions** icon to select **Integration System > Configure Integration Sequence Generators**
2. Configure the following values:

Field Name	Entry Value
Increment By	1
Format/Syntax	YOUR INITIALS_HCMWorkerOutput_[Seq].xml

3. Click **OK**

**TASK #3: CREATE THE INTEGRATION BUSINESS PROCESS**

1. To create the Business Process use the integration system's **Related Actions** icon to select **Business Process > Create, Copy, or Link Definition**
2. Verify the **Effective Date** is **today** and accept the default values.
3. Click **OK**.
4. Click the **+** sign to add a new step to the business process and configure as follows:

Field Name	Entry Value
Order	c
Type	Service
Specify	Document Delivery

5. Click **OK**



**Note:** After adding the Document Delivery step there will be an error on the business process indicating that the Document Delivery step has not been configured. This is expected behavior.

6. Click **Configure Document Delivery** accepting **today** as the **Effective Date** and click **OK**.

- Configure Document Delivery as follows:

Field Name	Entry Value
Document(s)	From this Integration Process
Delivery Settings	Define Transport Explicitly
Transport Type	SFTP
SFTP Address	sftp://wd2-sales-sftp.workday.net:3022
Directory	/home
Authentication Method	User Name / Password
User Id	**Provided by Instructor
Password	**Provided by Instructor

- Click **OK** then **Done**.

#### TASK #4: TEST THE TRANSPORT PROTOCOL

- If you are not returned to your integration system, search for *intsys:WICT* and select the **WICT\_HCM\_Workers** integration system
- To test your transport protocol use the integration system's **Related Actions** icon to select **Integration > Test Transport**
- The transport protocol you configured in the previous steps will automatically be populated. Click **OK**
- Select **Connect** and click **OK**
- The response will read **Completed, Connect to endpoint successfully!** If your response is different, please notify your instructor to receive assistance

#### TASK 5: LAUNCH THE INTEGRATION SYSTEM

- Search for and run the **Launch/Schedule Integration** task, entering the following information:

Field Name	Entry Value
Integration	WICT_HCM_Workers
Run Frequency	Run Now

- Click **OK**
- Specify the following Integration Criteria Launch parameters

Field Name	Entry Value
As of Entry Moment	Use the Default Value
Effective Date	Use the Default Value
Last Successful As of Entry Moment	Use the Default Value
Last Successful Effective Date	Use the Default Value
Full File	Checked

4. Click **OK**
5. There will be no "Refresh" button so click on the Overall Process link to refresh. It will take a few moments to run to completion. (This is a Business Process Event, not an Integration Event)
6. To view the output file, scroll to the bottom of the **WICT\_HCM\_Workers Event** to **Event Document(s)**. Notice you can follow the results of each Business Process Step.
7. You can view the Integration Background Process by clicking on the Integration Event hyperlink under the **Initial Integration Event** Section.



Note: Notice that the filename is now reflecting the configuration of your Filename Sequence Generator service, rather than the static filename that was set in Activity 2.1

## TASK 6: VERIFY YOUR FILE WAS DELIVERED

1. Navigate to your integration system by searching for *intsys:WICT* and selecting the **WICT\_HCM\_Workers** integration system
2. To verify your file was delivered use the integration system's **Related Actions** icon to select **Integration > Test Transport**
3. The transport protocol you configured in the previous steps will automatically be populated. Click **OK**
4. Select **List Files** and click **OK**
5. Verify your file is in the list returned. If your file is not in the list please notify your instructor to receive assistance



## CHAPTER 3 – INBOUND CORE CONNECTOR

### CORE CONNECTOR: ORGANIZATION INBOUND

The Core Connector: Organization Inbound integration system template enables you to build an integration to import organization data from an external system that defines organizations and their codes into Workday. Core Connector: Organization Inbound can be used to add new organizations to Workday, update existing organizations, and deactivate organizations.

#### ORGANIZATION EVENTS

The Core Connector: Organization Inbound integration system template enables your external system to:

- Create a new organization in Workday. Include an organization in the integration file with a unique Reference ID to load the organization into Workday. Define the organization's Reference ID, name, availability date, code, organization type and sub-type, and location in a hierarchy.
- Edit an existing organization in Workday. Include an organization in the integration file with a preexisting Reference ID to amend the existing organization in Workday. You can change the organization's superior organization (equivalent to moving the organization) or edit other information about the organization, including role assignments.
- Deactivate an organization. By using the provided Inactive flag, you can deactivate an organization. This is functionally equivalent to deleting the organization.

[Concept: Organization Inbound Connector](#)



#### Concept: Organization Inbound Connector

Concept: Organization Inbound Connector

Use the Organization Inbound Connector to import organization data from an external endpoint that defines organizations and their codes into Workday. The Organization Inbound Connector can add new organizations to Workday, update existing organizations, and deactivate organizations. With the Organization Inbound Connector, you can use a non-Workday application as your source-of-truth for organization data, then synchronize that data with Workday.

The Organization Inbound Connector works with organizations in Workday. Workday recommends that you familiarize yourself with Workday organization features.

## FILE FORMAT FOR CORE CONNECTOR: ORGANIZATION INBOUND

The Core Connector: Organization Inbound integration imports data in a Workday-defined CSV (Comma Separated Value) or XML format. Data must be sent full-file; the Core Connector: Organization does not support change-only files.

### [Reference: Organization Inbound Connector File Schema](#)

#### CSV FILE DESCRIPTION

The CSV format consists of 21 fields, each occurring once per organization. If you do not include a header on the CSV file, the fields must be in the order listed in the documentation.

#### XML ELEMENTS

Here is a partial screenshot of the XML elements from Workday Community. Note that the XML elements table provides descriptions for each of the fields.



### Reference: Organization Inbound Connector File Schema

Element	Level	Description
External_Organization_Inbound_Records	1	Contains all other elements. Only one element permitted per file.
External_Organization_Inbound_Record	2	Contains one instance of all subsequent elements, except as noted. Unlimited number of elements permitted per file.
Organization_Reference_ID	3	Reference ID value for the organization. If the organization is being inserted into Workday, ensure that this Reference ID does not exist in Workday. Must be in XSD <i>string</i> format.
Organization_Name	3	Organization name in Workday. Must be in XSD <i>string</i> format.
Availability_Date	3	Date that the organization becomes visible in Workday prompts. Must be in XSD <i>date</i> format.
Include_Organization_Code_In_Name	3	Indicates if the Organization_Code

## XML SCHEMA

Here is a partial screenshot of the XML Schema from Workday Community. The schema can be used with an XML editor to produce a blank XML file with the structure defined by this schema.

```

<?xml version="1.0" encoding="UTF-8"?>
<xsd:schema xmlns:xsd="http://www.w3.org/2001/XMLSchema" targetNamespace="urn:com.workday/org"
  xmlns:org="urn:com.workday/org" elementFormDefault="qualified">

  <xsd:element name="External_Organization_Inbound_Records">
    <xsd:complexType>
      <xsd:sequence>
        <xsd:element name="External_Organization_Inbound_Record" type="org:OrgInboundRecordType"
          maxOccurs="unbounded"/>
      </xsd:sequence>
    </xsd:complexType>
  </xsd:element>

  <xsd:complexType name="OrgInboundRecord">
    <xsd:sequence>
      <xsd:element name="Organization_Reference_ID" type="xsd:string" />
      <xsd:element name="Organization_Name" type="xsd:string" nillable="true"/>
      <xsd:element name="Availability_Date" type="xsd:date"/>
      <xsd:element name="Include_Organization_Code_In_Name" type="xsd:boolean"/>
      <xsd:element name="Organization_Code" type="xsd:string" nillable="true"/>
      <xsd:element name="Organization_Type_Name" type="xsd:string"/>
      <xsd:element name="Organization_Subtype_Name" type="xsd:string"/>
      <xsd:element name="Organization_Visibility_Name" type="xsd:string"/>
      <xsd:element name="Organization_Inactive" type="xsd:boolean"/>
      <xsd:element name="Inactivation_Date" type="xsd:date" nillable="true"/>
      <xsd:choice>
        <xsd:element name="Superior_Organization_Reference_ID" type="xsd:string" nillable="true"/>
        <xsd:element name="Container_Organization_Reference_ID" type="xsd:string" maxOccurs="unbounded"/>
      </xsd:choice>
      <xsd:element name="Frozen_Status" type="xsd:boolean"/>
      <xsd:element name="Staffing_Model" type="xsd:string"/>
      <xsd:element name="Primary_Business_Site_Reference" type="xsd:string" nillable="true"/>
      <xsd:element name="Role_Assignments">
        <xsd:complexType>
          <xsd:sequence>
            <xsd:element name="Role_Assignment" maxOccurs="unbounded"/>
          </xsd:sequence>
        </xsd:complexType>
        <xsd:sequence>
          <xsd:element name="Organization_Role_ID" type="xsd:string" nillable="true"/>
          <xsd:element name="Position_ID" type="xsd:string" nillable="true"/>
        </xsd:sequence>
      </xsd:element>
      </xsd:sequence>
    </xsd:complexType>
  </xsd:element>
</xsd:sequence>
</xsd:complexType>
</xsd:schema>
```

## DOCUMENT RETRIEVAL SERVICE

Document retrieval enables your integration to import files from an external system over a range of different transports such as AS2, FTP, FTPS, and SFTP. Workday loads the integration file(s) into your W: Drive, so that later on integrations can retrieve and process them.

Business Process Steps		Notifications		Allowed Actions by Role		Allowed Services		Related Links		A		
Business Process Steps 3 items												
Step		Order	If	Type	Specify			Optional				
Q		a		Initiation					No			
Q	Configure Document Retrieval	a2	Configured Retrieval Available for Retrieval Service? (Workday Owned)	Service	Document Retrieval				No			
Q		b		Service	Fire Integration				No			

The *Document Retrieval* Service is configured in the integration business process by configuring a *Document Retrieval* Service step which describes file selection, transport, and decryption options for the integration file. Document Retrieval also enables you to retrieve the output of a custom report. In this case, Document Retrieval retrieves the data from within Workday and stores the report output in the W: Drive for use by a subsequent integration step.

### Retention Policy

Document Retention Policy \* 3

### Document Tags

Total Tags organization  
Retrieved

Additional Tag(s)

X organization



### File(s)

1 items

<span style="color: blue;">+</span>	*File Name/Pattern
<span style="color: blue;">-</span>	AddOrgs.xml

### Transport

Transport Type \* SFTP

## INPUT FILE TAG

You will need to create/select one or more document tags that identify the file containing the organization inbound updates. Use this attribute in scenarios where multiple files of different types may be attached to the business process. If multiple tags are defined for the attribute, you must configure the Document Retrieval service to apply all listed tags in order for this integration to find the file.

Integration Attributes 2 items						
	Attribute Provider	Attribute	Description	Options	Override Default Values	Attribute Value
Core Connector: Organization Inbound		input File Tag	The tag identifying the file containing the organization inbound updates. Use this attribute in scenarios where multiple files of different types may be attached to the business process. If multiple tags are defined for the attribute, the matching file must have all listed tags in order to be processed. If left empty, the integration system will look for input files with 'Retrieved' tag.		<input type="checkbox"/>	
					<input type="checkbox"/>	organization

When the Document Retrieval step is configured, it must include the same document tag(s).

Retention Policy	Document Tags
Document Retention Policy <span style="color: red;">*</span> 3	Total Tags organization Retrieved Additional Tag(s) <span style="border: 1px solid red; padding: 2px;">organization</span>



## ACTIVITY 3.1 – CREATE AND LAUNCH INBOUND ORGANIZATION INTEGRATION SYSTEM

**Business Case:** You will configure a new integration system based on the Core Connector: Inbound Organization template to load new organization data. You will need to create an integration business process that includes a document retrieval service step before the integration fire step. A file will be provided on the training SFTP server.

### TASK #1: VERIFY THE DATA DOESN'T ALREADY EXIST

1. For this activity we will be loading two new Supervisory Organizations, **Sales Operations - North America** and **Sales Operations - Emerging Markets**. Search the tenant (All of Workday) for **org:Sales Operations**. Notice that neither of the organizations exists. Using the Core Connector: Inbound Organization template we will load these new organizations into Workday.

### TASK #2: CREATE THE INBOUND INTEGRATION

1. Run the **Create Integration System** task, and enter the following information:
2. Enter a **System Name** of **WICT\_Add\_Org\_Connector**
3. In the **Comment** box enter a simple description for the integration system
4. From the **New using Template** radio button, select the By Integration Template Category>Cloud Connect for HCM > **Core Connector: Organization Inbound**
5. Click **OK**

### TASK #3: CREATE THE INPUT FILE TAG

1. From the integration system's **Related Actions** icon, select **Integration System > Configure Integration Attributes**
2. Next to **Input File Tag** click the + sign to add a new row
3. Click the **prompt** and select **Create Document Tag**
4. Enter a value of **OrgUpdates** and click **OK**
5. Click **OK** to save your Integration Attributes and return to the **View Integration System** page.

## TASK #4: CREATE THE INTEGRATION BUSINESS PROCESS

1. To create the Business Process use the integration system's **Related Actions** icon to select **Business Process > Create, Copy, or Link Definition**
2. Verify the **Effective Date** is **today** and accept the default values.
3. Click **OK**.

Click the **+** sign to add a new step to the business process and configure as follows:

Field Name	Entry Value
Order	a2
Type	Service
Specify	Document Retrieval

4. Click **OK**
5. Click **Configure Document Retrieval** accepting **today** as the **Effective Date** and click **OK**.
6. Configure Document Retrieval as follows:

Field Name	Entry Value
Document Retention Policy	1
Document Tags - Additional Tag(s)	OrgUpdates
File Name / Pattern	AddOrgs.xml
Transport Type	SFTP
SFTP Address	sftp://wd2-sales-sftp.workday.net:3022
Directory	/home
Authentication Method	User Name / Password
User Id	**Provided by Instructor
Password	**Provided by Instructor

7. Click **OK** then **Done**.

## TASK #5: TEST THE TRANSPORT PROTOCOL

1. If you are not returned to your integration system, navigate to your integration system by searching for *intsys:WICT* and selecting the **WICT\_Add\_Org\_Connector** integration system

2. To test your transport protocol use the integration system's **Related Actions** icon to select **Integration > Test Transport**
3. The transport protocol you configured in the previous steps will automatically be populated. Click **OK**
4. Select **Connect** and click **OK**
5. The response will read **Completed, Connect to endpoint successfully!** If your response is different, please notify your instructor to receive assistance



**Note:** Repeating the above steps and instead selecting **List Files** would allow you to verify the file you wish to process is able to be found on the sFTP server configured.

## TASK #6: LAUNCH THE INTEGRATION SYSTEM

1. Search for and run the **Launch/Schedule Integration** task, entering the following information:

Field Name	Entry Value
Integration	WICT_Add_Org_Connector
Run Frequency	Run Now

2. Click **OK** and then click **OK** a second time to launch the integration
3. There will be no "Refresh" button so click on the Overall Process link to refresh. It will take a few moments to run to completion. (This is a Business Process Event, not Integration Event)
4. Search the tenant (All of Workday) for your new organizations.
  - A. Sales Operations - North America Group
  - B. Sales Operations - Emerging Markets Group



## CHAPTER 4 – INTEGRATION SYSTEM SECURITY

### INTEGRATION SYSTEM SECURITY

#### SECURITY FOR ACCESS TO INTEGRATION TEMPLATES, SYSTEMS, AND EVENTS

Workday provides several security domains that secure your users' access to integration templates and integration systems. These domains separate the permissions needed to configure an integration from the permissions needed to run an integration and view the integration's output documents. You can also segment integration templates and systems, and then grant access separately for each segment.

The following table lists integration-related security domains and what permissions are granted for each domain.

Domain	Grants Permissions To
Integration Build	<ul style="list-style-type: none"> <li>▪ Create or edit an integration system.</li> <li>▪ Create or edit an EIB.</li> <li>▪ Deploy a Workday Studio integration.</li> </ul>
Integration Configure	<ul style="list-style-type: none"> <li>▪ Configure Integration Services</li> <li>▪ Configure an EIB.</li> </ul>
Integration Debug	Debug a Workday Studio integration.
Integration Event	<ul style="list-style-type: none"> <li>▪ Launch an integration.</li> <li>▪ View resulting events, including integration output documents.</li> </ul>
Integration Reports	View integration reports, including reports for integration events, exception audits, messages, and integration IDs.
Integration Subscriptions	<ul style="list-style-type: none"> <li>▪ View an integration's subscriptions.</li> <li>▪ Edit an integration's subscriptions.</li> </ul>

#### ACCESS TO WORKDAY DATA

All access to Workday data is done through web service operations and Reports-as-a-Service. These web service operations, report data sources, report fields, and custom reports are secured to various security domains. Integration systems (and external systems that access Workday) must have the appropriate (Get and/or Put) access to the domains that include the web service operations. Also, they must have the appropriate (View) access to the domains that include the report data sources and report fields. Outbound EIBs also require access to the custom report that they use as a data source.

Cloud Connect and Studio integrations require an Integration System User account for authentication and access to web service tasks. Each integration system must have its own Integration System User account. Integration System Users are always members of Integration System Security Groups and can't be included in any other type of security group. In order for the integration to work correctly, the Integration System User's security group must have Put and Get access to the domains that contain the web service operations that interact with the necessary data.



**Note:** Enterprise Interface Builder (EIB) integrations are secured through the current user's sign in credentials and don't require an integration system user account.

For more information on Integration Security in Workday, documentation can be found in the administrator guide at the following link:

[Concept: Integration Security in Workday](#)

## CREATING AN INTEGRATION SYSTEM USER

To create an Integration System User, access the **Create Integration System User** task and enter a User Name and Password. Integration System Users represent systems, not a person. It is not intended that this user will log in to launch the integration system from the tenant.

**Create Integration System User**

Account Information	
User Name	<input type="text" value="IntegrationTrain"/> *
Password Rules	Your new password must not be the same as your current password or user name. Minimum number of characters required: 6. The following character types must be represented: uppercase characters, lowercase characters, Arabic numerals 0 - 9, special characters !#\$%&()'@;:=>?@[{\}~.
New Password	<input type="password"/> *
New Password Verify	<input type="password"/> *
Require New Password at Next Sign In	<input type="checkbox"/>
Session Timeout Minutes Enforced	20
Session Timeout Minutes	<input type="text" value="0"/>



**Note:** Keep the Session Timeout Minutes default value of 0 to prevent session expiration. An expired session can cause the integration to time out before it successfully completes.

## CREATING AN INTEGRATION SYSTEM SECURITY GROUP

To create an Integration System Security Group access the **Create Security Group** task and select **Integration System Security Group (Unconstrained)**.

Edit Integration System Security Group (Unconstrained) IntTrainingGroup	
Name	<input type="text" value="IntTrainingGroup"/> *
Comment	<input type="text"/>
Context Type	Unconstrained
Inactive	<input type="checkbox"/>
Integration System Users	<input type="text" value="IntegrationTrain /"/> <input type="button" value="..."/>

Once the Integration System Security group is created, you may add integration users. Multiple Integration System Users can be associated to a single Integration System Security Group, each receiving the same permissions.



Note: For further information about Security, please refer to the virtual training class 'Configurable Security'.

## PROVIDING PERMISSIONS TO YOUR SECURITY GROUP

Workday connector integrations use underlying web service operations (or tasks). For example Core Connector Worker leverages the underlying web service operation Get Workers. These web service operations (or tasks):

- Get data from Workday that is included on outbound integrations.
- Put data received from inbound integrations into Workday

Verify that the security group used by the application system user account has put and get access to the domain where the web service tasks are secured.

You must determine which web service tasks your integration system must access.

For Workday connectors, see a complete list of templates and their underlying web service tasks at **Security Domains for Integration System Data Access** in the Workday Community. For custom integrations, your developer can provide you a list of the web service tasks used by the integration.



## Reference: Security Domains for Integration System Data Access

### Reference: Security Domains for Integration System Data Access

Workday integrations use web service operations (or tasks). These tasks:

- Get data from Workday that is included on outbound integrations.
- Put data received from inbound integrations into Workday

Verify that the security group used by the application system user account has put and get access to the domain where the web service tasks are secured.

### [Reference: Security Domains for Integration System Data Access](#)

As an example, here is the entry for the Organization Inbound Connector.

#### Organization Inbound Connector

- Integration Build
- Manage: Organization Integration
- Manage: Organization Update Integration
- Worker Data: Organization Information
- Worker Data: Public Worker Reports

For each web service task required by your integration system, access the **View Security for Securable Item** report and enter the web service task name, then note the security domain or business process security policy to which the web service task is secured.

← View Security for Securable Item Add Update Organization (Web Service) Actions

Type	Web Service Task	
Permission Required	Put	
<a href="#">Domain Security</a>   <a href="#">Language Restrictions</a>		
<b>Domain Security</b> 1 item		
Security Policy	Domain	Functional Areas
Manage: Organization Update Integration		Organizations and Roles

Modify the Domain Security Policy identified using the **Domain Security Policies for Functional Area** report so the web service operation includes your integration security group.

**← Domain Security Policies for Functional Area Organizations and Roles** Actions

Description	Set up and administer organizations, organization types, and committees. Create and manage reorganization events. Set up organization roles and rules.
Status	Active
<div style="border-bottom: 1px solid #ccc; padding-bottom: 10px;"> <span style="font-size: 1.2em;">📁 Committee Membership</span> <ul style="list-style-type: none"> <li><span style="font-size: 0.8em;">📄</span> Manage: Committee Invitations</li> <li><span style="font-size: 0.8em;">📁</span> Committee Membership: Self-Service</li> <li><span style="font-size: 0.8em;">📁</span> External Committee Member: Contact Data</li> <li><span style="font-size: 0.8em;">📄</span> Manage: Committee Meeting Minutes</li> <li><span style="font-size: 0.8em;">📄</span> Manage: Company Tax ID Integration</li> <li><span style="font-size: 0.8em;">📁</span> Manage: Location</li> <li><span style="font-size: 0.8em;">📄</span> Manage: Location Hierarchy</li> <li><span style="font-size: 0.8em;">📄</span> Manage: Matrix Organizations</li> <li><span style="font-size: 0.8em;">📄</span> Manage: Membership Rule Create</li> <li><span style="font-size: 0.8em;">📄</span> Manage: Membership Rule Edit</li> <li><span style="font-size: 0.8em;">📄</span> Manage: Organization Edit and Reorganiz...</li> <li><span style="font-size: 0.8em;">📄</span> Manage: Organization Integration</li> <li><span style="font-size: 0.8em;">📄</span> Manage: Organization Roles</li> <li><span style="font-size: 1.2em; border: 2px solid red; padding: 2px;">📄</span> Manage: Organization Update Integration</li> <li><span style="font-size: 0.8em;">📄</span> Manage: Retiree Organization Create</li> <li><span style="font-size: 0.8em;">📁</span> Organization: Company</li> <li><span style="font-size: 0.8em;">📁</span> Organization: Cost Center</li> </ul> </div>	
Domain Security Policy	<a href="#">Manage: Organization Update Integration</a>
Status	Active
<b>Report/Task Permissions</b> 0 items	
<b>Securable Integrations</b> 4	
<b>Integration Permissions</b> 1 item	
Company Administrator Hierarchy Owner Chain HR System Implementers Organization Administrator + More (2)	
<span style="border: 1px solid #ccc; padding: 2px;">Edit Permissions</span>	

**Edit Permissions Manage: Organization Update Integration** Actions

Description	This domain provides access to maintain organizations. Contains web services.
Status	Active
Functional Areas	Organizations and Roles
Report/Task Permissions 0 items	
*Security Groups <span style="float: right;">View Modify</span>	
No Data	
<b>Securable Integrations</b> 4	
<b>Alert - Integration Permissions (Row 1)</b> Activate your security policy changes using the <a href="#">Activate Pending Security Policy Changes</a> task, and update the security evaluation moment, which is currently set to 09/20/2017 16:48:00.790.	
<b>Integration Permissions</b> 1 item	
*Security Groups <span style="float: right;">Get Put</span>	
IntTrainingGroup <span style="border: 2px solid red; padding: 2px;">-</span> Company Administrator <span style="border: 2px solid red; padding: 2px;">-</span> Hierarchy Owner Chain	

In addition to providing permissions to the web service task, your integration system user will also require permissions to the underlying data being accessed.



**Note:** The list of domains provided in the reference document do not account for any Integration System Field Overrides. These will require additional domains above and beyond those listed.

An alternate method of providing permissions to your security group that was added in Workday 28 is a task called **Maintain Permissions for Security Group**. With this task permissions can be provided in bulk instead of one at a time which is advantageous if you know in advance the full list of security policies required.

← Maintain Permissions for Security Group IntTrainingGroup Actions

Report/Task Permissions

Domain Security Policies permitting Modify access

X [Integration Build](#)  
X [Manage: Organization Integration](#)  
X [Manage: Organization Update Integration](#)  
X [Worker Data: Organization Information](#)  
X [Worker Data: Public Worker Reports](#)

Domain Security Policies permitting View access

Integration Permissions

Domain Security Policies permitting Put access

X [Integration Build](#)  
X [Manage: Organization Integration](#)  
X [Manage: Organization Update Integration](#)  
X [Worker Data: Organization Information](#)  
X [Worker Data: Public Worker Reports](#)

Domain Security Policies permitting Get access

After providing permissions to all necessary domain security policies you must run the **Activate Pending Security Policy Changes** task.

Domain Security Policy	Last Changed	By User
Integration Build	04/11/2016 02:32:48.151 PM	lmcneil / Logan McNeil
Worker Data: Organization Information	04/11/2016 02:32:15.061 PM	lmcneil / Logan McNeil
Worker Data: Organizations	04/11/2016 02:32:15.061 PM	lmcneil / Logan McNeil
Worker Data: Management Chain	04/11/2016 02:32:15.061 PM	lmcneil / Logan McNeil
Worker Data: Public Worker Reports	04/11/2016 02:31:52.679 PM	lmcneil / Logan McNeil
Manage: Organization Integration	04/11/2016 02:30:43.629 PM	lmcneil / Logan McNeil
Manage: Organization Update Integration	04/11/2016 02:27:20.589 PM	lmcneil / Logan McNeil

If you re-run the **View Security for Securable Item** report, you will see your Integration Security Group added to the *Permitted Security Groups* for that web service operation.

## ASSOCIATING THE INTEGRATION SYSTEM USER

Access your integration system and as a related action on the system, select **Workday Account > Edit** and add your integration system user as the Workday Account.

## CHAPTER 5 – DOCUMENT TRANSFORMATION

### THE DOCUMENT TRANSFORMATION CONNECTOR

Document Transformation is an integration system template that enables you to build an integration that contains a stylesheet attachment that includes Workday specific processing instructions to transform and validate documents. The special instructions include:

- Validation
- Integration Message
- Format Text (NonXML)

The Document Transformation approach involves using both integration systems as well as the Workday Business Process Framework. One benefit of linking a Business Process (BP) to an integration system is that the retrieval and delivery BP steps facilitate chaining together integrations.

The Document Transformation template provides access to Workday-specific ETV/XTT processing. Element Transformation and Validation (ETV) and XML to Text (XTT) enable you to add Workday-specific attributes into XML data to validate and control the data.

The ultimate objective of Document Transformation is to transform the output of an integration, or the input for an integration, into the required format. Beyond the main benefit of being able to transform a document there are a few other benefits to using Document Transformation as follows:

- By leveraging the Workday specific processing instructions, functionality that would require complex XPATH expressions is now much simpler.



Example: To achieve fixed length formatting with padding in raw XSLT and XPath would require the use of variables, the concatenation function as well as the substring function. However with XTT it is a simple matter of applying a few simple attributes.

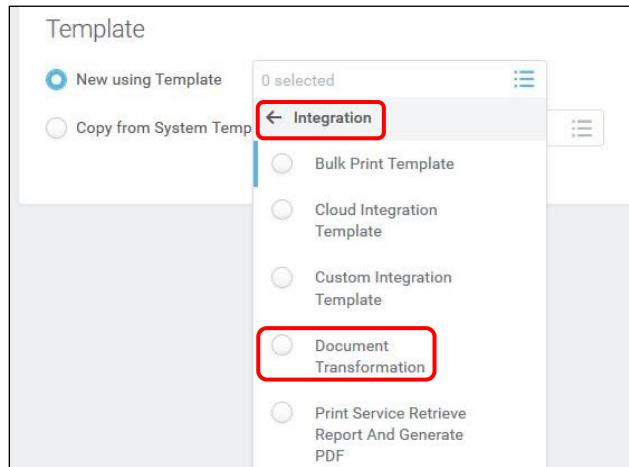
- In comparison to a tool such as Workday Studio, Document Transformation removes the need for maintaining document descriptions such as XML Schemas and XMLToCSV schemas.
- Reduce the number of places where document structure is maintained

Before setting up a Document Transformation integration system you must:

- Create an integration system that will generate the file to be transformed, or have an external system that is generating an incoming file.
- Determine what format is required by the recipient of the transformed file.
- Create an XSLT file that defines the transformation from the incoming file format to the format required by the file recipient leveraging the available options for ETV and XTT formatting.

## CREATING A DOCUMENT TRANSFORMATION INTEGRATION SYSTEM

To create a Document Transformation integration system, access the **Create Integration System** task and from the **New Using Template** prompt select **Integration > Document Transformation**.



The XSLT file being used to perform the transformation must be attached to the integration system as an **Integration Attachment Service** object. Once added, you can edit the attachment by using the task, **Edit Integration Service Attachment**.

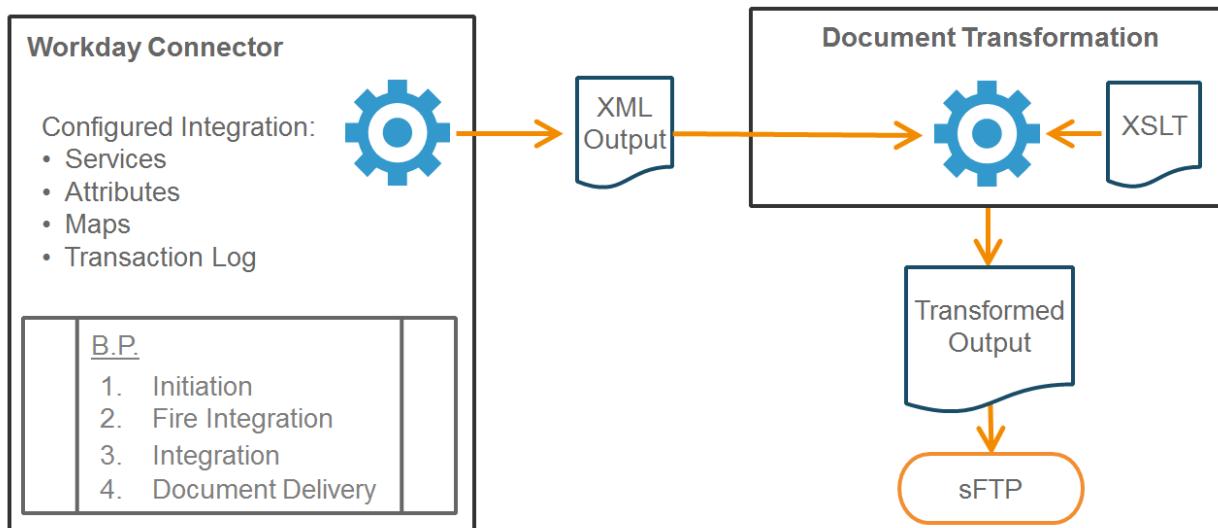
The screenshot shows a 'View Integration System' page for 'WICT\_DT\_HCM\_Workers\_XTT'. On the left, there's a 'Basic Details' section with 'System Name: WICT\_DT\_HCM\_Workers\_XTT' and a 'System ID' link. Below that is an 'Integration Services' section with '4 items' and two listed services: 'Integration Template Service' and 'Document Transformation / Document Attachment Service'. On the right, a vertical 'Actions' menu is open, listing options like 'Integration System', 'Audits', 'Business Process', etc. A dropdown menu for 'Integration' is shown, containing 'Integration Events', 'Integration Messages', 'Edit', 'Change Integration Template', 'Clone', and 'Configure Integration Attachment Service'. The 'Configure Integration Attachment Service' option is highlighted with a red box.

\*Please note that Workday is not an XSLT editor. Workday will not check syntax or validate your XSLT in any way.

## Chaining Outbound Connectors with Document Transformation

Document Transformation integrations take the output file generated by another integration system and transform that file based upon instructions in an XSLT file. While this feature can be used with any integration system, document transformation is ideal for Connector integrations such as Core Connector: Worker since these integrations are not designed for a specific endpoint. As such their XML output documents often require transformation before being sent to the endpoint.

When using Document Transformation with Core Connector integrations, the Core Connector system is the primary system which is in control of the process. The workflow when using Document Transformation with an outbound Core Connector is as follows:



1. When the integration system is launched steps one and two of the business process are executed. The initiation step (step 1) starts up the various background services and then the integration associated with the business process fires (step 2). The Core Connector integration system produces an XML output.
2. After the completion of the second step, step three executes which calls the second integration system (Document Transformation). The document transformation system takes the intermediate XML file (Core Connector Output) and the XSLT that has been attached via the Integration Service Attachment object and hands them off to the XSLT processor. The result of step three is the transformed output.
3. Finally, once step three returns that it has completed, step four kicks in to deliver the final transformed output to the defined end point.

In this process there are multiple files in scope of the business process event. In order to differentiate between the Core Connector XML Output and the transformed output, document tags will need to be leveraged. In this scenario the transformed output file (Document Transformation Output) will need a unique tag to ensure the document delivery step delivers the appropriate file. This will be achieved by configuring a custom Output Document Tag on the document transformation system and then specifying this tag in the document delivery configuration.

## DOCUMENT TRANSFORMATION INTEGRATION XSLT FORMATTING

Element Transformation and Validation (ETV) and XML to Text (XTT) enable you to add Workday-specific processing instructions to an XSLT file's elements using attributes.

ETV and XTT provide a number of different ways to transform and validate elements in an XML document. The ETV and XTT processing instructions require that your XSLT produce well-formed XML regardless of the final output format.

Workday provides processing attributes (Available for both ETV and XTT) in the following categories:

- Arithmetic Elements
- Comma Separated Value (CSV) Formatting
- Date/Time Formatting
- Element Text Addition and Removal
- Fixed Length Formatting
- Grouped attributes
- Integration System
- Number Formatting
- Truncation
- Validation

For details on the above categories, please visit the administrator guide via the following link.

[Document Transformation Connector](#)

### USAGE OF ETV/XTT

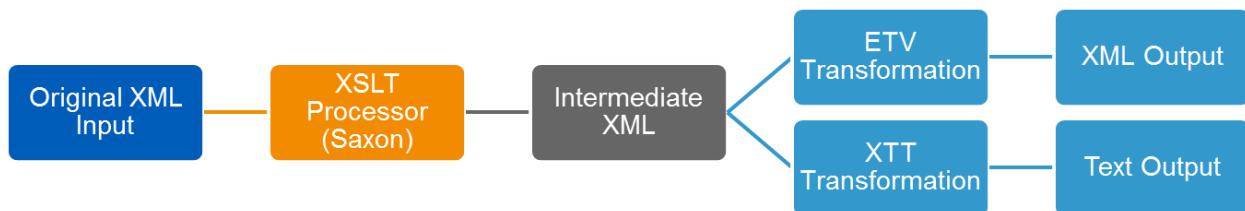
XTT and ETV are applied as attributes on XML elements within an XSLT document. Both the ETV and XTT namespaces need to be declared before the attributes can be leveraged.

```
xmlns:xtt="urn:com:workday/xtt"  
xmlns:etv="urn:com:workday/etv"
```

ETV and XTT may be used together in the same XSLT document, but best practice is to separate them into two separate transformations. When used together in one XSLT document the final file format will be text.

## TWO STAGE TRANSFORMATION PROCESS

Document Transformation consists of two separate transformation steps. In the first stage of the transformation Workday hands off the XML input and the XSLT file to an XSLT processor. This processor handles only the raw XSLT and simply carries the XTT/ETV through to an intermediate output. This intermediate output must be well-formed XML. The second stage of the transformation is where Workday applies the ETV/XTT attributes to produce the final transformed output. Below is a graphical representation of this two stage process.



## FIXED LENGTH FILE SCENARIO



Logan McNeil has been tasked with transforming the output of the WICT\_HCM\_Workers integration system to produce a fixed length file per the requirements of the third party system.

The file will have the following general characteristics:

ALIGN	left
PADDING CHARACTER	Space
SEVERITY	warning

These are the field specific requirements of the transformed file:

Field Name	Fixed Length	Required*	Report Truncation*
EMPLOYEE ID	10	true	no
FIRST NAME	10	false	warning
LAST NAME	15	false	warning
GENDER	5	true	no
MARITAL STATUS	20	true	warning
EMAIL ADDRESS	20	true	warning
HIRE DATE	10	true	warning
TOTAL ANNUAL BASE PAY	10	true	warning

\*The required and report truncation specifications are for internal purposes, they are not requirements of the third party system. All validation messages will be of type ‘warning’.

In order to achieve these requirements you will need to make use of a variety of XTT (XML To Text) attributes within your stylesheet. A baseline XSLT file has been provided as a starting point that you will edit to achieve the required output format. Below is an example snippet of the transformed output.

21001	Logan	McNeil	F	Married_USA	lmcneil2@workday.net2000-01-01212676.46
21002	Steve	Morgan	M	Married_USA	smorgan@workday.net 2000-01-01323559.59
21003	Oliver	Reynolds	M	Married_USA	oreynolds@workday.net2000-01-01392970.21
21004	Maximilian	Schneider	M	Married_USA	mschneider@workday.net2000-01-01242059.76
21005	Teresa	Serrano	F	Married_USA	tserrano@workday.net2000-01-01287472.76
21006	Maria	Cardoza	F	Single_USA	mcardoza@workday.net2000-01-01113434.97
21007	Jacqueline	Desjardins	F	Married_USA	jdesjardins@workday.net2000-01-01145594.93
21008	Betty	Liu	F	Married_USA	bliu@workday.net 2000-01-01140076.89
21009	Pedro	Santiago	M	Married_USA	psantiago@workday.net2000-01-01154458.75
21012	Norman	Chan	M	Single_USA	nchan@workday.net 2000-01-0197065.54
21010	Lillian	Chu	F	Single_USA	lchu@workday.net 2000-01-0187069.92
21014	James	Moore	M	Single_USA	jmoore@workday.net 2000-01-0192768.83
21011	Isabel	Arguello	F	Divorced_USA	iarguello@workday.net2000-01-0196244.19
21013	David	Spiegel	M	Single_USA	dspiegel@workday.net2000-01-0198931.29
21015	Daniel	Betancourt	M	Divorced_USA	dbetancourt@workday.net2000-01-0190976.23
21016	Chad	Anderson	M	Married_USA	canderson@workday.net2000-01-0178277.45
21017	Sara	Goldstein	F	Married_USA	sgoldstein@workday.net2000-01-01145594.93

### XTT (XML TO TEXT)

The XTT step supports instructions that convert XML documents to text. It converts documents from XML to text formats such as comma separated values (CSV), fixed width, or other text formats. All attributes available within XTT are also available within ETV and vice versa. In the above scenario our final transformed file is required to be a fixed length text file.

### FIXED LENGTH FORMATTING ATTRIBUTES

The following attributes allow fixed length format documents to be created. The fixed length of each element is specified using the **fixedLength** attribute. Values shorter than the fixed length

will be padded using the **paddingCharacter** attribute value. Values that are longer than the fixed length will be truncated.

- **align** - Indicates whether values should be aligned to the left or to the right when padding is added.
- **fixedLength** - The number of characters in this fixed length field.
- **paddingCharacter** - The padding character to use if the value is shorter than the fixed length. If a padding character is not defined the default character is space.

For the current scenario all three of these attributes will be leveraged to meet the listed third party specifications.

#### VALIDATION ATTRIBUTES: REQUIRED AND SEVERITY

Workday provides a variety of attributes to apply validation rules to the contents of the element they are attached to, to indicate if an element is required and what severity of message to return into the integration event when an element fails validation.

- **required** - The element must contain at least one character.
- **severity** - The severity of the message. One of info, warning, error or critical.

#### TRUNCATION ATTRIBUTES

Workday provides attributes for reporting the truncation of values when interacting with the **fixedLength** or **maxLength** attributes. With these attributes validation messages can be reported back to the integration event when truncation occurs.

- **reportTruncation** - The reportTruncation attribute controls how the truncation of a value is reported, if at all. It can be reported as a validation message or an attribute can be added to the message itself. Valid values for this attribute are values: *none*, *attribute*, *critical*, *error*, *warning*, or *info*. The default is *none*.

```
<xsl:template match="ws:Worker_Sync">
  <File xtt:separator="&#xd;&#xa;" xtt:align="left" xtt:severity="warning">
    <xsl:apply-templates select="ws:Worker"/>
  </File>
</xsl:template>

<xsl:template match="ws:Worker" >
  <Record>
    <EmployeeID xtt:fixedLength="10" xtt:required="true"><xsl:value-of select="ws:Summary">
      <FirstName xtt:fixedLength="10" xtt:required="false" xtt:reportTruncation="warning">
```



## ACTIVITY 5.1 – FIXED LENGTH TRANSFORMATION

**Business Case:** You will configure a new document transformation integration system to transform the output of the WICT\_HCM\_Workers integration. Logan has been given a set of specifications for the final fixed length file including internal directives around specific fields being required as well as the reporting of truncation of values. Leveraging the business process framework you will chain your Document Transformation integration system to your Core Connector Worker integration system.

### TASK #1: MODIFY THE RAW XSLT FILE

1. Locate the provided class files on your local machine and open the **Act 5\_1 Raw XSLT.xsl** file in your XML editor of choice. If you are uncomfortable modifying XSLT a solution file has been provided with all modifications in place.
2. For the general file requirements the following attributes will need to be applied:

Attribute	Code Example
Align	xtt:align="left"
Severity	xtt:severity="warning"

3. Modify the **<File>** element to add the necessary attributes to achieve the specification. \*Note that the default padding character when not defined is space.

Attribute	Value
Align	left
Severity	warning

4. For the field specific requirements the following attributes will need to be applied to each field element.

Attribute	Code Example
Fixed Length	xtt:fixedLength="10"
Required	xtt:required="true"
Report Truncation	xtt:reportTruncation="warning"

5. Modify the individual field elements to add the necessary attributes to achieve the specification.

Field Name	Fixed Length	Required	Report Truncation
Employee ID	10	true	no
First name	10	false	warning
Last Name	15	false	warning
Gender	5	true	no
Marital Status	20	true	warning
Email Address	20	true	warning
Hire Date	10	true	warning
Total Annual Base Pay	10	true	warning

6. After making all modifications save your file as **Act 5\_1 XTT Fixed Length Formatting.xsl**

#### TASK #2: CREATE THE DOCUMENT TRANSFORMATION INTEGRATION SYSTEM

1. Run the **Create Integration System** task
2. Enter a **System Name** of **WICT\_DT\_HCM\_Workers\_XTT**
3. In the **Comment** box enter a simple description for the integration system
4. From the **New using Template** radio button, select the By Integration Template Category>Integration > **Document Transformation**
5. Click **OK**

#### TASK #3: CONFIGURE THE INTEGRATION SERVICE ATTACHMENT (XSLT WITH XTT)

1. From the integration system's **Related Actions** icon, select **Integration System > Configure Integration Attachment Service**
2. In the **Attachment** field select **Create Integration Service Attachment**
3. Attach the **Act 5\_1 XTT Fixed Length Formatting.xsl** by dropping the file onto the upload interface or click **Select files** and locate the file on your machine and click **Open**
4. Click **OK** twice

## TASK #4: CONFIGURE AN OUTPUT DOCUMENT TAG

1. From the integration system's **Related Actions** icon, select **Integration System > Configure Integration Attributes**
2. Click on the + sign to add a row next to **Output Document Tags**.
3. In the **Value** field select **Create Document Tag**.
4. Enter **WICT\_HCM\_Workers\_List\_XTT**
5. Click **OK** twice

## TASK #6: CONFIGURE THE INTEGRATION SEQUENCE GENERATOR

1. To configure the Integration Sequence Generator use the integration system's **Related Actions** icon to select **Integration System > Configure Integration Sequence Generators**
2. Configure the following values:

Field Name	Entry Value
Increment By	1
Format/Syntax	YOUR INITIALS_DT_HCMWorker_List_[Seq].txt

3. Click **OK** and **Done**.

## TASK #7: MODIFY THE CORE CONNECTOR WORKER BUSINESS PROCESS

1. Navigate to your Core Connector Worker integration system business process by searching for **bp:WICT** and selecting **Integration Process Event for WICT\_HCM\_Workers (TOP LEVEL)**
2. Edit the definition of the business process using the business process' **Related Actions** icon to select **Business Process > Edit Definition**
3. Accept **today** as the **Effective Date** and click **OK**
4. Click the + sign to add a new step to the business process and configure as follows:

Field Name	Entry Value
Order	b2
Type	Integration

5. Click **OK**

6. Click **Configure Integration System**
7. In the **Integration** field, select **WICT\_DT\_HCM\_Workers\_XTT**
8. Click **OK**
9. In the **Run as User** field, select **lmcneil**
10. Click **OK**

#### TASK #8: MODIFY THE DOCUMENT DELIVERY STEP

1. Navigate back to the business process definition by clicking on the **Business Process Definition** link as seen below.

**View Workflow Step**  
**Integration Process Event for WICT\_HCM\_Workers (TOP LEVEL) step b2 - Integration** Actions

Business Process Definition	Integration Process Event for WICT_HCM_Workers (TOP LEVEL)
Order	b2
Type	Integration

2. Click **Configure Document Delivery** in step C
3. Accept **today** as the **Effective Date** and click **OK**
4. Under **Document(s)** select **From Specific Integration Step(s)** and select **Integration Process Event for WICT\_HCM\_Workers (TOP LEVEL) step b2 - Integration**
5. Under **Document Filter(s)** in the **Tagged** field select **WICT\_HCM\_Workers\_List\_XTT**
6. Click **OK** then **Done**

#### TASK #9: LAUNCH WICT\_HCM\_WORKERS

1. Search for and run the **Launch/Schedule Integration** task, entering the following information:

Field Name	Entry Value
Integration	WICT_HCM_Workers
Run Frequency	Run Now

2. Click **OK**

3. Specify the following Integration Criteria Launch parameters

Field Name	Entry Value
As of Entry Moment	Use the Default Value
Effective Date	Use the Default Value
Last Successful As of Entry Moment	Use the Default Value
Last Successful Effective Date	Use the Default Value
Full File	Checked

4. Click **OK**
5. There will be no "Refresh" button so click on the Overall Process link to refresh. It will take a few moments to run to completion. (This is a Business Process Event, not an Integration Event)

#### TASK #10: REVIEW THE OUTPUT RESULTS

1. Scroll down to the **Subsequent Processes** section of the **View Event** page. Notice the Document Transformation step shows a status of **Completed with Warnings**.

Integration Event  
WICT\_DT\_HCM\_Workers - 11/04/2016  
06:50:30.224 (Completed with Warnings)

Request Name  
WICT\_DT\_HCM\_Workers

Status  
Completed with Warnings

Number of Warnings  
3

2. Click on the number **3** under **Number of Warnings** to open the list of warnings that occurred on the background process. These warnings are a direct result of the validation attributes (xtt:required, xtt:severity, xtt:reportTruncation) included in the XSLT

3 items

Date and Time	Severity	Message	Background Process
04/07/2017 07:54:22.986 AM	⚠ Warning	No value output for required field EmailAddress.	Integration ESB Invocation (WICT_DT_HCM_Workers - 04/07/2017 07:54:01.318 (Completed with Warnings))
04/07/2017 07:54:23.154 AM	⚠ Warning	No value output for required field MaritalStatus.	Integration ESB Invocation (WICT_DT_HCM_Workers - 04/07/2017 07:54:01.318 (Completed with Warnings))
04/07/2017 07:54:23.269 AM	⚠ Warning	The value of EmailAddress exceeds the maximum length of 20. The value has been truncated.	Integration ESB Invocation (WICT_DT_HCM_Workers - 04/07/2017 07:54:01.318 (Completed with Warnings))

- To view the output files, scroll to the bottom of the **WICT\_HCM\_Workers Event** to **Event Document(s)**. Notice you can follow the results of each Business Process Step. Once the overall status of the event reaches Successfully Completed review both your XML file and your TXT file.



## DELIMITED FILE SCENARIO



Logan McNeil has been tasked with transforming the output of the WICT\_HCM\_Workers integration system to produce a delimited file per the requirements of the third party system. The file should be pipe delimited including a pipe delimited header with all column names.

In this scenario you will modify your XSLT to transform the output into a delimited file instead of a fixed length file. The file will have the following general characteristics:

SEPARATOR	
DEFAULT SEVERITY	warning
QUOTE LOGIC	pipe-delimited
QUOTE STYLE	single

These are the field specific requirements of the transformed file:

Field Name	Required	Severity
EMPLOYEE ID	true	error
FIRST NAME	false	
LAST NAME	false	
GENDER	true	error
MARITAL STATUS	true	error
EMAIL ADDRESS	true	
HIRE DATE	true	error
TOTAL ANNUAL BASE PAY	true	error
*A BLANK SEVERITY INDICATES THAT THE FIELD WILL INHERIT THE FILE LEVEL SEVERITY		

In order to achieve these requirements you will need to make use of a variety of XTT (XML To Text) attributes within your stylesheet. The XSLT file from activity 5.1 will be used as a starting

point that you will edit to achieve the required output format. Below is an example snippet of the transformed output.

Employee ID	First Name	Last Name	Gender	Marital Status	Email Address	Hire Date	Base Pay
21001	Logan	McNeil	F	Married_USA	lmcneil2@workday.net	2000-01-01	212676.46
21002	Steve	Morgan	M	Married_USA	smorgan@workday.net	2000-01-01	323559.59
21003	Oliver	Reynolds	M	Married_USA	oreynolds@workday.net	2000-01-01	392970.21
21004	Maximilian	Schneider	M	Married_USA	mschneider@workday.net	2000-01-01	242059.76
21005	Teresa	Serrano	F	Married_USA	tserrano@workday.net	2000-01-01	287472.76
21006	Maria	Cardoza	F	Single_USA	mcardoza@workday.net	2000-01-01	113434.97
21007	Jacqueline	Desjardins	F	Married_USA	jdesjardins@workday.net	2000-01-01	145594.93
21008	Betty	Liu	F	Married_USA	bliu@workday.net	2000-01-01	140076.89
21009	Pedro	Santiago	M	Married_USA	psantiago@workday.net	2000-01-01	154458.75

## SCOPE RULES

Many attributes (such as dateFormat or maxLength) are intended to be attached to elements of simple types and only apply to the elements to which they are attached. Others (such as target or truncate) can be attached to any element and their value is inherited by child elements. When working with an attribute such as **severity** which has a scope of element and all child elements a new value can be set at a lower level by simply reapplying the attribute as seen below.

```

<xsl:template match="ws:Worker_Sync">
    <File xtt:separator="&#xd;&#xa;" xtt:severity="warning" xtt:quotes="pipe-delimited" xt
        <xsl:apply-templates select="ws:Worker"/>
    </File>
</xsl:template>

<xsl:template match="ws:Worker" >
    <Record xtt:separator="|">
        <EmployeeID xtt:required="true" xtt:severity="error"><xsl:value-of select="ws:Summ
        <FirstName xtt:required="false"><xsl:value-of select="ws:Personal/ws:Name_Data/ws:
        <LastName xtt:required="false"><xsl:value-of select="ws:Personal/ws:Name_Data/ws:L
        <Gender xtt:required="true" xtt:severity="error"><xsl:value-of select="ws:Personal
        <MaritalStatus xtt:required="true" xtt:severity="error"><xsl:value-of select="ws:P

```

## CSV FORMATTING (DELIMITED FILE FORMATTING)

These attributes provide support for formatting documents in CSV format. The separator and quotes attributes are typically used together to indicate whether the separators are added. Both comma and pipe delimited formats can be created using a combination of the separator and quotes attributes. If other delimiters are required, the *quotesWhenMatches* attribute can be used to specify a regular expression that is used to determine if a value is quoted.

- quotes – Indicates whether the values from elements are included in quotes when displayed in the results. Possible values are “csv”, “pipe-delimited”, “always” and “never”.
- quoteStyle - Indicates whether to use single or double quotes when the results are quoted using the *quotes* attribute.
- separator – The characters to be added the output document between each of the child elements of the element that this attribute is attached to.

```

<xsl:template match="ws:Worker_Sync">
  <File xtt:separator="
" xtt:severity="warning" xtt:quotes="pipe-delimited" xtt:quoteStyle="single">
    <xsl:apply-templates select="ws:Worker"/>
  </File>
</xsl:template>

<xsl:template match="ws:Worker" >
  <Record xtt:separator="|">
    <EmployeeID xtt:required="true" xtt:severity="error"><xsl:value-of select="ws:Summary/ws:Employee_ID"/></EmployeeID>
    <FirstName xtt:required="false"><xsl:value-of select="ws:Personal/ws:Name_Data/ws:First_Name"/></FirstName>
    <LastName xtt:required="false"><xsl:value-of select="ws:Personal/ws:Name_Data/ws:Last_Name"/></LastName>
    <Gender xtt:required="true" xtt:severity="error"><xsl:value-of select="ws:Personal/ws:Gender"/></Gender>
    <MaritalStatus xtt:required="true" xtt:severity="error"><xsl:value-of select="ws:Personal/ws:Marital_Status"/></MaritalStatus>
  </Record>
</xsl:template>

```

By applying the xtt:separator attribute to the <Record> element, each child of <Record> will be separated by the indicated characters. In the above example xtt:separator is being used twice. The separator on the <File> element indicates that each record should be written out on a new line.

## HEADERS AND FOOTERS

When adding a header or footer to your output file remember that XTT and ETV require that your XSLT produce well-formed XML. Therefor the header and footer need to be added as an XML structure and not raw text such as in the following example:

```

<xsl:template match="ws:Worker_Sync">
  <File xtt:separator="
" xtt:severity="warn"
    <Header xtt:separator="|">
      <HeaderItem1>Employee ID</HeaderItem1>
      <HeaderItem2>First Name</HeaderItem2>
      <HeaderItem3>Last Name</HeaderItem3>
      <HeaderItem4>Gender</HeaderItem4>
      <HeaderItem5>Marital Status</HeaderItem5>
      <HeaderItem6>Email Address</HeaderItem6>
      <HeaderItem7>Hire Date</HeaderItem7>
      <HeaderItem8>Base Pay</HeaderItem8>
    </Header>
    <xsl:apply-templates select="ws:Worker"/>
  </File>
</xsl:template>

```

Note that there is no special processing around calling the elements <Header> or <Footer>, rather they are named as such for clarity purposes. What makes them a header or footer in your output is the placement within the XSLT. By placing the <Header> elements prior to the <xsl:apply-templates /> element the contents of the header will be written to the output prior to writing any of the record data.



## ACTIVITY 5.2 – DELIMITED FILE TRANSFORMATION

**Business Case:** Logan McNeil has been given a set of specifications for transforming the output of WICT\_HCM\_Workers into a pipe delimited file. You will modify the XSLT used in Activity 5.1 to remove all fixed length formatting related attributes and replace them with delimited formatting attributes. In addition you will add a header to the output.

### TASK #1: MODIFY THE ACTIVITY 5.1 XSLT FILE

1. Open the **Act 5\_1 XTT Fixed Length Formatting.xsl** file from activity 5.1 in your XML editor of choice. If you are uncomfortable modifying XSLT a solution file has been provided with all modifications in place.
2. Remove all fixed length formatting related attributes such as **fixedLength**, **align** and **reportTruncation**.
3. For the general file requirements the following attributes will need to be applied:

Attribute	Code Example
Quote Logic	xtt:quotes="pipe-delimited"
Quote Style	xtt:quoteStyle="single"

4. Modify the **<File>** element to add the necessary attributes to achieve the general file specifications.

Attribute	Value
Quote Logic	pipe-delimited
Quote Style	single

5. Between the **<File>** and **<xsl:apply templates select="ws:Worker">** elements, inject a **pipe delimited header** to your output. Example code is shown below:

```

<Header xtt:separator="|">
    <HeaderItem1>Employee ID</HeaderItem1>
    <HeaderItem2>First Name</HeaderItem2>
    <HeaderItem3>Last Name</HeaderItem3>
    <HeaderItem4>Gender</HeaderItem4>
    <HeaderItem5>Marital Status</HeaderItem5>
    <HeaderItem6>Email Address</HeaderItem6>

```

```

<HeaderItem7>Hire Date</HeaderItem7>
<HeaderItem8>Base Pay</HeaderItem8>
</Header>

```

6. Modify the **<Record>** element to add the necessary attribute to achieve the delimiter requirements.

Attribute	Code Example
Separator	xtt:separator=" "

7. For the field specific requirements the following attributes will need to be leveraged:

Attribute	Code Example
Required	xtt:required=" "
Severity	xtt:severity=" "

8. Modify the individual field elements to add and or change the necessary attributes to achieve the specification.

Field Name	Required	Severity
Employee ID	true	error
First name	false	
Last Name	false	
Gender	false	error
Marital Status	false	error
Email Address	false	
Hire Date	false	error
Total Base Annual Pay	false	error

\*Fields with no severity indicated means that the field will inherit the file level severity of warning

9. After making all necessary modifications save your file as **Act 5\_2 XTT Delimited Formatting.xls**

## TASK #2: EDIT THE INTEGRATION SERVICE ATTACHMENT OBJECT

1. Run the **Edit Integration Service Attachment** task

2. In the **Integration Service Attachment** field, select **All > Act 5\_1 XTT Fixed Length Formatting.xlsx**
3. Click **OK**
4. Click the **Trash Can** icon on the right side of the page to delete the current attached file.
5. Attach the **Act 5\_2 XTT Delimited Formatting.xlsx** by dropping the file onto the upload interface or click **Select files** and locate the file on your machine and click **Open**
6. Click **OK** and then **Done**

#### TASK #3: LAUNCH WICT\_HCM\_WORKERS

1. Search for and run the **Launch/Schedule Integration** task, entering the following information:

Field Name	Entry Value
Integration	WICT_HCM_Workers
Run Frequency	Run Now

2. Click **OK**
3. Specify the following Integration Criteria Launch parameters

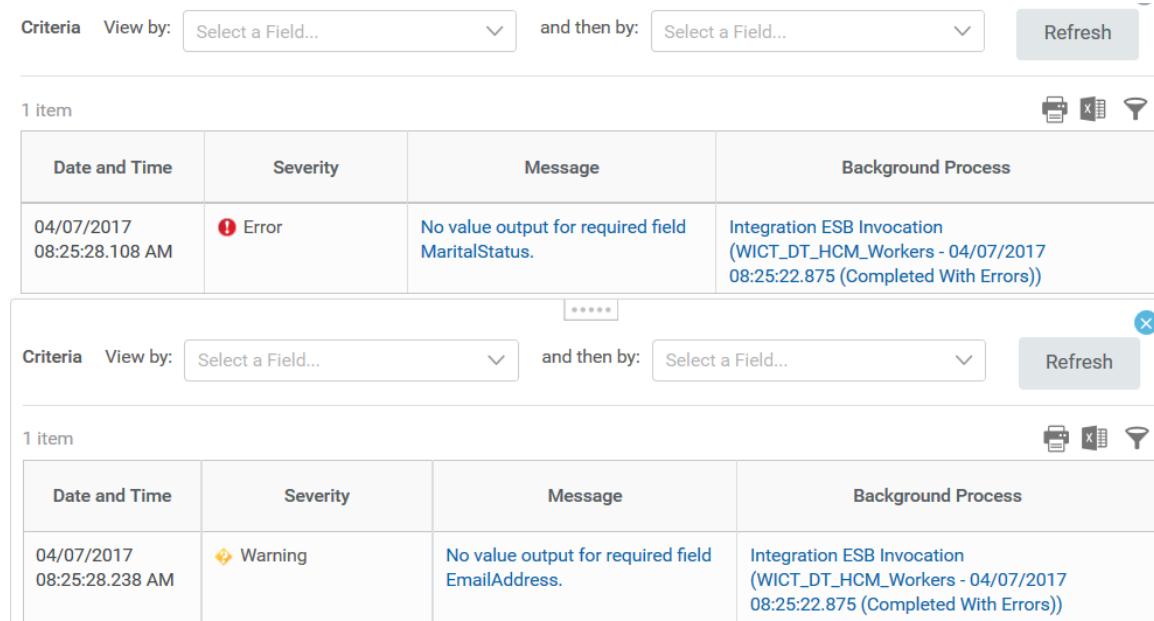
Field Name	Entry Value
As of Entry Moment	Use the Default Value
Effective Date	Use the Default Value
Last Successful As of Entry Moment	Use the Default Value
Last Successful Effective Date	Use the Default Value
Full File	Checked

4. Click **OK**
5. There will be no "Refresh" button so click on the Overall Process link to refresh. It will take a few moments to run to completion. (This is a Business Process Event, not an Integration Event)

#### TASK #4: REVIEW THE OUTPUT RESULTS

1. Scroll down to the **Subsequent Processes** section of the **View Event** page. Notice the Document Transformation step shows a status of **Completed with Errors**.

2. Click on the number **1** under **Number of Errors** and the number **1** under **Number of Warnings** to open the list of errors and warnings that occurred on the background process. These errors and warnings are a direct result of the validation attributes (xtt:required, xtt:severity) included in the XSLT and reflect the impact of scoping where the file level severity of warning has been overridden at the Marital Status field level to a severity of error.



The screenshot shows two separate tables of log entries. Each table has columns: Date and Time, Severity, Message, and Background Process.

**Table 1 (Errors):**

Date and Time	Severity	Message	Background Process
04/07/2017 08:25:28.108 AM	>Error	No value output for required field MaritalStatus.	Integration ESB Invocation (WICT_DT_HCM_Workers - 04/07/2017 08:25:22.875 (Completed With Errors))

**Table 2 (Warnings):**

Date and Time	Severity	Message	Background Process
04/07/2017 08:25:28.238 AM	Warning	No value output for required field EmailAddress.	Integration ESB Invocation (WICT_DT_HCM_Workers - 04/07/2017 08:25:22.875 (Completed With Errors))

3. To view the output files, scroll to the bottom of the **WICT\_HCM\_Workers Event to Event Document(s)**. Once the overall status of the event reaches Successfully Completed review both your XML file and your TXT file.



## XML FILE SCENARIO PART ONE



Logan McNeil has been tasked with transforming the output of the WICT\_HCM\_Workers integration system to produce an XML file per the requirements of the third party system. The final output should have a footer containing both a worker count and a sum of the total base pay.

The general file characteristics indicate that an overall severity of Warning should be used for failed validations unless otherwise specified at the field level. In addition Logan has been given internal directives that upon a failed validation the integration should capture both the name of the target and the Workday ID of the target that failed validation.

These are the field specific requirements of the transformed file:

Field Name	Required	Severity
EMPLOYEE ID	Yes	Error
FIRST NAME	No	
LAST NAME	No	
GENDER	Yes	Error
MARITAL STATUS	Yes	Error
EMAIL ADDRESS	Yes	
HIRE DATE	Yes	Error
TOTAL ANNUAL BASE PAY	Yes	Error
<b>*A BLANK SEVERITY INDICATES THAT THE FIELD WILL INHERIT THE FILE LEVEL SEVERITY</b>		

\*In addition to the general file structure requirements Logan has an internal requirement that upon a failed validation the integration should capture both the name of the target and the Workday ID of the target that failed validation.

In order to achieve these requirements you will need to make use of a variety of ETV (Element Transformation and Validation) attributes within your stylesheet. A baseline XSLT file has been provided as a starting point that you will edit to achieve the required output format.

### ELEMENT TRANSFORMATION AND VALIDATION

Element Transformation and Validation (ETV) transforms and validates the elements within an XML document as instructed by attributes attached to those elements. ETV is used when the end goal is to produce an XML file output.

### XSLT GENERAL TIP

When producing an XML output via your XSLT it is generally considered a good practice to ensure that unused namespaces are not output on the root element of your XML file. To prevent the unused namespaces from appearing, utilize the exclude-result-prefixes statement in your stylesheet declaration to suppress specific namespaces such as **exclude-result-prefixes="xs wd"** or suppress all unused namespaces by using **exclude-result-prefixes="#all"**. The following screenshots demonstrate the impact of exclude-result-prefixes.

#### Without exclude-result-prefixes

\*In this XSLT the ws and xsi namespaces are unused in the final output. Due to not including the exclude-result-prefixes statement the unused namespaces show up on the root element.

```
<xsl:stylesheet version="2.0" xmlns:xsl="http://www.w3.org/1999/XSL/Transform"
  xmlns:ws="urn:com:workday/workersync"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns:etv="urn:com:workday:etv">

  <?xml version="1.0" encoding="UTF-8"?>
  - <File xmlns:ws="urn:com:workday/workersync"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
    - <Record>
      <EmployeeID>21001</EmployeeID>
      <FirstName>Logan</FirstName>
      <LastName>McNeil</LastName>
      <Gender>F</Gender>
```

#### With exclude-result-prefixes

\*In this XSLT the ws and xsi namespaces are unused in the final output, however due to including the exclude-result-prefixes statement the unused namespaces no longer show up on the root element.

```
<xsl:stylesheet version="2.0" xmlns:xsl="http://www.w3.org/1999/XSL/Transform"
  xmlns:ws="urn:com:workday/workersync"
  exclude-result-prefixes="#all"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns:etv="urn:com:workday:etv">

  <?xml version="1.0" encoding="UTF-8"?>
  - <File>
    - <Record>
      <EmployeeID>21001</EmployeeID>
      <FirstName>Logan</FirstName>
      <LastName>McNeil</LastName>
      <Gender>F</Gender>
      <MaritalStatus>Married_USA</MaritalStatus>
      <EmailAddress>lmcneil2@workday.net</EmailAddress>
      <HireDate>2000-01-01</HireDate>
```

## ARITHMETIC ATTRIBUTES

These attributes provide a way to count the number of times an element occurs or to calculate the sum total of the values in a number of elements. The resulting number can then be placed into another element. This is a common requirement for text formats where a footer might be required to contain such totals. Each of these attributes contains the name of a variable or a comma separated list of variable names.

- addNumber – The value of the element is added to the existing value of the variable.
- incrementNumber – The value of the variable is incremented by one.
- number – The value of the element is replaced by the value of the variable.



Note: Element Transformation and Validation (ETV) and XML To Text (XTT) variables share scope as internal variables used by the Document Transformation Connector. The Document Transformation Connector prefixes its variables with 'dt'. To avoid conflicts, do not name your variables with a prefix of 'dt'.

```

<xsl:template match="ws:Worker_Sync">
  <File etv:severity="warning">
    <xsl:apply-templates />
    <Footer>
      <WorkerCount etv:number="totalCount" />
      <SumPay etv:number="totalSum" />
    </Footer>
  </File>
</xsl:template>

<xsl:template match="ws:Worker" >
  <Record etv:incrementNumber="totalCount">
    <EmployeeID etv:required="true" etv:severity="error"><xsl:value-of select="ws:Si
    <FirstName etv:required="false"><xsl:value-of select="ws:Personal/ws:Name_Data/v
    <LastName etv:required="false"><xsl:value-of select="ws:Personal/ws:Name_Data/w
    <Gender etv:required="true"><xsl:value-of select="ws:Personal/ws:Gender"/></Gen
    <EmailAddress etv:required="true" etv:severity="error"><xsl:value-of select="ws
    <HireDate etv:required="true" etv:severity="error"><xsl:value-of select="ws:Sta
    <BasePay etv:required="true" etv:severity="error" etv:addNumber="totalSum"><xsl
  </Record>
</xsl:template>

```

## ADDITIONAL VALIDATION ATTRIBUTES: TARGET AND TARGET WID

Workday provides attributes to apply validation rules to the contents of the element they are attached to and to provide control over the message that is reported when an element fails a validation rule.

- target – The target of the validation message. For example, when processing employee data, this would typically be the employee name.
- targetWID – The Workday ID of the target, this is used to provide a hyperlink in the message.

```
<xsl:template match="ws:Worker" >
<Record etv:incrementNumber="totalCount" etv:target="{ws:Summary/ws:Name}" etv:targetWID="{ws:Additional_Information/ws:WID}">
<EmployeeID etv:required="true" etv:severity="Error"><xsl:value-of select="ws:Summary/ws:Employee_ID"/></EmployeeID>
<FirstName etv:required="false"><xsl:value-of select="ws:Personal/ws:Name_Data/ws:First_Name"/></FirstName>
```

Criteria	View by:	Select a Field...	and then by:	Select a Field...	Refresh
Item					
Date and Time	Severity	Message	Target(s)	Background Process	
04/07/2017 09:03:31.735 AM	! Error	No value output for required field MaritalStatus. The following targets are affected: Stephen Peters, Joseph Finley, Joe Dunn, Maya Scott, Paul Walsh, and 5 more ...	Carrie Wong [H] Hank DeWitt [H] Joe Dunn [H] Joseph Finley [H] Maya Scott [H] <span style="color: blue;">+ More (5)</span>	Integration ESB Invocation (WICT_DT_HCM_Workers - 04/07/2017 09:03:26.822 (Completed With Errors))	



## ACTIVITY 5.3 – XML TRANSFORMATION PART 1

**Business Case:** Logan McNeil has been given a set of specifications for transforming the output of WICT\_HCM\_Workers into an XML file. The specification indicates that an overall severity level of warning should be used for all failed validations unless otherwise specified at the field level. In addition the specification indicates that the XML output should include a footer containing both a worker count and a sum total of all workers' annualized base pay. Lastly Logan has been given internal directives that upon a failed validation the integration should capture both the name of the target and the Workday ID of the target that failed validation.

### TASK #1: MODIFY THE RAW XSLT FILE

1. Locate the provided class files on your local machine and open the **Act 5\_3 Raw ETV XSLT.xsl** file in your XML editor of choice. If you are uncomfortable modifying XSLT a solution file has been provided with all modifications in place.
2. Modify the **<File>** element to add the necessary attributes to achieve the specification of an overall severity of **warning**.

Attribute	Code To Include
Severity	etv:severity=" "

3. Immediately following the **<xsl:apply-templates select="ws:Worker">** element, add a **footer** to your output using the code shown below:

```
<Footer>
    <WorkerCount etv:number="totalCount"/>
    <SumPay etv:number="totalSum" />
</Footer>
```

4. Modify the **<Record>** element to add the necessary attributes to capture a total record count as well as the target and Workday ID of targets that fail validation.

Attribute	Code To Include
Increment Number	etv:incrementNumber=" "
Target	etv:target="{ws:Summary/ws:Name}"
Target WID	etv:targetWID="{ws:Additional_Information/ws:WID}"

5. For the field specific requirements the following attributes will need to be applied to each field element where necessary.

Attribute	Code Example
Required	etv:required=" "
Severity	etv:severity=" "
Add Number	etv:addNumber=" "

6. Modify the individual field elements to add the necessary attributes to achieve the specification.

Field Name	Required	Severity	addNumber
Employee ID	Yes	Error	N/A
First name	No		N/A
Last Name	No		N/A
Gender	Yes	Error	N/A
Marital Status	Yes	Error	N/A
Email Address	Yes		N/A
Hire Date	Yes	Error	N/A
Total Annual Base Pay	Yes	Error	totalSum

\*A field with no severity indicate means that the field will inherit the file level severity of warning

7. After making all modifications save your file as **Act 5\_3 ETV XML Formatting.xsl**

## TASK #2: CREATE A NEW DOCUMENT TRANSFORMATION INTEGRATION SYSTEM

1. Run the **Create Integration System** task
2. Enter a **System Name** of **WICT\_DT\_HCM\_Workers\_ETV**
3. In the **Comment** box enter a simple description for the integration system
4. From the **New using Template** radio button, select the **By Integration Template Category>Integration > Document Transformation**
5. Click **OK**

## TASK #3: CONFIGURE THE INTEGRATION SERVICE ATTACHMENT (XSLT WITH ETV)

1. From the integration system's **Related Actions** icon, select **Integration System > Configure Integration Attachment Service**
2. In the **Attachment** field select **Create Integration Service Attachment**

3. Attach the **Act 5\_3 ETV XML Formatting.xsl** by dropping the file onto the upload interface or click **Select files** and locate the file on your machine and click **Open**
4. Click **OK** twice

#### TASK #4: CONFIGURE AN OUTPUT DOCUMENT TAG

1. From the integration system's **Related Actions** icon, select **Integration System > Configure Integration Attributes**
2. Click on the **+** sign to add a row next to **Output Document Tags**.
3. In the **Value** field select **Create Document Tag**.
4. Enter **WICT\_HCM\_Workers\_List\_ETV**
5. Click **OK** twice

#### TASK #5: CONFIGURE THE INTEGRATION SEQUENCE GENERATOR

1. To configure the Integration Sequence Generator use the integration system's **Related Actions** icon to select **Integration System > Configure Integration Sequence Generators**
2. Configure the following values:

Field Name	Entry Value
Increment By	1
Format/Syntax	YOUR INITIALS_DT_HCMWorker_List_ETV_[Seq].xml

3. Click **OK** and **Done**.

#### TASK #6: MODIFY THE CORE CONNECTOR WORKER BUSINESS PROCESS

1. Navigate to your Core Connector Worker integration system business process by searching for **bp:WICT** and selecting **Integration Process Event for WICT\_HCM\_Workers (TOP LEVEL)**
2. View the definition of the business process using the business process' **Related Actions** icon to select **Business Process > View Definition**
3. Accept **today** as the **Effective Date** and click **OK**
4. Click **Configure WICT\_DT\_HCM\_Workers\_XTT**
5. In the **Integration** field, select **WICT\_DT\_HCM\_Workers\_ETV**

6. Click **OK**
7. In the **Run as User** field, select **lmcneil**
8. Click **OK**

#### TASK #7: MODIFY THE DOCUMENT DELIVERY STEP

1. Navigate back to the business process definition by clicking on the **Business Process Definition** link as seen below.

View Workflow Step **Integration Process Event for WICT\_HCM\_Workers (TOP LEVEL)** step b2 - Integration 

Business Process Definition	<b>Integration Process Event for WICT_HCM_Workers (TOP LEVEL)</b>
Order	b2

2. Click **Configure Document Delivery**
3. Accept **today** as the **Effective Date** and click **OK**
4. Under **Document(s)** select **From Specific Integration Step(s)** and select **Integration Process Event for WICT\_HCM\_Workers (TOP LEVEL) step b2 – Integration**
5. Under **Document Filter(s)** in the **Tagged** field select **WICT\_HCM\_Workers\_List\_ETV**
6. Click **OK** then **Done**

#### TASK #8: LAUNCH WICT\_HCM\_WORKERS

1. Search for and run the **Launch/Schedule Integration** task, entering the following information:

Field Name	Entry Value
Integration	WICT_HCM_Workers
Run Frequency	Run Now

2. Click **OK**
3. Specify the following Integration Criteria Launch parameters

Field Name	Entry Value
As of Entry Moment	Use the Default Value
Effective Date	Use the Default Value
Last Successful As of Entry Moment	Use the Default Value
Last Successful Effective Date	Use the Default Value
Full File	Checked

4. Click **OK**
5. There will be no "Refresh" button so click on the Integration Event name to refresh. It will take a few moments to run to completion. (This is a Business Process Event, not an Integration Event)

#### TASK #9: REVIEW THE OUTPUT RESULTS

1. Scroll down to the **Subsequent Processes** section of the **View Event** page. Notice the Document Transformation step shows a status of **Completed with Errors**.
2. Click on the number **1** under **Number of Errors** and the number **1** under **Number of Warnings** to open the list of errors and warnings that occurred on the background process. Notice the error messages have been enhanced to include the target of the failed validation.
3. To view the output files, scroll to the bottom of the **WICT\_HCM\_Workers Event** to **Event Document(s)**. Notice you can follow the results of each Business Process Step. Once the overall status of the event reaches Successfully Completed review your XML file.



## XML FILE SCENARIO PART TWO



Logan McNeil has been tasked with adding conditional logic to the XSLT for the WICT\_DT\_HCM\_Workers\_ETV integration system to omit records that fail the validation on the Marital Status field. In addition Logan has been given additional requirements around formatting the numeric and date fields.

Logan will leverage the XSLT used in activity 5.3 as a starting point for the ETV document transformation system. The general file characteristics remain the same as activity 5.3 in regard to severity and the reporting of failed validations however a new requirement has been added to omit records from the output that are missing a value for the **Marital Status** field. In addition when the Marital Status field fails validation a custom error message should be returned into the integration event.

Per the specification the following field will need to be added to the output:

Field Name	Required	Severity
ORIGINAL HIRE DATE	Yes	Error

The following field level requirements have been added to the specification (Please note that only fields experiencing a change from the prior specification are listed below):

Field Name	Format
HIRE DATE	dd/MM/yyyy
ORIGINAL HIRE DATE	dd/MM/yyyy
TOTAL ANNUAL BASE PAY	#,###.00 Grouping Separator = "." Decimal Separator = ","

To improve maintainability of the XSLT Logan has been asked to implement the number and date formatting by leveraging classes. In order to achieve these requirements you will need to make use of a variety of ETV (Element Transformation and Validation) attributes within your stylesheet.

### FORMATTING DATES

The following attributes allow a date or dateTime format to be specified. The element values provided as input to the steps should be formatted as defined by the XML Schema specification. The values will be converted to the format specified in the attributes.

- dateFormat – The date format pattern, for example “yyyyMMdd”.
- dateTimeFormat – The date time format pattern, for example “yyMMdd:HH:mm:ss”.
- timezone – The timezone to be used when creating the value for the output document, for example “PST”.

## FORMATTING NUMBERS

The following attributes allow a number format to be specified.

- decimalSeparator – The decimal separator character.
- groupingSeparator – The grouping separator character.
- numberFormat – The number format pattern, for example “#,###.00”.
- scale – The position of an implied decimal place in the formatted value.

```
<HireDate etv:required="true" etv:severity="error" etv:dateFormat="dd/MM/yyyy">
  <xsl:value-of select="ws>Status/ws:Hire_Date"/>
</HireDate>
<OriginalHireDate etv:required="true" etv:severity="error" etv:dateFormat="dd/MM/yyyy">
  <xsl:value-of select="ws>Status/ws:Original_Hire_Date"/>
</OriginalHireDate>
<BasePay etv:required="true" etv:severity="error" etv:addNumber="totalSum"
  etv:decimalSeparator=", " etv:groupingSeparator=". " etv:numberFormat="#,###.00">
  <xsl:value-of select="ws:Compensation/ws:Total_Annual_Base_Pay"/>
</BasePay>
```

## GROUPED ATTRIBUTES

The *class* element allows one or more *attributes* to be defined as part of a class. The *class* attribute can then be used as a convenient way to apply all of those attributes. The attributes included in the *class* element are only applied to the element that the *class* attribute is attached to regardless of the scoping rules for the original attribute. The *class* attribute can be used in conjunction with other attributes. An attribute placed directly on an element will take precedence over the same within the class.

```
<File etv:severity="warning">
  <etv:class etv:name="FormatDates" etv:dateFormat="dd/MM/yyyy" />
  <etv:class etv:name="FormatNumbers" etv:numberFormat="#,###.00"
    etv:decimalSeparator=", " etv:groupingSeparator=". "/>
  <xsl:apply-templates select="ws:Worker"/>

<HireDate etv:required="true" etv:severity="error" etv:class="FormatDates">
  <xsl:value-of select="ws>Status/ws:Hire_Date"/>
</HireDate>
<OriginalHireDate etv:required="true" etv:severity="error" etv:class="FormatDates">
  <xsl:value-of select="ws>Status/ws:Original_Hire_Date"/>
</OriginalHireDate>
<BasePay etv:required="true" etv:severity="error" etv:addNumber="totalSum"
  etv:class="FormatNumbers">
  <xsl:value-of select="ws:Compensation/ws:Total_Annual_Base_Pay"/>
</BasePay>
```

## TEXT INSERTION AND REMOVAL ATTRIBUTES

These attributes allow additional text to be added before or after an element when it is converted to a text document, and allow for the removal of an element's content. These attributes can be useful when creating documents that use more complex text file formats such as EDI.

- **endTag** – The contents of the attribute will be placed after the value of the element in the output document.
- **omit** – The contents of the element will not be copied to the output document. This attribute will be covered in a later section.
- **startTag** – The contents of the attribute will be placed before the value of the element in the output document.

```
<xsl:template match="ws:Worker">
  <xsl:choose>
    <xsl:when test="not(ws:Personal/ws:Marital_Status)">
      <MaritalStatus etv:target="{ws:Summary/ws:Name}" etv:targetWID="{ws:Additional_Information/ws:WID}"
        etv:name="Marital Status field is missing a value. Please go to the worker record and provide a
        etv:required="true" etv:omit="true" etv:severity="ERROR">
        <xsl:value-of select="ws:Personal/ws:Marital_Status"/>
      </MaritalStatus>
    </xsl:when>
    <xsl:otherwise>
      <Record etv:incrementNumber="totalCount" etv:target="{ws:Summary/ws:Name}" etv:targetWID="{ws:Addit:
```

## CHAINING ETV WITH XTT SCENARIO



Logan McNeil has been tasked with implementing two different document transformation systems to process the output of the WICT\_HCM\_Workers integration system. The first transformation will use ETV and be responsible for validations, while the second transformation will use XTT and be responsible for final formatting into a comma delimited file.

The general file characteristics remain the same as activity 5.4 in regard to severity and the reporting of failed validations however all formatting attributes will be migrated into the XTT transformation.

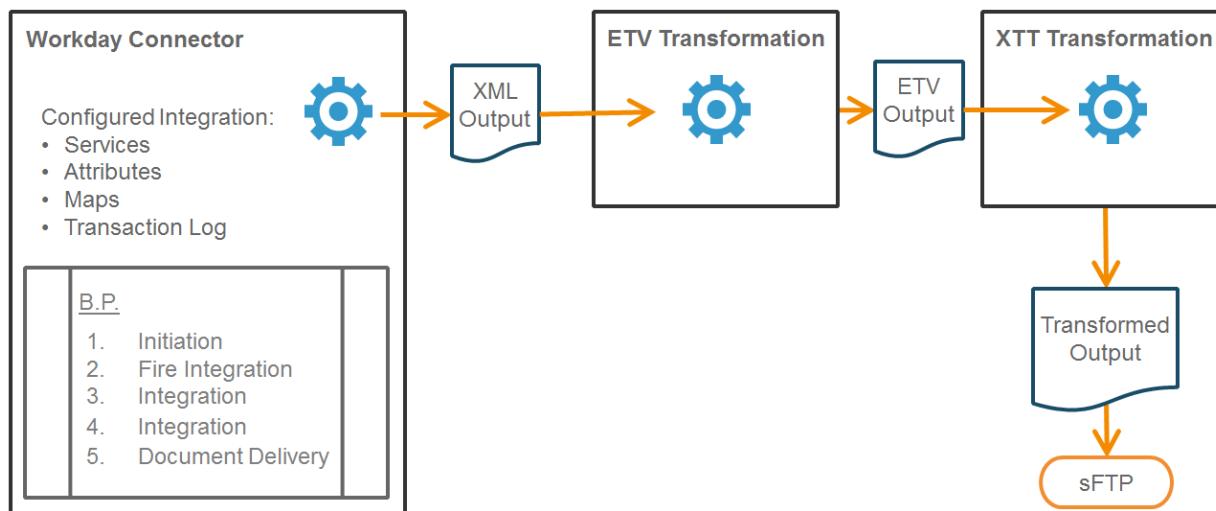
For the XTT transformation Logan has been given specifications that the output should be comma delimited, including a comma delimited header. In addition the output should include a header showing the worker count, the total base pay and an average base pay. Lastly Logan has been given the following field level requirements:

Field Name	Format
FIRST NAME	Upper Case
LAST NAME	Upper Case
EMAIL ADDRESS	Lower Case
HIRE DATE	dd/MM/yyyy
ORIGINAL HIRE DATE	dd/MM/yyyy
TOTAL ANNUAL BASE PAY	#,###.00 Decimal Separator = "," Grouping Separator = "."

In order to achieve these requirements you will need to make use of a variety of XTT attributes within your stylesheet as well as some XSLT functions to achieve the case manipulation. For this activity both XSLT files will be provided in full so that you can focus on the workflow.

## Chaining Document Transformation Systems

Previously we looked at how a business process could be used to separate the execution of the integration itself from the act of retrieving or delivering files. We have looked at how we could chain a Core Connector integration to a Document Transformation System. Now we will look at how we can use a business process to chain together two document transformation systems together post connector output.



In the above workflow there are three integration systems in play. The Workday Connector system is the primary system and will be in control of the entire workflow. This system is where the business process will be created and configured. The order post connector output will always be ETV then XTT due to the file types produced, ETV produces XML which can then further be transformed, where XTT produces text and cannot be further transformed. The steps involved in the workflow are as follows:

1. When the integration system is launched steps one and two of the business process are executed. The initiation step starts up the various background services and then the Workday Connector fires and produces an XML output.
2. Once the Workday Connector output is produced, step three is executed which calls the ETV document transformation system. When the integration fires the XML input (Workday Connector Output) and the XSLT that has been attached via the Integration Service Attachment object are handed off to the XSLT processor which produces a transformed XML output.
3. After the completion of step three, step four executes which calls the XTT document transformation system. This system takes the ETV output XML and transforms it to produce a text file.
4. Finally, once step four returns that it has completed step five kicks in to deliver the final transformed output (XTT Text Output).

In this process there are multiple files in scope of the business process event. Document tags will need to be leveraged in order to differentiate between the Workday Connector output, the ETV XML output and the XTT text output. In this scenario the intermediate file (ETV XML Output) will need a unique tag to ensure the secondary document transformation system

processes the appropriate XML file. This will be achieved by configuring an Output Document Tag on the ETV system and then associating that same tag as the Input Document Tag on the XTT system.

### TEXT INSERTION AND REMOVAL ATTRIBUTES

These attributes allow additional text to be added before or after an element when it is converted to a text document, and allow for the removal of an element's content. These attributes can be useful when creating documents that use more complex text file formats such as EDI.

- **endTag** – The contents of the attribute will be placed after the value of the element in the output document.
- **omit** – The contents of the element will not be copied to the output document. This attribute will be covered in a later section.
- **startTag** – The contents of the attribute will be placed before the value of the element in the output document.

```
<Footer>
    <TotalBasePay xtt:startTag="Total base pay = " xtt:endTag=" for " xtt:class="FormatNumbers">
        <xsl:value-of select="Footer/SumPay"/>
    </TotalBasePay>
    <TotalWorkerCount xtt:endTag=" total workers, results in an average salary of ">
        <xsl:value-of select="Footer/WorkerCount"/>
    </TotalWorkerCount>
    <AverageSalary xtt:class="FormatNumbers">
        <xsl:value-of select="Footer/SumPay div Footer/WorkerCount"/>
    </AverageSalary>
</Footer>
```

The code above would result in a footer as follows:

```
21265,SETH,VALENCIA,M,,,01/01/2016,18/04/2011,,00
21269,CARRIE,WONG,F,,cwong@workday.net,01/06/2014,15/08/2011,,00
21324,EMMA,ROSE,F,Single_USA,,01/09/2014,10/09/2012,,00
21327,CORINNE,CRONIN,F,Single_USA,,01/05/2014,01/05/2013,,00
21328,MICHAEL,WILSON,M,Married_USA,,01/05/2014,01/05/2013,,00
21329,SANDRA,MYERS,F,Single_USA,,01/05/2014,01/05/2013,,00
21413,JENNIFER TROUTMAN,F,Married_USA,jennie.troutman@workday.net,01/01/2016,01/01/2016,,00
Total base pay = 22.188.852,72 for 181 total workers, results in an average salary of 122.590,35
```



## ACTIVITY 5.4 – CHAINING ETV AND XTT

**Business Case:** You will implement two different document transformation systems to process the output of the WICT\_HCM\_Workers integration system. The first transformation will use ETV and be responsible for validations, while the second transformation will use XTT and be responsible for final formatting into a comma delimited file.

### TASK #1: EDIT THE ETV INTEGRATION SERVICE ATTACHMENT OBJECT

1. Run the **Edit Integration Service Attachment** task
2. In the **Integration Service Attachment** field, select **All > Act 5\_3 ETV XML Formatting.xsl**
3. Click **OK**
4. Click the **Trash Can** icon on the right side of the page to delete the current attached file.
5. Attach the **Act 5\_4 ETV XML Formatting.xsl** by dropping the file onto the upload interface or click **Select files** and locate the file on your machine and click **Open**
6. Click **OK** and then **Done**

### TASK #2: EDIT THE XTT INTEGRATION SERVICE ATTACHMENT OBJECT

1. Run the **Edit Integration Service Attachment** task a second time.
2. In the **Integration Service Attachment** field, select **All > Act 5\_2 XTT Delimited Formatting.xsl**
3. Click **OK**
4. Click the **Trash Can** icon on the right side of the page to delete the current attached file.
5. Attach the **Act 5\_4 XTT Formatting.xsl** by dropping the file onto the upload interface or click **Select files** and locate the file on your machine and click **Open**
6. Click **OK** and then **Done**

### TASK #3: MODIFY THE CORE CONNECTOR WORKER BUSINESS PROCESS

1. Navigate to your Core Connector Worker integration system business process by searching for **bp:WICT** and selecting **Integration Process Event for WICT\_HCM\_Workers (TOP LEVEL)**
2. Edit the definition of the business process using the business process' **Related Actions** icon to select **Business Process > Edit Definition**
3. Accept **today** as the **Effective Date** and click **OK**
4. Click the **+** sign to add a new step to the business process and configure as follows:

Field Name	Entry Value
Order	b3
Type	Integration

5. Click **OK**
6. Click **Configure Integration System**
7. In the **Integration** field, select **WICT\_DT\_HCM\_Workers\_XTT**
8. Click **OK**
9. In the **Run as User** field, select **Imcneil**
10. Click **OK**

### TASK #4: MODIFY THE DOCUMENT DELIVERY STEP

1. Navigate back to the business process definition by clicking on the **Business Process Definition** link as seen below.

View Workflow Step **Integration Process Event for WICT\_HCM**

Business Process Definition	<a href="#">Integration Process Event for WICT_HCM_Workers (TOP LEVEL)</a>
Order	b3
Type	Integration
Run As User	Imcneil / Logan McNeil

2. Click **Configure Document Delivery**
3. Accept **today** as the **Effective Date** and click **OK**
4. Under **Document(s)** select **From Specific Integration Step(s)** and select **Integration Process Event for WICT\_HCM\_Workers (TOP LEVEL) step b3 – Integration (WICT\_DT\_HCM\_Workers\_XTT)**
5. Under **Document Filter(s)** in the **Tagged** field remove **WICT\_HCM\_Workers\_List\_ETV** and then select **WICT\_HCM\_Workers\_List\_XTT**
6. Click **OK** then **Done**

**TASK #5: MODIFY THE WICT\_DT\_HCM\_WORKERS\_XTT INTEGRATION SYSTEM INPUT DOCUMENT TAG**

1. Navigate to the **WICT\_DT\_HCM\_Workers\_XTT** integration system by searching for **intsys:WICT** and selecting **WICT\_DT\_HCM\_Workers\_XTT**
2. From the integration system's **Related Actions** icon, select **Integration System > Configure Integration Attributes**
3. Next to **Input Document Tags** click the **+** sign to add a new row
4. Click the **prompt** and select **WICT\_HCM\_Workers\_List \_ETV**
5. Click **OK** and **Done**

**TASK #6: LAUNCH WICT\_HCM\_WORKERS**

1. Search for and run the **Launch/Schedule Integration** task, entering the following information:

Field Name	Entry Value
Integration	WICT_HCM_Workers
Run Frequency	Run Now

2. Click **OK**
3. Specify the following Integration Criteria Launch parameters

Field Name	Entry Value
As of Entry Moment	Use the Default Value
Effective Date	Use the Default Value
Last Successful As of Entry Moment	Use the Default Value

Last Successful Effective Date	Use the Default Value
Full File	Checked

4. Click **OK**
5. There will be no "Refresh" button so click on the Overall Process link to refresh. It will take a few moments to run to completion. (This is a Business Process Event, not an Integration Event)

#### TASK #7: REVIEW THE OUTPUT RESULTS

1. To view the output files, scroll to the bottom of the **WICT\_HCM\_Workers Event to Event Document(s)**. Open the output of both the ETV transformation and the XTT transformation. Notice the footer in the XTT output that reflects the use of both the **xtt:startTag** and **xtt:endTag** attributes. Also notice the output of both first name and last name have been converted to upper case due to the use of an XSLT function.



## DOCUMENT TRANSFORMATION WITH AN INBOUND CONNECTOR



Logan McNeil has been tasked with transforming an inbound file containing organization updates. While the incoming file is XML, it is not in the format required by the Organization Inbound Connector. In addition there are some fields missing from the incoming file due to the external system not tracking them. Lastly some of the data values need to be mapped from the external system values to Workday internal values.

Logan will leverage the Organization Inbound connector created in activity 3.1 to process the incoming file. However the incoming file is a generic XML file that does not adhere to the schema required by the connector. To process this file, Logan will need to inject a document transformation step into the workflow prior to the inbound connector firing to transform the incoming file to the correct format.

To avoid hard coding the missing values into the XSLT, Logan will make use of custom integration attributes to pass the values from the document transformation system into the transformation itself. For fields where the external system uses a different value from Workday, an integration map will be used to remap the values.

### INTEGRATION VALUE ATTRIBUTES

These attributes replace the value of an element with a value from the integration system associated with the integration that the step is used in. Integration attributes, launch parameters, or integration maps that are defined using report fields can contain references to objects as opposed to simple types. If a reference is found, the Element Transformation and Validation (ETV) step places a reference id in the output file.

- **attribute** – The name of an integration attribute. The element value is replaced with the value from the integration attribute.
- **direction** – The direction that the integration map is applied in. This attribute controls whether the map attribute uses an integration map to convert an internal Workday value to an external value or the other way around.
- **launchParameter** – The name of a launch parameter. The element value is replaced with the value from the launch parameter.
- **map** – The name of an integration map. The element value is replaced with the equivalent value as specified in the integration map.
- **mapAlternateValue** – If the integration map named by the map attribute is empty, then the value of the alternate output value named in this attribute is used.
- **mapAppliedOnEmptyInput** – If this attribute is set to true, then the integration map is applied even when there is no input value.
- **mapReferenceID** – If the integration map named by the map attribute is empty, then the value of the reference id named in this attribute is used.
- **sequencedValue** - The name of a sequenced value. The element value is replaced with the value from the sequenced value.

### INTEGRATION MAPS

- **map** – The name of an integration map. The element value is replaced with the equivalent value as specified in the integration map.

- **direction** - The direction that the integration map is applied in. This attribute controls whether the map attribute uses an integration map to convert an internal Workday value to an external value or the other way around.

You can validate the values available by using the enumeration attribute.

- **enumeration** – A comma separated list of values. The element must contain one of the values listed.

Using the **Maintain Integration Maps** task off of the related action menu of an integration system, you can create an integration system map.

Integration Maps 1 item						
	Map	Order	*Name	Description	*Internal Value Type	*External Value Type
<input type="button" value="+"/>	<input type="button" value="-"/>	<input type="button" value="▼"/>	OrgSubtypeMap		<input checked="" type="radio"/> Enumeration <input type="radio"/> Data Type Text	<input checked="" type="radio"/> Enumeration <input type="radio"/> Data Type search Text
Option(s)						Option(s)

If using a list, you will need to manually build the new Enumeration list of possible internal values.

Once this list is created, you can map the internal values with the external value expected in the output. Use the related action menu of the integration system to navigate to **Integration System > Configure Integration Maps**

	Map	Description	Default Value	Map Values	
				Internal Value	External Value
<input type="button" value="+"/>	OrgSubtypeMap				
<input type="button" value="-"/>				Department	2
<input type="button" value="-"/>				Division	1
<input type="button" value="-"/>				Group	3

To leverage the integration within your XSLT, apply the map attribute to the relevant element and specify the direction the map should be applied. Typically if the integration is outbound the direction will be out and if the integration is inbound the direction will be in.

```

<org:Availability_Date etv:attribute="OrgAvailableDate"></org:Availability_Date>
<org:Include_Organization_Code_In_Name etv:attribute="IncludeOrgCodeInName" />
<org:Organization_Code><xsl:value-of select="Code" /></org:Organization_Code>
<org:Organization_Type_Name><xsl:value-of select="Type" /></org:Organization_Type_Name>
<org:Organization_Subtype_Name etv:map="OrgSubtypeMap" etv:direction="in"><xsl:value-of select="Subtype" /></org:Organization_Subtype_Name>
<org:Organization_Visibility_Name><xsl:value-of select="Visibility" /></org:Organization_Visibility_Name>

```

## INTEGRATION ATTRIBUTES

If you need a hardcoded value for reference in your XSLT such as a Customer ID, exclusion or inclusion filters or Static values you can leverage integration system attributes. This gives you the ability to change the value while not prompting for a value every time the integration system is launch. Most importantly, it avoids hardcoded values in your XSLT.

- **attribute** – The name of an integration attribute. The element value is replaced with the value from the integration attribute.

Using the **Maintain Integration Attributes** task off of the related action menu of an integration system, you can create new integration system attributes.

Maintain Integration Attributes WICT_DT_Add_Org_Connector <a href="#">Actions</a>						
Integration Attributes 2 items						
+	Attribute	Order	*Name	Description	*Attribute Type	Multi-Select
+		▼ ▲	IncludeOrgCodeInName		<input type="radio"/> Enumeration <input type="text"/> <input checked="" type="radio"/> Data Type <input type="text" value="Boolean"/>	
+		▲ ▼	OrgAvailableDate		<input type="radio"/> Enumeration <input type="text"/> <input checked="" type="radio"/> Data Type <input checked="" type="checkbox" value="Date"/>	<input checked="" type="checkbox" value="Required for Launch"/>

Once an attribute is created, you can define the value of the attribute using the related action menu of the integration system to navigate to **Integration System > Configure Integration Attributes**.

WICT_DT_Add_Org_Connector				
	IncludeOrgCodeInName		Required for Launch	<input type="checkbox"/> <input checked="" type="checkbox"/>
	OrgAvailableDate		Required for Launch	<input type="checkbox"/> <input checked="" type="checkbox"/>

Within ETV/XTT **Attribute** replaces the value of an element with a value from the Integration System. Attributes may be declared as a parameter or called directly in the output of the stylesheet.

## EXAMPLE: USING AN ATTRIBUTE DIRECTLY IN THE OUTPUT

```
<org:Availability_Date etv:attribute="OrgAvailableDate"></org:Availability_Date>
<org:Include_Organization_Code_In_Name etv:attribute="IncludeOrgCodeInName" />
<org:Organization_Code><xsl:value-of select="Code" /></org:Organization_Code>
<org:Organization_Type_Name><xsl:value-of select="Type" /></org:Organization_Type_Name>
<org:Organization_Subtype_Name etv:map="OrgSubtypeMap" etv:direction="in"><xsl:value-of select="Subtype" /></org:Organization_Subtype_Name>
<org:Organization_Visibility_Name><xsl:value-of select="Visibility" /></org:Organization_Visibility_Name>
```

## EXAMPLE: USING AN ATTRIBUTE AS A PARAMETER

```
<xsl:template match="root">
  <xsl:param name="attr_IncludeOrgCodeInName"/></xsl:param>
  <org:External_Organization_Inbound_Records>
    <xsl:for-each select="organization">
      <org:External_Organization_Inbound_Record>
        <org:Organization_Reference_ID><xsl:value-of select="ID" /></org:Organization_Reference_ID>
        <org:Organization_Name><xsl:value-of select="Name" /></org:Organization_Name>
        <org:Availability_Date etv:attribute="OrgAvailableDate"></org:Availability_Date>
        <org:Include_Organization_Code_In_Name><xsl:value-of select="$attr_IncludeOrgCodeInName" /></xsl:value-of>
        <org:Organization_Code><xsl:value-of select="Code" /></org:Organization_Code>
```



## ACTIVITY 5.5 – TRANSFORM AN INBOUND XML FILE

**Business Case:** You will configure a new document transformation integration system to transform the XML input for your Core Connector: Inbound Organization system. The incoming file is missing some of the required fields so you will leverage integration attributes to provide those values without hardcoding them into the XSLT.

### TASK #1: VERIFY THE DATA DOESN'T ALREADY EXIST

1. For this activity we will be loading three new Supervisory Organizations, **Sales Support**, **Sales Support - North America** and **Sales Support – South America**. Search the tenant (All of Workday) for **org:Sales Support**. Notice that none of the organizations exist. These organizations will be loaded using our Core Connector: Inbound Organization integration system once the incoming data has been transformed to the appropriate format.

### TASK #2: CREATE THE INBOUND INTEGRATION

1. Run the **Create Integration System** task, and enter the following information:
2. Enter a **System Name** of **WICT\_DT\_Add\_Org\_Connector**
3. In the **Comment** box enter a simple description for the integration system
4. From the **New using Template** radio button, select the **By Integration Template Category>Integration > Document Transformation**
5. Click **OK**

### TASK #3: CONFIGURE THE INTEGRATION SERVICE ATTACHMENT

1. From the integration system's **Related Actions** icon, select **Integration System > Configure Integration Attachment Service**
2. In the **Attachment** field select **Create Integration Service Attachment**
3. Attach the **Act 5\_5 ETV Inbound Formatting.xsl** by dropping the file onto the upload interface or click **Select files** and locate the file on your machine and click **Open**
4. Click **OK** twice

## TASK #4: CONFIGURE THE DOCUMENT TAGS

1. From the integration system's **Related Actions** icon, select **Integration System > Configure Integration Attributes**
2. Next to **Input Document Tags** click the + sign to add a new row
3. Click the **prompt** and select **OrgUpdates**
4. Next to **Output Document Tags** click the + sign to add a new row
5. Click the **prompt** and select **Create Document Tag**
6. Enter a value of **TransformedOrgUpdates** and click **OK**
7. Click **OK** to save your Integration Attributes and return to the **View Integration System** page.

## TASK #5: CREATE THE CUSTOM INTEGRATION MAP

1. From the integration system's **Related Actions** icon, select **Integration System > Maintain Integration Maps**
2. Configure the map as follows:

Field Name	Entry Value
Name	OrgSubtypeMap
Internal Value Type / Data Type	Basic Attributes > Text
External Value Type / Data Type	Text

3. Click **OK**



**Note:** If you are not returned to your integration system navigate back to it by searching for *intsys:WICT* and selecting the **WICT\_DT\_Add\_Org\_Connector** integration system.

## TASK #6: CONFIGURE THE CUSTOM INTEGRATION MAP

1. From the integration system's **Related Actions** icon, select **Integration System > Configure Integration Maps**
2. Click the + sign three times to add three rows to the **OrgSubtypeMap**.



Note: You will not be mapping all possible values for Subtype, just those values the integration will be using in this activity.

3. Map the values as follows:

Internal Value	External Value
Department	1
Division	2
Group	3

	Map	Description	Default Value	Map Values	
				Internal Value	External Value
	OrgSubtypeMap			<input type="button" value="⊕"/>	
				<input type="button" value="⊖"/>	<input type="text" value="Department"/> 1
				<input type="button" value="⊖"/>	<input type="text" value="Division"/> 2
				<input type="button" value="⊖"/>	<input type="text" value="Group"/> 3

4. Click **OK**

#### TASK #7: CREATE THE CUSTOM INTEGRATION ATTRIBUTES

1. From the integration system's **Related Actions** icon, select **Integration System > Maintain Integration Attributes**
2. Click the **+** sign to add an additional row to the Integration Attributes list.
3. Configure the attributes as follows:

	Field Name	Entry Value
Attribute 1	Name	OrgAvailableDate
	Data Type	Basic Attributes > Date
	Options	Required for Launch
Attribute 2	Name	IncludeOrgCodeInName
	Date Type	Basic Attributes > Boolean

4. Click **OK** and **Done**

## TASK #8: CONFIGURE THE CUSTOM INTEGRATION ATTRIBUTES

1. From the integration system's **Related Actions** icon, select **Integration System > Configure Integration Attributes**
2. Scroll to the bottom of the attribute list to find your custom integration attributes and configure by clicking the **plus** sign and providing the following values for each:

Field	Value
IncludeOrgCodeInName	Checked
OrgAvailableDate	Today's Date

3. Click **OK**

## TASK #9: MODIFY THE WICT\_ADD\_ORG\_CONNECTOR INTEGRATION BUSINESS PROCESS

1. Navigate to your Core Connector Organization Inbound integration system business process by searching for **bp:WICT** and selecting **Integration Process Event for WICT\_Add\_Org\_Connector (TOP LEVEL)**
2. Edit the definition of the business process using the business process' **Related Actions** icon to select **Business Process > Edit Definition**
3. Accept **today** as the **Effective Date** and click **OK**
4. Click the **+** sign to add a new step to the business process and configure as follows:

Field Name	Entry Value
Order	a3 ( <i>Step should appear between the document retrieval and fire integration steps</i> )
Type	Integration

5. Click **OK**
6. Click **Configure Integration System**
7. In the **Integration** field, select **WICT\_DT\_Add\_Org\_Connector**
8. Click **OK**
9. In the **Run as User** field, select **Imcneil**
10. Click **OK**

## TASK #10: MODIFY THE DOCUMENT RETRIEVAL STEP

1. Navigate back to the business process definition by clicking on the **Business Process Definition** link as seen below.

View Workflow Step **Integration Process Event for WICT\_Add\_Org\_Connector**

Business Process Definition	<b>Integration Process Event for WICT_Add_Org_Connector (TOP LEVEL)</b>
Order	a3
Type	Integration
Run As User	lmcneil / Logan McNeil

2. Click **Configure Document Retrieval**
3. Accept **today** as the **Effective Date** and click **OK**
4. Change the **File Name / Pattern** setting to a value of **GenericOrgInbound.xml**
5. Click **OK** then **Done**

## TASK #11: MODIFY THE INPUT FILE TAG ON THE WICT\_ADD\_ORG\_CONNECTOR SYSTEM

1. Navigate to your Core Connector Organization Inbound integration system by searching for **intsys:WICT** and selecting **WICT\_Add\_Org\_Connector**
2. From the integration system's **Related Actions** icon, select **Integration System > Configure Integration Attributes**
3. Next to Input File Tag remove the existing tag and click the prompt to select **TransformedOrgUpdates**, which is the earlier created tag.
4. Click **OK**

## TASK #12: LAUNCH THE INTEGRATION SYSTEM

1. From the integration system's **Related Actions** icon, select **Integration > Launch / Schedule**
2. Click **OK** and then click **OK** a second time to launch the integration
3. There will be no "Refresh" button so click on the Integration Event name to refresh. It will take a few moments to run to completion. (This is a Business Process Event, not Integration Event)

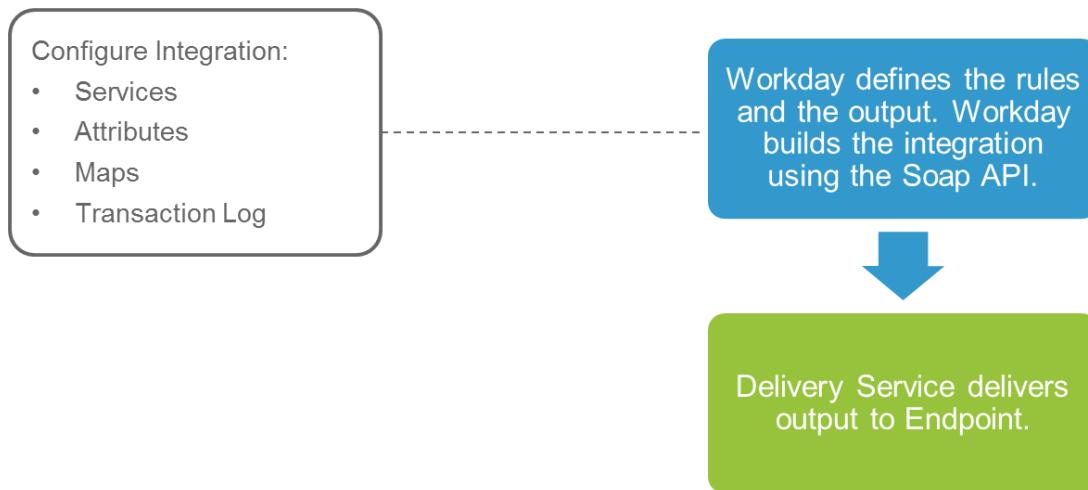
4. Search the tenant (All of Workday) for **org:Sales Support** to view your new organizations.
  - A. Sales Support
  - B. Sales Support – North America
  - C. Sales Support – South America



## APPENDIX A – SUPPLEMENTAL MATERIALS

### COMMON OUTBOUND DESIGN PATTERNS

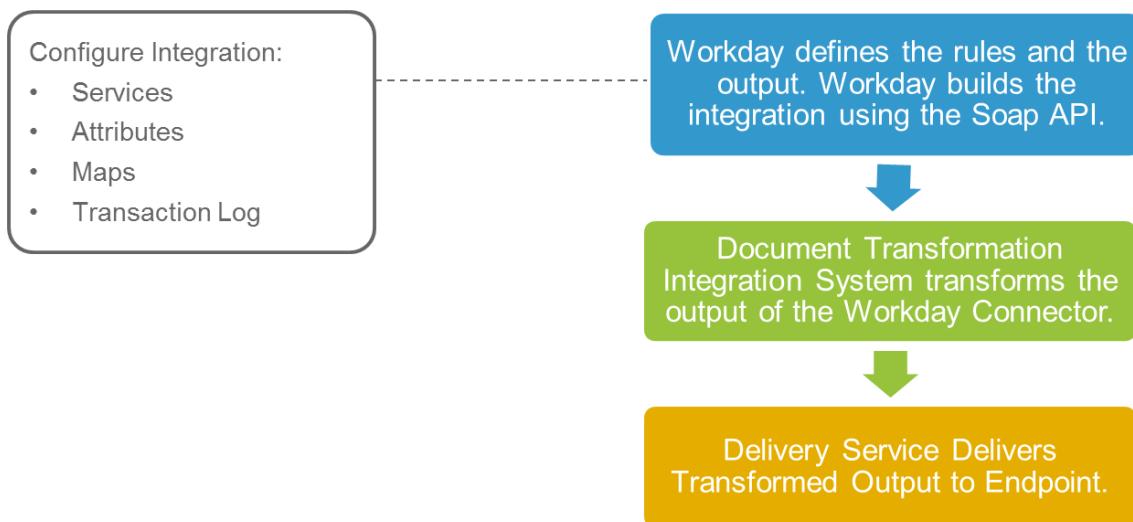
#### DELIVERED SOLUTION – WORKDAY CONNECTOR



Workday Connector integrations are a configurable delivered solution.

- This design pattern is useful when you require change detection; however a Workday Connector can also be used to produce a full file output.
- The transaction log can be leveraged to filter down to relevant results.
- Reasonable if only a restricted number of field overrides are required (Missing fields < 30) Avoid Overrides that use Calculated Field prompts
- Provides a standardized Workday XML output
- Delivery service supports the file delivery requirements

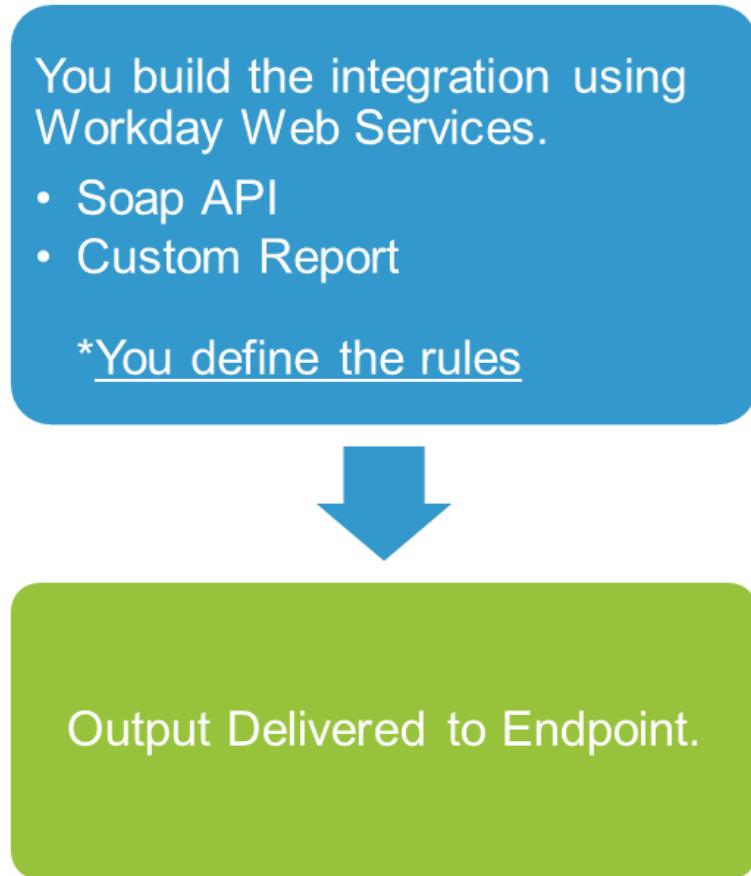
## DELIVERED + CUSTOM SOLUTION – WORKDAY CONNECTOR WITH DOCUMENT TRANSFORMATION



When the receiving system of your outbound integration requires a file format other than Workday XML, Document Transformation can be added to the design pattern to transform the output into the format required.

- Reasonable if restricted to 3 or less transformations
- Runs in 2 hours or less
- Document Transformation was specifically designed to work with Connectors
- Document Transformation can include custom Integration Maps and Attributes
- If more than 3 transformations (Doc Transform) are required post connector output, use Workday Studio
- Delivery service supports the file delivery requirements.

## CUSTOM SOLUTION – EIB

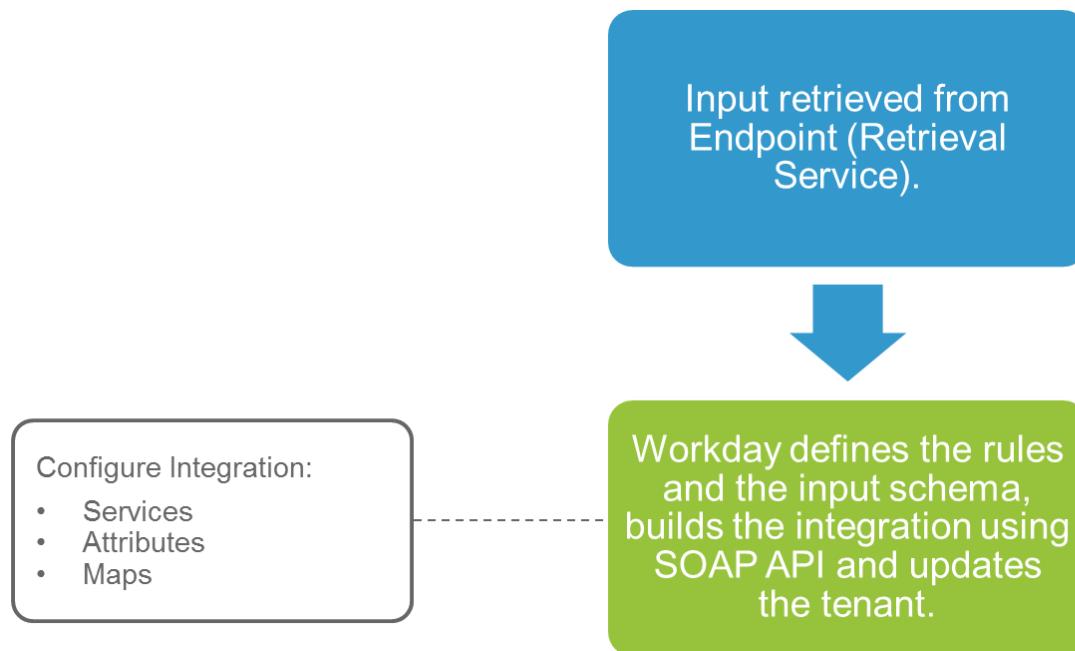


When working with a fully custom design pattern, you are responsible for building out the web service requests and defining the rules.

- Low complexity
- Reasonable if change detection is not needed
- Reasonable if all data can be retrieved in a single data source, all the data is available within WD.
- One destination endpoint
- One transformation only (i.e. one XSLT). No additional processing. (ETV/XTT not supported)

## COMMON INBOUND DESIGN PATTERNS

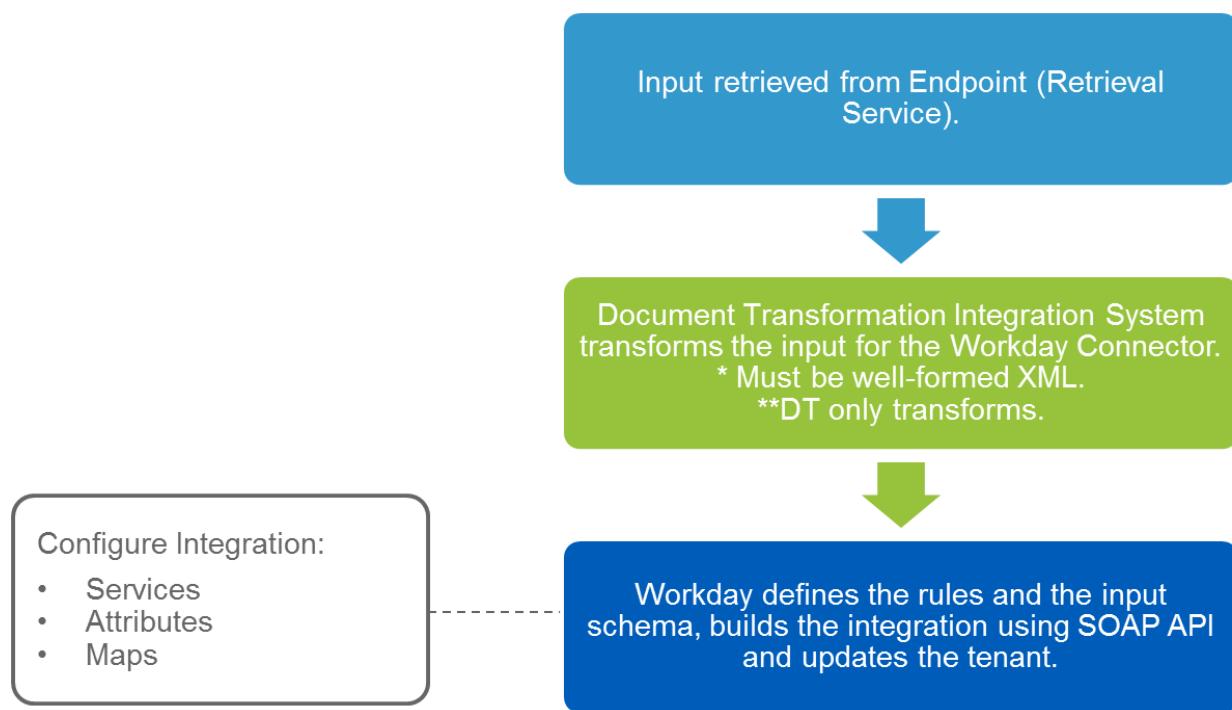
### DELIVERED – WORKDAY CONNECTOR



Workday Connector integrations are a configurable delivered inbound solution.

- The connector interfaces with all the data elements that need to be imported into Workday
- Custom objects are not supported

### Delivered + Custom Solution – Workday Connector with Document Transformation



When the transmitting system of your inbound integration provides an XML file that is not Workday XML, Document Transformation can be added to the design pattern to transform the input into the format required by the Workday Connector.



## SUPPLEMENTAL ACTIVITY SA1 – INTEGRATION SYSTEM SECURITY

This demonstration will show the workflow for creating a new integration system user and integration security group. It will then illustrate how to configure permission by adding the newly created integration system security group to the appropriate security policies.

### TASK #1: CREATE THE INTEGRATION SYSTEM USER

1. Run the **Create Integration System User** task, and enter the following information:

Field Name	Entry Value
User Name	IntegrationTrain
Password	P@ssw0rd

2. Click **OK** then **Done**

### TASK #2: CREATE THE INTEGRATION SYSTEM SECURITY GROUP

1. Run the **Create Security Group** task, and enter the following information:

Field Name	Entry Value
Type of Tenanted Security Group	Integration System Security Group (Unconstrained)
Name	IntTrainingGroup

2. Click **OK**
3. In the **Integration System Users** field, select **IntegrationTrain /**



Note: The integration system user name will always be followed by a slash when selecting it from prompts.

4. Click **OK** then **Done**

### TASK #3: IDENTIFY REQUIRED PERMISSIONS FOR YOUR SECURITY GROUP

1. Search Workday Community for **Security Domains for Integration System Data Access** and locate the Organization Inbound Connector to identify the required domains. The required domains are as follows:
  - A. Integration Build
  - B. Manage: Organization Integration
  - C. Manage: Organization Update Integration
  - D. Worker Data: Organization Information
  - E. Worker Data: Public Worker Reports
2. Run the **View Security for Securable Item** task. In the **Domain Item** field, search for and select **Add Update Organization (Web Service)**. Take note of the listed **Security Policy** and **Functional Area**.

### TASK #4: PROVIDE PERMISSIONS TO THE UNDERLYING WEB SERVICE OPERATION

1. Run the **Domain Security Policies for Functional Area** report. In the **Functional Area** field, search for and select **Organizations and Roles**. This is the functional area containing the domain security policy for the underlying web service operation.
2. Navigate the list of domain security policies and select **Manage: Organization Update Integration**
3. Click **Edit Permissions**
4. Under **Integration Permissions** in the **\*Security Groups** field, search for and select **IntTrainingGroup**
5. Click **OK** then **Done**



Note: This permission provides access to the underlying web service operation, however other permissions are still required to be able to interact with all underlying data.

## TASK #5: PROVIDE PERMISSIONS TO THE REMAINING REQUIRED DOMAINS

1. Navigate the list of domain security policies and select **Manage: Organization Integration**
2. Click **Edit Permissions**
3. Under **Integration Permissions** in the **\*Security Groups** field, search for and select **IntTrainingGroup**
4. Click **OK** then **Done**
5. Looking at the remaining list of required domains you will notice that they do not fall under the Organizations and Roles functional area. Without knowing the functional area for the remaining domain security policies we can search for the domains directly. Search for **domain:Worker Data Organization Information**
6. From the domain's **Related Action** icon, select **Domain > Edit Security Policy Permissions**
7. Click **Edit Permissions**
8. Under **Integration Permissions** in the **\*Security Groups** field, search for and select **IntTrainingGroup**
9. Click **OK** then **Done**
10. Repeat steps six through nine above for the remaining domains **Worker Data: Public Worker Reports** and **Integration Build**

## TASK #6: ACTIVATE YOUR SECURITY POLICY CHANGES

1. Run the **Activate Pending Security Policy Changes** task
2. Enter a meaningful **Comment** and click **OK**
3. Review the list of pending security policy changes
4. Select the **Confirm** check box, and then click **OK**.

## TASK #7: VERIFY PERMISSIONS TO THE UNDERLYING WEB SERVICE OPERATION

1. Run the **View Security for Securable Item** task. In the **Domain Item** field, search for and select **Add Update Organization (Web Service)**. Verify that your Integration Security Group shows under **Permitted Security Groups**.

## TASK #8: ASSOCIATE THE INTEGRATION SYSTEM USER TO THE INTEGRATION SYSTEM

1. Navigate to your integration system by searching for **intsys:WICT** and selecting the **WICT\_Add\_Org\_Connector** integration system.
2. From the Integration System's **Related Action** icon, select **Workday Account > Edit**
3. In the **Workday** Account field, select **IntegrationTrain /**
4. Click **OK** and then click **OK** a second time

## TASK #9: LAUNCH THE INTEGRATION SYSTEM

1. From the Integration System's **Related Action** icon, select **Integration > Launch / Schedule**
- A. Specify a Run Frequency of **Run Now** and click **OK** and then click **OK** a second time
2. There will be no "Refresh" button so click on the Integration Event name to refresh. It will take a few moments to run to completion. (This is a Business Process Event, not Integration Event)





## SUPPLEMENTAL ACTIVITY SA2 – XML TRANSFORMATION PART 2

**Business Case:** Logan McNeil has been given additional specifications for transforming the output of WICT\_HCM\_Workers into an XML file. The specification indicates that records that fail the validation on the Marital Status field should generate a custom error message and be omitted from the output. In addition Logan has been given additional requirements around formatting the numeric and date fields. To improve maintainability of the XSLT the number and date formatting should be extracted out of the individual fields and placed into class elements that can be reused on multiple fields.

### TASK #1: MODIFY THE XSLT FILE

1. Locate the provided class files on your local machine and open the **Act SA2 ETV XML Formatting Starter.xsl** file in your XML editor of choice. This XSLT file already has the conditional logic in place for omitting records that are missing the **marital status** field. If you are uncomfortable modifying XSLT a completed solution file has been provided with all modifications in place.
2. Immediately following the **<File>** element, add two **classes** to group the number formatting and date formatting attributes using the code shown below:

```
<etv:class etv:name="FormatDates" etv:dateFormat="dd/MM/yyyy" />
<etv:class etv:name="FormatNumbers" etv:numberFormat="#,###.00"
etv:decimalSeparator="," etv:groupingSeparator="."/>
```

3. In order to achieve the requirement of omitting a record that fails validation on the Marital Status field conditional logic will be required. Using an **<xsl:choose>** statement you will first check to see if the **Marital Status** field is missing for a given record and if so you will generate a custom error message and **omit** the worker. Otherwise you will generate a **<Record>** element as normal. This conditional logic has already been provided in your XSLT however you will need to provide the custom error message. Locate the **etv:name** attribute within the **<xsl:when>** statement and provide an error message of your choice.
4. For the field specific requirements the following attributes will need to be applied to each field element where necessary.

Attribute	Code Example
Required	etv:required="true"
Severity	etv:severity="error"
Class	etv:class="FormatDates"

- Within the **<Record>** element add **Original Hire Date** to the output immediately following the **<HireDate>** element with the following attributes. Reference the original XML output of WICT\_HCM\_Workers to identify the relevant XPath.

Attribute	Value
Required	True
Severity	Error
Class	FormatDates

- Modify the following field elements to add the necessary attributes to achieve the specification.

Field Name	Class to Call
Hire Date	FormatDates
Total Annual Base Pay	FormatNumbers

- After making all modifications save your file as **Act SA2 ETV XML Formatting.xsl**

## TASK #2: EDIT THE INTEGRATION SERVICE ATTACHMENT OBJECT

- Run the **Edit Integration Service Attachment** task
- In the **Integration Service Attachment** field, select **All > Act 5\_3 ETV XML Formatting.xsl**
- Click **OK**
- Click the **Trash Can** icon on the right side of the page to delete the current attached file.
- Attach the **Act SA2 ETV XML Formatting.xsl** by dropping the file onto the upload interface or click **Select files** and locate the file on your machine and click **Open**
- Click **OK** and then **Done**

### TASK #3: LAUNCH WICT\_HCM\_WORKERS

1. Search for and run the **Launch/Schedule Integration** task, entering the following information:

Field Name	Entry Value
Integration	WICT_HCM_Workers
Run Frequency	Run Now

2. Click **OK**
3. Specify the following Integration Criteria Launch parameters

Field Name	Entry Value
As of Entry Moment	Use the Default Value
Effective Date	Use the Default Value
Last Successful As of Entry Moment	Use the Default Value
Last Successful Effective Date	Use the Default Value
Full File	Checked

4. Click **OK**
5. There will be no "Refresh" button so click on the Integration Event name to refresh. It will take a few moments to run to completion. (This is a Business Process Event, not an Integration Event)

### TASK #4: REVIEW THE OUTPUT RESULTS

1. Scroll down to the **Subsequent Processes** section of the **View Event** page. Notice the Document Transformation step shows a status of **Completed with Errors**.
2. Click on the number **1** under **Number of Errors** to open the list of errors that occurred on the background process. Notice the error is now using your custom error message in regard to the missing **Marital Status** field.

Date and Time	Severity	Message	Target(s)
04/07/2017 09:52:14.226 AM	<span style="color: red;">!</span> Error	No value output for required field Marital Status field is missing a value. Please go to the worker record and provide a Marital Status.. The following targets are affected: Stephen Peters, Joseph Finley, Joe Dunn, Maya Scott, Paul Walsh, and 5 more ...	<a href="#">Carrie Wong [C]</a> <a href="#">Hank DeWitt [C]</a> <a href="#">Joe Dunn [C]</a> <a href="#">Joseph Finley [C]</a> <a href="#">Maya Scott [C]</a> <a href="#">More (5)</a>

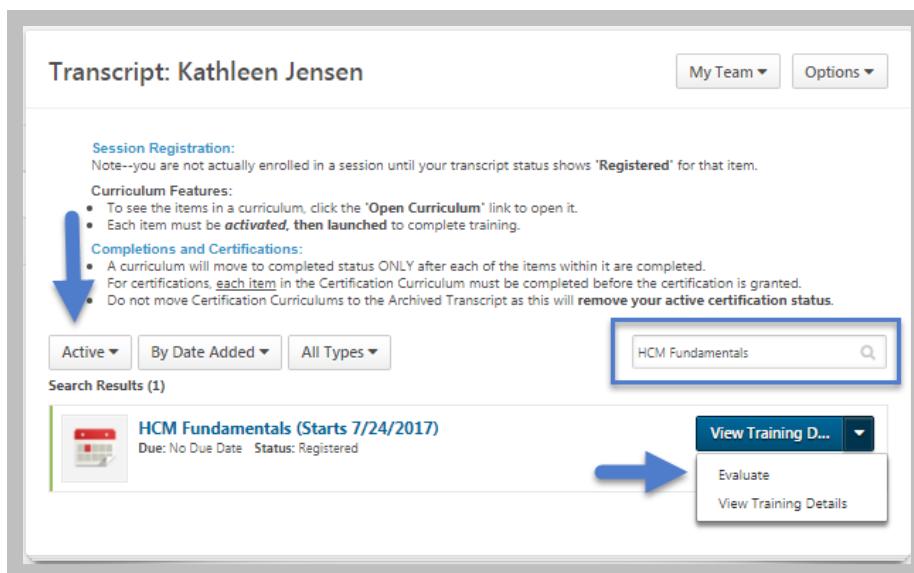
To view the output files, scroll to the bottom of the **WICT\_HCM\_Workers Event to Event Document(s)**. Open the output of your ETV transformation and notice in the footer that there are now less records due to the use of the **etv:omit** attribute.



## APPENDIX B – CLASS EVALUATIONS

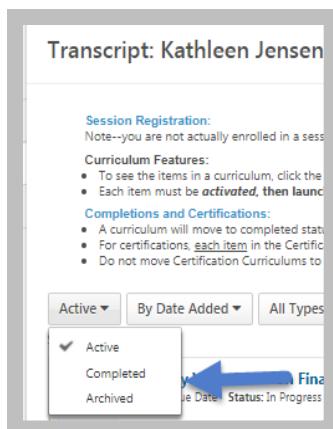
### AVAILABLE AT THE START OF THE LAST DAY OF CLASS

1. Log in to the Learning Center. <https://workday.csod.com>
2. Select **View Transcript**.
3. Locate the training session in your **Active** tab. (Use the search field to quickly find your training session.)
4. Click the **View Training Details** pull-down menu and select **Evaluate**.

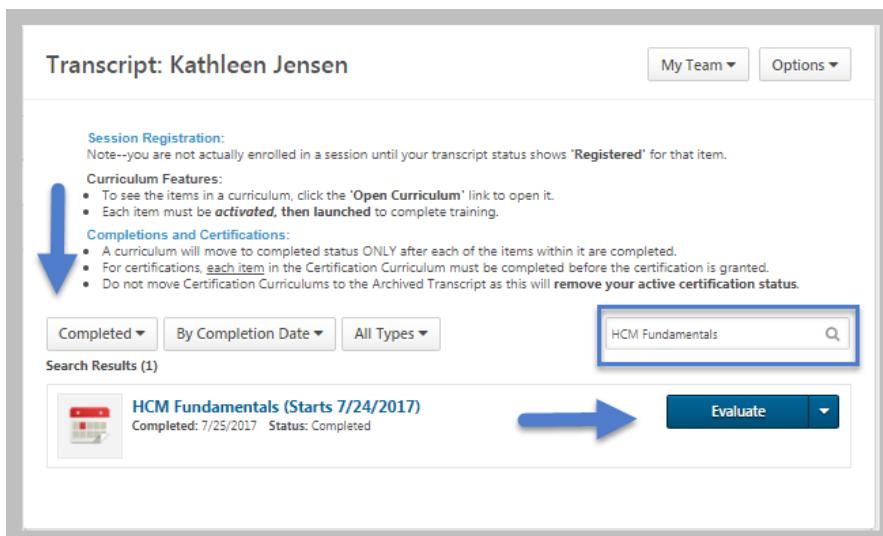


### AVAILABLE AFTER CLASS ENDS AND ROSTER SUBMITTED

1. Log in to the Learning Center. <https://workday.csod.com>
2. Select **View Transcript**.
3. Select the **Active** tab to toggle to your **Completed** training.



4. Locate and select the completed training session. (Use the search field to quickly find your training session.)
5. Click **Evaluate**.



### CLASS EVALUATION (SESSION WITHIN A CURRICULUM): AVAILABLE AT THE START OF THE LAST DAY OF CLASS

1. Log in to the Learning Center. <https://workday.csod.com>
2. Select **View Transcript**.
3. Locate the training session within the curriculum in your Active tab. (Use the search field to quickly find your training session and select the Curriculum Training Tile link to open the curriculum.)
4. Select **Evaluate** under the Options column.

Curriculum		TYPE	STATUS	OPTIONS	DETAILS
<b>View</b>	All Training   Activated Training   Not Activated Training				
<b>TITLE (CLICK ON TO SEE COURSE DESCRIPTION)</b>					
<b>Prerequisite Requirements (Min. required: 0)</b>					
<b>Next Steps</b>		Note	Completed	None	None
<b>Report Writer (Min. required: 1)</b>		Section	Session	None	None
<b>Report Writer</b>		Session	Completed	None	None
<b>Report Writer</b>		Session	Cancelled	Select Session	None
<b>Report Writer</b>		Session	Cancelled	Select Session	None
<b>Report Writer - Learn Independent</b>		Event	Completed (Equivalent)	Select Session	None
<b>Workday Report Designer (BIRT) (Min. required: 1)</b>		Section			
<b>Workday Report Designer (BIRT)</b>		Session	Registered	Launch   Evaluate	None

## CLASS EVALUATION (WITHIN A CURRICULUM): AVAILABLE AFTER CLASS ENDS AND ROSTER SUBMITTED

Log in to the Learning Center. <https://workday.csod.com>

5. Select **View Transcript**.
6. Select the **Active** tab to toggle to your **Completed** training.

Transcript: Kathleen Jensen

Session Registration:  
Note--you are not actually enrolled in a session.

Curriculum Features:  

- To see the items in a curriculum, click the title.
- Each item must be **activated**, then launched.

Completions and Certifications:  

- A curriculum will move to completed status when all requirements are met.
- For certifications, each item in the Curriculum must be completed.
- Do not move Certification Curriculums to completed status.

Active ▾   By Date Added ▾   All Types ▾

Active   Completed   Archived

Note: If the curriculum is still Active, meaning the curriculum requirements have not been met, the curriculum will remain on the Active tab.

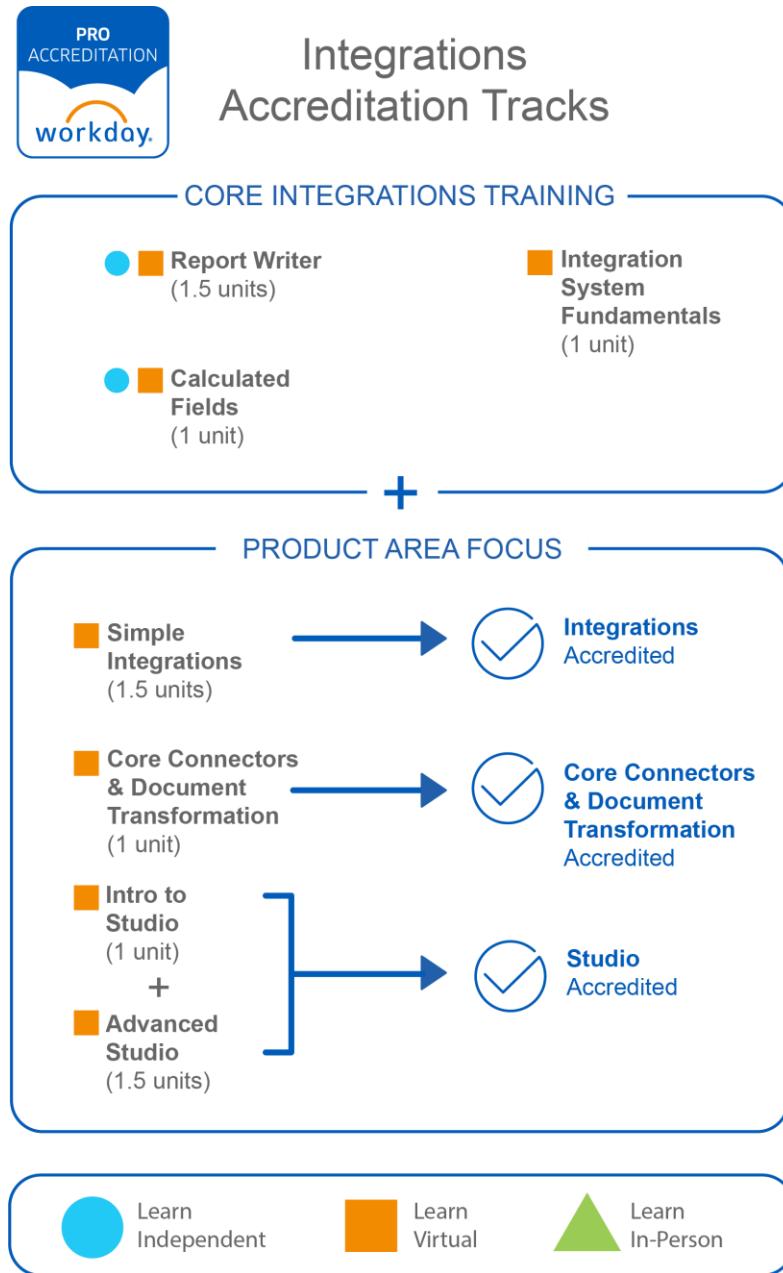
7. Locate and select the completed training curriculum. Select the Training Title link to open the curriculum and locate the session. (Use the search field to quickly find your training session.)
8. Click **Evaluate**.

Curriculum							
View	All Training	Activated Training	Not Activated Training	TYPE	STATUS	OPTIONS	DETAILS
Perequisite Requirements (Min. required: 0)				Section			None
Next Steps				Note	Completed	None	None
Report Writer (Min. required: 1)				Section			None
Report Writer				Session	Completed	None	None
Report Writer				Session	Cancelled	Select Session	None
Report Writer				Session	Cancelled	Select Session	None
Report Writer - Learn Independent				Event	Completed (Equivalent)	Select Session	None
Workday Report Designer (BIRT) (Min. required: 1)				Section			None
Workday Report Designer (BIRT)				Session	Completed	Evaluate	None

## APPENDIX C – WORKDAY PRO

### CUSTOMER ACCREDITATION PROGRAM

Workday Pro is a customer-focused accreditation program targeted at customers who want to actively engage and work side-by-side with the ecosystem on a path to develop a similar level of knowledge and expertise. It consists of several tracks, each with relevant courses, plus a written test.



Learn more: [community.workday.com/pro](http://community.workday.com/pro)