

Workday Integration System Fundamentals

Course Manual and Activity Guide

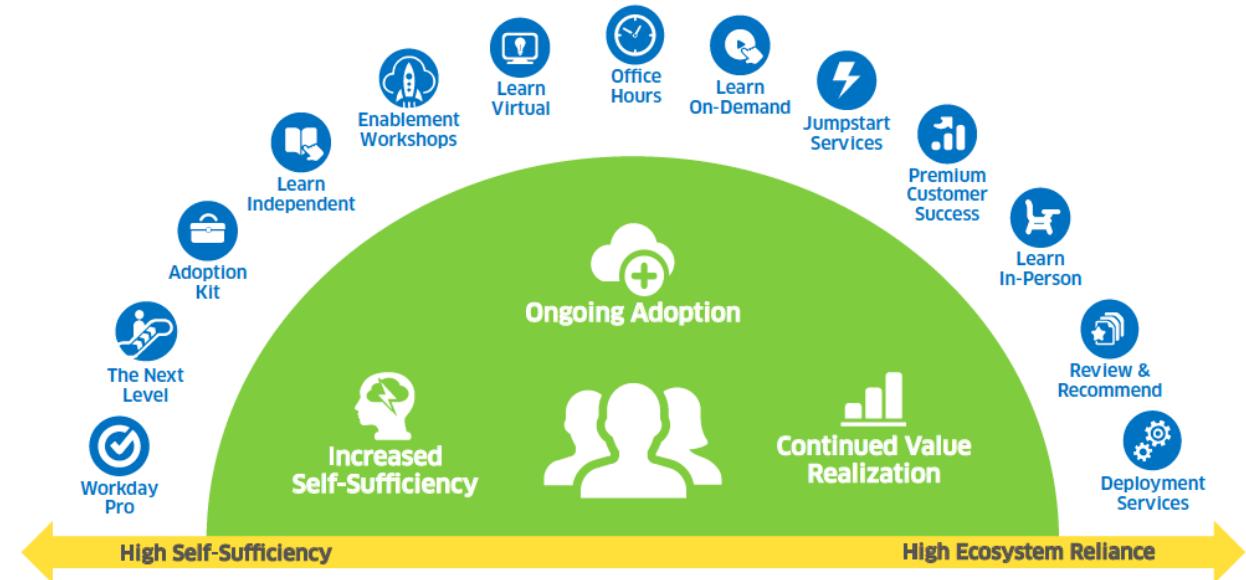
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Get Maximum Value From Your Workday!



Available Programs and Services for **Customers**



Workday Pro

This customer-focused accreditation program helps drive greater Workday competency and self-sufficiency for your organization.



The Next Level

A series of online demonstrations that show Workday in action and give you tips on deploying features.



Adoption Kit

This collection of templates and resources accelerates student training and your Workday rollout. It includes a combination of videos and job aids, as well as facilitation and marketing materials. All content can be tailored to your needs, or used as is.



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In-person training with hands-on configuration in your own sandbox tenant.



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- HCM Transactions
- Payroll Transactions
- Business Process Fundamentals
- Configurable Security Fundamentals



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One-hour appointments with Workday consultants to ask how-to questions or view tailored demos of features you already own.



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A design-focused engagement preparing you for a successful deployment by delivering a detailed design guide and deployment approach. Service includes: Jumpstart Plus Package for Workday Executive HCM Dashboard.



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A designated Customer Success Manager partners with the project team during deployment to provide additional guidance and project oversight. During production, the CSM works with the customer to continuously drive business value from Workday.



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This instructor-led, in-classroom training prepares students to meet their job requirements. It combines lectures, social learning, product demonstrations, and hands-on activities. Courses include:

- HCM Fundamentals
- Benefits Fundamentals
- Compensation Fundamentals
- Financials Fundamentals
- Payroll Fundamentals
- Procure-to-Pay Fundamentals
- Recruiting Fundamentals
- Workday Integration System Fundamentals



Review and Recommend

A detailed review of your Workday configuration and identification of new ways to optimize your Workday solution. Service includes: Review and Recommend for HCM Reporting and Analytics.



Deployment Services

Accelerated services to guide you with configuration and roll-out of new functionality.

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WORKDAY INTEGRATION SYSTEM FUNDAMENTALS FOR WORKDAY ISF 29

DESCRIPTION

This class introduces Workday users to tools and concepts needed to build and maintain Workday integration systems. We explore the technologies used to integrate with Workday and discuss the strengths and limitations of each. This class also introduces basic concepts in web services and XML and how Workday integrations leverage them.

GOAL & OBJECTIVES

This class is designed to prepare you to leverage the Workday integration architecture and associated integration technologies.

- Define the Workday integration framework
- Define core concepts needed to use Workday integration tools
- Build, launch, and monitor Workday integration systems
- Configure integration business processes and security
- Transform and deliver integration output
- Determine which tools to use in an integration scenario based on their strengths and limitations

AGENDA

- Workday Integration Architecture and Overview of Tools
- Reporting as a Service (RaaS)
 - XML Overview
 - Integration IDs
 - Enterprise Interface Builder (EIB)
- Workday Web Services (WWS)
 - Workday Public Web Services
 - Integration Cloud Connect
- Business Process Framework
 - Delivery
 - Notifications
 - Document Transformation
- Integration System Security
- Workday Studio
- Common Design Patterns

COURSE STRUCTURE

You will use this course manual throughout the course. There are various interactive elements throughout this course, including:



Demos

Demos show concepts, configuration, and functionality within a Workday training environment. Students are welcome to work through the demo steps in their tenants as time permits.



Activities

You will use your individual training tenant to perform activities in the Workday system. These activities reinforce concepts discussed in the demos and course manual.

Most activities include “shortcuts”: pre-built reports and integrations for students to investigate key concepts without having to perform configuration tasks.

Some activities include unguided Challenge Tasks meant for those students wishing to explore advanced concepts on their own.

CHAPTER 1 – INTRODUCTION TO WORKDAY

OVERVIEW

Workday's suite of business services is hosted as a set of metadata and microservices that support a persistent, in-memory store of objects. All interaction with these objects is done via web services.

OBJECTIVES

By the end of this chapter, you will be able to:

- Explain how the Integration Cloud Platform fits within the Workday architecture.
- Compare SOAP and REST API functionality.
- Define Workday Integration Systems and Services.

INTEGRATION ARCHITECTURE OVERVIEW

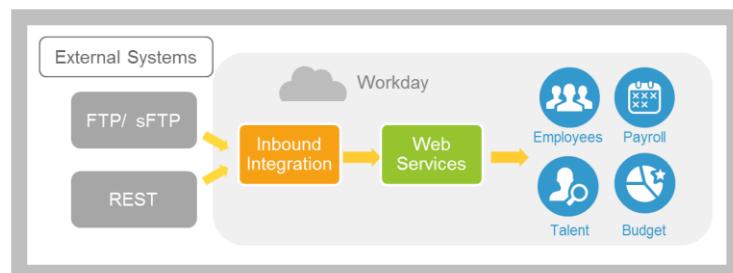
All Workday customer data is stored as objects within a persistent, in-memory store. Originally, a suite of business services called the **Object Management System (OMS)** maintained the relationships and integrity of these objects. Over time, the OMS has evolved to become a set of microservices that scale based on transaction and reporting demand. The only way to access Workday object data is via web service requests. This is an important aspect of how Workday addresses issues such as security and performance.

All communication with the Workday services is via HTTPS requests. Users generally access Workday through web browsers. The User Interface Server (UI Server) handles these requests, presenting HTML forms for user interaction, while communicating with the Workday platform using XML messages. Developers also connect via the UI Server to make use of the browser-based tools, for example, when configuring Integration Systems or building integrations using Enterprise Interface Builder (EIB).

Workday has application programming interfaces (APIs) that support both inbound and outbound requests for mobile applications and data-driven integrations that do not use the Workday UI.

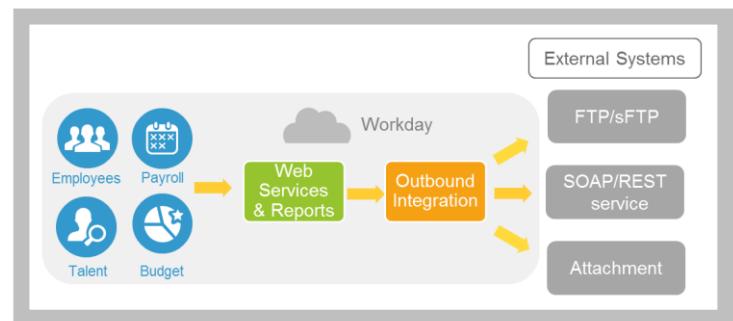
Inbound

- Data is fed into Workday.
- Incoming data is transformed into Workday Web Service (WWS) compliant format.



Outbound

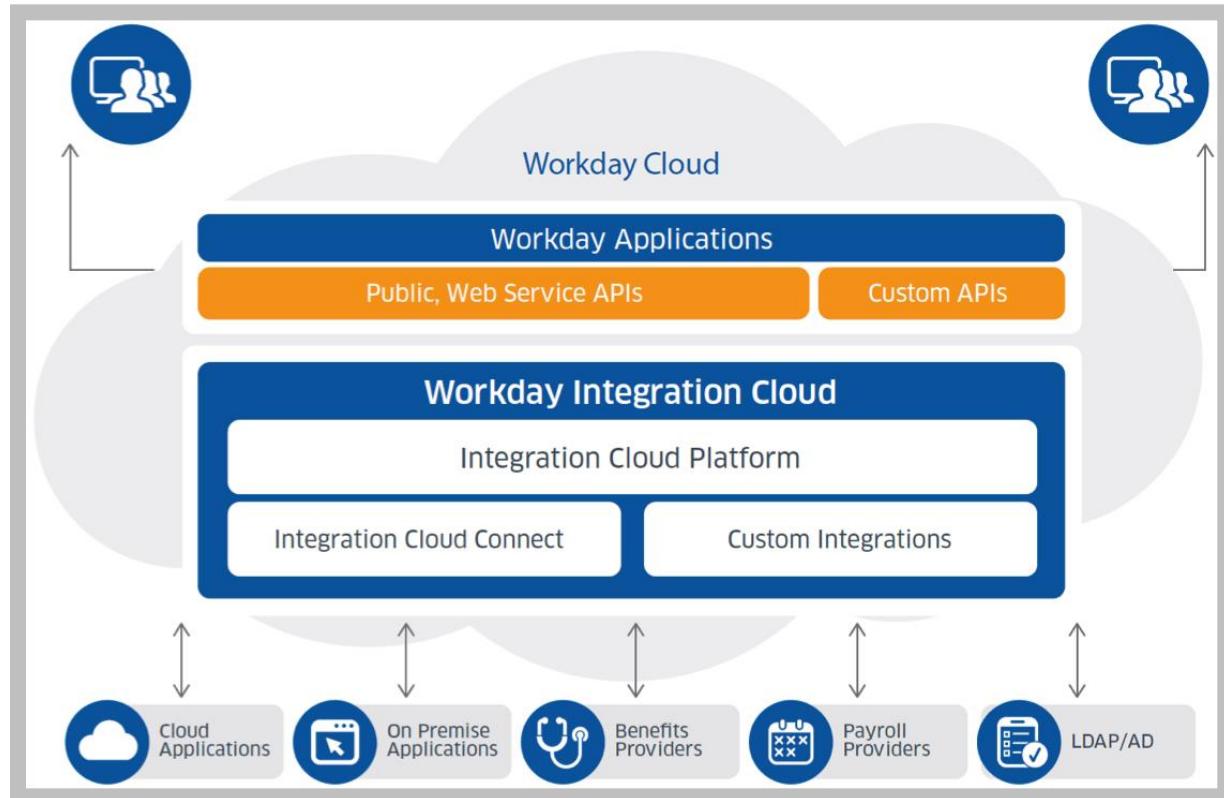
- Data is provided by Workday.
- Outgoing data may be transformed.



Workday supports integration scheduling, data encryption, and secure transfer protocols, allowing for the regular synchronization of large volumes of customer data using file servers.

INTEGRATION CLOUD PLATFORM

Workday's enterprise-class Integration Platform-as-a-Service allows all integrations to deploy to, and run in, the Workday Cloud without on premise middleware. Workday hosts these integrations, freeing you from the burden of managing and maintaining separate infrastructures.



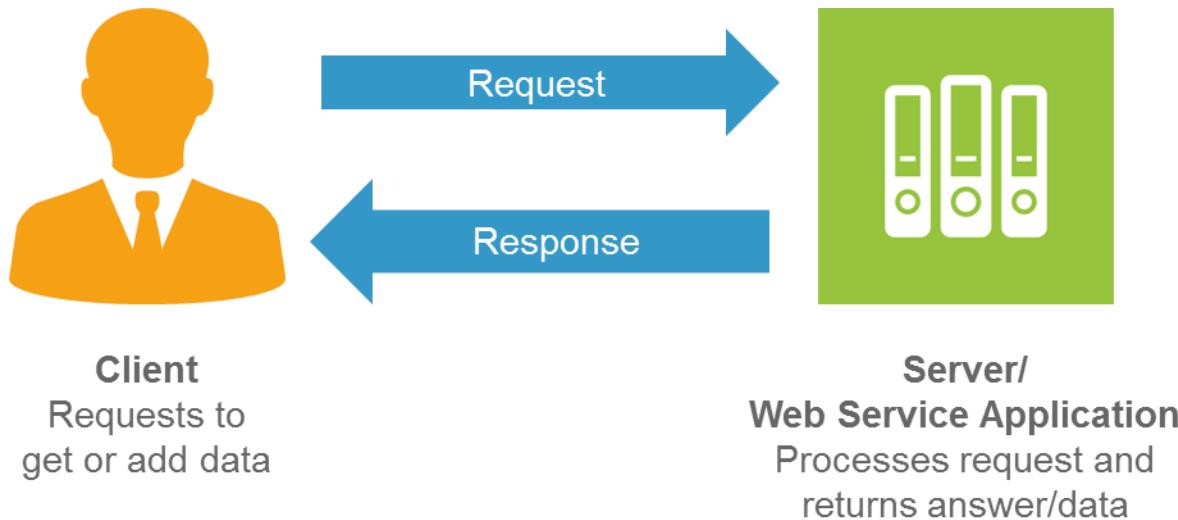
1 - Workday integration architecture

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

WEB SERVICES

A web service is a method of communication between two electronic devices over the web. At its simplest, it is a client—typically, an application accessed on an internet browser operated by a person—and a server that houses a web service application.

The application or system will send a request to the server so the end-point application, or web service, can process the request. The web service application will generate a response and send it back to the browser application via the server.



There are standards and rules that need to be adhered to while writing these services. For example, if I offer a web service, I publish a document using **Web Service Description Language (WSDL)**. Put very simply, it defines the rules of the service that I offer so you can build a client application to interact with it.

Web Services:

- Are application components.
- Can be used by other applications.
- Communicate using open protocols.
- Are based on HTTP and XML.
- Are self-contained and self-describing.

TWO TYPES OF WEB SERVICES: SOAP AND REST

Simple Object Access Protocol (SOAP) web services allow for platform-independent information exchange using XML.

Architectures that use SOAP must:

- Expose a list of the operations that the web service offers.
- Provide a description of each interface, including input and output message formats.
 - A web service specification is sometimes referred to as a contract.
 - WSDL is often used to describe the details of each operation.
- Address any complex, nonfunctional requirements (availability, security, scalability, etc.)

Representational State Transfer (REST) services allow sessionless data interchange using a simple request and response model.

RESTful web services:

- Do not typically require XML messages or WSDL documentation.
 - REST requests are simple URLs in many cases.
 - JavaScript Object Notation (JSON) is a common output format.
- Are well suited for basic, ad-hoc integration scenarios, e.g., mobile applications and authentication.

WORKDAY WEB SERVICES

Workday Web Services (WWS) provide a programmatic public API for our On-Demand Workday Business Management Services. WWS are implemented using industry standard web services technology which encompass WSDL, SOAP, REST and the WS-* standards. Delivering WWS on open standards means avoiding the traditional pitfalls of building tightly coupled and proprietary integrations that are brittle and difficult to change.

SOAP API

Workday Community provides API Documentation for our SOAP-based web services:
<https://community.workday.com/api>

API Documentation

[VIEW](#) | [REVISIONS](#)

Updated a month 3 weeks ago • Read 47244 times

Latest WWS API Documentation Directory

API Type	Description
Public Web Services API Directory	Workday offers an open, standards-based SOAP API for programmatic access to our On-Demand Business Management Services. The following directory provide the API Documentation for our multi-tenant SOAP-based web services with corresponding WSDL and XML Schemas (XSD's).
(*New) Operation Directory Page for Latest Version	This directory provides list of all public web service operations in alphabetical order for the latest version in production. Please use the Find (CTRL+F) capability in browser to search for a particular operation. The services which the operations belong to, are listed on the last column.

2 - Workday Web Services API Documentation Directory

The SOAP interface is targeted for import and export of data needed for integration with enterprise business systems external to Workday. These integrations typically involve large quantities of data moving between systems, often scheduled and initiated automatically from one system to another.

REST API

The Workday REST API is an addition to the Public APIs supported by Workday. This RESTful interface supports enterprise web and mobile applications characterized by small, typically self-service transactions initiated by end users. This REST API exists alongside the current SOAP-based web services, but serves a different need.

Workday Community includes documentation and an API Explorer, which provides access to a Developer Sandbox to test REST functionality: <https://community.workday.com/rest/explorer>.

The screenshot shows the REST API Explorer interface. At the top, there is a "workday" logo and the title "REST API Explorer". Below the title, a message says "The REST API Explorer allows you to interactively play with the Workday REST API using our Developer Sandbox environment." To the right, there are three buttons: "Authorize using OAuth 2.0", "Authenticate", and "Discover Valid Credentials". The main area is divided into two columns: "Resources" on the left and "Methods" on the right. The "Resources" column lists: workers, inboxTasks, supervisoryOrganizations, businessProcesses, businessTitleChanges, currencies, and customObjectDefinitions. The "Methods" column lists various HTTP methods (GET, POST) and their corresponding URLs for each resource. For example, under "workers", there are two GET methods: one for "/workers" and one for "/workers/{id}". Under "businessTitleChanges", there is one POST method for "/workers/{id}/businessTitleChanges". Under "currencies", there is one GET method for "/workers/{id}/inboxTasks". Under "customObjectDefinitions", there is one POST method for "/workers/{id}/jobChanges".

Resources	Methods
workers	<code>GET /workers v1:/tenant/workers</code> <code>GET /workers/{id} v1:/tenant/workers/:id</code>
inboxTasks	<code>GET /workers/{id}/businessTitleChanges v1:/tenant/workers/:id/businessTitleChanges</code>
supervisoryOrganizations	<code>POST /workers/{id}/businessTitleChanges v1:/tenant/workers/:id/businessTitleChanges</code>
businessProcesses	<code>GET /workers/{id}/directReports v1:/tenant/workers/:id/directReports</code>
businessTitleChanges	<code>GET /workers/{id}/history v1:/tenant/workers/:id/history</code>
currencies	<code>GET /workers/{id}/inboxTasks v1:/tenant/workers/:id/inboxTasks</code>
customObjectDefinitions	<code>POST /workers/{id}/jobChanges v1:/tenant/workers/:id/jobChanges</code>

3 - REST API Explorer

The REST API is designed to quickly return a small set of frequently used information for display or further action. Customers can integrate REST calls into an enterprise portal or mobile application, providing a subset of Workday functionality crafted for that specific audience.

REPORTS AS A SERVICE (RAAS)

Furthermore, Workday allows you to expose custom reports as web services. Web services-enabled reports are accessible via both SOAP XML requests and REST URLs.

WORKDAY INTEGRATION SYSTEMS

Workday includes several options to build integrations that interact with our Public Web Services and RaaS. In addition to the Integration Cloud Connect pre-built integrations, these tools give you a framework to build both inbound and outbound integrations based on your unique business needs.

All integrations systems have certain key elements:

Integration System: An external system defined in Workday. It provides both the security necessary for an external system to access Workday and a methodology to communicate data in a way that both Workday Web Services and the customer system understand.

Data Source: The location of the data Workday will receive from an external source or will extract from Workday objects for output.

Transformation (optional): Converts the data into something that Workday or the receiving external system can understand. Workday provides some transformations, but the users can create their own using XSLT.

Transport Protocol: Where, or to what endpoint, the Integration System will send the integration's outgoing message data. The transport protocol also defines the method of delivery.

INTEGRATION SERVICES

Integration services perform tasks required to run an integration system. Some services are unique to a given integration template; others (such as Integration Document Retrieval) are available to most integrations. Integration services are sometimes optional for a given integration system, and can be enabled and disabled as needed.

List of Common Services:

Service	Definition
Attributes	Values that are required to configure the integration system. They are configurable constants that may need to be changed occasionally in Workday.
Custom Object (Studio)	Associates a Workday Custom Object with an alias defined in Workday Studio. Integrations built using Workday Studio use the Custom Object Service to access each Custom Object using this alias.
Document Delivery	Enables your integration to send output files to an external system over a range of different transports such as AS2, FTP, FTPS, and SFTP.

Service	Definition
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 integrations can retrieve and process them.
Field Attributes (Connectors)	Enables 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 define maximum field length
Field Overrides (Connectors)	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.
Integration Maps	Used to map internal Workday values to their equivalent in external systems. For example, you might decide to map Workday cost center or gender codes into equivalent codes supported by the external system.
Report Service (Studio)	Associates a Workday custom report with an alias. Integrations built using Workday Studio use the Report Service to access the custom report using this alias. By using an alias, the integration can still locate the custom report even if the report's name or owner changes.
Sequence Generator	Generates a unique, sequenced file name each time it runs.
Transaction Log	Improves change detection performance by subscribing to events for particular transaction types or business process types.

DATA SOURCES

You may use the Reports as a Service (RaaS) or the Workday Public Web Service SOAP API as data sources for outbound integration systems. Inbound integrations use external files provided by a resource outside of Workday. Outbound data can be transformed, and inbound data typically requires transformation before updating Workday.

TRANSFORMATIONS

An integration transformation tells Workday how to convert data from an external system so that Workday can understand it, or how to convert Workday data so that the external system can interpret it. Workday supports three types of integration transformations:

- Delivered transformations
- Custom report transformations (EIB with RaaS only)
- XSLT attachment transformations

TRANSPORT PROTOCOL TYPES

A transport protocol tells Workday how to deliver data to or from an external system. Workday supports the following types of transport protocols to import or export data:

Document Delivery:

- AS2
- Email
- FTP
- FTP/SSL
- Google Cloud Storage
- HTTP/SSL
- SFTP
- Workday Attachment

Document Retrieval:

- FTP
- FTP/SSL
- REST URL
- SFTP

CHAPTER 2 – REPORTS AS A SERVICE

OVERVIEW

Workday enables you to build your own web services through our Report Writer / Custom Reports functionality. Web service-enabled reports may be used as data sources for custom integrations, such as those built with Enterprise Interface Builder (EIB) and Workday Studio.

OBJECTIVES

By the end of this chapter, you will be able to:

- Configure a custom report as a web service.
- Compare Workday XML and Simple XML data structure.
- Locate integration IDs for objects in your tenant.
- Build a simple integration using EIB and RaaS.

REPORTS AS A SERVICE (RAAS)

When custom reports are web service-enabled, they become **Reports as a Service (RaAS)** and are exposed as both SOAP- and REST-based web services for integration scenarios.

Only Advanced and Search reports can be enabled for web services.

The screenshot shows the 'Create Custom Report' dialog box. It has a blue header bar with the title. Below it, there are five input fields: 'Report Name' (WICT RW Positions), 'Report Type' (Advanced), 'Data Source' (All Positions), 'Temporary Report' (unchecked), and 'Enable As Web Service' (checked). Each field has a red asterisk indicating it is required.

4 - Create Custom Report task with Enable As Web Service option selected



Important: When you enable web services for a custom report, the maximum size of the response that Workday returns is 2 GB.

NAMESPACE

Namespaces define the scope of named elements and attributes in an XML document, avoiding conflicts where a single document might use the same tag name for multiple purposes.

When you enable a custom report as a web service, Workday generates a default RaAS **namespace** for the report, using the following format: *urn:com.workday.report/Report_Name* (where *Report_Name* is the name of the report with underscores replacing spaces).

Web Services Options

A save and re-open is required to see and modify the web service aliases if they are not shown. (empty)

Enable As Web Service

Web Service API Version v30.0

Namespace om.workday.report/WICT_RW_Positions

5 - Custom Report Advanced Web Services Options

The RaaS namespace remains fixed even if the report owner changes due to transfers of ownership or if the report name changes. This prevents integrations that rely on the report's output from being unable to interpret the data.

You can edit the namespace for a custom report. However, you should consider the following:

- Workday does not verify that a changed RaaS namespace is unique.
- If you have any integrations that use the report, you will have to update them to use the new RaaS namespace.

Reports that are enabled as a web service must have **XML aliases** defined for all columns, prompts, and related business objects.

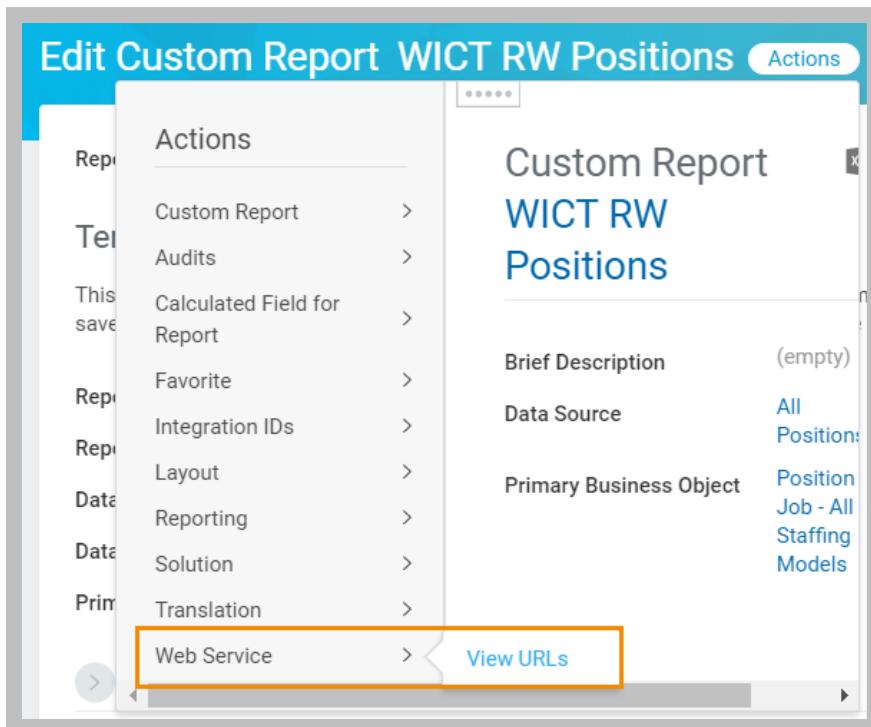
Business Object	Field	Column Heading Override XML Alias
Position and Job - All Staffing Models	Position ID	Position
Position and Job - All Staffing Models	Position Text	Title
Position and Job - All Staffing Models	Annual Compensation / Pay in USD	Pay
Position and Job - All Staffing Models	Available For Hire	Available
Position and Job - All Staffing Models	Availability Date	AvailabilityDt

6 - Custom Report Columns with Column Heading Override XML Aliases

WORKDAY REPORT XML

Workday accepts REST-based report requests via URLs, enabling simple integration between Workday and external business services, such as payroll or benefits providers.

To view the Workday XML, XSD, WSDL, and alternative report formats, navigate to the report in the tenant and use its Related Actions to view the Web Service URLs. If your report contains prompts, you will need to enter the values.



7 - View URLs Related Action

Then click the **Workday XML** link to view the report in a browser window.

The screenshot shows the 'View URLs Web Service' interface for 'WICT RW Positions'. At the top, there's a back arrow and the title 'View URLs Web Service WICT RW Positions' with an 'Actions' button. Below the title, under 'Report Parameters', are two date fields: 'Starting Availability Date' set to '01/01/2000' and 'Ending Availability Date' set to '10/01/2017'. Under 'Workday XML', there are three options: 'REST' (selected and highlighted with an orange border), 'XSD', and 'WSDL'. Under 'Simple XML', there are two options: 'Simple XML' (selected) and 'XSD'. Under 'CSV', there are two options: 'csv' (selected and highlighted with an orange border) and 'CSV'.

8 - Workday XML link on the View URLs Web Service page

A yellow note icon with a pencil and paper symbol is on the left. To its right, the text reads: 'Note: The first time you click the Workday XML link in a browser session, you will need to enter a user name/password. Make sure pop-ups are not disabled.' Below this is a screenshot of a 'Basic authentication required' dialog box. It shows the URL 'https://[REDACTED] host01.workdayeducation.com'. There are two input fields: 'Username' containing 'Imcneil' and 'Password' containing '*****'. At the bottom are 'Log in' and 'Cancel' buttons.

9 - Basic authentication prompt

The Workday XML option outputs the literal, and somewhat advanced, XML code used internally within Workday. This option might be useful in cases where REST or SOAP is used to leverage Workday's sophisticated use of the XML language.

```
<?xml version="1.0" encoding="UTF-8"?>
- <wd:Report_Data xmlns:wd="urn:com.workday.report/WICT_RW_Positions">
  - <wd:Report_Entry>
    <wd:Title>Senior Benefits Analyst Allocation (3 Headcount Unfilled)</wd:Title>
    <wd:Pay>77500</wd:Pay>
    <wd:Available>0</wd:Available>
    <wd:AvailabilityDt>2000-01-01-08:00</wd:AvailabilityDt>
  </wd:Report_Entry>
  - <wd:Report_Entry>
    <wd:Title>Staff Benefits Analyst Allocation (1 Headcount Unfilled)</wd:Title>
    <wd:Pay>77500</wd:Pay>
    <wd:Available>0</wd:Available>
    <wd:AvailabilityDt>2000-01-01-08:00</wd:AvailabilityDt>
  </wd:Report_Entry>
  - <wd:Report_Entry>
    <wd:Title>Senior Payroll Specialist (1 Headcount Unfilled)</wd:Title>
    <wd:Pay>0</wd:Pay>
    <wd:Available>0</wd:Available>
    <wd:AvailabilityDt>2000-01-01-08:00</wd:AvailabilityDt>
  </wd:Report_Entry>
```

10 - RaaS output as Workday XML



ACTIVITY 2.1 – CREATE A REPORT AS A SERVICE

Business Case: You have been tasked with synchronizing position information with an external application. You will start by building a custom report to expose Workday position data as a web service.

- Initially, the report will include a few simple report fields (no objects).
- You will use a filter to limit the data to a range of dates.

Shortcut: Use the pre-built report **WDINST RW EIB Positions** and skip to Task #2.

TASK #1: CREATE A CUSTOM REPORT

- Sign in as Logan McNeil (*lmcneil*).
- Search for and select the *Create Custom Report* task.
- Enter the following information:

Field Name	Entry Value
Report Name	WICT RW Positions
Report Type	Advanced
Data Source	All Positions
Enable As Web Service	Checked

- Click the **OK** button.
- On the **Columns** tab, click the **Add** button to add the following fields and XML Aliases:

Field	Column Heading	Override XML Alias
Position ID	Position	
Position Text	Title	
Annual Compensation / Pay in USD	Pay	
Available for Hire	Available	
Availability Date	AvailabilityDt	

11 - Columns tab with Column Heading Override XML Alias configured

6. On the **Filter** tab, enter the following two filters:

A.

Field Name	Entry Value
Field	Availability Date
Operator	greater than or equal to
Comparison Type	Prompt the user for the value
Comparison Value	Starting Prompt

B.

Field Name	Entry Value
Field	Availability Date
Operator	less than or equal to
Comparison Type	Prompt the user for the value
Comparison Value	Ending Prompt

*Field	*Operator	Comparison Type	Comparison Value
Availability Date	greater than or equal to	Prompt the user for the value	Starting Prompt
Availability Date	less than or equal to	Prompt the user for the value	Ending Prompt

12 - Filter tab with Availability Date prompts configured

7. On the **Prompts** tab, click the **Populate undefined Prompt Defaults** checkbox to add two rows under **Prompt Defaults** and enter the following:

A.

Field Name	Entry Value
Field	Availability Date
Prompt Qualifier	Starting Prompt
Label For Prompt XML Alias	Start

B.

Field Name	Entry Value
Field	Availability Date
Prompt Qualifier	Ending Prompt
Label For Prompt XML Alias	End

Prompt Defaults 2 items				
Order	*Field	Prompt Qualifier	Label for Prompt	Label For Prompt XML Alias
1	Availability Date	Starting Prompt		Start
2	Availability Date	Ending Prompt		End

13 - Prompts tab with Label for Prompt XML Alias configured

8. On the **Advanced** tab, verify the following:
 - A. *Enable As Web Service* is checked.
 - B. *Web Service API Version* is the highest available.
 - C. *Namespace* includes the underscored version of your report name.
9. Click **OK** to save your report.

TASK #2: RUN REPORT AND VIEW WORKDAY XML

1. Click the **Run** button to run your report, and enter the following at the prompts:
 - A. Starting Availability Date: *01/01/2000*
 - B. Ending Availability Date: *[today's date]*
2. Confirm that there are 601 results.

601 items				
Position ID	Position Text	Annual Compensation / Pay in USD	Available For Hire	Availability Date
	Senior Benefits Analyst Allocation (3 Headcount Unfilled)-	77,500.00		01/01/2000
	Staff Benefits Analyst Allocation (1 Headcount Unfilled)-	77,500.00		01/01/2000
	Senior Payroll Specialist (1 Headcount Unfilled)-	0.00		01/01/2000
	Staff Payroll Specialist (3 Headcount Unfilled)-	77,500.00		01/01/2000
	Senior Workforce Analyst (None Available)-	0.00		01/01/2000
	Workforce Analyst (1 Headcount Unfilled)-	77,500.00		01/01/2000

14 - Tenant report output

3. Use the report's **Related Actions** to select **Web Service > View URLs**.
4. Enter the following dates in the prompts:
 - A. Starting Hire Date: *01/01/2000*
 - B. Ending Hire Date: *[today's date]*
5. Click **OK**.

6. Select the REST **Workday XML** link.
7. When prompted, enter *lmcneil* as the user and your tenant password.
8. Review the report XML.

```
<?xml version="1.0" encoding="UTF-8"?>
- <wd:Report_Data xmlns:wd="urn:com.workday.report/WICT_RW_Positions">
  - <wd:Report_Entry>
    <wd:Title>Senior Benefits Analyst Allocation (3 Headcount Unfilled)-</wd:Title>
    <wd:Pay>77500</wd:Pay>
    <wd:Available>0</wd:Available>
    <wd:AvailabilityDt>2000-01-01-08:00</wd:AvailabilityDt>
  </wd:Report_Entry>
  - <wd:Report_Entry>
    <wd:Title>Staff Benefits Analyst Allocation (1 Headcount Unfilled)-</wd:Title>
    <wd:Pay>77500</wd:Pay>
    <wd:Available>0</wd:Available>
    <wd:AvailabilityDt>2000-01-01-08:00</wd:AvailabilityDt>
  </wd:Report_Entry>
  - <wd:Report_Entry>
    <wd:Title>Senior Payroll Specialist (1 Headcount Unfilled)-</wd:Title>
    <wd:Pay>0</wd:Pay>
    <wd:Available>0</wd:Available>
    <wd:AvailabilityDt>2000-01-01-08:00</wd:AvailabilityDt>
  </wd:Report_Entry>
```

15 - Workday XML output



XML OVERVIEW

WHAT IS XML?

- XML stands for Extensible Markup Language.
- XML is a markup language, much like HTML.
- XML was designed to carry data, not to display data.
- XML tags are not predefined; each application must define its own tags.
- XML is self-descriptive.

XML does not *do* anything. XML was created to structure, store, and transport information.

WHAT DOES XML LOOK LIKE?

XML must be “well formed”.

```
<message>
  <record>
    <payload>Not really all that interesting</payload>
  </record>
  <record>
    <ofrelevance>yes</ofrelevance>
    <payload>Something more interesting</payload>
  </record>
</message>
```

16 - Well-formed XML example

XML has a single “root” element that contains all other elements.

<pre><message> <record> <payload>Not really all that interesting</payload> </record> <record> <ofrelevance>yes</ofrelevance> <payload>Something more interesting</payload> </record> </message></pre>	“root” element
---	-----------------------

17 - Root “message” element

Elements are nested.

```
<message>
  <record>                                record element [1]
    <payload>Not really all that interesting</payload>
  </record>
  <record>                                record element [2]
    <ofrelevance>yes</ofrelevance>
    <payload>Something more interesting</payload>
  </record>
</message>
```

18 - Nested "record" elements

Elements contain either text or other elements.

```
<message>
  <record>
    <payload>Not really all that interesting</payload>
  </record>
  <record>
    <ofrelevance>yes</ofrelevance>
    <payload>Something more interesting</payload>
  </record>
</message>
```

19 - "payload" element with text data

Elements have begin and end tags.

```
<message>
  <record>
    <payload>Not really all that interesting</payload>
  </record>
  <record>
    <ofrelevance>yes</ofrelevance>
    <payload>Something more interesting</payload>
  </record>
</message>
```

20 - Begin and end tags of "payload" element

Begin and end tags must be correctly nested.

```
<message>
  <record>
    <payload>Not really all that interesting</payload>
  </record>
  <record>
    <ofrelevance>yes</ofrelevance>
    <payload>Something more interesting</payload>
  </record>
</message>
```

21 - Nested "record" elements correctly delimited with begin and end tags

Elements can contain attributes. Attributes appear as *name="value"* pairs within begin tags.

```
<message>
  <record ID="001">      Attribute (ID with value of 001)
    <payload>Not really all that interesting</payload>
  </record>
  <record ID="002">      Attribute (ID with value of 002)
    <ofrelevance>yes</ofrelevance>
    <payload>Something more interesting</payload>
  </record>
</message>
```

22 - "record" elements with "ID" attributes

WORKDAY XML: RaaS ELEMENTS AND TAGS

Workday XML from RaaS has a predictable structure based on the report definition.

```

<?xml version="1.0" encoding="UTF-8"?>
- <wd:Report_Data xmlns:wd="urn:com.workday.report/WICT_RW_Positions">
  - <wd:Report_Entry>
    <wd:Title>Senior Benefits Analyst Allocation (3 Headcount Unfilled)</wd:Title>
    <wd:Pay>77500</wd:Pay>
    <wd:Available>0</wd:Available>
    <wd:AvailabilityDt>2000-01-01-08:00</wd:AvailabilityDt>
  </wd:Report_Entry>
  - <wd:Report_Entry>
    <wd:Title>Staff Benefits Analyst Allocation (1 Headcount Unfilled)</wd:Title>
    <wd:Pay>77500</wd:Pay>
    <wd:Available>0</wd:Available>
    <wd:AvailabilityDt>2000-01-01-08:00</wd:AvailabilityDt>
  </wd:Report_Entry>
  - <wd:Report_Entry>
    <wd:Title>Senior Payroll Specialist (1 Headcount Unfilled)</wd:Title>
    <wd:Pay>0</wd:Pay>
    <wd:Available>0</wd:Available>
    <wd:AvailabilityDt>2000-01-01-08:00</wd:AvailabilityDt>
  </wd:Report_Entry>
</wd:Report_Data>

```

23 - RaaS Workday XML structure

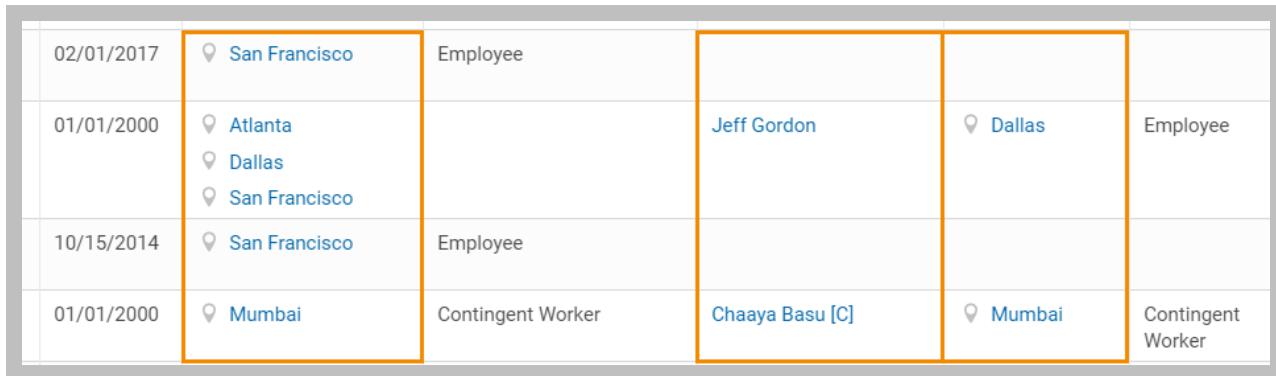
The **wd:Report_Data** root node contains list of **wd:Report_Entry** elements. (It also has an **xmlns** attribute that associates the **wd** prefix with the report namespace.)

Each **wd:Report_Entry** contains list of other elements or "fields" as defined by the report.

E.g., **wd:Pay** contains the contents of the Annual Compensation / Pay in USD field (**77500**).

SIMPLE TYPES VS. BUSINESS OBJECTS

All Business Objects (BOs) have Workday IDs (WIDs). “Simple” data types display in black, whereas BOs typically display as blue, actionable links. BOs have Related Actions.

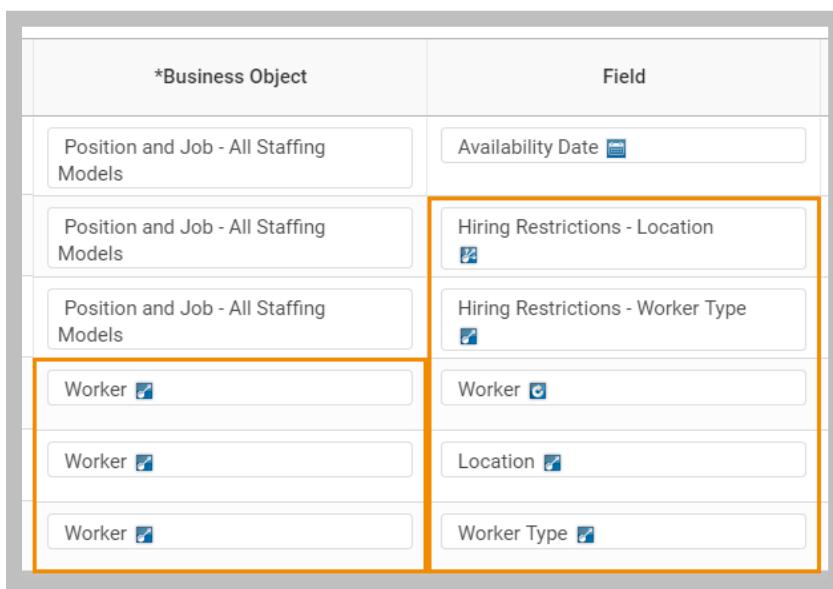


The screenshot shows a table with several columns. Some cells contain blue, underlined links (Business Objects), while others contain plain black text (Simple Types). Orange boxes highlight specific cells to illustrate the visual difference:

- Row 1, Column 2:** Contains a blue link "San Francisco".
- Row 2, Column 2:** Contains blue links "Atlanta", "Dallas", and "San Francisco".
- Row 3, Column 2:** Contains a blue link "San Francisco".
- Row 4, Column 2:** Contains a blue link "Mumbai".
- Row 1, Column 3:** Contains the word "Employee".
- Row 2, Column 3:** Contains the word "Employee".
- Row 3, Column 3:** Contains the word "Employee".
- Row 4, Column 3:** Contains the word "Contingent Worker".
- Row 1, Column 4:** Contains the word "Jeff Gordon".
- Row 2, Column 4:** Contains a blue link "Dallas".
- Row 3, Column 4:** Contains a blue link "Chaaya Basu [C]".
- Row 4, Column 4:** Contains a blue link "Mumbai".
- Row 1, Column 5:** Contains the word "Employee".
- Row 2, Column 5:** Contains the word "Employee".
- Row 3, Column 5:** Contains the word "Contingent Worker".

24 - Custom report output with related business objects

Fields that contain a BO have either a 1-to-1 or a 1-to-many relationship to the Business Object.

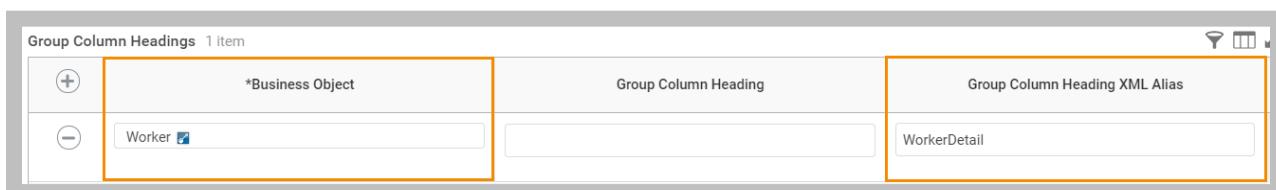


The screenshot shows the "Columns" tab of a report configuration. It lists various fields grouped by their source Business Object. Orange boxes highlight specific fields to demonstrate related business objects:

*Business Object	Field
Position and Job - All Staffing Models	Availability Date
Position and Job - All Staffing Models	Hiring Restrictions - Location
Position and Job - All Staffing Models	Hiring Restrictions - Worker Type
Worker	Worker
Worker	Location
Worker	Worker Type

25 - Custom report Columns tab with related business object fields

Use the Group Column Headings section to provide XML Aliases for related business object data.



The screenshot shows the "Group Column Headings" section of a report configuration. It includes a table with columns for "Group Column Headings" and "Group Column Heading XML Alias". Orange boxes highlight specific entries:

Group Column Headings	Group Column Heading XML Alias
*Business Object	
Worker	WorkerDetail

26 - Group Column Headings configured with Group Column Heading XML Alias

The resulting Workday XML contains *Integration IDs* associated with the business object instance. Related business objects are nested within Group Column Heading XML Aliases.

```

<?xml version="1.0" encoding="UTF-8"?>
- <wd:Report_Data xmlns:wd="urn:com.workday.report/WICT_RW_Positions">
  + <wd:Report_Entry>
  + <wd:Report_Entry>
  + <wd:Report_Entry>
  + <wd:Report_Entry>
  - <wd:Report_Entry>
    <wd:Position>P-00043</wd:Position>
    <wd:Title>IT HelpDesk Specialist - Jeff Gordon-P-00043</wd:Title>
    <wd:Pay>67920.04</wd:Pay>
    <wd:Available>0</wd:Available>
    <wd:AvailabilityDt>2000-01-01-08:00</wd:AvailabilityDt>
    - <wd:Restrictions-Location wd:Descriptor="Dallas">
      <wd:ID wd:type="WID">c2215e4e5d6e413aa972fc4d22f37870</wd:ID>
      <wd:ID wd:type="Location_ID">Dallas_site</wd:ID>
    </wd:Restrictions-Location>
    - <wd:Restrictions-Location wd:Descriptor="Atlanta">
      <wd:ID wd:type="WID">cc237600165744559cea44608b969271</wd:ID>
      <wd:ID wd:type="Location_ID">Atlanta_site</wd:ID>
    </wd:Restrictions-Location>
    - <wd:Restrictions-Location wd:Descriptor="San Francisco">
      <wd:ID wd:type="WID">d13a7c46a06443c4a33c09afbd72c73</wd:ID>
      <wd:ID wd:type="Location_ID">San_Francisco_site</wd:ID>
    </wd:Restrictions-Location>
    - <wd:WorkerDetail>
      - <wd:Worker wd:Descriptor="Jeff Gordon">
        <wd:ID wd:type="WID">50bf8a32796e476ca4e56a7c47b54d2b</wd:ID>
        <wd:ID wd:type="Employee_ID">21025</wd:ID>
      </wd:Worker>
      - <wd:Location wd:Descriptor="Dallas">
        <wd:ID wd:type="WID">c2215e4e5d6e413aa972fc4d22f37870</wd:ID>
        <wd:ID wd:type="Location_ID">Dallas_site</wd:ID>
      </wd:Location>
      - <wd:Type wd:Descriptor="Employee">
        <wd:ID wd:type="WID">d588c41a446c11de98360015c5e6daf6</wd:ID>
        <wd:ID wd:type="Worker_Type_ID">EE</wd:ID>
      </wd:Type>
    </wd:WorkerDetail>
  </wd:Report_Entry>
  + <wd:Report_Entry>
  + <wd:Report_Entry>
  + <wd:Report_Entry>
  + <wd:Report_Entry>
</wd:Report_Data>
```

27 - RaaS Workday XML output including objects

In this example, **wd:Location** contains a **wd:Descriptor** attribute with a value of **Dallas**.

ALTERNATE OUTPUT FORMATS

Simple XML

Workday XML may be too complex for many integration needs, such as quickly creating a refreshable report with Microsoft Excel. In such cases, the Simple XML option may be more appropriate.

Simple XML is particularly useful for basic desktop integrations, in which a knowledgeable user wants to integrate with other reporting tools such as Microsoft Excel or Crystal Reports. With Simple XML, the complexity of Workday XML is distilled into basic XML elements that are simple to understand and can be processed by many desktop applications.

Simple XML results in XML that is easier to read and understand than Workday XML. Here are a couple of key examples of how it is different:

- Single-instance fields are changed to simple string-type elements.
- Multi-instance fields are changed to simple string-type elements.
- Multi-instance fields within the primary business object are changed to simple string-type elements, with a semi-colon separating each value.
- Data fields that only contain dates (that is, they do not contain times) output dates only, with no times or offset from GMT.

Workday XML is the default output of an integration unless an alternate output is selected or a custom transformation is applied.

Other Output Formats

CSV: Comma-Separated Values. This output option is likely to be used to import data into a spreadsheet as simply and quickly as possible. No knowledge of XML or schemas is required.

RSS: Really Simple Syndication. It is an XML standard for publishing frequently updated content over the Internet. Common examples are news headlines and blog postings.

GData: Google Data protocol. This option is useful for integrations with Google gadgets and other cases where it is desirable to allow programmatic access to this data format.

JSON: JavaScript Object Notation. This lightweight format has become the de facto standard for data interchange with cloud-based REST APIs.



ACTIVITY 2.2 – ADD BUSINESS OBJECTS TO RAAS

Business Case: You have been asked to include some position restriction information as well as worker details to your web service output. The data should also be organization-specific.

- Modify the custom report to include object data, including fields from the Worker related business object (RBO).
- Add a prompt to filter by Supervisory Organization.
- Compare the output of Workday XML and Simple XML.

Shortcut: Use the pre-built report **WDINST RW EIB Positions with RBOs** and skip to Task #2.

TASK #1: MODIFY THE CUSTOM REPORT

1. Sign in as Logan McNeil (*lmcneil*).
2. Edit **WICT RW Positions** to include the following fields and XML aliases:

Business Object	Field	Column Heading Override XML Alias
Position and Job – All Staffing Models	Hiring Restrictions – Location	Restrictions-Location
Position and Job – All Staffing Models	Hiring Restrictions – Worker Type	Restrictions-Type
Worker	Worker	Worker
Worker	Location	Location
Worker	Worker Type	Type

3. Click the **Add** button in the **Group Column Headings** section and enter the following:
 - A. Business Object: *Worker*
 - B. Group Column Heading XML Alias: *WorkerDetail*

The screenshot shows the configuration interface for Business Object Fields and Group Column Headings. The main grid lists items such as 'Position and Job - All Staffing Models', 'Availability Date', and 'Worker Type'. Below this, a 'Group Column Headings' section contains one item with columns for 'Group Column Heading' and 'Group Column Heading XML Alias'. Orange boxes highlight specific fields and sections for emphasis.

28 - Business object fields and Group Column Headings

- Click the **Filter** tab and add the following filter condition:

Field Name	Entry Value
Field	Supervisory Organization
Operator	In the selection list
Comparison Type	Prompt the user for the value
Comparison Value	Default Prompt

The screenshot shows the 'Filter' configuration screen. It includes tabs for Columns, Sort, Filter (highlighted with an orange box), Subfilter, Prompts, Output, Share, and Advanced. Below these tabs is a table for defining filter conditions, with the last row highlighted by an orange box.

*Field	*Operator	Comparison Type	Comparison Value
Availability Date	greater than or equal to	Prompt the user for the value	Starting Prompt
Availability Date	less than or equal to	Prompt the user for the value	Ending Prompt
Supervisory Organization	in the selection list	Prompt the user for the value	Default Prompt

29 - Filter with business object prompt

- On the **Prompts** tab, click the **Populate undefined Prompt Defaults** checkbox to add the Supervisory Organization prompt. Accept the defaults.

The screenshot shows the 'Prompts' tab in the Workday interface. At the top, there are two checkboxes: 'Populate undefined Prompt Defaults' (unchecked) and 'Display Prompt Values in Subtitle' (checked). Below these is a table titled 'Prompt Defaults' containing three items:

	Order	*Field	Prompt Qualifier	Label for Prompt	Label For Prompt XML Alias
<input type="button" value="+"/>	▼ ▾	Supervisory Organization <input type="text"/>	Default Prompt		Supervisory_Organization
<input type="button" value="+"/> <input type="button" value="-"/>	▲ ▼	Availability Date <input type="text"/>	Starting Prompt		Start
<input type="button" value="+"/> <input type="button" value="-"/>	▲ ▲	Availability Date <input type="text"/>	Ending Prompt		End

30 - Prompts tab with business object prompt configured

TASK #2: RUN REPORT AND COMPARE SIMPLE XML TO WORKDAY XML

- Run the report with the following values:

Field Name	Entry Value
Supervisory Organization	IT HelpDesk Department
Starting Availability Date	01/01/2000
Ending Hire Date	[Today's Date]

Note: All five new fields are actionable, although only three are hyperlinked.

Availability Date	Hiring Restrictions - Location	Hiring Restrictions - Worker Type	Worker	Location	Worker Type
02/13/2017	📍 San Francisco	Employee			
02/10/2017	📍 San Francisco	Employee			
01/25/2017	📍 San Francisco	Employee			
02/01/2017	📍 San Francisco	Employee			
01/01/2000	📍 Atlanta 📍 Dallas 📍 San Francisco		Jeff Gordon	📍 Dallas	Employee

31 - Custom report output with actionable objects

2. Use the reports related actions to select **Web Service > View URLs**.
3. When prompted, enter the following:

Field Name	Entry Value
Supervisory Organization	IT HelpDesk Department
Starting Availability Date	01/01/2000
Ending Hire Date	[Today's Date]

4. On the View URLs Web Service page, select the **Workday XML** link.
 - A. If prompted, enter your tenant username and password at the basic authentication prompt.
 - B. Review the resulting XML. Pay particular attention to Position **P-00043**.

```
<?xml version="1.0" encoding="UTF-8"?>
- <wd:Report_Data xmlns:wd="urn:com.workday.report/WICT_RW_Positions">
+ <wd:Report_Entry>
+ <wd:Report_Entry>
+ <wd:Report_Entry>
+ <wd:Report_Entry>
- <wd:Report_Entry>
<wd:Position>P-00043</wd:Position>
<wd:Title>IT HelpDesk Specialist - Jeff Gordon-P-00043</wd:Title>
<wd:Pay>67920.04</wd:Pay>
<wd:Available>0</wd:Available>
<wd:AvailabilityDt>2000-01-01-08:00</wd:AvailabilityDt>
- <wd:Restrictions-Location wd:Descriptor="Dallas">
<wd:ID wd:type="WID">c2215e4e5d6e413aa972fc4d22f37870</wd:ID>
<wd:ID wd:type="Location_ID">Dallas_site</wd:ID>
</wd:Restrictions-Location>
- <wd:Restrictions-Location wd:Descriptor="Atlanta">
<wd:ID wd:type="WID">cc237600165744559cea44608b969271</wd:ID>
<wd:ID wd:type="Location_ID">Atlanta_site</wd:ID>
</wd:Restrictions-Location>
- <wd:Restrictions-Location wd:Descriptor="San Francisco">
<wd:ID wd:type="WID">d13a7c46a06443c4a33c09afbd72c73</wd:ID>
<wd:ID wd:type="Location_ID">San_Francisco_site</wd:ID>
</wd:Restrictions-Location>
- <wd:WorkerDetail>
- <wd:Worker wd:Descriptor="Jeff Gordon">
<wd:ID wd:type="WID">50bf8a32796e476ca4e56a7c47b54d2b</wd:ID>
<wd:ID wd:type="Employee_ID">21025</wd:ID>
</wd:Worker>
- <wd:Location wd:Descriptor="Dallas">
<wd:ID wd:type="WID">c2215e4e5d6e413aa972fc4d22f37870</wd:ID>
<wd:ID wd:type="Location_ID">Dallas_site</wd:ID>
</wd:Location>
- <wd:Type wd:Descriptor="Employee">
<wd:ID wd:type="WID">d588c41a446c11de98360015c5e6daf6</wd:ID>
<wd:ID wd:type="Worker_Type_ID">EE</wd:ID>
</wd:Type>
</wd:WorkerDetail>
</wd:Report_Entry>
+ <wd:Report_Entry>
+ <wd:Report_Entry>
+ <wd:Report_Entry>
+ <wd:Report_Entry>
</wd:Report_Data>
```

32 - Workday XML output including objects

5. Return to the View URLs Web Service page and click **Simple XML**.
6. Review the resulting XML. Again, pay close attention to Position **P-00043**.

```

<?xml version="1.0" encoding="UTF-8"?>
- <wd:Report_Data xmlns:wd="urn:com.workday.report/WICT_RW_Positions">
  + <wd:Report_Entry>
  + <wd:Report_Entry>
  + <wd:Report_Entry>
  + <wd:Report_Entry>
  - <wd:Report_Entry>
    <wd:Position>P-00043</wd:Position>
    <wd:Title>IT HelpDesk Specialist - Jeff Gordon-P-00043</wd:Title>
    <wd:Pay>67920.04</wd:Pay>
    <wd:Available>0</wd:Available>
    <wd:AvailabilityDt>2000-01-01</wd:AvailabilityDt>
    <wd:Restrictions-Location>Dallas; Atlanta; San Francisco</wd:Restrictions-Location>
    <wd:Worker>Jeff Gordon</wd:Worker>
    <wd:Location>Dallas</wd:Location>
    <wd>Type>Employee</wd>Type>
  </wd:Report_Entry>
  + <wd:Report_Entry>
  + <wd:Report_Entry>
  + <wd:Report_Entry>
  + <wd:Report_Entry>
</wd:Report_Data>

```

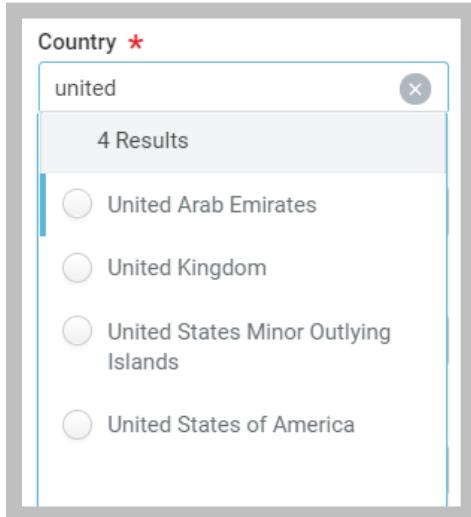
- Compare the Simple XML to the Workday XML. What do you notice about the business objects?
- Compare the actual URLs of the Workday XML and the Simple XML. What is the difference between them?
- What is controlling the element names of the fields in the Workday XML? For example, if you wanted to change the value of <wd:AvailabilityDt> to <wd:AvailabilityDate>, where is that action performed?
- When viewing the Workday XML, the document contains a namespace of wd="urn:com.workday.report/WICT_RW_Positions". Where in the report definition is that defined?



INTEGRATION IDS

Workday uses "Integration IDs" as an umbrella term for all of the various object identifiers that can be used for integrations.

Many fields in Workday appear as lookups, presenting users with a limited list of values. Users can narrow down a list by typing in known codes (e.g., a worker's employee ID) or partial search terms (e.g., the first few letters of an organization's title).



33 - Country prompt

Each of these values is actually an object instance in Workday. Unlike users entering them through the Workday UI, background processes cannot generally access objects using their descriptions. **Integration IDs** provide a method to identify an object for retrieval or update.

Integration ID types include **Workday ID (WID)**, **Reference ID** and **External ID**.

Integration IDs United States of America		Actions
Workday ID	bc33aa3152ec42d4995f4791a106ed09	
Reference IDs 3 items		
Type	ID	
ISO_3166-1_Alpha-3_Code	USA	
ISO_3166-1_Numeric-3_Code	840	
ISO_3166-1_Alpha-2_Code	US	

34 - Integration IDs for a Country instance

Workday ID (WID)

A globally unique identifier that Workday automatically generates on all object data. Workday IDs consist of a 32-character, immutable string. E.g., bc33aa3152ec42d4995f4791a106ed09.

WIDs are unique across all Workday environments, thus the same Workday object has different WIDs in your production, testing, and implementation tenants. Although the use of WIDs can prevent integrations from inadvertently running against the wrong environment, testing and migration of these integrations is more complex.



Tip: The exception to the above is the sandbox environment, which is a regularly refreshed clone of your production environment. Because these two tenants share WIDs, it is recommended to test your integrations fully in your sandbox in case any of your solutions use WIDs for object references.

Reference ID

An optional, unique identifier that can be set externally or within Workday. Workday determines whether a business object can have one or more Reference ID types. All Reference IDs contain a "type" and a "value".

- The "type" defines the attribute that holds the unique identifier (e.g. ISO_3166-1_Alpha-3_Code).
- The "value" is the identifier itself (e.g. USA).

Reference IDs are only unique by type and value and can be shared between tenants. This allows you to build an integration in one environment and use the same object identifiers after moving to production. While Workday uses WIDs internally to represent data, Reference IDs are more useful for integration purposes, particularly when users need to manipulate them, such as when populating spreadsheet templates for inbound EIB integrations.

External ID

A two-part, unique identifier that is determined by an external system. They require an "Integration System" together with an identifier value. In prior versions, these IDs were referred to as "Integration IDs" but are now called "External IDs" for clarity. Since the introduction of Reference IDs, External IDs have become less common in integrations.

External IDs consist of:

- A "System ID", which identifies an integration system in Workday. E.g., "SFDC" is a System ID for a tenanted integration system between Workday and Salesforce.com.
- A "value", which identifies a particular business object instance. E.g., W-001 is the external ID value for the Western region instance of the sales organization.

Reserved System ID

A subtype of External ID that allow for backward compatibility with the original v1 and v2 operations in the Workday API. The Reserved System IDs are internal system ID values that are needed for some web service operations that have not been updated to use Reference IDs.

There are two types of Reserved System IDs still in use today:

- **WD-WID:** Used to pass Workday IDs into a v1 or v2 operation.
- **WD-EMPLID:** Used to pass Employee IDs or Contingent Worker IDs into a v1 or v2 operation.

For example, the Add Workday Account operation does not yet support Reference IDs. Integrations like the following EIB template need to use the WD-EMPLID System ID in order to refer to an existing worker when creating an account:

	A	B	C	D	E	F
1	Workday Account for Worker Add					
2	Area	Employee Reference	Contingent Worker Reference		Workday Account for Work	
3	Restrictions	Optional	Optional	Optional	Optional	Required
4	Format	Text	Text	Text	Text	Text
5	Fields	System ID	ID	System ID	ID	User Name*
6		WD-EMPLID	21226			djackson
7		WD-EMPLID	21225			jwilson

35 - Spreadsheet template for Add Workday Account inbound EIB

FINDING INTEGRATION IDS

Methods to locate the IDs needed for integrations consist of using related actions from objects in the user interface, and running the Integration ID or View Reference ID reports.

Workday user interface

One of the most effective ways to become familiar with the Workday object model and Integration IDs is through the Workday UI.

To view IDs for a specific instance of a business object, click **Related Actions > Integration IDs > View IDs**.

The screenshot shows the Workday user interface for an employee profile. On the left, there is a circular portrait of Logan McNeil, Vice President, Human Resources. Below the portrait, her name and title are displayed. To the right, there is a 'Job Details' card with fields for Employee ID (21001), Organization (Global Moder), and Position (Vice Presiden). Below this, there is a 'Location' card with San Francisco listed as the location. On the far left, a sidebar titled 'Actions' lists various options: Location, Additional Data, Audits, Business Process, Favorite, Hierarchy, Integration IDs, Job Application, Payroll, Reporting, Reports, and Sort Order. The 'Integration IDs' option is highlighted with a yellow box. A dropdown menu for 'Integration IDs' is open, showing three options: View IDs, Edit External IDs, and Edit Reference ID. The 'View IDs' option is also highlighted with a yellow box. To the right of the dropdown, there is a table with columns for Location Usage, Location Type, and Locale. The table contains the following data:

Location Usage	Location Type	Locale
Business Asset	North America	English (United States) - en_US
Business Site	USA - Western US	San Francisco
Payroll Tax		
Headquarters		

36 - Integration IDs > View IDs related action

Integration IDs San Francisco Actions

Workday ID d13a7c46a06443c4a33c09afbd72c73

Reference IDs 1 item

Type	ID
Location_ID	San_Francisco_site

External IDs 2 items

System	ID Value
ADP PayForce	SF1
New Organization Hierarchy Load (EIB)	San_Francisco_site

37 - Integration IDs for a Location instance

Integration IDs report

This delivered report includes IDs for tenanted and non-tenanted data. Since Reference IDs are optional in Workday, and not all business objects support them, the Integration IDs report could contain instances of data that do not have reference ID values.

To find all of the Integration IDs associated with a business object in Workday, search for the **Integration IDs** report and enter one or more Business Object types at the prompt.

Integration IDs

Business Object *

- X Language Proficiency
- X Language Ability Type
- X Language Ability
- X Language

38 - Integration IDs report prompt with multiple business objects

← Integration IDs				
Business Object	Instance	Workday ID	Reference IDs	
			Type	ID
Language Proficiency	1 - Beginner	bd89ce7337104d64a4b7141d22a4b8d7	Language_Proficiency_ID	233.1
Language Proficiency	2 - Classroom Study	283bb7753241410a87f50871a2635ca0	Language_Proficiency_ID	233.2
Language Proficiency	3 - Intermediate	ed6b319958e24a1e869b46f0ce2fd7af	Language_Proficiency_ID	233.3
Language Proficiency	4 - Advanced	d76547fac38d479282925b73b67dad0	Language_Proficiency_ID	233.4
Language Proficiency	5 - Fluent	82412376d1cb4ad0a568245bee9631fa	Language_Proficiency_ID	233.5
Language	English	deff4eab62f646b8904e180693dce877	Language_ID	234.1
Language	Latin	953c429ff8724c0ba4827a553a762384	Language_ID	234.2

39 - Integration IDs report displaying WIDs and Reference IDs



Tip: Several worker-related business events prompt the user to enter a reason (e.g., hire, change job, termination). These event codes are classified into categories and subcategories. Categories make it easier to look up an event reason when entering data; the subcategory value is actually stored in the field. Use the Integration IDs report to generate a list of the subcategory reference IDs that you might need for an integration.

Business Object	Instance	Workday ID	Reference IDs	
			Type	ID
Category	Information	7125a70bdf10f6	gory_ID	
General Event Category	Manage Medicare Information > Add New Medicare Information	2e24fa108aea10d5fd 71262fc18e10f9	General_Event_Cate gory_ID	GENERAL_EVENT_CATEGORY-16-65
General Event Category	Create Position > Acquisition	2eb21d19e0a110106 777b47313090362	General_Event_Cate gory_ID	GENERAL_EVENT_CATEGORY-16-66
General Event Category	Create Job Requisition > Acquisition	2eb21d19e0a110106 7a72403af7f038d	General_Event_Cate gory_ID	GENERAL_EVENT_CATEGORY-16-67
General Event Category	Hire Employee > Acquisition	2eb21d19e0a110106 7d6d4ef4dab03ca	General_Event_Cate gory_ID	GENERAL_EVENT_CATEGORY-16-68
General Event Subcategory	Additional Headcount Request > Headcount Request > New Project	b1f726390965404f8 19ccda1fe078b85	Event_Classification _Subcategory_ID	Additional_Headcount_Request_Headcount_Requ est_New_Project
			General_Event_Sub category_ID	Additional_Headcount_Request_Headcount_Requ est_New_Project
General Event Subcategory	Additional Headcount Request > Headcount Request > Understaffed	987832b94d2841ba9 519aaaa7a037095	Event_Classification _Subcategory_ID	Additional_Headcount_Request_Headcount_Requ est_Understaffed
			General_Event_Sub category_ID	Additional_Headcount_Request_Headcount_Requ est_Understaffed

40 - Integration IDs report for General Event Categories and Subcategories

View Reference ID report

This delivered report shows all reference IDs for a single business object. It will display reference IDs specific to your tenanted data only.

The screenshot shows a report titled "View Reference IDs". At the top, there are filter and export icons. Below the title, there are two columns: "Business Object" and "Language". A message indicates "84 items". The main content is a table with three columns: "Business Object Instance", "Reference ID Type", and "Reference ID Value". The data rows are: English (Language_ID, 234.1), Latin (Language_ID, 234.2), Polish (Language_ID, 234.3), and Russian (Language_ID, 234.4). The table has scroll bars on the right side.

Business Object Instance	Reference ID Type	Reference ID Value
English	Language_ID	234.1
Latin	Language_ID	234.2
Polish	Language_ID	234.3
Russian	Language_ID	234.4

41 - View Reference IDs report displaying Reference IDs for a business object



ACTIVITY 2.3 – FIND INTEGRATION IDS

Business Case: In order to become more familiar with Workday Integration IDs, you will find integration IDs for various business objects using different methods.

- Use related actions to find integration IDs through the UI.
- Run reports to review integration IDs for multiple instances of objects.

TASK #1: USE THE UI TO VIEW REFERENCE IDS

1. Sign in as Logan McNeil (*/mcneil*).
2. Click Logan McNeil's profile picture and click **View Profile** to access her **Job Details** (visible from the Summary or Job page).
3. Use the related actions of the following objects to find the listed integration IDs:

Object	Integration ID Type	Value
Organization	Organization_Reference_ID	
Position	WID	
Time Type	Position_Time_Type_ID	
Location	Location_ID	

TASK #2: USE THE INTEGRATION IDS REPORT TO VIEW INTEGRATION IDS

1. Search for and select the *Integration IDs* report to run it.
2. Run the report for the following Business Objects to find the listed integration IDs:

Business Object	Instance	Integration ID Type	Value
Language	French	WID	
Language	Russian	Language_ID	
Country	United States	WID	
Country	Canada	ISO_3166-1_Alpha-2_Code	
Employee Type	Regular	WID	

Business Object	Instance	Integration ID Type	Value
Supervisory Organization	IT HelpDesk Department	WID	
Supervisory Organization	Field Sales – North American Group	Organization_Reference_ID	
General Event Subcategory	Request Compensation Change > Adjustment > Performance	General_Event_Subcategory_ID	

TASK #3: USE THE VIEW REFERENCE IDS REPORT TO VIEW REFERENCE IDS

1. Search for and select the *View Reference IDs* report to run it.
2. Run the report for the following Business Objects to find their Reference IDs:

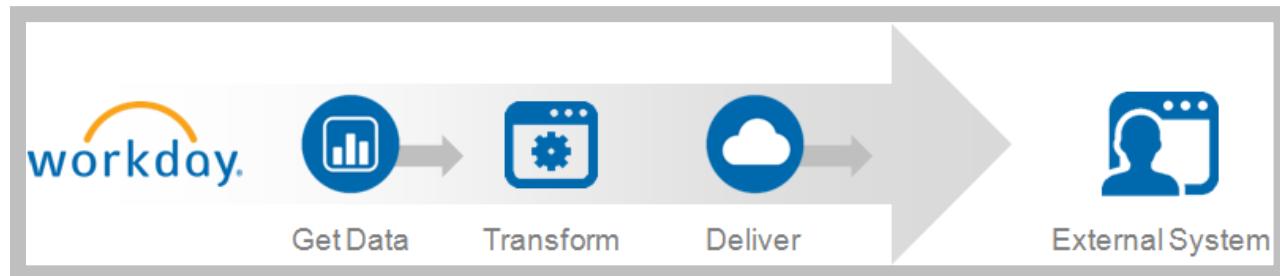
Business Object	Instance	Reference ID Type	Value
Absence Plan	Floating Holiday Plan		
Compensation Plan	General Salary Plan		



SIMPLE INTEGRATIONS – EIB AND RAAS

ENTERPRISE INTERFACE BUILDER

The Enterprise Interface Builder (EIB) tool provides an easy-to-use graphical and guided interface to define inbound and outbound integrations with little to no programming. Both IT users and business experts can leverage EIB to address simple integration needs.



42 - Enterprise Interface Builder (EIB) Outbound Design Pattern

Because of its ease-of-use, EIB makes up 40-50% of all customer integrations. Of those, up to 90% are outbound and use RaaS as the data source. Inbound EIB can make use of spreadsheet templates, allowing bulk imports of Excel-entered data into a Workday web service without any additional coding.

EIB is quite limited, in that each integration only supports a single data source, one transformation (if needed), and one endpoint. Furthermore, EIB does not support any conditional logic, error handling, or configurable integration maps or attributes. As such, use EIB to solve integration problems of low data volume and complexity.



Additional Training: The Simple Integrations course (3-day VILT) covers multiple inbound and outbound EIB use cases, including RaaS, WWS, custom transformation, and spreadsheet templates.

VIEWING AN INTEGRATION SYSTEM

To search for an existing integration system, you can run the “View Integration System” report.

The screenshot shows a search interface for an integration system. The search term 'wdinst' is entered into a search bar. A dropdown menu titled '5 Results' appears, listing two items: 'WDINST CC Positions' and 'WDINST CC Positions with DT'.

43 - Locating Integration Systems using the View Integration System report

You can also search for the name of the integration system directly. When searching, the default scope is “Common”. Since an integration will not be displayed using the Common scope, you will need to change it to “Integrations” or “All of Workday”.

The screenshot shows the Workday search interface. The search term 'cc' is entered in the search bar. The 'Categories' sidebar on the left lists 'Common', 'Assets', 'Banking', 'Expenses', 'Financial Accounting', 'Integrations' (which is selected and highlighted with an orange border), and 'Organizations'. The 'Search Results' section on the right shows 9 items under 'Tasks and Reports' (e.g., 'Sub Report - Plan Lines CC Headcount') and 'Integrations' (e.g., 'WDINST CC Positions' and 'WDINST CC Positions with DT').

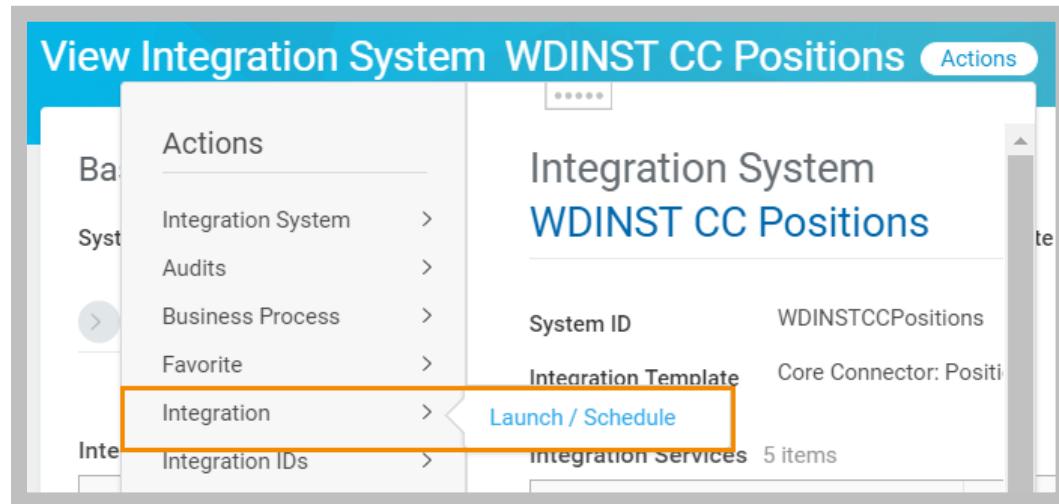
44 - Locating Integration Systems by search and category



Tip: Use the *intsys:* prefix to force a search on integration systems by name.

LAUNCHING AN INTEGRATION SYSTEM

From an integration system's Related Actions, select **Integration > Launch/Schedule**.



45 - Launching an Integration System by related action

Launch / Schedule options include restricting processing by Organization and choosing a Run Frequency.

The screenshot shows the 'Launch / Schedule Integration' dialog. It has fields for 'Integration' (set to 'WDINST CC Positions') and 'Organization' (empty). The 'Run Frequency' field is set to 'Run Now' and has a red asterisk indicating it's required. A dropdown menu for 'Run Frequency' is open, listing several options: 'Daily Recurrence', 'Hourly Recurrence', 'Minute Recurrence', 'Monthly Recurrence', 'Run Now' (which is highlighted with a blue box), 'Run Once in the Future', and 'Weekly Recurrence'.

46 - Launch / Schedule Integration task with Run Frequency options

You must populate any required launch parameters, which could include prompts from a custom report data source.

Field	Description	Value Type	Value
<input checked="" type="checkbox"/> Position(s)	Extracts only the specified Position(s).	Specify Value	
<input checked="" type="checkbox"/> Supervisory Organization(s)	Extracts Positions for only the specified Supervisory Organization(s).	Specify Value	
<input checked="" type="checkbox"/> Location(s)	Extracts Positions for only the specified Location(s).	Specify Value	
<input checked="" type="checkbox"/> Full Extract	Extracts Positions as of the As Of Entry Moment and Effective Date, regardless of whether or not they have changed.	Specify Value	<input type="checkbox"/>

47 - Entering Integration Criteria



Note: With the exception of integration systems built with the EIB template, all integration systems require an integration system user account when launched in a Production tenant.

VIEW BACKGROUND PROCESS EVENT

When an integration is set to Run Now, the View Background Process page is displayed immediately. Click the **Refresh** button until you see the Status change. If there are no errors, the Status will change to **Completed** once the integration event has finished processing.

Process	WDINST CC Positions
Request Name	WDINST CC Positions
Status	Processing
Percent Complete	<div style="width: 75.00%;">75.00%</div>
Current Processing Time (hour:min:sec)	00:00:06

Refresh

Integration Details Process Info Process History Output Files (0)

Integration Process

Parent Event Integration: WDINST CC Positions - 10/05/2017 09:20:42.812

Integration Event WDINST CC Positions - 10/05/2017 09:20:42.812 (Processing)

Event Type Integration Event

Integration System WDINST CC Positions

[48 - View Background Process Page for an Integration Event](#)

INTEGRATION EVENT

Launching an integration system creates a new integration event. The integration background process performs any required transformations and outputs the appropriate files or web service messages.

You can access an event via the Process Monitor, however, the **Integration Events** report was specifically designed to monitor and review the results of integrations.

Integration Events

Integration Systems

Integration Event Status

by Person

Sent After 10 / 01 / 2017

Sent Before MM / DD / YYYY -- : -- : -- AM

49 - Integration Events report search criteria

 **Tip:** Since each launch of an integration produces a new event, you should enter some criteria, such as a Sent After date and time, to limit the number of results.

← Integration Events [Actions](#)

Sent After 10/01/2017 12:00:00 AM

6 items

Workday Integration Cloud Platform (ESB) Process IDs	Event Type	Integration Event	Integration System	by Person
41c22532dbb601ab860c955d08003500	Integration Event	WDINST CC Positions - 10/05/2017 09:20:42.812 (Completed)	WDINST CC Positions	Logan McNeil
29ca06f51b11016ee1ff6b5021000c01	Integration Event	WDINST DT Positions XTT Fixed - 10/02/2017 17:16:14.876 (Completed with Warnings)	WDINST DT Positions XTT Fixed	Logan McNeil
29ca06f51b1101394a9ebc4e2100f600	Integration Event	WDINST CC Positions with DT - 10/02/2017 17:16:07.371 (Completed)	WDINST CC Positions with DT	Logan McNeil
29ca06f51b1101478f1f323c2100da00	Integration Event	WDINST CC Positions - 10/02/2017 17:14:47.793 (Completed)	WDINST CC Positions	Logan McNeil
29ca06f51b1101546dc59d812000be00	Integration Event	Retrieval - 10/02/2017 17:01:26.679 (Completed)	Retrieval	Logan McNeil
29ca06f51b1101546dc59d812000be00	Integration Event	WDINST EIB Positions - 10/02/2017 17:01:25.841 (Completed)	WDINST EIB Positions	Logan McNeil

50 - Integration Events report results

Clicking a link in the **Integration Event** column opens the View Background Process page for that launch. Each link in the **Integration System** column is a reference to the integration system itself, providing easy access to its View Integration System page and related actions.



ACTIVITY 2.4 – CREATE AND LAUNCH EIB

Business Case: You will create your first integration using EIB to invoke your web service-enabled report.

- The EIB will leverage the WICT RW Positions custom report.
- This first integration system will not require transformation nor deliver the output externally.

Shortcut: Use the pre-built integration **WDINST EIB Positions** and skip to Task #2. (Note: The output for this integration is JSON instead of XML.)

TASK #1: CREATE EIB

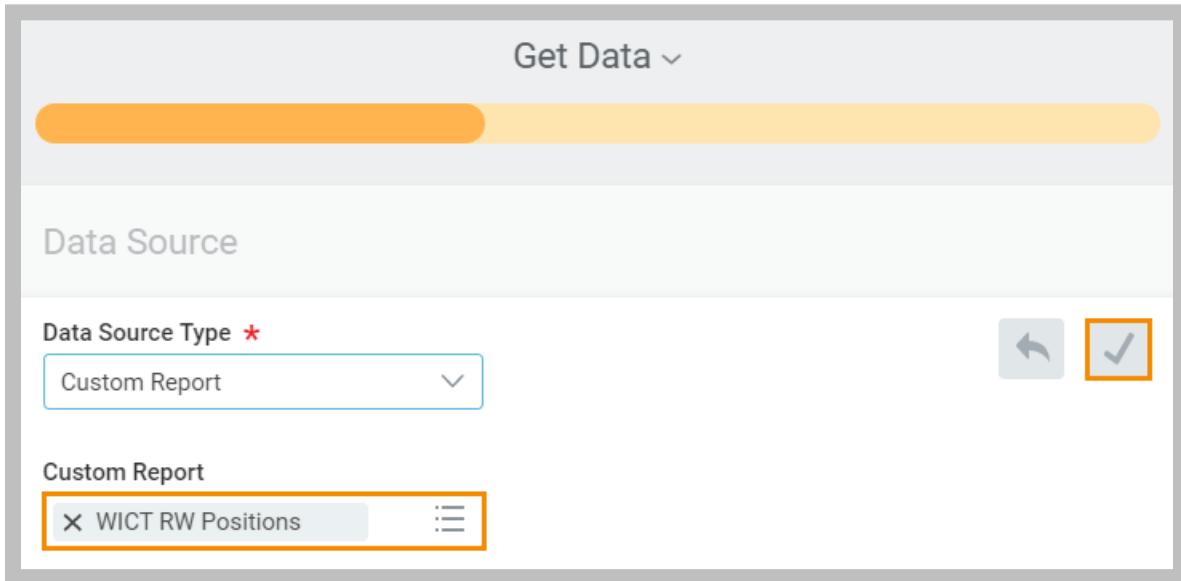
1. Sign in as Logan McNeil (*lmcneil*).
2. Search for and select the **Create EIB** task.
 - A. Enter a **Name** of *WICT EIB Positions*.
 - B. Select the **Outbound** option.
 - C. Click the **OK** button.

51 - Create EIB task

3. Click **Next** to accept the default General Settings.

4. In the Data Source section, click the **Edit** button .

 - A. In the Custom Report field, select the **WICT RW Positions** report.
 - B. Click the **Save** button .
 - C. Click **Next** to complete the Get Data step.



52 - EIB Get Data step

5. Click **Next** to skip the Transform step.
6. In the Deliver section, click the **Edit** button.
 - A. Enter a **File Name** of *positions.xml*.
 - B. Click the **Save** button.
 - C. Click **Next** to complete the Deliver step.

Deliver ▾

Deliver

Delivery Method *

Workday Attachment ▼

✓

Delivery Details
(Workday Attachment)

File Name *

positions.xml

Document Retention Policy (in Days) *

1

53 - EIB Deliver step

7. Review the Summary and click **OK**.

The screenshot shows the 'View Integration System WICT EIB Positions' page. At the top right is an 'Actions' button. Below it is a 'Basic Details' section with a 'System Name' field containing 'WICT EIB Positions'. A 'System ID' link is shown below. A navigation bar at the bottom of this section includes 'Configuration' (selected) and 'Security'. The main content area is titled 'Get Data' and contains fields for 'Name' (Custom Report) and 'Data Source' (WICT RW Positions). A 'Details' link is present. The 'Deliver' section shows one item with a table:

Delivery	File Name	Document Retention Policy
Delivery Method Workday Attachment	positions.xml	1 Sequence

54 - Viewing the EIB integration system

TASK #2: LAUNCH EIB

1. Search for and select the **WICT EIB Positions** integration system.
2. Use WICT EIB Positions' related actions to select **Integration > Launch / Schedule**.
3. From its **Related Actions**, select **Integration > Launch/Schedule**.

4. Verify the **Run Frequency** is **Run Now** and click **OK**.

5. Enter the following integration criteria:

Field Name	Entry Value	
Supervisory Organization	IT HelpDesk Department	
Starting Availability Date	01/01/2000	
Ending Hire Date	[Today's Date]	

Field	Value Type	Value
Supervisory Organization	Specify Value	IT HelpDesk Department
Starting Availability Date	Specify Value	01/01/2000
Ending Availability Date	Specify Value	10 / 01 / 2017

55 - EIB Integration Criteria

6. Click **OK**.

7. On the View Background Process page, click **Refresh** until the Status is **Completed**.

View Background Process
WICT EIB Positions
Actions

Process	WICT EIB Positions
Request Name	WICT EIB Positions
Status	Completed
Current Processing Time (hour:min:sec)	00:00:15

Integration Details
Process Info
Process History
Output Files (1)
Messages (3)

Enterprise Interface Event WICT EIB Positions - 10/05/2017 10:11:24.907 (Completed)

Integration Process

Parent Event Integration: WICT EIB Positions - 10/05/2017 10:11:24.907

56 - Background Process details for Completed EIB integration event

8. On the **Output Files** tab, select the **positions.xml** file to view it.

```

<?xml version="1.0" encoding="UTF-8"?>
- <wd:Report_Data xmlns:wd="urn:com.workday.report/WICT_RW_Positions">
  - <wd:Report_Entry>
    <wd:Position>P-00030</wd:Position>
    <wd:Title>Senior IT Analyst (Unfilled)-P-00030</wd:Title>
    <wd:Pay>77500</wd:Pay>
    <wd:Available>1</wd:Available>
    <wd:AvailabilityDt>2017-02-13-08:00</wd:AvailabilityDt>
    - <wd:Restrictions-Location wd:Descriptor="San Francisco">
      <wd:ID wd:type="WID">d13a7c46a06443c4a33c09afbd72c73</wd:ID>
      <wd:ID wd:type="Location_ID">San_Francisco_site</wd:ID>
    </wd:Restrictions-Location>
    - <wd:Restrictions-Type wd:Descriptor="Employee">
      <wd:ID wd:type="WID">d588c41a446c11de98360015c5e6daf6</wd:ID>
      <wd:ID wd:type="Worker_Type_ID">EE</wd:ID>
    </wd:Restrictions-Type>
  </wd:Report_Entry>
  - <wd:Report_Entry>
    <wd:Position>P-00031</wd:Position>
    <wd:Title>Senior IT Analyst (Unfilled)-P-00031</wd:Title>
    <wd:Pay>77500</wd:Pay>
    <wd:Available>1</wd:Available>
    <wd:AvailabilityDt>2017-02-10-08:00</wd:AvailabilityDt>
    - <wd:Restrictions-Location wd:Descriptor="San Francisco">
      <wd:ID wd:type="WID">d13a7c46a06443c4a33c09afbd72c73</wd:ID>
      <wd:ID wd:type="Location_ID">San_Francisco_site</wd:ID>
    </wd:Restrictions-Location>
    - <wd:Restrictions-Type wd:Descriptor="Employee">
      <wd:ID wd:type="WID">d588c41a446c11de98360015c5e6daf6</wd:ID>
      <wd:ID wd:type="Worker_Type_ID">EE</wd:ID>
    </wd:Restrictions-Type>
  </wd:Report_Entry>

```

57 - Outbound EIB RaaS output

CHALLENGE TASK: OUTPUT JSON INSTEAD OF WORKDAY XML

1. Edit the EIB Data Source to select an **Alternate Output Format** of **JSON**.
2. Change the **File Name** in the Deliver section to *positions.txt* to view it in a text editor.

Hint: Use the EIB's related action **Enterprise Interface > Edit** to return to the Summary.



CHAPTER 3 – WORKDAY WEB SERVICES

OVERVIEW

Workday's public web services (WWS) offer an open, standards-based API for programmatic access to our on-demand business management services. Integration Cloud Connect is a collection of templates that allows customers to take advantage of the power of WWS through configuration rather than coding.

OBJECTIVES

By the end of this chapter, you will be able to:

- Locate documentation on Workday's public web services.
- Submit web service requests to Workday using a third-party application.
- Explain Workday's web service support policy.
- Create a prebuilt integration using a Core Connector template.

PUBLIC WEB SERVICES – SOAP API

Even without using Workday's delivered and supported integration templates, you can incorporate Workday's public web service (WWS) operations into your own applications.

API DOCUMENTATION

You might find it helpful to familiarize yourself with the details of the available WWS operations so that you understand their elements and validations: <https://community.workday.com/api>.

Workday Web Services (WWS) API Documentation

The Workday Community contains the latest documentation for our SOAP- and REST-based web services, with corresponding Web Service Description Language (WSDL) and XML Schema (XSD) files.

The screenshot shows the Workday Web Services (WWS) Directory (v29.0) page. At the top, there is a logo for workday® and the title "Workday Web Services (WWS) Directory (v29.0)". Below the title, a message states: "The following directory provides the (v29.0) WWS API Documentation for our SOAP-based web services with corresponding WSDL and XML Schemas (XSD's).". It also includes links to "Version Directory" and "Operation Directory". A "Service Directory Legend" section defines icons for WSDL and XSD. A note says: "Click a web service for a directory of operations in that service." A table lists three services: Absence_Management, Academic_Advising, and Academic_Foundation, each with a description and links to WSDL and XSD files.

Service	Description	Definitions
Absence_Management	The Absence Management Web Service contains operations that expose absence-related data, including Employee Time Off and Absence Inputs for time off and accrual adjustments and overrides, and Leave Requests, in Workday Human Capital Management Business Services.	wsdl xsd
Academic_Advising	Web Service for retrieving objects related to Academic Advising, such as Student Academic Requirement Assignments.	wsdl xsd
Academic_Foundation	Public Web Service for creating, editing and retrieving the foundational objects for the Student System, such as Programs of Study, Educational Institutions, and other other objects with cross-module uses.	wsdl xsd

58 - Workday Web Services (WWS) Directory

Select a web service to view all of its available operations.

Service Directory > v29.0 > Staffing

Web Service: Staffing (v29.0)

The Staffing Web Service operations expose Workday Human Capital Management Business Services and data. These services support staffing transactions for both employees and contingent workers, such as bringing employees and contingent workers on board.

Version

- v29.0 [wsdl](#) [xsd](#)

Operations

Operation	Description
Add_Additional_Job	Adds an additional job for an existing employee. Uses the Add Additional Job business process.
Add_Retiree_Status	Changes the status of a previously terminated worker to retiree. Uses the Retire Worker business process.
Assign_Organization	Assigns company, cost center, region, fund, grant, business unit, program organizations configured for staffing usage to a staffing position. Uses the Assign Organization business process.
Assign_Organization_Roles DEPRECATED	Assigns organization roles to one or more workers. Uses the Assign Organization Roles business process. All new and existing assignees must be specified. Any existing role assignees that are not included in the set of role assignments will be removed. Workday highly recommends you use 'Assign_Roles' web service operation.
Assign_Roles	Assigns roles to assignees and uses the Assign Roles business process. If you specify a worker as the event target or an assignee, the worker has multiple positions as of the role assignment effective date, the primary position (IA) will take precedence over the worker's primary position. If a worker with multiple positions as an assignee to remove will remove all the assignments for that worker for that role assignment.

59 - Staffing web service operations

By selecting a specific operation, you can learn about its requirements, including the request and response messages, and their underlying elements. You can even download sample XML requests and responses.

Service Directory > v29.0 > Staffing > Get_Positions

Operation: Get_Positions

Returns information for position management positions. If a position is filled, identifies the worker filling the position.

@ - A parameter name with this symbol denotes an XML attribute within the document instead of an XML element.

Contents

- [Web Service](#)
- [Request](#)
- [Response](#)
- [Elements](#)

Web Service

- Staffing (v29.0) [wsdl](#) [xsd](#)

Request

- Element: [Get_Positions_Request](#) [xml](#)

Response

- Element: [Get_Positions_Response](#) [xml](#)

60 - Get Positions service operation details

WEB SERVICES DESCRIPTION LANGUAGE

Web Services Description Language (WSDL) is an XML-based interface definition language that describes the functionality offered by a web service. Workday provides WSDL documents for all publicly available services.

WSDL TERMINOLOGY

Term	Definition
Service	The available service and its Port
Port	The address or connection point to a web service
Binding	The binding style and transport for one or more Port Types
Port Type (Interface)	The input and output messages needed to perform an operation
Operation	A function or method being called via the service
Types	The valid data elements and structures for web service messaging

VIEWING THE WSDL TO DETERMINE ENDPOINT

Community documentation is not sufficient to integrate with a specific Workday tenant. You need to determine the actual endpoint for the WWS that you wish to access.

For each delivered web service, you can view the WSDL specific to your tenant by running the **Public Web Services** report. (You can also retrieve the WSDL to access custom objects you have built in your tenant.)

Web Service	Documentation
Absence Management (Public)	The Absence Management Web Service contains operations that expose absence-related data, including Employee Time Off and Absence Inputs for time off and accrual adjustments and overrides, and Leave Requests, in Workday Human Capital Management Business Services.
Academic Advising (Public)	Web Service for retrieving objects related to Academic Advising, such as Student Academic Requirement Assignments.
Academic Foundation (Public) ...	Actions , editing and retrieving the foundational objects for the ams of Study, Educational Institutions, and other other s.
Admissions (Public)	Web Service > View Custom WSDL Integration IDs > Security >
Adoption (Public)	ns. ns.
Benefits Administration (Public)	The Benefits Administration Web Service contains operations that expose Workday Human Capital Management Business Services benefits related data.

61 - Public Web Services Report with View WSDL related action

From the desired Web Service's Related Actions, click **Web Service > View WSDL**. Scroll to the bottom of the WSDL and you will find the service endpoint in the location attribute within the `<soapbind:address>` element:

```

</wsdl:fault>
</wsdl:operation>
</wsdl:binding>
▼<wsdl:service name="StaffingService">
  ▼<wsdl:port name="Staffing" binding="wd-wsdl:StaffingBinding">
    <soapbind:address location="https://[REDACTED]
      host01.workdayeducation.com/ccx/service/crossappgms01/Staffing/v30.0"/>
  </wsdl:port>
</wsdl:service>
</wsdl:definitions>

```

62 - WSDL SOAP binding address location

The API at this URL can accept SOAP-based web service requests from external applications into your Workday tenant.



Reminder: You do not generally need to download a WSDL if you use Workday's delivered technologies to integrate with external systems. Workday Studio, for example, includes a Schema Explorer that allows you to test and develop for WWS without having to run the Public Web Services report in your tenant.

WORKDAY XML: WORKDAY PUBLIC WEB SERVICES

The XML response from a Workday Web Service (WWS) request is specific to each service operation and often more complex than the output from a RaaS request.

```

<env:Envelope xmlns:env="http://schemas.xmlsoap.org/soap/envelope/">
  <env:Body>
    <wd:Get_Positions_Response wd:version="v30.0" xmlns:wd="urn:com.workday/bsvc">
      <wd:Request_Criteria>
        <wd:Supervisory_Organization_Reference wd:Descriptor="IT HelpDesk Department">
          <wd:ID wd:type="WID">af6d7f10878340d186121b9d88ae1b5d</wd:ID>
          <wd:ID wd:type="Organization_Reference_ID">IT_HelpDesk_supervisory</wd:ID>
        </wd:Supervisory_Organization_Reference>
      </wd:Request_Criteria>
      <wd:Response_Filter>
        <wd:Page>1</wd:Page>
        <wd:Count>5</wd:Count>
      </wd:Response_Filter>
      <wd:Response_Group>
        <wd:Include_Position_Definition_Data>1</wd:Include_Position_Definition_Data>
        <wd:Include_Qualifications>1</wd:Include_Qualifications>
      </wd:Response_Group>
      <wd:Response_Results>
        <wd>Total_Results>8</wd>Total_Results>
        <wd>Total_Pages>2</wd>Total_Pages>
        <wd:Page_Results>5</wd:Page_Results>
        <wd:Page>1</wd:Page>
      </wd:Response_Results>
      <wd:Response_Data>
        <wd:Position>
          <wd:Position_Data>

```

63 - SOAP response example with namespaces highlighted

SOAP acts as a wrapper around application-specific request and response data. A WWS request might include elements nested within both the SOAP Header and Body sections.

XML namespaces provide a method to avoid element name conflicts between SOAP and Workday-specific XML tags. The namespace for Workday WWS is typically “urn:com.workday/bsvc”.

Community provides full details of the SOAP XML elements for both the request and response messages of all publicly available operations.

WORKDAY COMMON HEADER

The only SOAP Header element that Workday currently uses is a flag that sets whether or not you want Descriptor attributes in object data output.

```

1<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/" xmlns:bsvc="urn:com.workday/bsvc">
2  <soapenv:Header>
3    <bsvc:Workday_Common_Header>
4      <!--Optional:-->
5      <bsvc:Include_Reference_Descriptors_In_Response>true</bsvc:Include_Reference_Descriptors_In_Response>
6    </bsvc:Workday_Common_Header>
7  </soapenv:Header>
8  <soapenv:Body>
122 </soapenv:Envelope>
```

64 - Workday Common Header element of SOAP Header



Note: Workday suppresses all object descriptors if you omit `Include_Reference_Descriptors_In_Response`.

GET REQUEST

The scope of data returned from a “Get”-type WWS operation is determined by filters, criteria, and other parameters entered in the SOAP request.

Request Element: Get_Positions_Request										
Request element to get position management positions and their associated data.										
Parameter name	Type/Value	Cardinality	Description	Validations						
<code>@version</code>	string	[0..1]	Web Service version							
<code>Request_References</code>	<code>Position_Request_References</code>	[0..1]	Utilize the Request References element to retrieve a specific instance(s) of Position and its associated data.	<table border="1"> <thead> <tr> <th>Validation</th><th>Description</th></tr> </thead> <tbody> <tr> <td>Position [position] is not a position management position. This web service only returns position management positions.</td><td></td></tr> <tr> <td>The Position has a future dated request [date].</td><td></td></tr> </tbody> </table>	Validation	Description	Position [position] is not a position management position. This web service only returns position management positions.		The Position has a future dated request [date].	
Validation	Description									
Position [position] is not a position management position. This web service only returns position management positions.										
The Position has a future dated request [date].										
<code>Request_Criteria</code>	<code>Position_Request_Criteria</code>	[0..1]	Utilize the Request Criteria element to search the transaction log for specific instance(s) of a Position.							
<code>Response_Filter</code>	<code>Response_Filter</code>	[0..1]	The “Response_Filter” element contains common WWS information that allows you control the response data that you will be provided including <code>As_of_Date</code> , <code>As_of_Entry_Moment</code> , and <code>Page</code> attributes.	<table border="1"> <thead> <tr> <th>Validation</th><th>Description</th></tr> </thead> <tbody> <tr> <td>Page Number cannot be zero.</td><td>Page number cannot be zero.</td></tr> </tbody> </table>	Validation	Description	Page Number cannot be zero.	Page number cannot be zero.		
Validation	Description									
Page Number cannot be zero.	Page number cannot be zero.									
<code>Response_Group</code>	<code>Position_Response_Group</code>	[0..1]	The response group allows for the response data to be tailored to only included elements that the user is looking for. If no response group is provided in the request the only the following elements will be returned: Reference and Position Definition Data							

65 - API Documentation of a Get Request



Important: Within the body of the SOAP request, the specific Workday API Version is included as an attribute on the root node of the service operation call. If omitted, the most current, supported API version for the operation will process the request.

REQUEST REFERENCES

Use the <Request_References> section when there are specific instances of an object you want to retrieve.

Position_Request_References				
part of: Get_Positions_Request , Get_Positions_Response				
Utilize the Request References element to retrieve a specific instance(s) of Position and its associated data.				
Parameter name	Type/Value	Cardinality	Description	Validations
@Skip_Non_Existing_Instances	boolean	[1..1]		
Positions_Reference	Position_ElementObject	[1..*]	An unique identifier for a Position requested.	
Validation				Description
Position [position] is not a position management position. This web service only returns position management positions.				
The Position has a future dated request [date].				

66 - API Documentation of the Request References section

REQUEST CRITERIA

The <Request_Criteria> element varies by service operation and allows you to limit the scope of data Workday will process.

Position_Request_Criteria								
part of: Get_Positions_Request , Get_Positions_Response								
Utilize the Request Criteria element to search the transaction log for specific instance(s) of a Position.								
Parameter name	Type/Value	Cardinality	Description	Validations				
Transaction_Log_Criteria_Data	Transaction_Log_Criteria	[0..*]	Searches the transaction log for business processes and event types to find specific events that occurred during a period of time.	<table border="1"> <thead> <tr> <th>Validation</th><th>Description</th></tr> </thead> <tbody> <tr> <td>Subscriber Reference must have an enabled Transaction Log Service configuration.</td><td>Subscriber Reference must have an enabled Transaction Log Service configuration.</td></tr> </tbody> </table>	Validation	Description	Subscriber Reference must have an enabled Transaction Log Service configuration.	Subscriber Reference must have an enabled Transaction Log Service configuration.
Validation	Description							
Subscriber Reference must have an enabled Transaction Log Service configuration.	Subscriber Reference must have an enabled Transaction Log Service configuration.							
Supervisory_Organization_Reference	Supervisory_OrganizationObject	[0..*]	A unique identifier for the organization.	<table border="1"> <thead> <tr> <th>Validation</th><th>Description</th></tr> </thead> <tbody> <tr> <td>Supervisory Organization(s) [orgs] must be active.</td><td></td></tr> </tbody> </table>	Validation	Description	Supervisory Organization(s) [orgs] must be active.	
Validation	Description							
Supervisory Organization(s) [orgs] must be active.								
Job_Requisition_Reference	Job_RequisitionObject	[0..*]	A unique Identifier for a Job Requisition for a Position. Identifies all positions connected to the Job Requisition.					
Exclude_Filled_Positions	boolean	[0..1]	Indicates if filled positions are to be returned in the response					
Exclude_Non_Recruitable_Positions	boolean	[0..1]	If set to true, indicates that non-recruitable positions are to be excluded in the response. Non-recruitable positions include those with an open Job Requisition if the Recruiting Instruction is specified as "Do Not Send To Recruiting System".					
Ignore_Future_Positions	boolean	[0..1]	No data will be returned for positions that are available after the effective date of the request. The position information will remain in the request criteria and they will not cause an error.					
Event_Reference	EventObject	[0..1]	The identifier of an existing Event.					
Field_And_Parameter_Criteria_Data	Field_And_Parameter_Criteria_Data	[0..1]	Field Result Request Criteria					
Location_Reference	LocationObject	[0..*]	Reference(s) to the location that a worker being hired/contracted using this opening can use. The results for this criteria are combined(union operation) with the results from the Additional Locations Reference criteria					
Additional_Locations_Reference	LocationObject	[0..*]	Reference to Additional Location(s) for the Job Requisition. This also applies to Positions that have Job Requisitions. The results for this criteria are combined(union operation) with the results from the Location Reference criteria					

67 - API Documentation of the Request Criteria section

RESPONSE_FILTER

The <Response_Filter> contains generic parameters that let you filter the data returned in the response. You can filter returned data by effective date, entry date-time, and page attributes.

Response_Filter			
part of: Get_Positions_Request , Get_Positions_Response			
Parameters that let you filter the data returned in the response. You can filter returned data by dates and page attributes.			
Parameter name	Type/Value	Cardinality	Description
As_Of_Effective_Date	date	[0..1]	Indicates the date when application data, such as benefits and compensation, are deemed effective in the Workday system. (Also referred to as the "Effective Moment".) If not specified, this date defaults to TODAY.
As_Of_Entry_DateTime	dateTime	[0..1]	Indicates the date and time that data was entered into the system. (This field is also referred to as the "Entry Moment".) If not specified, defaults to the CURRENT DATE/TIME.
Page	decimal (12, 0) >0	[0..1]	Indicates the page of data to return in the response, and defaults to the first page (Page = 1). For responses that contain more than one page of data, use this parameter to retrieve the additional pages of data. For example, set Page = 2 to retrieve the second page of data. Note: If you set the page parameter, you must also specify the "As_Of_Entry_Date" to ensure that the result set remains the same between your requests.
Count	decimal (3, 0) >0	[0..1]	Sets the number of objects to return within each response page (Min = 1, Max = 999, Default = 100 if not set). Any values you set must be between 1-999.
Validation		Description	
Page Number cannot be zero.		Page number cannot be zero.	

68 - API Documentation of the Response Filter section

RESPONSE_GROUP

The <Response_Group> contains a set of Boolean flags, allowing you to limit the types of data included for each record returned. If the request does not set any values for the response group, then the response returns a default set of elements.

Position_Response_Group			
part of: Get_Positions_Request , Get_Positions_Response			
The response group allows for the response data to be tailored to only include elements that the user is looking for. If no response group is provided in the request the only the following elements will be returned: Reference and Position Definition Data			
Parameter name	Type/Value	Cardinality	Description
Include_Reference	boolean	[0..1]	Indicates if the Reference for the Position is included in the response.
Include_Position_Definition_Data	boolean	[0..1]	Indicates if the details of the Position is included in the response.
Include_Position_Restrictions_Data	boolean	[0..1]	Indicates if the Hiring Restrictions is included in the response.
Include_Default_Compensation_Data	boolean	[0..1]	Indicates if the Default Compensation is included in the response.
Include_Default_Position_Organization_Assignment_Data	boolean	[0..1]	Indicates if the Default Position Organization Assignment Data is included in the response.
Include_Worker_For_Filled_Positions_Data	boolean	[0..1]	Indicates if the Worker for Filled Positions is included in the response.
Include_Qualifications	boolean	[0..1]	Indicates if the Position's Qualifications (Competencies, Education, Responsibilities, etc.) are included in the response.
Include_Job_Requisition_Data	boolean	[0..1]	Indicates if the Position's Open Job Requisition (if there is one) is included in the response.
Include_Job_Requisition_Attachments	boolean	[0..1]	Indicates if the Position's Open Job Requisition Attachments (if they exist) are included in the response.

69 - API Documentation of the Response Group section

RESPONSE RESULTS

The SOAP response returns a summary of the requested Reference, Criteria, Filter, and Group parameters, as well as the number of results included in the output. The <Response_Data> element contains the requested data itself.

```
<wd:Response_Results>
  <wd:Total_Results>536</wd:Total_Results>
  <wd:Total_Pages>6</wd:Total_Pages>
  <wd:Page_Results>100</wd:Page_Results>
  <wd:Page>1</wd:Page>
</wd:Response_Results>
```

70 - Response Results section of a Get operation



Note: The following demonstration uses SoapUI as a proxy for an external application accessing Workday via web services. You can use other web services-aware clients and browser plugins to perform these same requests. If you have Workday Studio installed, you can investigate WWS using the Schema Explorer.



DEMO 3.1 – REVIEW SOAP REQUESTS AND RESPONSES USING SOAPUI

Business Case: We are going to use SoapUI to test the Get Positions web service operation as a possible replacement of our custom RaaS. This operation is in the Staffing web service.

- Other tools can also retrieve Workday WSDL and submit WWS requests.
- The instructor will demonstrate this activity; it is optional for students.

TASK #1: DETERMINE WWS ENDPOINT

1. Sign in to your tenant as Logan McNeil (*/mcneil*).
2. Search for and run the **Public Web Services** report.
3. Review the list of available web services.
4. Use the **Staffing** service's related actions to select **Web Service > View WSDL**.
5. In the new browser tab or window that opened, scroll to the bottom of the downloaded WSDL document.
 - A. Locate the value of the **soapbind:address location** attribute.
 - B. Select and copy (Ctrl-C) the address location (only select the value in quotes).

```
</wsdl:fault>
</wsdl:operation>
</wsdl:binding>
▼<wsdl:service name="StaffingService">
  ▼<wsdl:port name="Staffing" binding="wd-wsdl:StaffingBinding">
    <soapbind:address location="https://
      host01.workdayeducation.com/ccx/service/crossappgms01/Staffing/v30.0"/>
  </wsdl:port>
</wsdl:service>
</wsdl:definitions>
```

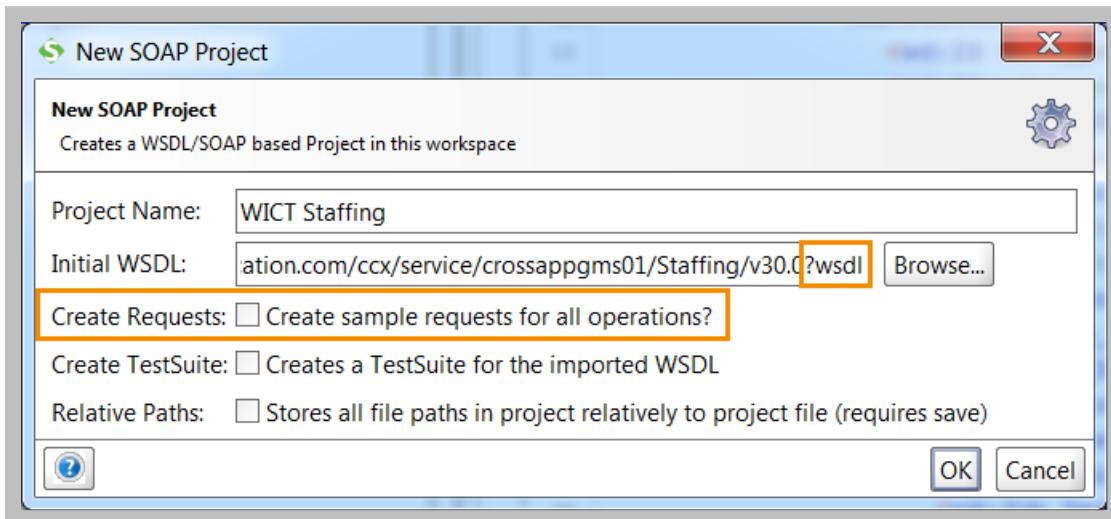
71 - SOAP binding address location for Staffing WWS

6. Close the new browser window or tab.

TASK #2: CREATE WWS TEST PROJECT WITH SOAPUI

1. Launch **SoapUI** using its desktop icon  or Start menu shortcut (under SmartBear).
2. Create a new SoapUI project for your tests by selecting **File > New SOAP Project**.
3. Enter the details for your new project:

Field Name	Entry Value
Project Name	WICT Staffing
Initial WSDL	[service address location from previous task + "?wsdl" suffix]
Create Requests	Unchecked

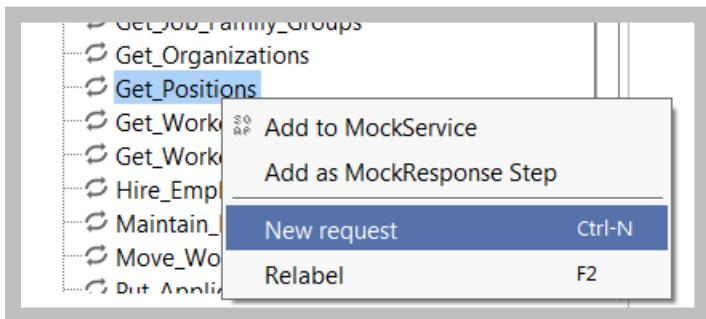


72 - SoapUI New SOAP Project

4. Click **OK** to retrieve the WSDL into the SoapUI project.

TASK #3: CREATE REQUEST TO GET POSITIONS

1. Right-click on the **Get_Positions** operation and select **New Request**.



73 - SoapUI New Request command

2. Enter **WICT Get Positions** as the name for your new request and click **OK**.

3. Modify the XML to submit a test request with no criteria.

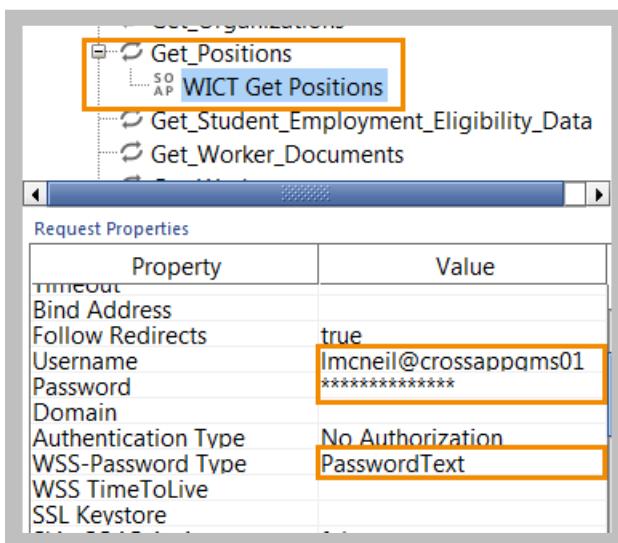
```
<soapenv:Envelope
  xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
  xmlns:bsvc="urn:com.workday/bsvc">
  <soapenv:Header>
    <bsvc:Workday_Common_Header>
      <!--Optional:-->

      <bsvc:Include_Reference_Descriptors_In_Response>true</bsvc:Include_Reference_Descriptors_In_Response>
        </bsvc:Workday_Common_Header>
    </soapenv:Header>
    <soapenv:Body>
      <bsvc:Get_Positions_Request>
        </bsvc:Get_Positions_Request>
    </soapenv:Body>
  </soapenv:Envelope>
```

4. In the Project Navigator, expand the Get Positions operation and select the **WICT Get Positions** request.

5. Enter the following information into the Request Properties sheet:

Property	Value
Username	lmcneil@crossappgmsXX (where XX are the digits of your tenant)
Password	[your tenant password]
WSS-Password Type	PasswordText



74 - Get Positions Request Properties

6. Click the **Submit** button ➤ to send the request.

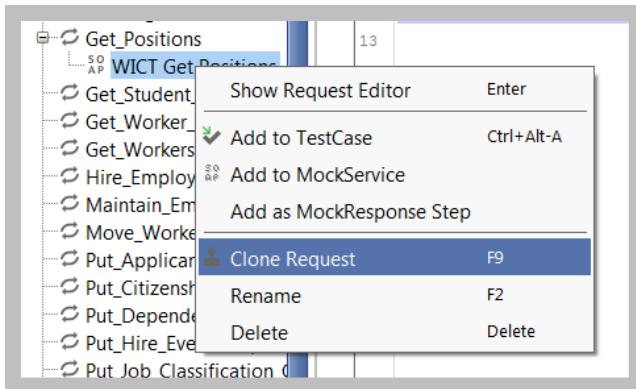
```
<env:Envelope xmlns:env="http://schemas.xmlsoap.org/soap/envelope/">
  <env:Body>
    <wd:Get_Positions_Response wd:version="v30.0" xmlns:wd="urn:com.workday/bsvc">
      <wd:Response_Results>
        <wd>Total_Results>536</wd>Total_Results>
        <wd>Total_Pages>6</wd>Total_Pages>
        <wd>Page_Results>100</wd>Page_Results>
        <wd>Page>1</wd>Page>
      </wd:Response_Results>
      <wd:Response_Data>
        <wd:Position>
          <wd:Position_Reference wd:Descriptor="Chief Risk Management Officer (Unfi
            <wd>ID wd:type="WID">b98b3c3628bc44fa9c6b4c8483a0d530</wd>ID>
            <wd>ID wd:type="Position_ID">P-00054</wd>ID>
          </wd:Position_Reference>
          <wd:Position_Data>
            <wd:Supervisory_Organization_Reference wd:Descriptor="Finance & Ad
              <wd>ID wd:type="WID">1ad7d37487904a989b2db1bfa6fed57d</wd>ID>
              <wd>ID wd:type="Organization_Reference_ID">Finance_Administration_s
            </wd:Supervisory_Organization_Reference>
            <wd:Effective_Date>2011-11-01T07:00</wd:Effective_Date>
            <wd:Position_Definition_Data>
              <wd:Position_ID>P-00054</wd:Position_ID>
              <wd:Job_Posting_Title>Chief Risk Management Officer</wd:Job_Posting
```

75 - Get Positions Response with no criteria

7. Review the response.
 - A. How many positions (Total Results) did Workday find based on our request?
 - B. How many total pages of results does this represent?
 - C. How many results were returned to SoapUI based on our request?
 - D. Which page was returned?
 - E. What types of positional data are included in the response?

TASK #4: MODIFY REQUEST TO RETRIEVE 5 POSITIONS

1. Create a new SOAP request by right-clicking on **WICT Get Positions** and selecting **Clone Request**.



76 - SoapUI Clone Request

2. Enter **WICT Get 5 Positions** as the new request name and click **OK**.
3. Modify the XML to include a Response Filter that returns the first 5 results.

```

<soapenv:Envelope
  xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
  xmlns:bsvc="urn:com.workday/bsvc">
  <soapenv:Header>
    <bsvc:Workday_Common_Header>
      <!--Optional:-->

      <bsvc:Include_Reference_Descriptors_In_Response>true</bsvc:Include_Reference_Descriptors_In_Response>
    </bsvc:Workday_Common_Header>
  </soapenv:Header>
  <soapenv:Body>
    <bsvc:Get_Positions_Request>
      <bsvc:Response_Filter>
        <bsvc:Page>1</bsvc:Page>
        <bsvc:Count>5</bsvc:Count>
      </bsvc:Response_Filter>
    </bsvc:Get_Positions_Request>
  </soapenv:Body>
</soapenv:Envelope>

```

4. Submit the request and review the results.
 - A. How many positions (Total Results) did Workday find based on our request? Is this different from the last request?
 - B. How many total pages of results does this represent? Is this different from the last request?

- C. How many results were returned to SoapUI based on our request? Why this number?
- D. Which page was returned?
- E. How would you modify the request to get the next 5 positions?
- F. How would you modify the request to return all positions for a given supervisory organization?

TASK #5: MODIFY REQUEST TO RETRIEVE IT HELPDESK POSITIONS

1. Create a new SOAP request by right-clicking on **WICT Get 5 Positions** and selecting **Clone Request**.
2. Enter **WICT Get IT HelpDesk Positions** as the new request name and click **OK**.
3. Modify the XML to include a **Request Criteria** section that limits the data to the IT HelpDesk organization (HINT: Search your tenant for *org:it helpdesk* to find its WID).

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"  
    xmlns:bsvc="urn:com.workday/bsvc">  
    <soapenv:Header>  
        <bsvc:Workday_Common_Header>  
            <!--Optional:-->  
  
        <bsvc:Include_Reference_Descriptors_In_Response>true</bsvc:Include_Reference_D  
escriptors_In_Response>  
        </bsvc:Workday_Common_Header>  
    </soapenv:Header>  
    <soapenv:Body>  
        <bsvc:Get_Positions_Request>  
            <bsvc:Request_Criteria>  
                <bsvc:Supervisory_Organization_Reference>  
                    <bsvc:ID  
bsvc:type="WID">af6d7f10878340d186121b9d88ae1b5d</bsvc:ID>  
                    </bsvc:Supervisory_Organization_Reference>  
                </bsvc:Request_Criteria>  
                <bsvc:Response_Filter>  
                    <bsvc:Page>1</bsvc:Page>  
                    <bsvc:Count>5</bsvc:Count>  
                </bsvc:Response_Filter>  
            </bsvc:Get_Positions_Request>  
        </soapenv:Body>  
    </soapenv:Envelope>
```

4. Submit the request and review the results.
 - A. How many positions (Total Results) did Workday find based on our request? Is this different from the last request?
 - B. How many total pages of results does this represent? Is this different from the last request?
 - C. How many results were returned to SoapUI based on our request? Why this number?
 - D. Note the information returned in the Request Criteria section of the response. What is a friendlier alternative to the WID to specify an organization?

TASK #6: MODIFY REQUEST TO RETRIEVE QUALIFICATION DATA

1. Create a new SOAP request by right-clicking on **WICT Get IT HelpDesk Positions** and selecting **Clone Request**.
2. Enter **WICT Get IT HelpDesk Qualifications** as the new request name and click **OK**.
3. Modify the XML to include the following:
 - A. Use a Reference ID instead of WID for the IT HelpDesk organization.
 - B. Add a **Response Group** element that includes **Position Definition Data** and **Qualifications**.

```
<soapenv:Envelope
 xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
 xmlns:bsvc="urn:com.workday/bsvc">
  <soapenv:Header>
    <bsvc:Workday_Common_Header>
      <!--Optional:-->

      <bsvc:Include_Reference_Descriptors_In_Response>true</bsvc:Include_Reference_Descriptors_In_Response>
    </bsvc:Workday_Common_Header>
  </soapenv:Header>
  <soapenv:Body>
    <bsvc:Get_Positions_Request>
      <bsvc:Request_Criteria>
        <bsvc:Supervisory_Organization_Reference>
          <bsvc:ID
            bsvc:type="Organization_Reference_ID">IT_HelpDesk_supervisory</bsvc:ID>
          </bsvc:Supervisory_Organization_Reference>
        </bsvc:Request_Criteria>
        <bsvc:Response_Filter>
          <bsvc:Page>1</bsvc:Page>
          <bsvc:Count>5</bsvc:Count>
        </bsvc:Response_Filter>
        <bsvc:Response_Group>

        <bsvc:Include_Position_Definition_Data>true</bsvc:Include_Position_Definition_Data>

        <bsvc:Include_Qualifications>true</bsvc:Include_Qualifications>
      </bsvc:Response_Group>
    </bsvc:Get_Positions_Request>
  </soapenv:Body>
</soapenv:Envelope>
```

4. Submit the request and review the results.

```

<wd:Get_Positions_Response wd:version="v30.0" xmlns:wd="urn:com.workday/bsvc">
  <wd:Request_Criteria>
    <wd:Supervisory_Organization_Reference wd:Descriptor="IT HelpDesk Department">
      <wd:ID wd:type="WID">a6d7f10878340d186121b9d88ae1b5d</wd:ID>
      <wd:ID wd:type="Organization_Reference_ID">IT_HelpDesk_supervisory</wd:ID>
    </wd:Supervisory_Organization_Reference>
  </wd:Request_Criteria>
  <wd:Response_Filter>
    <wd:Page>1</wd:Page>
    <wd:Count>5</wd:Count>
  </wd:Response_Filter>
  <wd:Response_Group>
    <wd:Include_Position_Definition_Data>1</wd:Include_Position_Definition_Data>
    <wd:Include_Qualifications>1</wd:Include_Qualifications>
  </wd:Response_Group>
  <wd:Response_Results>
    <wd>Total_Results>8</wd>Total_Results>
    <wd>Total_Pages>2</wd>Total_Pages>
    <wd:Page_Results>5</wd:Page_Results>
    <wd:Page>1</wd:Page>
  </wd:Response_Results>
  <wd:Response_Data>
    <wd:Position>
      <wd:Position_Data>
        <wd:Supervisory_Organization_Reference wd:Descriptor="IT HelpDesk Depar
        <wd:Effective_Date>2000-01-01-08:00</wd:Effective_Date>
        <wd:Position_Definition_Data>
        <wd:Qualification_Data>
          <wd:Closed>0</wd:Closed>
        </wd:Position_Definition_Data>
      </wd:Position_Data>
    </wd:Position>
  </wd:Response_Data>

```

77 - Get Positions Response with Request Criteria, Response Filter, and Response Group

- How many results were returned to SoapUI based on our request? Is this different from our previous request?
- What Response Groups are now included in the output?
- Are any Response Groups missing that were in previous responses?



IMPORT VS. SUBMIT WEB SERVICES

The Workday Import Web Service (IWS) pattern improves integration performance during large data loads by running a background process for each request that splits up large documents into smaller data sets.

```

<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/" xmlns:bsvc="urn:com
  <soapenv:Header>
  </soapenv:Header>
  <soapenv:Body>
    <bsvc:Import_Currency_Conversion_Rates_Request>
      <bsvc:Currency_Conversion_Rate_Data>
      <bsvc:Currency_Conversion_Rate_Data>
      <bsvc:Currency_Conversion_Rate_Data>
      <bsvc:Currency_Conversion_Rate_Data>
      <bsvc:Currency_Conversion_Rate_Data>
      <bsvc:Currency_Conversion_Rate_Data>
      <bsvc:Currency_Conversion_Rate_Data>
      <bsvc:Currency_Conversion_Rate_Data>
      <bsvc:Currency_Conversion_Rate_Data>
      <!-- Invalid Target Currency Code -->
      <bsvc:Currency_Conversion_Rate_Data>
        <bsvc:Effective_Timestamp>2017-03-29T07:00:00.000-08:00</bsvc:Effective_Timestamp>
        <bsvc:From_Currency_Reference>
          <bsvc:ID bsvc:type="Currency_ID">USD</bsvc:ID>
        </bsvc:From_Currency_Reference>
        <bsvc:Target_Currency_Reference>
          <bsvc:ID bsvc:type="Currency_ID">XYZ</bsvc:ID>
        </bsvc:Target_Currency_Reference>
        <bsvc:Currency_Rate_Type_Reference>
          <bsvc:ID bsvc:type="Currency_Rate_Type_ID">CURRENT</bsvc:ID>
        </bsvc:Currency_Rate_Type_Reference>
        <bsvc:Currency_Rate>99.999</bsvc:Currency_Rate>
      </bsvc:Currency_Conversion_Rate_Data>
    </bsvc:Import_Currency_Conversion_Rates_Request>
  </soapenv:Body>
</soapenv:Envelope>
```

78 - Sample Import Web Services Request

The Import Web Service returns a reference to a Workday Web Service Background Process (WSBP) instance, allowing you to monitor the import process activity.

```

<env:Envelope xmlns:env="http://schemas.xmlsoap.org/soap/envelope/">
  <env:Body>
    <wd:Put_Import_Process_Response wd:version="v30.0" xmlns:wd="urn:com.workday/bsvc">
      <wd:Import_Process_Reference>
        <wd:ID wd:type="WID">41c22532dbb60138c253c62a18009c00</wd:ID>
      </wd:Import_Process_Reference>
    </wd:Put_Import_Process_Response>
  </env:Body>
</env:Envelope>
```

79 - Sample Response from an Import Web Service Operation Request

You can monitor an import directly by using the **Get_Import_Process_Messages** operation. The **Process Monitor** in your Workday tenant also provides detailed information for any errors or warnings generated during processing.

The screenshot shows the Workday Process Monitor interface. At the top, there are filter options: From Date and Time (10/04/2017 12:00:00.000 AM), To Date and Time (10/06/2017 12:00:00.000 AM), Process Type (Web Service), and Maximum Rows (100). A 'Refresh' button is also present. Below these, a table titled 'Background Processes' shows one item:

Started Date and Time	Process Type	Process	Request	Status	Total Processing Time	Submitted by	Errors & Warnings
10/05/2017 02:10 PM	Web Service	Import Currency Conversion Rates (WS Background Process)	Import Currency Conversion Rates	Completed With Errors	00:00:01	Teresa Serrano	1

Below the main table, there is a search/filter section with 'Criteria' and dropdowns for 'View by' and 'and then by'. An orange box highlights this section. At the bottom, another table titled '1 item' displays the error message:

Date and Time	Severity	Message	Par Count Line Number	Background Process
10/05/2017 02:10:18.886 PM	Error	Invalid ID value. 'XYZ' is not a valid ID value for type = 'Currency_ID'	9	Import Currency Conversion Rates (Rate Load - 2017 10 05 14 10-0700)

80 - Reviewing Import Web Service Requests with the Process Monitor

As well as improving integration performance, the IWS design pattern has the following benefits:

- It improves availability of the Workday application for other users and systems during data loads.
- It provides better visibility into data loading jobs.

WORKDAY WEB SERVICES API SUPPORT POLICY

You can find the Workday Web Services (WWS) API Support Policy on Community:

<https://community.workday.com/articles/437>.

SUPPORT

Workday recommends using the most recent WWS version for optimum performance and stability. We update prior versions of our WWS APIs to maintain backward-compatibility of deprecated operations until they reach end-of-life status, but they are not generally enhanced.

Backward Compatibility

Workday strives to make our WWS API completely backward compatible from release-to-release, even as we introduce new API versions. Workday does not guarantee that an application will always work with all future API versions as certain object model changes and data representations are often required as we continue to enhance the API. Any required changes will be announced and communicated through our Workday Developer Network at developer.workday.com. Workday will also directly notify customers when changes that require modifications from one release to the next occur.

Deprecation

When a specific operation within our WWS API is to be no longer enhanced or updated (and has been replaced another operation), Workday will communicate the DEPRECATION of an operation through our API Documentation within our Workday Developer Network at developer.workday.com. Deprecated operations will continue to work and be accepted until an end-of-life status is reached.

End-of-Life

When an API operation is to be removed and requests for that operation are no longer accepted, advance “End-of-Life” notice will be given at least 18 months before support for that API operation is ended through developer.workday.com. Workday will also directly notify customers using API operations planned for removal.

When a new Workday version is released, you should review the available release notes:
<https://community.workday.com/wws/notes>.

WWS Update: v29.0 Release Notes

[VIEW](#) | [REVISIONS](#)

Updated 3 weeks 5 days ago • Read 610 times

WWS v29.0 Notes

- Support Policy for Prior API Versions
- Change Logs

WWS API Updates in v29.0

- New Operations
- Modified Operations
- Renamed Operations
- Deprecated Operations
- EOL Operations
- EOL Versions

WWS v29.0 Notes

Workday introduces a new version (v29.0) of the Workday Web Services (WWS) API and adds 80 new operations.

81 – WWS Update Release Notes

API CHANGE LOG

Use the **API Change Log** report to display the changes to a WWS operation from one version to another. You will find this useful if you are considering updating your custom integration to use a newer version of an operation.

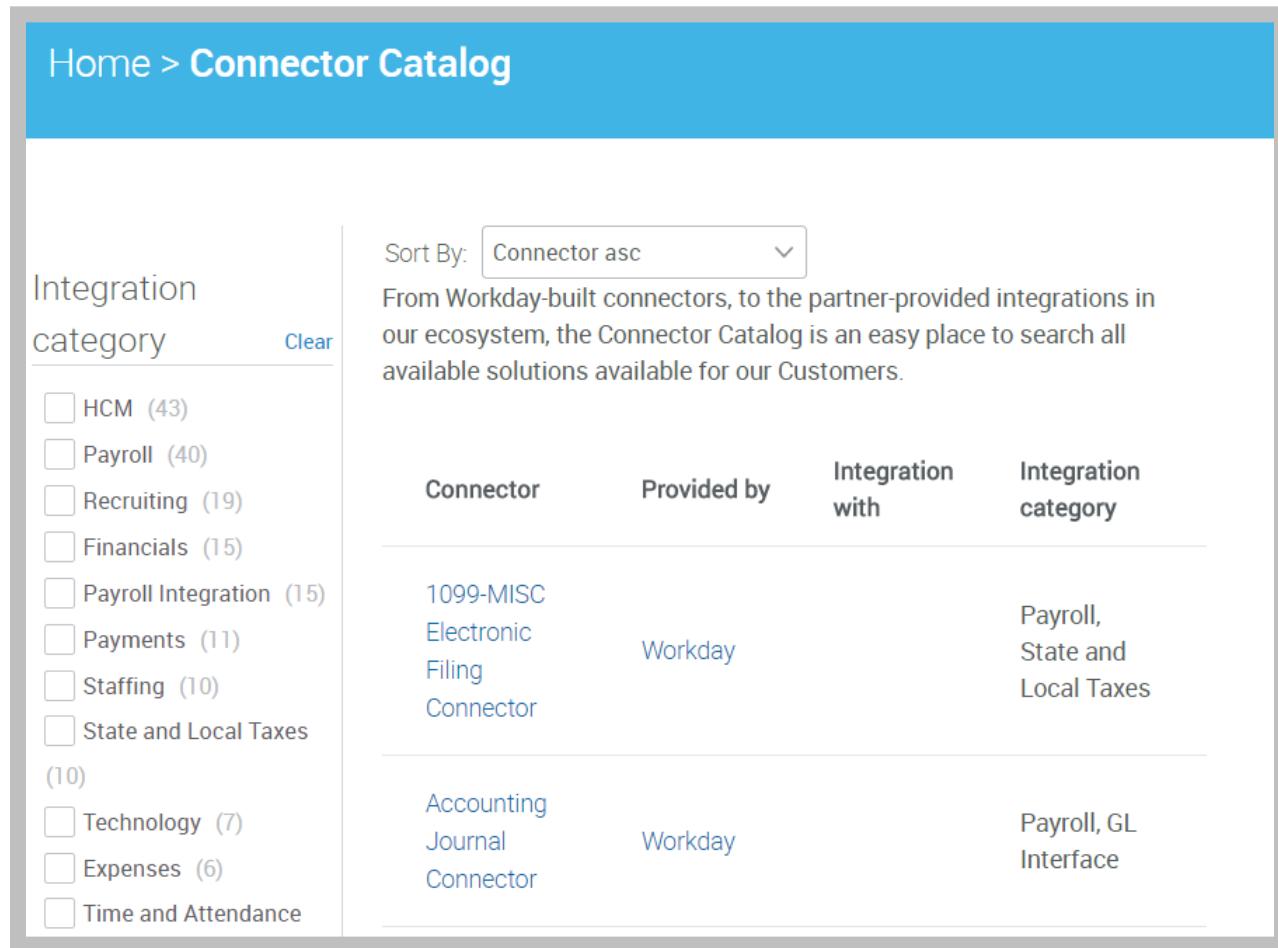
The screenshot shows a report titled "API Change Log" for the "Get Positions" operation. The report details changes from version v25.0 to v30.0. The changes are listed in a table with columns: Version, Release Date, Required, Change Type, and Description. The table contains 39 items.

Version	Release Date	Required	Change Type	Description
v25.1	11/07/2015		Custom Transform	Custom Transform applied to 'Language Ability Data' : Added Required display option.
v25.1	11/07/2015	Yes	Release Note	Release Note for 'Language Ability Data/Language Ability Type Reference' : Marking Ability as a required field because when a language is added ability is always required.
v27.1	11/12/2016		Release Note	Release Note for 'Proposed Merit Plan Assignment Data/c/Guaranteed Minimum [BL]' Validation : Taking into account for Merit Amount Plans using the Snapshot Pattern
v27.1	11/12/2016		Introduced	'Proposed Merit Plan Assignment Data/b2/Merit Plan Assignment Percent [NM]' Validation was introduced. Failure message is 'Percent cannot be entered for plan [plan] which is an amount based plan.'
v27.1	11/12/2016		Release Note	Release Note for 'Proposed Merit Plan Assignment Data/b2/Merit Plan Assignment Percent [NM]' Validation : Adding validation to take into account for Merit Amount Plans
v27.1	11/12/2016		Introduced	'Proposed Merit Plan Assignment Data/Individual Target Amount' was introduced.
v27.1	11/12/2016		Renamed	'Competency Profile for Job Data/Competency Level Reference' was renamed to 'Competency Profile for Job Data/Proficiency Rating Reference'

82 - API Change Log for the Get Positions Web Service Operation

PREBUILT INTEGRATIONS – WORKDAY CLOUD CONNECT

Workday Integration Cloud Connect consists of a growing number of packaged integrations and connectors to complement solutions that are built, supported, and maintained by Workday:
<https://community.workday.com/workday/connector>.



The screenshot shows the 'Connector Catalog' page. On the left, there's a sidebar with a 'Integration category' filter containing checkboxes for HCM (43), Payroll (40), Recruiting (19), Financials (15), Payroll Integration (15), Payments (11), Staffing (10), State and Local Taxes (10), Technology (7), Expenses (6), and Time and Attendance. A 'Clear' link is next to the filter. Above the filter is a 'Sort By:' dropdown set to 'Connector asc'. The main area has a descriptive text: 'From Workday-built connectors, to the partner-provided integrations in our ecosystem, the Connector Catalog is an easy place to search all available solutions available for our Customers.' Below this is a table with four columns: 'Connector', 'Provided by', 'Integration with', and 'Integration category'. Two rows are visible:

Connector	Provided by	Integration with	Integration category
1099-MISC Electronic Filing Connector	Workday		Payroll, State and Local Taxes
Accounting Journal Connector	Workday		Payroll, GL Interface

83 - Workday Connector Catalog on Community

The benefits of this approach to the customer are many, including access to a set of integrations that are:

- Lower cost, lower risk, and faster to deploy without requiring any coding.
- Fully supported by Workday and are certified and tested across updates and patches.
- Treated like any other part of the product, with a published product roadmap.

Because of the high level of support provided for connectors, these templates should be your first choice when building new integrations.

CONNECTORS

Workday provides two types of Connectors:

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

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.

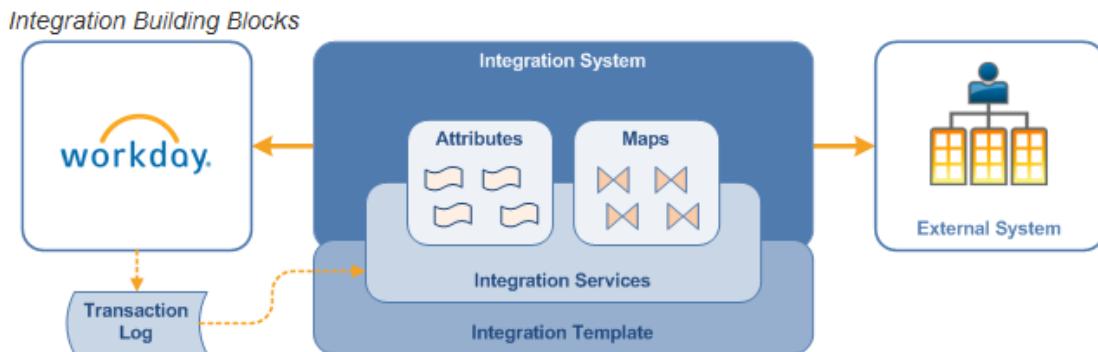
INTEGRATION TEMPLATES

With the exception of EIB, when you view an integration system in the tenant, the **Integration Template** will indicate which tool was used to build the integration system.

Service Name	Initial Service to Invoke	Optional	Enabled
Core Connector: Positions / Core Connector: Positions Initial Service*	Yes		Yes
Core Connector: Positions / Core Connector: Date Launch Parameters			Yes
Core Connector: Positions / Core Connector: Position Data Section Fields			Yes
Core Connector: Positions / Core Connector: Job Qualification Data Section Fields		Yes	Yes
Core Connector: Positions / Integration Document Retention			Yes

84 - Integration Template for a Core Connector

An integration template is a collection of integration services that enables communication between Workday and an external system. Many of the delivered templates contain default values for attributes, as well as configurable prompts for attributes and maps to refine the integration for your needs.



85 - An Integration Template as a collection of Integration Services, Attributes, and Maps

Outbound connectors have built-in change detection, allowing you to schedule integrations that will only output data incremental changes that take effect between launches. The Transaction Log Service further limits the scope of events to your needs.



Additional Training: The Core Connector and Document Transformation course (2-day VILT) covers common inbound and outbound connector examples, as well as the use of Document Transformation to enhance output and to transform input files.



ACTIVITY 3.2 – CREATE AND LAUNCH A CONNECTOR

Business Case: You will explore using a connector as a better supported and more feature-rich alternative to EIB with RaaS, and as a more easily configured option to WWS SOAP requests.

- **The Core Connector: Positions template** is based on the Get Positions operation, but allows for the selection of individual fields for output.
- You will disable change detection when testing by choosing the Full Extract option.

Shortcut: Use the pre-built integration **WDINST CC Positions** and skip to Task #3.

TASK #1: CREATE INTEGRATION SYSTEM

1. Sign in as Logan McNeil (*lmcneil*).
2. Search for and select the **Create Integration System** task.
 - A. Enter a **System Name** of *WICT CC Positions*.
 - B. In the **New using Template** prompt, select **Core Connector: Positions**.
 - C. Click the **OK** button.

The screenshot shows the 'Create Integration System' dialog box. At the top, it says 'Create Integration System'. Below that, there's a 'System Name' field with a red asterisk and the value 'WICT CC Positions'. There are several sections: 'System ID' (with a dropdown arrow), 'Comment' (with a large text input field), 'Integration Tags' (with a dropdown arrow), 'Contacts' (with a dropdown arrow), and 'Template'. Under 'Template', there are two options: 'New using Template' (radio button selected) and 'Core Connector: Positions' (radio button unselected). Both options have dropdown arrows next to them.

86 - Create Integration System using the Core Connector: Positions Template

3. On the Configure Integration Services page, select the optional **Job Qualification Data Section Fields** service and click **OK**.

The screenshot shows the 'Configure Integration Services' page for 'WICT CC Positions'. At the top, it says 'Integration Template' is 'Core Connector: Positions' and there is an 'Enable All Services' checkbox. Below is a table titled 'Integration Services' with 9 items. The columns are 'Integration Template Service', 'Initial Service to Invoke', 'Optional', and 'Enabled'. The 'Core Connector: Positions / Core Connector: Job Qualification Data Section Fields' row is highlighted with an orange border, indicating it is selected. The 'Enabled' checkbox for this row is checked.

Integration Template Service	Initial Service to Invoke	Optional	Enabled
Core Connector: Positions / Core Connector: Positions Initial Service*	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Core Connector: Positions / Core Connector: Date Launch Parameters	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Core Connector: Positions / Core Connector: Position Data Section Fields	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Core Connector: Positions / Core Connector: Job Qualification Data Section Fields	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Core Connector: Positions / Core Connector: Job Requisition Data Section Fields	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Core Connector: Positions / Core Connector: Job Profile Data Section Fields	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

87 - Configure Integration Services with an optional Data Section Fields service enabled

TASK #2: SELECT FIELDS

1. Use WICT CC Positions' related actions to select **Integration System > Configure Integration Field Attributes**.
2. Select the **Core Connector: Position Data Section Fields** service to select the following fields for output (Position ID is required and already selected):
 - A. Supervisory Organization
 - B. Job Posting Title

C. Available for Hire

D. Availability Date

E. Location

F. Worker Type

G. Filled By Worker

Field(s)	Override Default Values	Include in Output
Supervisory Organization	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Job Posting Title	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Available For Hire	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Available For Recruiting	<input type="checkbox"/>	<input type="checkbox"/>
Hiring Freeze	<input type="checkbox"/>	<input type="checkbox"/>
Availability Date	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Earliest Hire Date	<input type="checkbox"/>	<input type="checkbox"/>
Job Family	<input type="checkbox"/>	<input type="checkbox"/>
Job Profile	<input type="checkbox"/>	<input type="checkbox"/>
Location	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Worker Type	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Time Type	<input type="checkbox"/>	<input type="checkbox"/>
Worker Subtype	<input type="checkbox"/>	<input type="checkbox"/>
Filled By Worker	<input type="checkbox"/>	<input checked="" type="checkbox"/>

88 - Position Data Section Fields Included in Output

3. Select the **Core Connector: Job Qualification Data Section Fields** service to select the following fields for output (Position ID is required and already selected):
 - A. Education Qualification
 - B. Education Qualification / Education Degree
 - C. Education Qualification / Education Field of Study

The screenshot shows a configuration interface for the 'Core Connector: Job Qualification Data Section Fields' service. On the left, there's a sidebar with two items: 'Core Connector: Position Data Sect...' and 'Core Connector: Job Qualification D...', with the second item highlighted by an orange border. The main area has a title 'WDINST CC Positions / Core Connector: Job Qualification Data Sectic'. Below it is a checkbox 'Include All Fields in Output' which is unchecked. A table titled 'Field Configuration 31 items' lists five fields under the 'Field(s)' column and their descriptions under the 'Description' column. To the right of each row is a vertical column labeled 'Include in Output' containing checkboxes. The checkboxes for 'Education Qualification', 'Education Qualification / Education Degree', and 'Education Qualification / Education Field of Study' are checked, while the others are unchecked. An orange border highlights the entire table.

Field(s)	Description	Include in Output
Certification Qualification / Certification Required		<input type="checkbox"/>
Education Qualification		<input checked="" type="checkbox"/>
Education Qualification / Education Degree		<input checked="" type="checkbox"/>
Education Qualification / Education Field of Study		<input checked="" type="checkbox"/>
Education Qualification / Education Required		<input type="checkbox"/>

89 - Job Qualification Data Section Fields Included in Output

4. Click the **OK** button. (Do NOT click Done.)

TASK #3: LAUNCH INTEGRATION

1. If necessary, search for and select the **WICT CC Positions** integration system.
2. Use the WICT CC Positions related actions to select **Integration > Launch / Schedule**.
3. Accept the default Run Frequency of Run Now and click **OK**.
4. Enter the following Integration Criteria:

Field	Entry Value
Supervisory Organization(s)	IT HelpDesk Department
Full Extract	Selected

5. Click **OK** and click **Refresh** on the View Background Process page until the Status is Completed.
6. On the **Output Files** tab, select **output.xml** to download it.

Reports and Other Output Files							
Date and Time Created	File	Type	Created by	Number of Shared Users	Expiration Date	Document Tag	
10/05/2017 06:34 PM	DiagnosticAudit.html	XML Document (XML)	Logan McNeil		11/04/2017		
10/05/2017 06:34 PM	MessagesAudit_1.zip	Compressed Archive (ZIP)	Logan McNeil		11/04/2017		
10/05/2017 06:34 PM	output.xml	XML Document (XML)	Logan McNeil		11/04/2017	Deliverable	
10/05/2017 06:34 PM	positions.xsd	Text Document (TXT)	Logan McNeil		11/04/2017		

90 - Connector Integration Event Output Files

7. Review the results.

```

<?xml version="1.0" encoding="UTF-8"?>
<ps:Positions xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:ps="urn:com.workday/coreconnector/positions">
  - <ps:Header>
    <ps:Prior_Entry_Time xsi:nil="true"/>
    <ps:Current_Entry_Time>2017-10-05T18:31:12.043-07:00</ps:Current_Entry_Time>
    <ps:Prior_Effective_Time xsi:nil="true"/>
    <ps:Current_Effective_Time>2017-10-05T00:00:00.000-07:00</ps:Current_Effective_Time>
    <ps:Full_File>true</ps:Full_File>
    <ps:Document_Retention_Policy>30</ps:Document_Retention_Policy>
    <ps:Position_Count>8</ps:Position_Count>
  </ps:Header>
  - <ps:Position>
    - <ps:Position_Data>
      <ps:Position_ID>P-00030</ps:Position_ID>
      <ps:Supervisory_Organization>IT_HelpDesk_supervisory</ps:Supervisory_Organization>
      <ps:Job_Posting_Title>Senior IT Analyst</ps:Job_Posting_Title>
      <ps:Available_For_Hire>true</ps:Available_For_Hire>
      <ps:Availability_Date>2017-02-13</ps:Availability_Date>
      <ps:Location>San_Francisco_site</ps:Location>
      <ps:Worker_Type>EE</ps:Worker_Type>
    </ps:Position_Data>
    <ps:Qualification_Data/>
  </ps:Position>
  - <ps:Position>
    - <ps:Position_Data>
      <ps:Position_ID>P-00031</ps:Position_ID>
      <ps:Supervisory_Organization>IT_HelpDesk_supervisory</ps:Supervisory_Organization>
      <ps:Job_Posting_Title>Senior IT Analyst</ps:Job_Posting_Title>
      <ps:Available_For_Hire>true</ps:Available_For_Hire>
      <ps:Availability_Date>2017-02-10</ps:Availability_Date>
      <ps:Location>San_Francisco_site</ps:Location>
      <ps:Worker_Type>EE</ps:Worker_Type>
    </ps:Position_Data>
    <ps:Qualification_Data/>
  </ps:Position>
</ps:Positions>

```

91 - Core Connector: Positions output

CHALLENGE TASK: REVIEW MESSAGES AUDIT

1. Download the **MessagesAudit_1.zip** file from the Output Files tab of the event.
2. Compare the xml files with the SOAP requests and responses in **Demo 3.1**.



CHAPTER 4 – INTEGRATION BUSINESS PROCESS

OVERVIEW

A business process in Workday is a set of tasks that people initiate, act upon, and complete in order to accomplish a desired business objective. Workday supports integration-specific business processes using the Integration Process Event business process type.

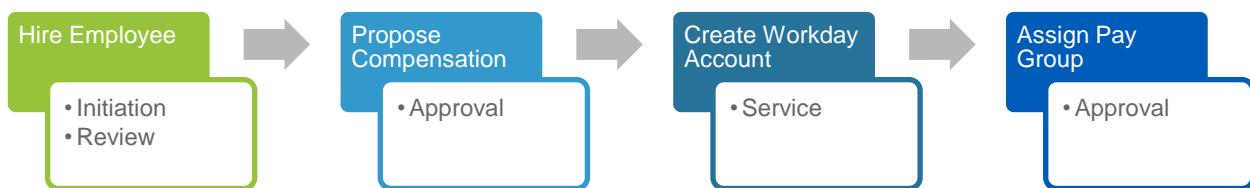
OBJECTIVES

By the end of this chapter, you will be able to:

- Trigger an integration from a step in a business process.
- Configure an integration process to deliver files to an SFTP server.
- Enable notifications for integration events.
- Transform the output of a connector using Document Transformation.

WORKDAY BUSINESS PROCESSES

A business process is the definition of tasks that need to be done in order for an event to occur, the order in which they must be completed, and who must do them. The business process definition specifies the security group responsible for each step in the process, notifies the workers in these groups, and gets feedback on when each step is complete so it can move on to the next step. Steps can also be conditional.



92 - Example Hire business process with both user-driven and automated service steps

Workday includes several predefined business processes that are identified in the system as factory defaults. These default business processes are available to any organization and are editable. You also have the option of configuring context-specific business processes (e.g., by supervisory organization).

The screenshot shows the Workday search interface. The search bar at the top has the prefix 'bp:hire' entered. Below the search bar, the title 'Search Results' is displayed. On the left, there is a sidebar with categories: Common, Assets, Banking, Expenses, Financial Accounting, and Integrations. To the right of the sidebar, the search results are listed under the heading 'Search Results 19 items'. The results include: 'Hire (Default Definition)' (Business Process Definition), 'Hire for Global Modern Services' (Business Process Definition), 'Hire for IT HelpDesk Department' (Business Process Definition), and 'Hire for Legal' (Business Process Definition).

Category	Search Results	Type
Common	Hire (Default Definition)	Business Process Definition
Assets	Hire for Global Modern Services	Business Process Definition
Banking	Hire for IT HelpDesk Department	Business Process Definition
Expenses		
Financial Accounting		
Integrations	Hire for Legal	Business Process Definition

93 - Search for a business process using the 'bp:' search prefix

Chapter 4 – Integration Business Process

Once you select a business process, you can view its steps and other details.

View Business Process Definition Hire for IT HelpDesk Department [Actions](#)

Effective Date	10/05/2017
Time Zone	GMT-08:00 Pacific Time (Los Angeles)
Business Object	IT HelpDesk Department
Notes	The short version of Hire Business Process
Most Recent Used Date	08/22/2007
Due Date	2 Days

[View Diagram](#)

[Security Group Restrictions](#)

[Business Process Steps](#) [Notifications](#) [Allowed Actions by Role](#) [Allowed Services](#) [Allowed Subprocess For](#) [Related Links](#) [Available Rules & Fields](#)

Business Process Steps 3 items

Step	Order	Type	Specify	Optional	Group	All	Run As User	Due Date	Due Date Is Based On Effective Date	Complete
Q	a	Initiation		No						
Q	b	Action	Propose Compensation Hire	No	Manager			2 Days		Yes
Q	c	Integration	Configure WICT EIB Positions - BP	No			Imcneil / Logan McNeil			

94 - Organization-specific Business Process Definition with configured Integration step

Most business processes support automated step types, such as Services and Integrations. Integration steps can be run as specific user accounts to determine their access to data, and fields from the business event can be mapped dynamically to integration system launch parameters.



Note: Step Order labels can be non-consecutive (e.g., a, b, f); however, they are ordered alphabetically. You should therefore only use letters for steps to avoid confusion (e.g., b11 is alphabetically before b2). The first step is always “a – Initiation” and cannot be changed.



DEMO 4.1 – TRIGGER AN INTEGRATION FROM THE HIRE BUSINESS PROCESS

Business Case: The IT HelpDesk Department has a need to synchronize filled positions with an external directory immediately upon completion of a new hire.

- WDINST RW Positions by Worker is already RaaS-enabled for this purpose.
- The instructor will create a new EIB using that report and configure an Integration step on the Hire for IT HelpDesk Department business process to trigger it.

TASK #1: CREATE A NEW EIB

- Sign in to your tenant as Logan McNeil (*lmcneil*).
- Search for and select the **Create EIB** task, and enter the following:

Field Name	Entry Value
Name	WICT EIB Position - BP
Outbound	Selected

- Click **OK** and enter the following Get Data information:

Field Name	Entry Value
Custom Report	WDINST RW EIB Position by Worker
Alternate Output Format (under Details)	JSON

Get Data

Data Source

Data Source Type *

Custom Report

Custom Report

X WDINST RW EIB
Position by Worker

Web Service
(empty)

Details

Alternate Output Format

JSON

The screenshot shows the 'Get Data' step configuration screen. The 'Data Source Type' dropdown is set to 'Custom Report'. Under 'Custom Report', the option 'WDINST RW EIB Position by Worker' is selected and highlighted with an orange border. The 'Alternate Output Format' dropdown is set to 'JSON' and is also highlighted with an orange border. The 'Details' section is collapsed.

95 - Get Data step with Alternate Output Format selected

4. Click **Next** to save the Get Data step.
5. Click **Next** to skip the Transform step.
6. Enter a **File Name** of *position_filled.txt* in the Deliver step.

Deliver

Delivery Method *

Workday Attachment

Delivery Details
(Workday Attachment)

File Name *

position_filled.txt

The screenshot shows the 'Deliver' step configuration screen. The 'Delivery Method' dropdown is set to 'Workday Attachment'. The 'File Name' input field contains 'position_filled.txt' and is highlighted with an orange border.

96 - Deliver step with File Name configured for text output

- Click **Next** to save the Deliver step and review the Summary.

TASK #2: ADD INTEGRATION TO BUSINESS PROCESS

- Search for *bp:hire* and select the **Hire for IT HelpDesk Department** business process definition.
- Use its related actions to select **Business Process > Edit**.
- Add a Step** and enter the following:

Field Name	Entry Value
Step	c
Type	Integration

The screenshot shows the 'Business Process Steps' screen with the following details:

- Business Process Steps**: 3 items
- Step**: c (highlighted with an orange box)
- *Order**: a
- Parallel Step Inbox Order**: b
- Notes**: Action
- *Type**: Integration (highlighted with an orange box)
- Specify**: Propose Compensation Hire

97 - Added Integration Step

- Click **OK** and review the error.

Error

1. Page Error

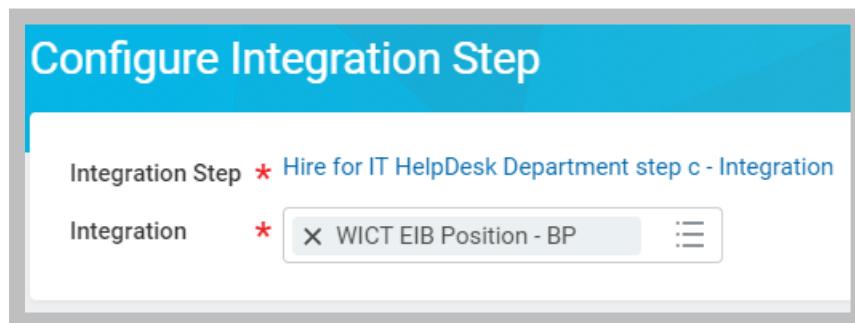
Invalid Integration Setup for Integration Workflow Step. Use related task of Configure Integration Step.

98 - Integration Setup error

Business Process Steps 3 items											
Step		Order	Type	Specify	Optional	Group	All	Run As User	Due Date	Due Date Is Based On Effective Date	Complete
Q		a	Initiation		No						
Q		b	Action	Propose Compensation Hire	No	Manager			2 Days		Yes
Q	Configure Integration System	c	Integration		No						

99 - Configure Integration System button on Integration Step

- Click **Configure Integration System** and select **WICT EIB Position – BP** in the Integration prompt.



100 - Configure Integration Step with EIB selected

- Click **OK** and enter the following:

Field Name	Entry Value
Run As User	Imcneil / Logan McNeil
Field	Worker (defined in report)
Value Type	Determine Value at Runtime
Value	Worker

Run As User

Integration Configuration

Request Name

Static Text

Dynamic using

Integration WICT EIB Position - BP

Integration Criteria 2 items

	Provider	Field	Value Type	Value
	WDINST RW EIB Position by Worker	<input checked="" type="checkbox"/> Worker	Determine Value at Runtime	<input type="text" value="Worker"/> <input checked="" type="checkbox"/>

101 - Integration Step configured with Run As User defined and RaaS prompt mapped to event data

7. Click **OK** to save the Integration Step configuration.

TASK #3: HIRE AN EMPLOYEE

1. Sign in to your tenant (or start a proxy session) as Jack Taylor (*jtaylor*).
2. Search for *org: it help* and select the **IT HelpDesk Department**.
3. Click the **Staffing** tab.
4. Use one of the **Senior IT Analyst (Unfilled)** positions' related actions to select **Hire > Hire Employee**.
5. Select **Existing Pre-Hire**, enter **Dion Jackson**, and click **OK** to proceed.

Supervisory Organization * IT HelpDesk Department

Position

Existing Pre-Hire

Create a New Pre-Hire

102 - Hire Employee using an Existing Pre-Hire

6. Enter the following hire information:

Field Name	Entry Value
Hire Date	[Today's Date]
Hire Reason	New Hire > Fill Vacancy

Hire Employee Dion Jackson Actions

Hire Date * 10 / 01 / 2017

Reason X New Hire > Fill Vacancy

Job Details

Position *	X Senior IT Analyst
Job Requisition	R-00018 Senior IT Analyst (Open)
Employee Type *	X Regular
Job Profile *	X Senior IT Analyst
Time Type *	X Full time
Location *	X San Francisco
Work Space	
Pay Rate Type	

Submit Save for Later Cancel

103 – Completed Hire Initiation Step

7. Click **Submit** to initiate the hire process.

The screenshot shows a blue header bar with the text "You have submitted Hire: Dion Jackson - Senior IT Analyst" and an "Actions" button. Below the header, there are three main sections: "Up Next" (listing "Jack Taylor" and "Propose Compensation Hire" due on 10/07/2017), "Do Another" (with links to "Convert to Employee" and "Hire Employee"), and "Related Links" (linking to "Business Policy Document"). A large orange-bordered "Open" button is centered at the bottom of the main content area.

104 - Submitted Initiation Step

8. Click **Open** to proceed to the Propose Compensation Hire step.
9. In the **Salary** section, click the **Add** button and enter the following:

<i>Field Name</i>	<i>Entry Value</i>
Compensation Plan	General Salary Plan
Amount	65000

Salary

Compensation Plan

× General Salary Plan

Total Base Pay
55,000.00 - 77,500.00 - 100,000.00 USD Annual

Apply FTE%

Amount *

65,000.00

Currency *

× USD

Frequency *

× Annual

> Additional Details

More

105 - Completing the Propose Compensation action

10. **Save** the Salary section and click **Submit** to complete the Propose Compensation step.

TASK #4: VERIFY INTEGRATION LAUNCH

1. Search for and run the **Integration Events** report.
2. Confirm that **WICT EIB Position - BP** was launched.
3. Select the integration event link in the report.
4. Select the **Output Files** tab of the View Background Process page and select the **position_filled.txt** file. Verify that it contains Dion's information in JSON format.

```
{
  "Report_Entry": [
    {
      "Position": "P-00030",
      "Title": "Senior IT Analyst - Dion Jackson-P-00030",
      "Pay": "65000",
      "Available": "0",
      "AvailabilityDt": "2000-01-01",
      "Restrictions-Location": "Dallas; Atlanta; San Francisco",
      "Worker": "Dion Jackson",
      "Location": "San Francisco",
      "Type": "Employee"
    }
  ]
}
```

106 - JSON output of new hire position data

5. Search for **Dion Jackson** and select the **All of Workday** category.
6. Click the **Hire: Dion Jackson** link to open the business process event.
7. Click **Process** to review the entire event.

Process	Step	Status	Completed On	Due Date	Person
Hire	Hire	Step Completed	10/06/2017 12:02:20 AM	10/07/2017	Jack Taylor
Propose Compensation Hire	Propose Compensation Hire	Submitted	10/06/2017 12:12:49 AM	10/07/2017	Jack Taylor (Manager)
Integration Process: WICT EIB Position - BP	Integration Process Event	Automatic Complete	10/06/2017 12:12:49 AM		
Integration Process: WICT EIB Position - BP	Service: Fire Integration	Step Completed	10/06/2017 12:13:11 AM		Workday Service

107 - Hire event process details including Integration steps

8. Sign in to your tenant as Logan McNeil (*lmcneil*) (or stop proxy).

CHALLENGE TASK: LAUNCH CONNECTOR WITH CHANGE DETECTION

1. Search for and select the **WICT CC Positions** integration system.
2. Launch the integration for the **IT HelpDesk Department** with **Full Extract** cleared. (Note the date-time field values.)
3. Review the **output.xml** file.



INTEGRATION PROCESS EVENT

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 one or more, earlier integration systems.

The Integration Process Event default definition is usually delivered with your tenant. The default Integration Process Event consists of two steps, **Initiation** and **Service (Fire Integration)**.

View Business Process Definition
Integration Process Event (Default Definition) Actions

Effective Date	10/05/2017
Time Zone	GMT-08:00 Pacific Time (Los Angeles)
Most Recent Used Date	10/05/2017
Due Date	1 Day

[View Diagram](#)

Business Process Steps		Notifications		Allowed Actions by Role			Allowed Services		More	
Business Process Steps 2 items										
Step	Order	Type	Specify	Optional	Group	All	Run As User	Due Date	Due Date Is Based On Effective Date	Complete
	a	Initiation		No						
	aa	Service	Fire Integration	No						

108 - Integration Process Event Default Definition

Before you can create an Integration Process Event for a specific integration system, 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 also have created the integration system that will use the Integration Process Event business process.

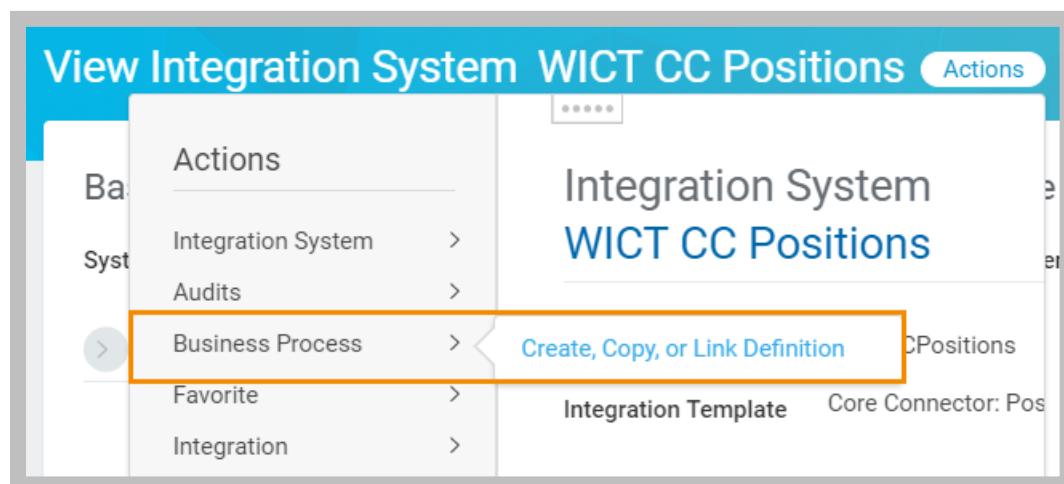
INTEGRATION PROCESS EVENT STEPS

The Integration Process Event allows the following step types:

- **Initiation**
- **Approval**
- **To Do**
- **Integration** – This step triggers an additional integration process. This integration can be of any type, including EIB, Connector, or Workday Studio.
- **Service** – The Integration Process Event supports three service types:
 - **Document Delivery** delivers integration files from outbound integration systems to external endpoints.
 - **Document Retrieval** imports integration files either from an external endpoint (such as an FTP server) or by running a custom report.
 - **Fire Integration** executes the integration system itself, to either generate an output file (for outbound integrations) or load data from a file into Workday (for inbound integrations).

CONFIGURE THE INTEGRATION PROCESS EVENT

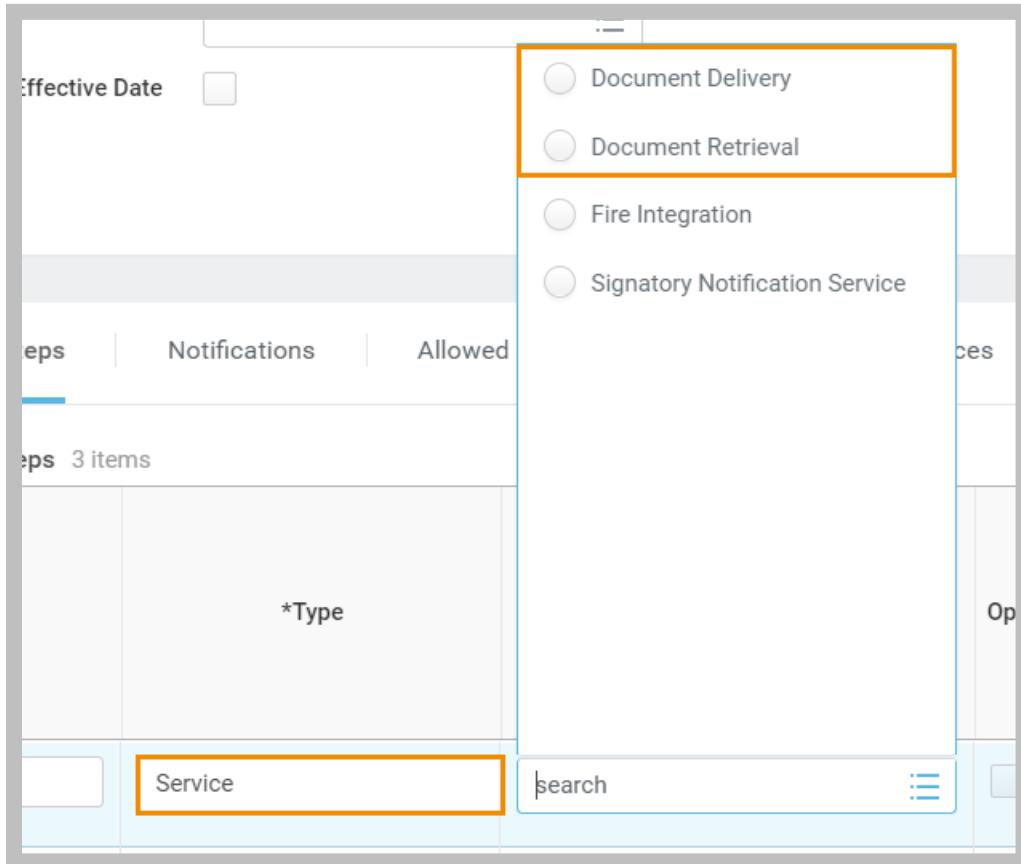
To create an integration system-specific business process, select **Business Process > Create, Copy, or Link Definition** from its Related Actions.



109 - Creating a custom Integration Process Event

TRANSPORT SERVICES

Configure a business process to transfer integration files with an external location by configuring Document Delivery and Retrieval Service steps, which describe file selection, transport, and encryption options for the integration file(s).



110 - Adding a Service Step

Delivery Service

[← Configure Document Delivery](#)

Workflow Step	Integration Process Event for WICT CC Positions (TOP LEVEL) step d - Service [Document Delivery]
Event Service	Document Delivery
Effective Date	10/05/2017

Document(s) <input checked="" type="radio"/> From this Integration Process <input type="radio"/> Derived Using <input style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; width: 150px; height: 20px;" type="button" value="..."/>	Document Filter(s) Tagged <input style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; width: 150px; height: 20px;" type="button" value="..."/>
---	---

Delivery Settings	
Delivery Attempts * <input type="text" value="3"/> <input style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; width: 150px; height: 20px;" type="button" value="..."/>	<input type="radio"/> Existing Transport from <input style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; width: 150px; height: 20px;" type="button" value="..."/> <input type="radio"/> Derive Transport using <input style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; width: 150px; height: 20px;" type="button" value="..."/> <input checked="" type="radio"/> Define Transport Explicitly

Transport	
Transport Type * <input style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px; width: 150px; height: 20px;" type="button" value="SFTP"/>	

111 - Configuring Document Delivery

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. By default, the Document Delivery service transports any files labelled as **Deliverable**

In the **Delivery Settings** section, set delivery attempts and whether to derive or reuse existing settings.

In the **Transport** section, select a transport protocol and specify details about the endpoint.

MAINTAIN INTEGRATION PROCESS EVENTS

Access the integration business process to correct or maintain Document Delivery or Retrieval steps. You can search for the definition using the *bp:* prefix and the name of the integration system, or use the actionable link on the Business Process Definitions section of the integration system itself.

Organization	Business Process Definition
	Integration Process Event for WICT CC Positions (TOP LEVEL) ...

112 - Business Process Definitions section showing configured Integration Process Event(s)



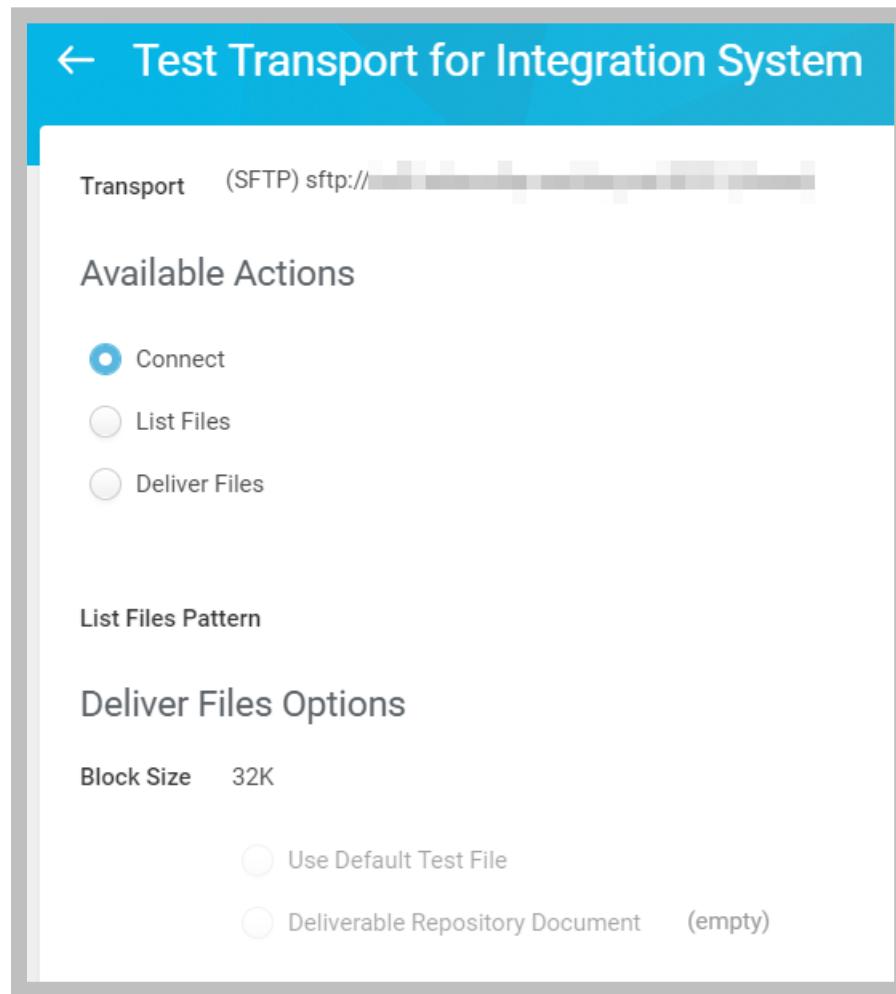
Note: Once a custom Integration Process Event exists for an integration system, only use the **Business Process > Create, Copy, or Link Definition** related action to create new, organization-specific versions of the process.

TEST TRANSPORT

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

Use the integration system's related actions to select **Integration > Test Transport**. Select a configured transport and then one of the Available Actions:

- **Connect** – tests connectivity to the endpoint using the provided credentials.
- **List Files** – tests read access to the server and existence of file(s) by pattern.
- **Deliver File** – tests write access to the endpoint using a test file or repository document.



113 - Test Transport of (S)FTP Configurations



Note: The Connect action will attempt to create folders if the directory path is incomplete on the server.

VIEW RESULT AND VERIFY DELIVERY

The Integration Events report lists each execution of an integration system separately from any transport services. As such, the integration event will not indicate whether the file delivery was successful—the integration is just one step in the overall business process. View the “Parent Event” to see the status of all of the steps defined in the business processes associated with that integration system.

The screenshot shows a web-based application interface for viewing background processes. At the top, a blue header bar displays the title "View Background Process WICT CC Positions" and an "Actions" button. Below the header, there is a table with four rows of information:

Process	WICT CC Positions
Request Name	WICT CC Positions
Status	Completed
Current Processing Time (hour:min:sec)	00:00:25

Below the table, there are four tabs: "Integration Details" (which is selected), "Process Info", "Process History", and "Output Files (0)". Under the "Integration Details" tab, there is a section titled "Integration Process". Inside this section, there are two entries:

- A "Parent Event" entry with the link "Integration: WICT CC Positions - 10/06/2017 00:06:23.932". This link is highlighted with an orange rectangle.
- An "Integration Event" entry with the details "WICT CC Positions - 10/06/2017 00:06:23.932 (Completed)" and a "Date Param" link.

114 - Parent Event link on the View Background Process page

Chapter 4 – Integration Business Process

Subsequent Processes 3 items					
Process	Step	Status	Completed On	Comment	Sub Integration Event
Integration Process: WICT CC Positions	Integration Process Event for WICT CC Positions (TOP LEVEL) step b - Service [Fire Integration]	Step Completed	10/06/2017 12:06:49 AM	Logan McNeil: Integration Completed.	
Integration Process: Document Delivery	Integration Process Event for Document Delivery (TOP LEVEL) step a - Initiation	Automatic Complete	10/06/2017 12:06:49 AM		<p>Integration Event Document Delivery - 10/06/2017 00:06:49.003 (Completed)</p> <p>Request Name Document Delivery</p> <p>Status Completed</p> <p>Percent Complete  100.00%</p> <p>Total Processing Time (hour:min:sec) 00:00:11</p>
Integration Process: Document Delivery	Integration Process Event for Document Delivery (TOP LEVEL) step aa - Service [Fire Integration]	Step Completed	10/06/2017 12:07:00 AM	Logan McNeil: Delivered 1 document(s).	

115 - Subsequent Processes section of the View Event page showing Document Delivery status



ACTIVITY 4.2 – CONFIGURE A DELIVERY SERVICE FOR AN INTEGRATION

Business Case: You are ready to deliver Workday position data to an SFTP server that will serve as a staging area for your integration. You will create a business process for the WICT CC Positions system to add a Delivery Service step.

- As all student files will be delivered to the same SFTP server, you will include your initials in the path to create your own folder.
- Your instructor will provide SFTP connection details.

Note: If you used the shortcut in Activity 3.2 instead of creating a new integration system, continue to use **WDINST CC Positions** instead of WICT CC Positions in this activity.

TASK #1: CREATE BUSINESS PROCESS AND CONFIGURE DELIVERY SERVICE

1. Sign in as Logan McNeil (*lmcneil*).
2. Search for and select the **WICT CC Positions** integration system.
3. Use the **Related Actions** to select **Business Process > Create, Copy, or Link Definition**.
4. Click **OK** to accept the defaults and create a new business process definition with today's date as the Effective Date.
5. Click the **Add** button to add a new step and enter the following:

Field Name	Entry Value
Order	d
Type	Service
Specify	Document Delivery

6. Click **OK**.

Step		Order	If	Type	Specify
🔍		a		Initiation	
🔍		b		Service	Fire Integration
🔍	Configure Document Delivery	d	Document(s) and Configured Delivery available for Delivery Service? (Workday Owned)	Service	Document Delivery

116 - Integration Process Event with Document Delivery Service Step

7. Click the **Configure Document Delivery** button.
8. Click **OK** to accept today as the Effective Date and enter the following:

Field Name	Entry Value
Document(s)	From this Integration Process
Delivery Settings	Define Transport Explicitly
Transport Type	SFTP
SFTP Address	[provided by instructor]
Directory	/home/[your initials]
Authentication Method	User Name / Password
User Id	[provided by instructor – NOT lmcmelil]
New Password / Verify Password	[provided by instructor – NOT your tenant password]

Transport

Transport Type * SFTP

SFTP Address * sftp:// [REDACTED]

Directory /home/XYZ

Use Temp File

Authentication Method

User Name / Password
 SSH Authentication

Authentication Details

User Id * class000e

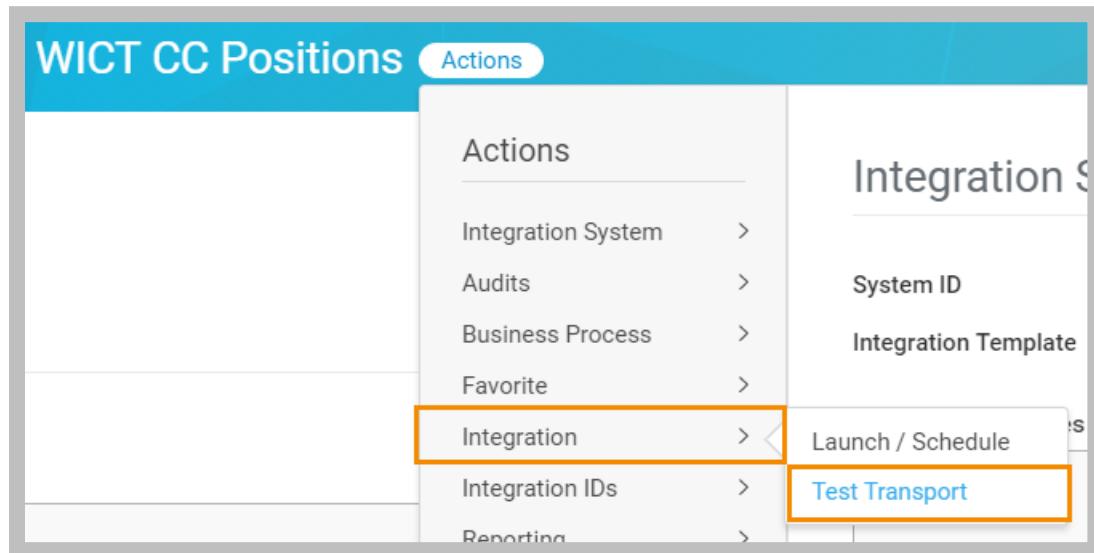
New Password *
Verify Password *

117 - Configured SFTP Transport

9. Click **OK** and **Done**.

TASK #2: TEST DELIVERY AND LAUNCH INTEGRATION

1. Search for and select the **WICT CC Positions** integration system.
2. Use the **Related Actions** to select **Integration > Test Transport** and verify connectivity to the SFTP server.



118 - Test Transport related action

3. Launch WICT CC Positions, using its **Related Actions** to select **Integration > Launch Schedule**.
4. Click **OK** to accept the default Run Frequency and enter the following:

<i>Field</i>	<i>Entry Value</i>
Supervisory Organization(s)	IT HelpDesk Department
Full Extract	Selected

5. There is no Refresh button on the View Event page, so click on the **View Event** or **Overall Process** links to refresh the page until processing is complete.

View Event Integration: WICT CC Positions - 10/06/2017 09:02:19.079 Actions

Overall Process	Integration: WICT CC Positions - 10/06/2017 09:02:19.079
Overall Status	In Progress

Details | Process | Related Links

Initial Integration Event

Integration Event	WICT CC Positions - 10/06/2017 09:02:19.079 (Processing)	Date Parameters
Integration System	WICT CC Positions	As Of Effective Date
Initiated By	Logan McNeil	As Of Entry DateTime
Initiated at	10/06/2017 09:02:19.079 AM	Begin Effective Date
Ran As	lmcnell / Logan McNeil	Begin Entry DateTime

119 – Refresh the View Event page by using the top two links

- To view the output file, scroll to the bottom of the page to **Event Documents**.

Event Document(s) 4 items	
File Name	Type
 DiagnosticAudit.html	XML Document (XML)
 MessagesAudit_1.zip	Compressed Archive (ZIP)
 output.xml	XML Document (XML)
positions.xsd	Text Document (TXT)

120 - Integration Process Event Documents

- In the **Initial Integration Event** section, use the **Related Actions** of the WICT CC Positions integration system to select **Integration > Test Transport**.
- Select **List Files** and click **OK** to verify that your file was delivered to the SFTP server.

Test Transport for Integration System
(SFTP) sftp://[REDACTED] (/home/XYZ)

Actions

Completed

output.xml

121 - Test Transport with List Files option



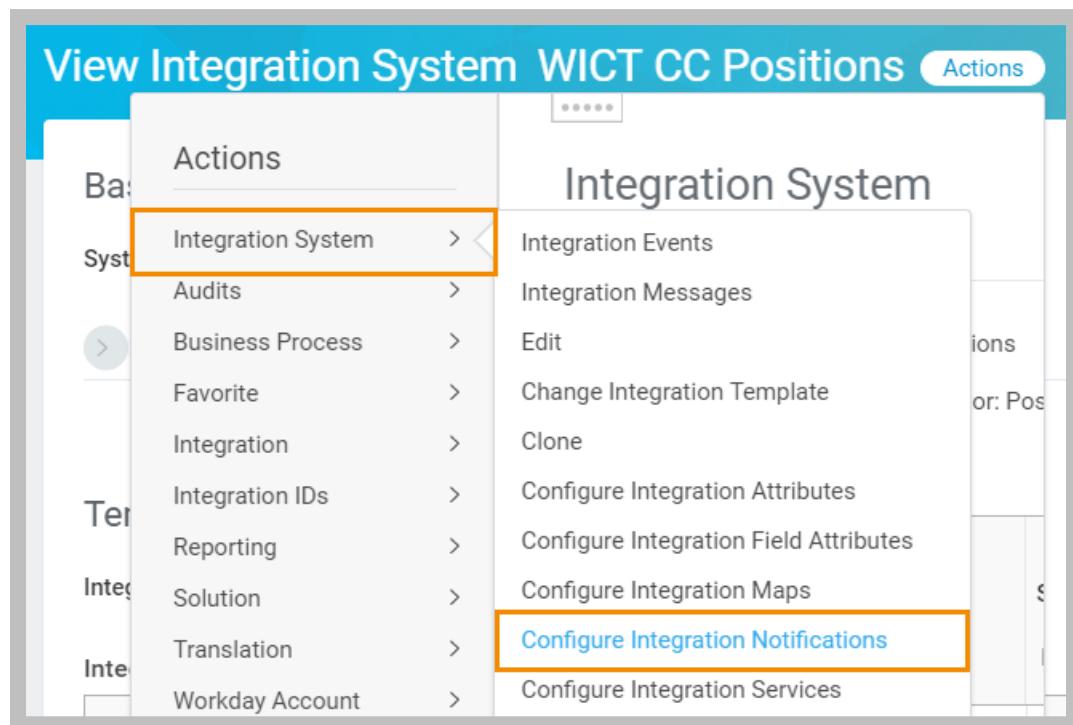
INTEGRATION NOTIFICATIONS

To help monitor integration events, you can create one or more notification messages to send to groups of people based on integration event status. You can configure notifications to send to a Workday Inbox, email address, or both.

The default integration notification can include text and content from external fields, as well as a link to the integration process event.

The maximum size of a Workday email notification is 20 MB. Workday does not process email notifications larger than 20 MB and does not display error messages in this situation.

To configure a notification for an integration system, used its related actions to select **Integration System > Configure Integration Notifications**.



122 - Configure Integration Notifications related action

Integration notifications can be triggered based on launch, change of status (e.g., from Initiated to Processing), or custom conditions.

Recipients can be Workday users and/or external email addresses.

Integration Notifications WICT CC Positions Actions

Integration Template Core Connector: Positions

Notifications

Trigger(s)

- Trigger on Launch
- Trigger on Status
 - Failed
 - Completed With Errors
 - Completed with Warnings
 - Completed

Conditions and Rules

Repeat On

Related Instance(s)

Recipient(s)

Recipient(s) Group(s)

123 – Integration Notification Triggers and Recipients

You configure Message content (Subject and Body) by adding static text and dynamic field elements that Workday will assemble into a message when the notification is triggered.

Message Content

Subject 1 item

Order	*Text / External Field	
<input type="button" value="+"/>	<input type="button" value="-"/>	<input type="radio"/> Text <input type="button" value="x"/> <input checked="" type="radio"/> External Field <input type="button" value="x Integration Event"/>

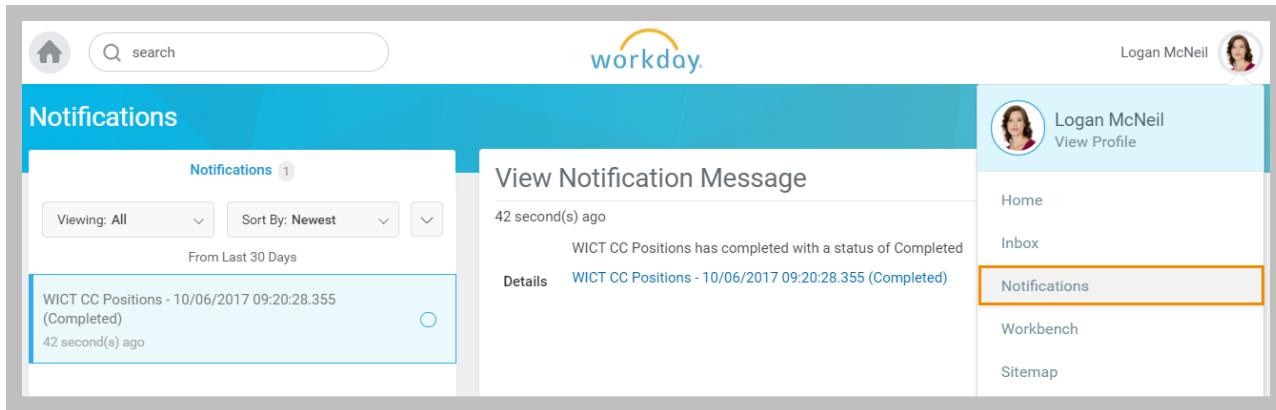
Body 3 items

Order	*Text / Field	
<input type="button" value="+"/>	<input type="button" value="-"/>	<input type="radio"/> Text <input type="button" value="x"/> <input checked="" type="radio"/> Field <input type="button" value="x Integration System"/>
<input type="button" value="+"/>	<input type="button" value="-"/>	<input checked="" type="radio"/> Text has completed with a status of <input type="button" value="x"/> <input type="radio"/> Field <input type="button" value="x"/>
<input type="button" value="+"/>	<input type="button" value="-"/>	<input type="radio"/> Text <input type="button" value="x"/> <input checked="" type="radio"/> Field <input type="button" value="x Integration Event Status"/>

124 - Integration Notification Message Content

NOTIFICATION RESULTS

Integration Notifications appear to Workday recipients along with other system notifications. Click your profile icon and select Notifications to review these messages.



The screenshot shows the Workday Notifications interface. At the top, there's a search bar and the Workday logo. On the right, a user profile for Logan McNeil is shown with a "View Profile" link. A sidebar on the right includes links for Home, Inbox, Notifications (which is highlighted with an orange border), Workbench, and Sitemap. The main content area is titled "View Notification Message" and displays a single message from 42 seconds ago: "WICT CC Positions has completed with a status of Completed". Below this, under "Details", it says "WICT CC Positions - 10/06/2017 09:20:28.355 (Completed)". On the left, a list of notifications is shown, with one item selected: "WICT CC Positions - 10/06/2017 09:20:28.355 (Completed)" from 42 seconds ago.

125 - Integration Notifications in the Workday tenant



Note: The default email notification template for integrations includes a link to the integration event and any included documents. Users clicking a link need to sign in to Workday to view the event or document(s). While you can also attach documents produced in the event right to the email, this is not recommended for security reasons.

TRANSFORMATION

A transformation is the process whereby data is converted from one system so that an external system can understand it, and vice versa. In Workday, business processes allow for the configuration of a transformation step independent of the transport and integration of data.

WORKDAY TRANSFORMATION OPTIONS

Workday supports three types of integration transformations:

- Custom report transformations
- Delivered transformations
- XSLT attachment transformations

Delivered Transformations

Delivered transformations are provided by Workday, and include the alternate output formats of RaaS reports. Some delivered transformations are specific to spreadsheet uploads using EIB. If your integration data source is based on a spreadsheet import template generated in Workday, the transformation is linked to a template model. You can edit the template model to change the spreadsheet details and Workday applies your changes to the transformation during the upload.

Custom Report Transformations

Custom Report Transformations are custom transformations that you define in outbound EIBs that use RaaS as their data source. They enable you to include or exclude report fields, define output order, format individual reports, and add headers and footers to output files.



Important: Custom Report Transformations cannot be migrated between Workday tenants. Expert users in production use them to rapidly produce non-XML output from RaaS-based EIBs that they build in production.

XSLT Transformations

XSLT attachment transformations are custom transformations that you create by using **Extensible Stylesheet Language Transformation (XSLT)**.

EXTENSIBLE STYLESHEET LANGUAGE TRANSFORMATION (XSLT)

There are times when Workday does not present output in the desired format for simple integration tasks. One example is uppercase and lowercase letters. Workday stores names in mixed-case, but another system might require the last name appear as all uppercase letters. Another example might be the Social Security Number (SSN). SSN is typically formatted as a 9-digit numeric value (if unmasked). Another system could require that the data be passed, but only the last 4 digits.

In this case, you could implement an Extensible Stylesheet Language Transformation (XSLT) with your integration system. XSL stands for Extensible Stylesheet Language, a style sheet language for XML documents.

- **Formatting:** If Workday data comes out of the system and is not compatible with the external system, XSLT can be used to transform the data. Some common examples are date fields – many external systems require a different date format from Workday. XSLT can be used to reformat the data to suit the endpoint's needs.
- **Conditional Logic:** You might want to produce a different output format based on the value of a particular data element. An example might be a contingent worker vs. a full time employee. Using if/then logic, you can tailor the output to the type of worker the XSLT is attempting to transform.
- **Custom Output:** You may have a need to convert the document structure to support a legacy system (e.g. fixed column format), a business-to-business standard (e.g. EDI), or a portal use case (e.g. HTML5).



Note: Workday does not generate or validate your XSLT attachments. These attachments can be used in EIB, Studio, and Document Transformation.

Example: Source XML

When creating your stylesheets, you must use the XML document you want to change as your starting point. The original document is not changed; rather, a new document is created based on the content of an existing one.

You must reference the namespace of the original XML document that you are transforming in your stylesheet. You must also reference all of the elements and attributes as they appear in the document you are transforming. Space and case count!

Below is the output of a Core Connector: Positions integration system. Notice the namespace of ps="urn:com.workday/coreconnector/positions" and the xml element names (start/end tags).

```
<?xml version="1.0" encoding="UTF-8"?>
- <ps:Positions xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns:ps="urn:com.workday/coreconnector/positions">
  + <ps:Header>
  + <ps:Position>
  + <ps:Position>
  - <ps:Position>
    - <ps:Position_Data>
      <ps:Position_ID>P-00035</ps:Position_ID>
      <ps:Supervisory_Organization>IT_HelpDesk_supervisory</ps:Supervisory_Organization>
      <ps:Job_Posting_Title>IT HelpDesk Specialist</ps:Job_Posting_Title>
      <ps:Available_For_Hire>true</ps:Available_For_Hire>
      <ps:Availability_Date>2017-01-25</ps:Availability_Date>
      <ps:Location>San_Francisco_site</ps:Location>
      <ps:Worker_Type>EE</ps:Worker_Type>
    </ps:Position_Data>
    - <ps:Qualification_Data>
      - <ps:Education_Qualification>
        <ps:Education_Degree>299.3</ps:Education_Degree>
      </ps:Education_Qualification>
    </ps:Qualification_Data>
  </ps:Position>
  + <ps:Position>
  + <ps:Position>
  + <ps:Position>
  + <ps:Position>
  + <ps:Position>
</ps:Positions>
```

126 - Core Connector example XML output

Example: Standard XSLT

The xml stylesheet below is an example of using standard XSLT to transform the sample xml output above. Make note of the declared namespace and the “XPath” syntax used to select values from the original xml document.

```

<?xml version="1.0" ?>
<xsl:stylesheet version="2.0"
  xmlns:xsl="http://www.w3.org/1999/XSL/Transform"
  xmlns:ps="urn:com.workday/coreconnector/positions">

  <xsl:template match="/">
    <PositionData>
      <xsl:for-each select="ps:Positions/ps:Position">
        <PositionSummary>
          <!-- Position ID as attribute -->
          <xsl:attribute name="id">
            <xsl:value-of select="ps:Position_Data/ps:Position_ID" />
          </xsl:attribute>
          <!-- Organization -->
          <Organization>
            <xsl:value-of select="ps:Position_Data/ps:Supervisory_Organization" />
          </Organization>
          <!-- Availability Date -->
          <DateAvailable>
            <xsl:value-of select="ps:Position_Data/ps:Availability_Date" />
          </DateAvailable>
          <!-- Time Type -->
          <WorkerType>
            <xsl:value-of select="ps:Position_Data/ps:Worker_Type" />
          </WorkerType>
          <!-- Degree -->
          <Degree>
            <xsl:value-of select="ps:Qualification_Data/ps:Education_Qualification/ps:Education_Degree" />
          </Degree>
        </PositionSummary>
      </xsl:for-each>
    </PositionData>
  </xsl:template>
</xsl:stylesheet>

```

127 - XSLT to transform Core Connector example XML output

Example: Result

```

<?xml version="1.0"?>
- <PositionData xmlns:ps="urn:com.workday/coreconnector/positions">
  + <PositionSummary id="P-00030">
  + <PositionSummary id="P-00031">
  - <PositionSummary id="P-00035">
    <Organization>IT_HelpDesk_supervisory</Organization>
    <DateAvailable>2017-01-25</DateAvailable>
    <WorkerType>EE</WorkerType>
    <Degree>299.3</Degree>
  </PositionSummary>
  + <PositionSummary id="P-00036">
  + <PositionSummary id="P-00043">
  + <PositionSummary id="P-00044">
  + <PositionSummary id="P-00274">
  + <PositionSummary id="P-00275">
</PositionData>

```

128 - Result of standard XSLT



ACTIVITY 4.3 – COMPARE WORKDAY OUTPUT TO XSLT

Business Case: Transformations often fail because of mismatches between the source document and the transformation logic. You have been asked to review an XSLT stylesheet that is not transforming the XML output of your RaaS report as expected.

- As a form of XML, XSLT files must also be well-formed.
- XML is space and case-sensitive.
- Find three errors in the XSLT document.

TASK #1: COMPARE REPORT OUTPUT TO XSLT

1. Search for and select the report definition for **WICT RW Positions**.
2. Open the XSLT stylesheet provided by the instructor in a text or XML editor.
3. Review the XSLT file and compare to the report definition. Find three errors.

```
<?xml version="1.0" encoding="UTF-8"?>
- <wd:Report_Data xmlns:wd="urn:com.workday.report/WICT_RW_Positions">
  - <wd:Report_Entry>
    <wd:Position>P-00030</wd:Position>
    <wd:Title>Senior IT Analyst (Unfilled)-P-00030</wd:Title>
    <wd:Pay>77500</wd:Pay>
    <wd:Available>1</wd:Available>
    <wd:AvailabilityDt>2017-02-13-08:00</wd:AvailabilityDt>
    + <wd:Restrictions-Location wd:Descriptor="San Francisco">
    + <wd:Restrictions-Type wd:Descriptor="Employee">
  </wd:Report_Entry>
  + <wd:Report_Entry>
  + <wd:Report_Entry>
</wd:Report_Data>
```

129 - Sample RaaS Output

```
<?xml version="1.0" encoding="UTF-8"?>
<xsl:stylesheet
    xmlns:xsl="http://www.w3.org/1999/XSL/Transform" version="2.0"
    xmlns:wd="urn:com.workday.report/WICT_EIB_Positions">

    <xsl:template match="/">
        <FILE>
            <xsl:for-each select="/wd:Report_Data/wd:Report_Entry">

                <ID><xsl:value-of select="wd:Position"/>
                ...
                <TITLE><xsl:value-of select="wd:Title"/></TITLE>
                ...
                <DATE><xsl:value-of select="wd:AvailabilityDT"/></DATE>
                ...
                <BASEPAY><xsl:value-of select="wd:Pay"/></BASEPAY>
                ...
                <!-- Worker Type Restriction -->
                <TYPE>
                    ...
                    <xsl:value-of select="wd.Restrictions-Type/@wd:Descriptor"/>
                </TYPE>
                ...
            </xsl:for-each>
        </FILE>
    </xsl:template>
</xsl:stylesheet>
```

130 - Example XSLT



DOCUMENT TRANSFORMATION

The Document Transformation integration system template is part of the Cloud Connect Catalog. Using this template, you can attach an XSLT file that contains Workday-specific transformation attributes to apply transformations and validations to an integration system's output documents. These attributes are referred to as **Element Transformation and Validation (ETV)** and **XML to Text (XTT)**. ETV and XTT provide a number of different ways to transform and validate elements in an XML document.

Document Transformation only applies a transformation to a source file. It does not retrieve data, nor can it update Workday. As such, these integration systems will always run in an Integration step as part of a larger integration business process.



Note: XSLT transformations using ETV/XTT are available to integration systems built using the Document Transformation template and in Workday Studio assemblies. These stylesheets cannot be attached to an EIB integration system.

ETV and XTT allow Workday-specific processing instructions to be included in an XSLT file's elements using attributes. After adding the XSLT file that generates XML with ETV and/or XTT attributes to a Document Transformation integration system, Workday applies transformations and validations to the integration system's output documents. ETV and XTT provide a number of different ways to transform and validate elements, but still require that the XML defined in the XSLT file be valid XML.

There are two separate namespaces, one for ETV, which outputs XML, and a second for XTT, which outputs non-XML. Both steps provide similar features that include:

- Validation
- Number/date formatting
- Data mapping
- Truncation
- Counting and summing of Values

ETV and XTT need to be declared in the namespace of the XSLT.

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

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

They may be used together in the same XSLT document, but best practice is to separate them into two transformation steps.



Tip: Once you declare that you are using XML to Text (XTT), Workday automatically strips XML tags out of the final document, producing flat files without the need for complicated schemas.

EXAMPLE: DOCUMENT TRANSFORMATION – XTT

Below is an example of an XSLT stylesheet that uses XTT to transform the original XML output about to a fixed length file. Notice the XTT attributes, including **separator**, **startTag**, **severity**, **fixedLength**, **dateFormat**, and **required**.

```

<?xml version='1.0'?>
<xsl:stylesheet version="2.0" xmlns:xsl="http://www.w3.org/1999/XSL/Transform"
    xmlns:ps="urn:com.workday/coreconnector/positions"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xmlns:xtt="urn:com.workday/xtt">

    <xsl:template match="/">
        <File xtt:separator="
">
            <xsl:apply-templates/>
            <Footer xtt:startTag="Total Records Processed = ">
                <Count>
                    | <xsl:value-of select="/ps:Positions/ps:Header/ps:Position_Count"/>
                </Count>
            </Footer>
        </File>
    </xsl:template>

    <xsl:template match="/ps:Positions/ps:Position" >
        <Position xtt:severity="warning">
            <Position xtt:fixedLength="10"><xsl:value-of select="ps:Position_Data/ps:Position_ID"/></Position>
            <Organization xtt:fixedLength="10"><xsl:value-of select="ps:Position_Data/ps:Supervisory_Organization"/></Organization>
            <DateAvailable xtt:fixedLength="10" xtt:dateFormat="yyyy/MM/dd"><xsl:value-of select="ps:Position_Data/ps:Availability_Date"/>
            </DateAvailable>
            <TimeType xtt:fixedLength="2"><xsl:value-of select="ps:Position_Data/ps:Time_Type"/></TimeType>
            <Degree xtt:fixedLength="5" xtt:required="true"><xsl:value-of select="ps:Qualification_Data/ps:Education_Qualification/ps:Education_Degree"/></Degree>
        </Position>
    </xsl:template>
</xsl:stylesheet>

```

131 - XSLT to transform Core Connector example XML output using XTT

P-00030	IT_HelpDes2017/02/13EE
P-00031	IT_HelpDes2017/02/10EE
P-00035	IT_HelpDes2017/01/25EE299.3
P-00036	IT_HelpDes2017/02/01EE299.3
P-00043	IT_HelpDes2000/01/01 299.3
P-00044	IT_HelpDes2014/10/15EE299.3
P-00274	IT_HelpDes2000/01/01CW299.3
P-00275	IT_HelpDes2000/01/01CW299.3
Total Records Processed = 8	

132 - Result of XSLT with XTT

Additionally, ETV/XTT enables us to introduce simple validations. For example, the Education Degree is marked as required. If a value is missing, it will display as a warning on the event.

Process Messages 6 items		
Date and Time	Severity	Message
10/06/2017 10:56:57.093 AM	i Info	Launch Request, Log files and Consolidated Report.
10/06/2017 10:56:54.898 AM	i Info	Attached Messages Audit. See Output Files.
10/06/2017 10:56:54.659 AM	i Info	Attaching output document
10/06/2017 10:56:54.423 AM	w Warning	No value output for required field Degree.
10/06/2017 10:56:54.112 AM	i Info	Retrieved input document. Processing document transformation ...
10/06/2017 10:56:53.304 AM	i Info	Reading stylesheet XTT_XSLT_Get_Position.xsl

133 - ETV/XTT validation messages appear in the integration event

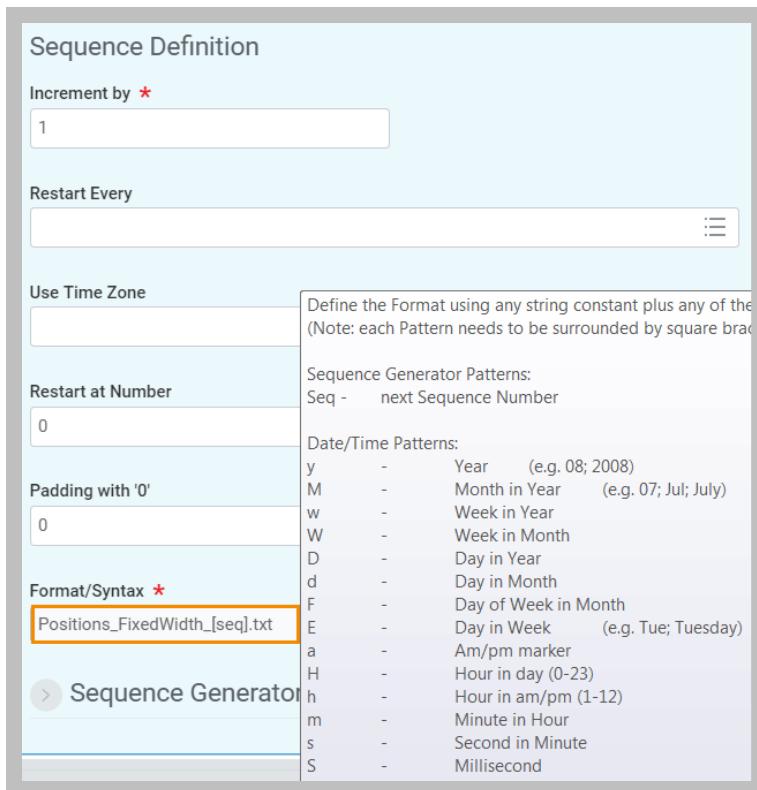


Additional Training: Document Transformation's primary purpose is to transform Connector data. The Core Connector and Document Transformation (2-day VILT) course details ETV and XTT options, and the steps to chain these systems together in a business process.

SEQUENCE GENERATORS

Integration systems support the use of the Integration Sequence Generator service to generate unique filenames. This is most useful when delivering output to servers via file transfer protocols (SFTP, FTP) where there is a risk of overwriting data.

Document Transformation systems have a Sequence Generator service enabled as part of their template. Configure the service by using the related actions to select **Integration System > Configure Integration Sequence Generators**.

**134 - Configured Sequence Generator Format**

The sequence number is incremented at each launch of the integration. You can also make use of date/time patterns to construct unique, dynamic filenames.

Test Transport for Integration System
(SFTP) sftp:// [REDACTED] (/home/XYZ) [Actions](#)

Completed

Positions_FixedWidth_1.txt
output.xml

135 - Unique output filename produced by sequence generator



ACTIVITY 4.4 – LAUNCH INTEGRATION WITH DOCUMENT TRANSFORMATION

Business Case: Our external application needs position data to be in fixed columns in order to interpret it. You will apply a Document Transformation to convert the data into a readable format as well as perform some simple validation.

- The WDINST DT Positions XTT Fixed integration system already contains the XSLT you need.
- You will add an Integration step in the WICT CC Positions integration process event to transform the connector output before delivery.

Shortcut: Use the pre-built integration **WDINST CC Positions with DT** instead of WICT CC Positions and skip to Task #3.

TASK #1: ADD INTEGRATION STEP TO INTEGRATION PROCESS EVENT

1. Sign in as Logan McNeil (*lmcneil*)
2. Search for *bp:wict* and use the related actions of the **Integration Process Event for WICT CC Positions (TOP LEVEL)** to select **Business Process > Edit Definition**.

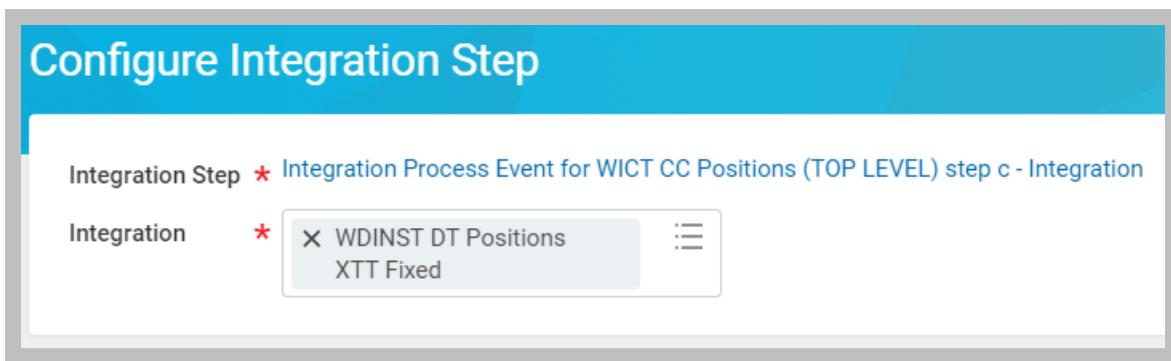
The screenshot shows the Workday search interface with a search term 'bp:wict'. The results show one item: 'Integration Process Event for WICT CC Positions (TOP LEVEL)'. A context menu is open over this item, with the 'Edit Definition' option highlighted by an orange box.

136 - Edit Business Process Definition for the Integration Process Event

3. Click **OK** to accept the default Effective Date.
4. **Add** a new Step with the following details:

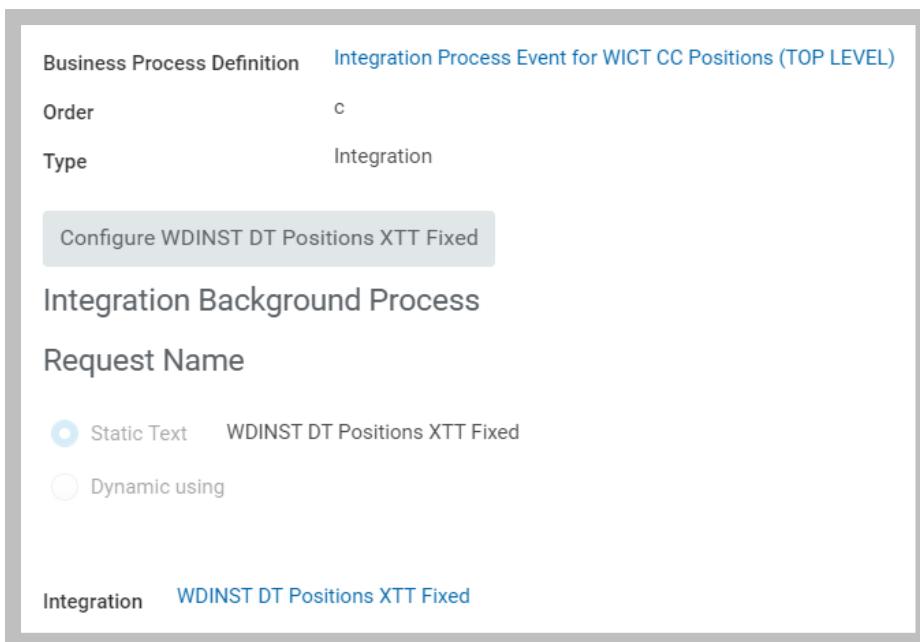
Field Name	Entry Value
Order	c
Type	Integration

5. Click the **Configure Integration System** button and use the **Integration** prompt to select **WDINST DT Positions XTT Fixed**.



137 - Configure Integration Step with Document Transformation

6. Click **OK** to proceed and **OK** again to accept the default request details.



138 - Completed Integration Step configuration

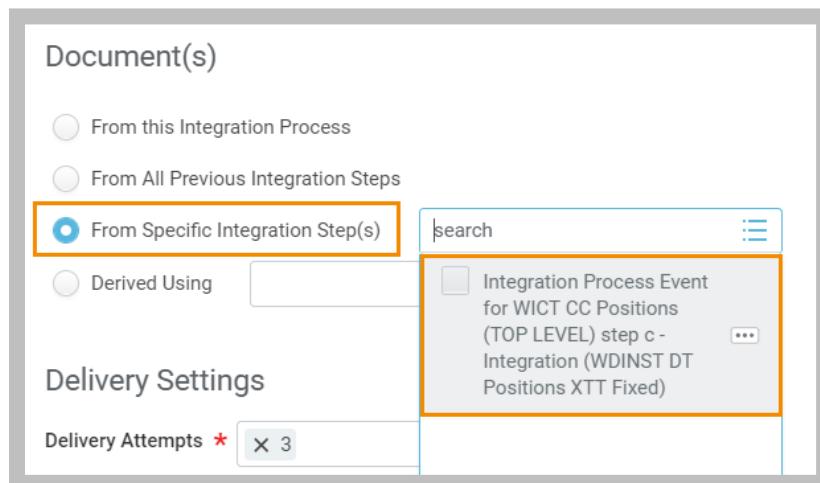
TASK #2: ADJUST DOCUMENT DELIVERY SERVICE STEP

1. Search for *bp:wict* and select the **Integration Process Event for WICT CC Positions (TOP LEVEL)**.

Business Process Steps 4 items					
Step		Order	If	Type	Specify
		a		Initiation	
		b		Service	Fire Integration
	Configure WDINST DT Positions XTT Fixed	c		Integration	
	Configure Document Delivery	d	Document(s) and Configured Delivery available for Delivery Service? (Workday Owned)	Service	Document Delivery

139 - Integration Process Event with Document Transformation and Document Delivery

2. Click the **Configure Document Delivery** button and click **OK** to accept the default Effective Date.
3. In the Document(s) section, select **From Specific Integration Step(s)** and use the prompt to select the newly configured Integration Step.



140 - Delivering Documents From Specific Integration Step

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

TASK #3: LAUNCH INTEGRATION WITH TRANSFORMATION

1. Search for and launch the **WICT CC Positions** integration using its related actions with the following Integration Criteria:

<i>Field</i>	<i>Entry Value</i>
Supervisory Organization(s)	IT HelpDesk Department
Full Extract	Selected

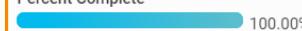
2. Refresh the View Event page using the **Overall Process** link until the event is Successfully Completed.
3. Scroll down to the Event Document(s) section and download the **output.xml** and **Positions_FixedWidth_1.txt** files to compare them.

```
P-00030  IT_HelpDes2017/02/13EE
P-00031  IT_HelpDes2017/02/10EE
P-00035  IT_HelpDes2017/01/25EE299.3
P-00036  IT_HelpDes2017/02/01EE299.3
P-00043  IT_HelpDes2000/01/01 299.3
P-00044  IT_HelpDes2014/10/15EE299.3
P-00274  IT_HelpDes2000/01/01CW299.3
P-00275  IT_HelpDes2000/01/01CW299.3
Total Records Processed = 8
```

141 - Fixed Width XTT output

TASK #4: REVIEW DOCUMENT TRANSFORMATION EVENT STATUS

1. Scroll to the Subsequent Processes section and locate the **Integration Process: WDINST DT Positions XTT Fixed** link in the Subsequent Process section, or search for it in the Integration Events report.

Subsequent Processes 3 items					
Process	Step	Status	Completed On	Comment	Sub Integration Event
Integration Process: WDINST DT Positions XTT Fixed	Integration Process Event (Default Definition) step a - Initiation	Automatic Complete	10/02/2017 05:16:14 PM		<p>Integration Event WDINST DT Positions XTT Fixed - 10/02/2017 17:16:14.876 (Completed with Warnings)</p> <p>Request Name WDINST DT Positions XTT Fixed</p> <p>Status Completed with Warnings</p> <p>Number of Warnings 1</p> <p>Percent Complete  100.00%</p> <p>Total Processing Time (hour:min:sec) 00:00:08</p>

142 - Subsequent Processes section with Sub Integration Event details

2. Click the link under Number of Warnings to see the warning.

1 item			
Date and Time	Severity	Message	Background Process
10/06/2017 12:06:03.698 PM	 Warning	No value output for required field Degree.	Integration ESB Invocation (WDINST DT Positions XTT Fixed - 10/06/2017 12:05:55.985 (Completed with Warnings))

143 - Document Transformation XTT Warning

TASK #5: CONFIRM DELIVERY OF TRANSFORMED OUTPUT

1. Scroll to the **Integration System link** (Initial Integration Event section) or search for **WICT CC Positions**, and use its related actions to select Integration > Test Transport.
2. Use the **List Files** action to confirm the fixed width .txt file is on the SFTP server.

Note: The output.xml file from previous activities will also appear in the results.

Test Transport for Integration System
(SFTP) sftp:// [REDACTED] (/home/XYZ) [Actions](#)

Completed

Positions_FixedWidth_1.txt
output.xml

144 - Test Transport results with Fixed Width file.



CHAPTER 5 – SECURITY FOR INTEGRATIONS

OVERVIEW

Workday has separate security requirements to set up and launch integration systems based on the integration type. Before you can create, edit, or launch an integration system, you must be in a security group that has access to the Integration security domain and permission to access the underlying integration system or template.

OBJECTIVES

By the end of this chapter, you will be able to:

- Identify the requirements to configure and launch integration systems.
- Create an Integration System User to automate the execution of integration events.
- Schedule an integration system.

INTEGRATION SYSTEM SECURITY

Workday's security model for integrations is as follows:

Access to systems and output: 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.

Access to Workday data: All access to Workday data is through web service operations and Reports-as-a-Service.

Access to external endpoints: Workday provides encryption, decryption, and signature options using PGP. Workday provides encryption (for AS2), SFTP authentication, SAML logout, and web service authentication using X.509.

SECURITY FOR ACCESS TO INTEGRATION TEMPLATES, SYSTEMS, AND EVENTS

Workday has separate security requirements to set up and launch integration systems (including EIBs) based on the integration type.

Security Domain	Allows
Integration Build	<ul style="list-style-type: none"> Create or edit an EIB. Create or edit an integration system. Deploy a Workday Studio integration. View an integration system or EIB.
Integration Configure	<ul style="list-style-type: none"> Configure an EIB. Configure one or more integration services.
Integration Debug	<ul style="list-style-type: none"> Debug a Workday Studio integration.
Integration Event	<ul style="list-style-type: none"> Launch an integration. Schedule an integration. View resulting integration events, including integration output documents.
Integration Process	<ul style="list-style-type: none"> View details of processes that are commonly executed as part of an integration.

Security Domain	Allows
Integration Reports	<ul style="list-style-type: none"> View integration reports, including reports for integration events, exception audits, messages, and integration IDs.
Integration Subscriptions	<ul style="list-style-type: none"> Edit integration subscriptions. View integration subscriptions.
Integrations: EIBs	<ul style="list-style-type: none"> Set up EIB-specific options (e.g. template model, custom report transformation).



Resource: Review the Workday Administrator Guide “**Reference: Security Domains for User Access to EIBs and Integrations**” for the specific security requirements to configure and launch different integration system types.

ACCESS TO WORKDAY DATA

All access to Workday data is through web service operations and Reports-as-a-Service; these web service operations, report data sources, class report fields, and custom reports are secured to various security domains. For custom integrations, your developer must provide a list of the web service tasks and/or reports used by the integration.

The **Public Web Services** report provides easy access to the permissions granted for web service operations:

The screenshot shows a table with columns for 'Web Service' and 'Documentation'. The 'Actions' column contains links to 'Absence Management (Public)', 'Academic Advising (Public)', 'Academic Foundation (Public)', and 'Admissions (Public)'. The 'Security' link under 'Actions' is highlighted with an orange box and a callout pointing to a blue link 'View Web Service Operations Security Groups'. The 'Documentation' column provides descriptions for each service.

Web Service	Documentation
Absence Management (Public)	Service contains operations that expose absence-related adjustments and overrides, and Leave Requests, in Workday.
Academic Advising (Public)	Operations related to Academic Advising, such as Student Academic
Academic Foundation (Public)	editing and retrieving the foundational objects for the
Admissions (Public)	Web Service for creating, editing, and retrieving objects related to Admissions, such as

145 - Viewing Web Service Operations Security Groups from the Public Web Services report



Resource: For delivered integrations, the complete list of connectors and their security requirements is available in the Workday Administrator Guide “**Reference: Security Domains for Integration System Data Access**”.

INTEGRATION SYSTEM USER

In Production tenants, Cloud Connect and Studio integrations require an **Integration System User (ISU)** account for authentication and access to web service tasks. ISUs are also required in any tenant type in order to schedule integrations. Each integration system must have its own ISU account.

ISUs are always members of **Integration System Security Groups** and cannot be included in any other type of security group. In order for inbound integrations to work correctly, the security group(s) must have Put and/or Get access to the domains that contain the web service operations that interact with the necessary data.



Note: EIB integrations run using the current user's sign in credentials and do not require an ISU account.

INTEGRATION SYSTEM USER

Access the **Create Integration System User** task and create a new User Name and Password. An ISU represents a system, not a person. It is not intended that this user will launch the integration system from the tenant UI.

Create Integration System User

Account Information

User Name	* CC Positions ISU
Generate Random Password	<input type="checkbox"/>
Password Rules	Your new password must not be the same as your previous password. Your password must contain at least one character of each type: alpha numeric, uppercase, lowercase, special character, and punctuation. Special characters include !#\$%&()^*,.,;:=>?@[N]^_`{}~.
New Password	*
New Password Verify	*

146 - Creating an Integration System User

INTEGRATION SYSTEM SECURITY GROUP

Access the **Create Security Group** task and create a new *Integration System Security Group (Unconstrained)*. (Unconstrained security groups are not limited by organization.)

Type of Tenanted Security Group * Integration System Security Gro...

Name * CC Positions ISSG

147 - Creating an Integration System Security Group

Once the group is created, you may add integration users.

Name * CC Positions ISSG

Comment

Context Type Unconstrained

Inactive

Integration System Users

CC Positions ISU /

BatchJobRunner /

CC Positions ISU /

Cloud_Translator /

148 - Adding an ISU to an Integration System Security Group



Security Note: Although security groups are reusable, Workday recommends having a single ISU per integration system security group. This mitigates “privilege creep”, the tendency to accumulate permissions above what each individual in the group needs.

SECURITY POLICIES

Data access in Workday is organized by functional area (e.g., Resource Management). Each functional area includes **Domain** security policies that give access to UI tasks and fields (e.g., business asset report fields), and Business Process security policies that control many data entry transactions (e.g., Create Expense Report).



Tip: Use the **Domain Security Policies for Functional Area** and **Business Process Security Policies for Functional Area** to review and configure the permissions of each domain or business process in a Workday application.

You must first determine which web service tasks your integration system needs to access. Once you have identified the domains and/or business processes for those operations, assign the integration system security group to the appropriate security policies.



Security Note: Security policy updates do not take effect immediately and are not effective dated. You must activate any pending policy changes at the moment when you want them to take effect.

Maintaining Security Policies

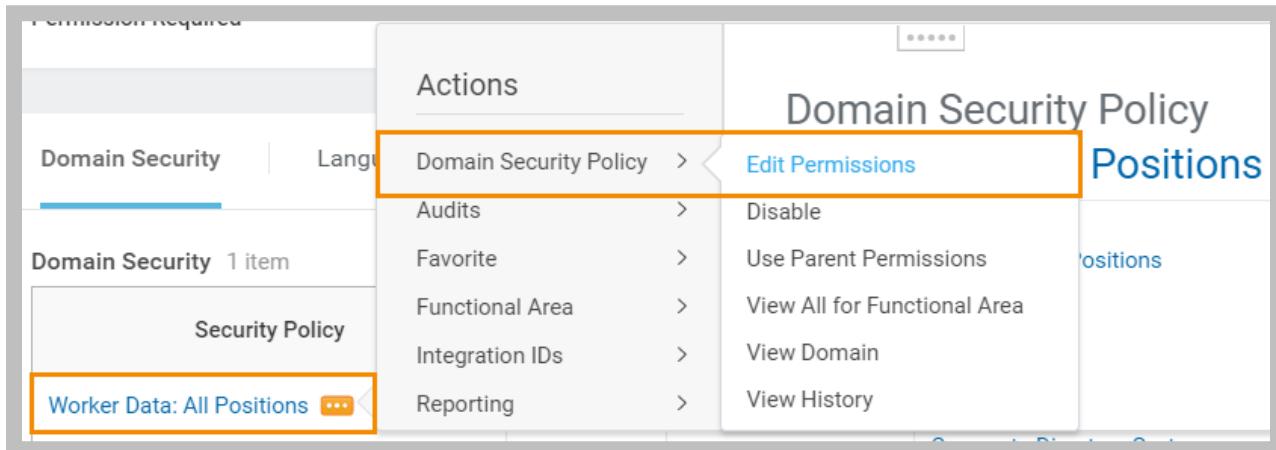
For each web service operation required by your integration system, access the **View Security for Securable Item** report and enter the web service task name, then note the security domain or business process security policy to which the operation is secured.

The screenshot shows the 'View Security for Securable Item' report for the task 'Get Positions (Web Service)'. The report header includes a back arrow, the report title, and an 'Actions' button. Below the header, the 'Type' is listed as 'Web Service Task' and 'Permission Required' as 'Get'. The 'Domain Security' tab is selected, showing one item. The table details the security policy 'Worker Data: All Positions', which is associated with the 'Staffing' domain and the 'Benefits System', 'Corporate Directory System', 'HR Administrator', 'HR Integration Administrator', 'HR Partner', and 'More (6)' security groups.

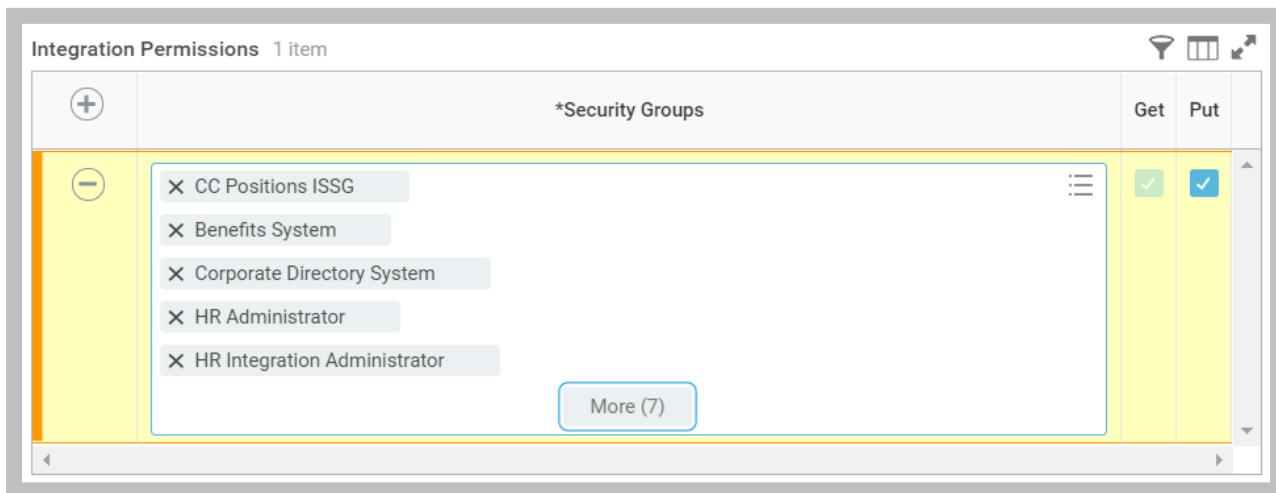
Security Policy	Domain	Functional Areas	Permitted Security Groups
Worker Data: All Positions	Staffing		Benefits System Corporate Directory System HR Administrator HR Integration Administrator HR Partner More (6)

149 - View Security for Securable Item report

Modify the Security Policy identified using the Related Actions of the policy or domain to include your integration system security group.



150 - Editing the Permissions of a Domain Security Policy



151 - Adding a Security Group to a Domain's Integration Permissions

Next, run the **Activate Pending Security Policy Changes** task.

Activate Pending Security Policy Changes

All pending security policy changes will become effective. Please review the data below and click Confirm if you want to proceed.

Current Security Evaluation Moment 09/20/2017 04:48:00.790 PM
Proposed Security Evaluation Moment 10/06/2017 01:20:15.520 PM
Comment Created ISU and ISSG for WICT CC Positions.

Confirm *

Domain Security Policies 1 item

Domain Security Policy	Last Changed	By User
Worker Data: All Positions	10/06/2017 01:19:15.023 PM	lmcneil / Logan McNeil

152 - Confirming the Activation of Pending Security Policy Changes

Re-run the **View Security for Securable Item** report to confirm that your Integration Security Group is now a Permitted Security Group for that web service operation.

Domain Security | Language Restrictions

Domain Security 1 item

Security Policy	Domain	Functional Areas	Permitted Security Groups
Worker Data: All Positions	🔍	Staffing	Benefits System CC Positions ISSG (highlighted) Corporate Directory System HR Administrator HR Integration Administrator + More (7)

153 - Domain Security Permitted Security Groups with Integration System Security Group included

Editing Integration System Workday Account

Add the ISU to the integration system by using its Related Actions to select **Workday Account > Edit**.

The screenshot shows a navigation sidebar on the left with categories like 'Base', 'System', 'Audit', 'Business Process', 'Favorite', 'Integration', 'Integration IDs', 'Reporting', 'Solution', 'Translation', and 'Workday Account'. The 'Workday Account' item is highlighted with an orange box, and an arrow points from it to the 'Edit' button at the bottom of the list. The main content area displays the title 'Integration System WICT CC Positions' and details such as 'System ID: WICTCCPositions', 'Integration Template: Core Connector: Pos', and a section titled 'Integration Services' with 5 items. The 'Edit' button is also highlighted with an orange box.

154 - Editing the Workday Account of an Integration System

The screenshot shows a search bar with the placeholder 'CC Positions ISU /'. To the left of the search bar is a blue box containing a white exclamation mark icon. The text 'Workday Account' is displayed above the search bar.

155 - Assigning the ISU as the Workday Account for Integration System



Important: Once an ISU has been assigned as a Workday Account, it is no longer available for other Studio or Connector integration systems.



Tip: Customers can leverage the **Maintain Permissions for Security Group** task to assign domain security policies to security groups in bulk. This can be useful when you have a known list of domains, such as those provided for integration system templates in the Workday Administration Guide.

← **Maintain Permissions for Security Group**
CC Inbound Org ISSG [Actions](#)

Report/Task Permissions

Domain Security Policies permitting Modify access

Domain Security Policies permitting View access

Integration Permissions

Domain Security Policies permitting Put access

Alert:
Activate your security policy changes using the Activate Pending Security Policy Changes task, and update the security evaluation moment, which is currently set to 10/06/2017 13:20:15.520.

Domain Security Policies permitting Get access

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

[156 - Maintaining Integration Permissions for Security Group](#)



ACTIVITY 5.1 – CREATE AN INTEGRATION SYSTEM USER

Business Case: You now need to synchronize positions on a regular schedule. You will create a new integration system user and unconstrained integration security group, update (and activate) the appropriate security policies, and assign the ISU to your connector.

- Core Connector: Positions only needs access to the Worker Data: All Positions domain if you are not including job information in the output.

Note: If you used the shortcut in Activity 4.4, continue to use **WDINST CC Positions with DT** instead of WICT CC Positions in this activity.

TASK #1: CREATE INTEGRATION SYSTEM USER AND EDIT PERMISSIONS

- Sign in as Logan McNeil (*lmcneil*).
- Search for and select the **Create Integration System User** task and enter the following:

Field Name	Entry Value
User Name	CC Positions ISU
New Password / New Password Verify	P@ssw0rd

- Click **OK** and **Done**.
- Search for and select the **Create Security Group** task and enter the following:

Field Name	Entry Value
Type of Tenanted Security Group	Integration System Security Group (Unconstrained)
Name	CC Positions ISSG

- Click **OK** to continue.
- Select the **CC GetPositions ISU** account for **Integration System Users**.
- Click **OK** and **Done**.
- Run the **View Security for Securable Item** report for the Domain Item of *Get Positions (Web Service) (Web Service Task)*.

6. Use the **Related Actions** of the **Worker Data: All Positions** security policy to select **Domain Security Policy > Edit Permissions**.
 - A. Under **Integration Permissions**, use the prompt on the existing Get/Put record to select your **CC Positions ISSG** security group (do not add another row).
 - B. Click **OK and Done**.
7. Search for and select the **Activate Pending Security Policy Changes** task.
 - A. Enter a **Comment** and click **OK**.
 - B. Select the **Confirm** check box and click **OK**.
8. Re-run the **View Security for Securable Item** report for the Domain Item of *Get Positions (Web Service) (Web Service Task)* to confirm your new security group was added.

TASK #2: EDIT INTEGRATION SYSTEM WORKDAY ACCOUNT

1. Search for and select the **WICT CC Positions** integration system.
2. Use the **Related Actions** to select **Workday Account > Edit**.
 - A. Select **CC Positions ISU** for the **Workday Account**.
 - B. Click **OK** to save the Workday Account.
 - C. Click **OK** to accept the default account preferences.

View Integration System WICT CC Positions Actions

Basic Details

System Name WICT CC Positions

> System ID

Template

Integration Template Core Connector: Positions

Workday Account CC Positions ISU /

157 - View Integration System with Workday Account

TASK #3: SCHEDULE INTEGRATION

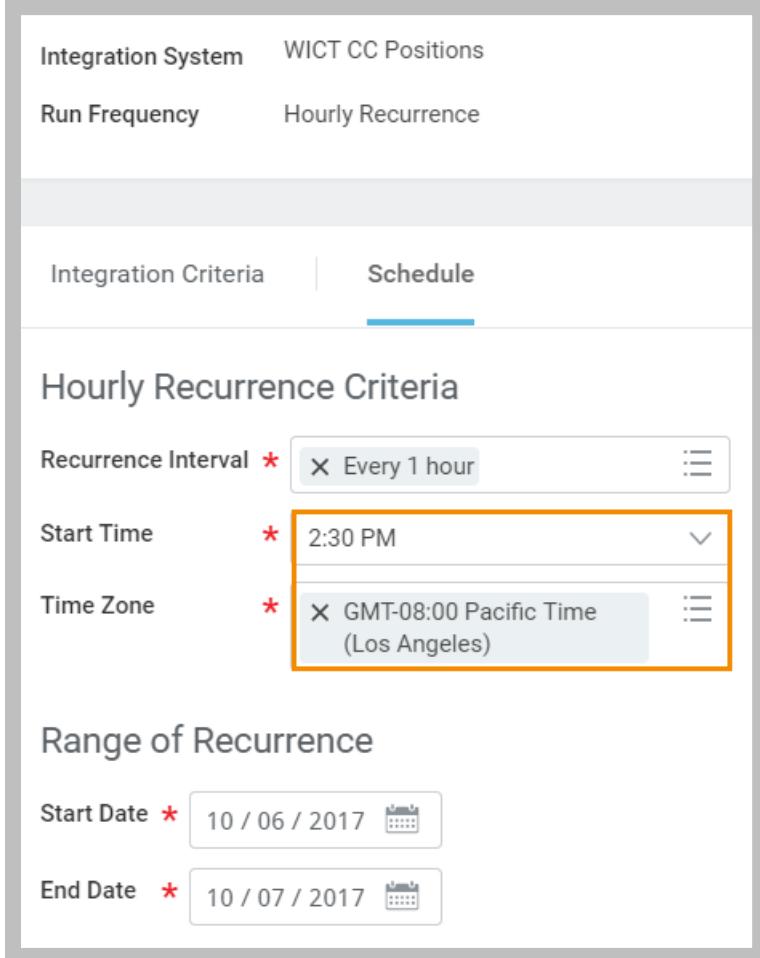
1. Use the WICT CC Positions' **Related Actions** to select **Integration > Launch/Schedule**.
2. For **Run Frequency**, select **Hourly Recurrence** and click **OK**.
3. Enter the following Integration Criteria:

Field	Value
Supervisory Organization	IT HelpDesk Department
Full Extract	Checked

4. Select the **Schedule** tab and enter the following:

Field Name	Entry Value
Recurrence Interval	Every 1 Hour (default)
Start Time	[Next possible 15-minute interval]
Start Date	[Today's date]

End Date	[Tomorrow's date]
----------	-------------------



Integration System: WICT CC Positions

Run Frequency: Hourly Recurrence

Integration Criteria | Schedule

Hourly Recurrence Criteria

Recurrence Interval * Every 1 hour

Start Time * 2:30 PM

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

Range of Recurrence

Start Date * 10 / 06 / 2017

End Date * 10 / 07 / 2017

158 - Hourly Recurrence Schedule

5. Click **OK**.
6. Wait until after your runtime and view the **Integration Events** report.

TIP: The **Scheduled Future Processes** report includes a **Refresh** button.

Scheduled Future Processes									
<input type="button" value="Refresh"/> <input type="button" value="Print"/> <input type="button" value="Excel"/> <input type="button" value="CSV"/>									
Background Processes 1 of 48 items									
Process Type	Process	Request Name	Run Frequency	Owned By	Restricted to Environment	Start Date	End Date	Status	Number of Times Run
Integration	WICT CC Positions	WICT CC Positions	Hourly Recurrence	Logan McNeill		10/06/2017	10/07/2017	Active	0 10/06/2017 14:30 PDT

159 - Scheduled Future Process report filtered by Process

7. View the **Integration Details** of the integration event to confirm that it **Ran As** the ISU.

Integration Details	Process Info	Process History	Output Files (4)	Messages
Initiated From				
Trigger	Scheduled / WICT CC Positions / Imcneil / Logan McNeil / Next Fire Time: 10/06/2017 15:30:00.000 PDT			
Integration Process				
Parent Event	Integration: WICT CC Positions - 10/06/2017 14:30:15.378			
Integration Event	WICT CC Positions - 10/06/2017 14:30:15.378 (Completed)			Date Parameters
Event Type	Integration Event			As Of Effective Date 10/0
Integration System	WICT CC Positions			As Of Entry Date/Time 10/0
Initiated By	Logan McNeil			Begin Effective Date 10/0
Initiated at	10/06/2017 02:30:15.378 PM			Begin Entry Date/Time 10/0
Ran As	CC Positions ISU /			
Response Message	Integration Completed.			

160 - Integration Event for a schedule integration



CHAPTER 6 – WORKDAY STUDIO

OVERVIEW

Workday Studio is a powerful, Eclipse-based development tool enabling customers and partners to build sophisticated and highly customizable integrations to and from Workday.

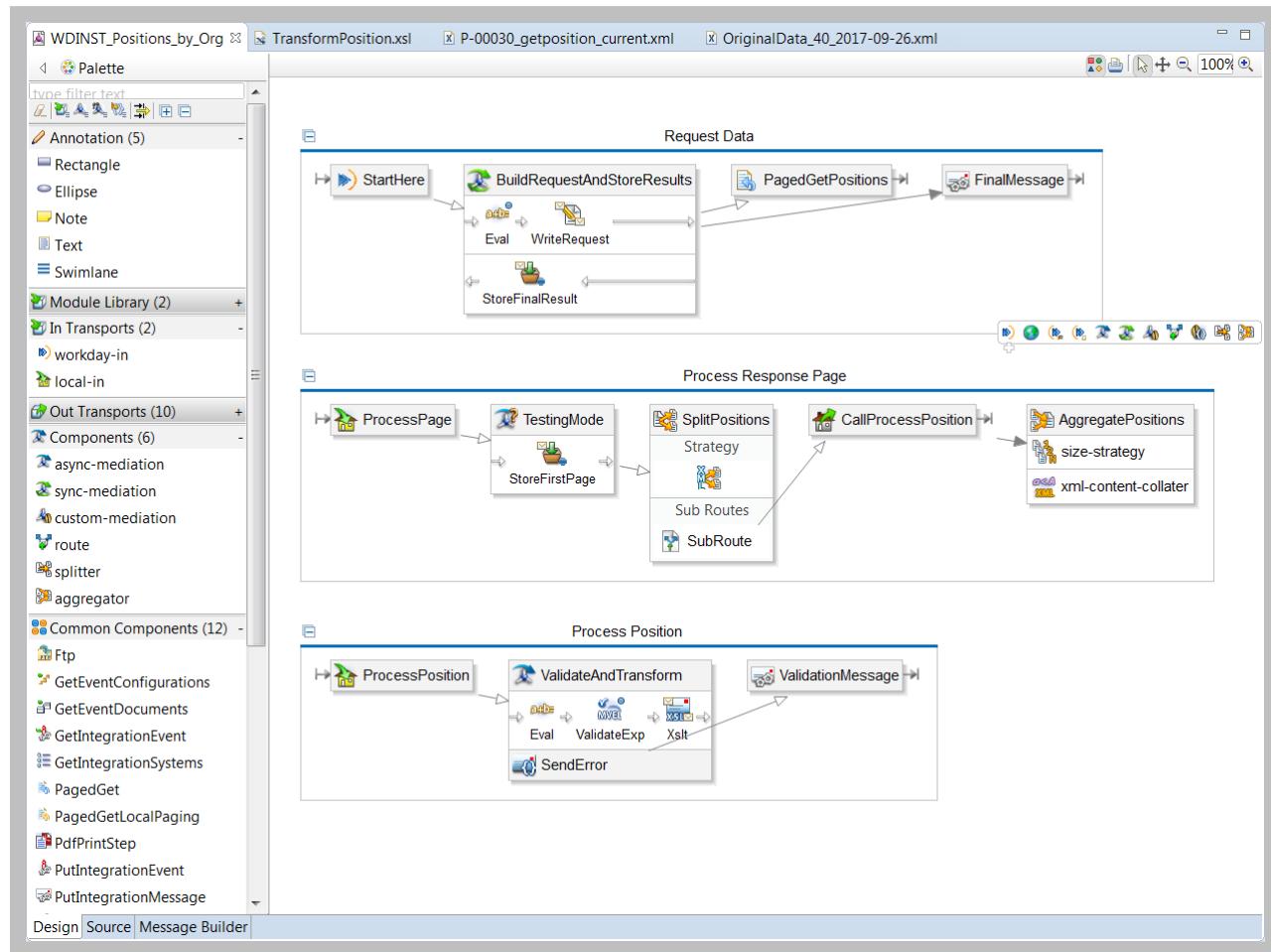
OBJECTIVES

By the end of this chapter, you will be able to:

- Identify the integration requirements that are best solved with Workday Studio.
- Configure sequence generator, maps, and attribute services for a deployed Workday Studio collection.
- Launch and monitor a Studio integration system.

COMPLEX INTEGRATIONS – WORKDAY STUDIO PLATFORM

Studio is a module build on top of the open-source Eclipse IDE (Integrated Development Environment) that helps developers design and build integrations. With this development tool, you create assemblies of reusable components that include transport, routing, configuration, and mediation steps. These assemblies form the basis of your integration.



161 - Example Workday Studio Assembly

Studio assemblies provide much tighter control over the flow of your integration, allowing for conditional branching and iteration, flexible exception handling and logging, and highly scalable processing of multiple data sources and endpoints. As an Eclipse module, Studio also supports custom Java.



Resource: Visit the Workday Studio Community site to learn more about the platform and to download and install Studio: <https://community.workday.com/studio>.

WORKDAY STUDIO DEVELOPMENT

Studio integrations are developed in distinct phases:

- **Design:** Developers build assemblies in the Studio IDE installed on their workstations.
- **Deploy:** Studio users with Integration Build permissions deploy those assembly projects as archived collections into the Workday tenant.
- **Configure:** Integration administrators then use the Workday UI to configure any services needed by the Studio integration system, such as integration maps and transports.
- **Launch and Monitor:** Once configured, these integration systems are ready to be tested and eventually scheduled in production.

The screenshot shows the 'View Integration System' page for 'WDINST_Positions_by_Org'. On the left, under 'Basic Details', it shows the 'System Name' as 'WDINST_Positions_by_Org'. Below that is a 'System ID' section with a link to a 'Cloud Collection (Studio Project)' named 'WDINST_Positions_by_Org_Collection', which is highlighted with an orange border. At the bottom, there's a 'Integration Services' section showing '1 item'. On the right, a vertical 'Actions' menu is open, listing options like 'Integration System', 'Audits', 'Business Process', etc., with several items highlighted with orange boxes. The 'Integration System' option is also highlighted with an orange box.

162 - Deployed Studio Integration System with configurable services



Note: Although developers can test their assemblies by launching and monitoring their progress in Studio itself, the integrations actually run on an Enterprise Service Bus (ESB) in the Workday Cloud. You cannot test a Studio integration without tenant access.



Additional Training: The Introduction to Workday Studio (2-day VILT) course provides an overview of Studio capabilities and introduces key concepts in managing and deploying Workday projects, and in understanding integration message flow. Advanced Workday Studio (3-day VILT) covers more detailed programmatic concepts, including routing, scalability, error handling, and leveraging web services.



ACTIVITY 6.1 – LAUNCH WORKDAY STUDIO INTEGRATION

Business Case: Your integration requirements have moved beyond the capabilities of delivered connectors, and you have engaged a resource to build a Studio integration. You are now responsible for administering this integration system.

- The WDINST_Positions_by_Org integration has already been deployed to your tenant.
- You will review the configured sequence generators, integration maps, and attributes before testing.

TASK #1: REVIEW INTEGRATION SERVICES CONFIGURATION

1. Sign in as Logan McNeil (*lmcneil*).
2. Search for and select the **WDINST_Positions_by_Org** integration system.
3. Review the **Custom Integration Services** and make note of any **Integration Attributes**, **Integration Maps**, and **Launch Parameters**.

Attribute Provider	Attribute
Cloud Integration Broker	Workdayln Connector ID
Positions by Org Maps and Attributes	Testing Mode

163 - Custom Integration Services

4. Answer the following:
 - A. What is the value of the **Testing Mode** attribute?
 - B. What is the name of the Integration Map? What values are being mapped?
 - C. What is the Launch Parameter? Is it Required?
5. Use the related actions to select **Integration System > Configure Integration Sequence Generators**.
6. Answer the following:
 - A. How many Integration Sequencers have been configured?
 - B. What are their Format/Syntax values?

TASK #2: LAUNCH A STUDIO INTEGRATION

1. Launch the integration using its related actions to select **Integration > Launch/Schedule**.
2. Click **OK** to Run Now.
3. Select **IT HelpDesk Department** for **Supervisory Organization** and click **OK**.
4. **Refresh** the Integration Event until processing is complete.
 - A. What is the Status?
 - B. Are there any Error or Warning messages?
 - C. Which tab shows the launch parameter value?
 - D. What files were output?
 - E. Are any of the files Deliverable?

The screenshot shows the 'Integration Details' page for a process named 'WDINST_Positions_by_Org'. The process has completed with errors. The 'Messages (5)' tab is selected, displaying five log entries. Two entries are highlighted with an orange border: one 'Error' message about worker type restrictions and another 'Info' message about a log file.

Date and Time	Severity	Message	Background Process
10/06/2017 04:17:36.098 PM	Info	Launch Request, Log files and Consolidated Report.	Integration ESB Invocation (WDINST_Positions_by_Org - 10/06/2017 16:17:24.432 (Completed With Errors))
10/06/2017 04:17:34.716 PM	Info	Positions by Organization complete!	Integration ESB Invocation (WDINST_Positions_by_Org - 10/06/2017 16:17:24.432 (Completed With Errors))
10/06/2017 04:17:34.383 PM	Error	No Worker Type restriction for filled position: P-00043	Integration ESB Invocation (WDINST_Positions_by_Org - 10/06/2017 16:17:24.432 (Completed With Errors))
10/06/2017 04:17:34.076 PM	Error	No Worker Type restriction for filled position: P-00030	Integration ESB Invocation (WDINST_Positions_by_Org - 10/06/2017 16:17:24.432 (Completed With Errors))
10/06/2017 04:17:33.878 PM	Info	Positions_Org_1-2017-10-06.xml	Integration ESB Invocation (WDINST_Positions_by_Org - 10/06/2017 16:17:24.432 (Completed With Errors))

164 - Studio Integration Event Messages

5. Download and view the output files.
 - A. How are the files different?
 - B. Where do you see the value of the Integration Attribute?

CHALLENGE TASK #1: DISABLE TESTING MODE

1. Use the Configure Integration Attributes related action to clear **Testing Mode**.
2. Relaunch the integration and compare the results.

CHALLENGE TASK #2: DELIVER OUTPUT

1. Create a custom integration process event to add a Delivery Service Step.
2. Configure the Delivery Step to send the final output (only) to your SFTP folder using the same credentials as provided for WICT CC Positions.

CHALLENGE TASK #3: SCHEDULE INTEGRATION

1. Create an ISU and give it the appropriate permissions to launch WDINST_Positions_by_Org.
Hint: The only operation used by this assembly is Get Positions.
2. Assign the ISU to the Studio Workday Account and schedule the integration to run with a daily recurrence.



CHAPTER 7 – COMMON DESIGN PATTERNS

OVERVIEW

Workday provides several types of integration tools that can address a wide range of data interchange problems. Often, a solution may require a combination of integration systems to fulfill a requirement.

OBJECTIVES

By the end of this chapter, you will be able to:

- Explain Workday’s recommendations for inbound and outbound integrations.
- Compare the strengths and limitations of the different integration tools.
- Determine the appropriate design pattern(s) for common use cases.

RECOMMENDATIONS

FULL FILE RECOMMENDATIONS

Use a full data extract when your integration is not dependent on changes since the last run.

Connector	EIB	Studio
<ul style="list-style-type: none">• Use when available• Performance-tested• Use Document Transformation or Studio to enrich output	<ul style="list-style-type: none">• Low complexity• Low volume	<ul style="list-style-type: none">• Allows complex, conditional logic• Scales to large data sources (paging)

CHANGE FILE RECOMMENDATIONS

Some Workday tools are better than others at detecting changes between integration events.

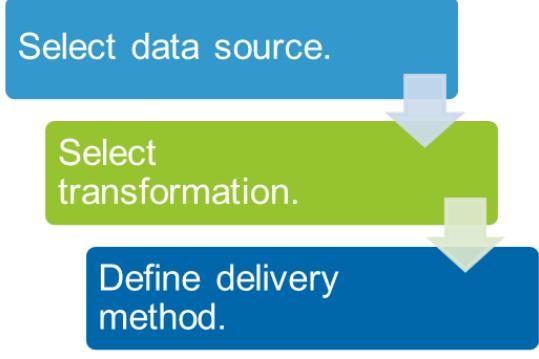
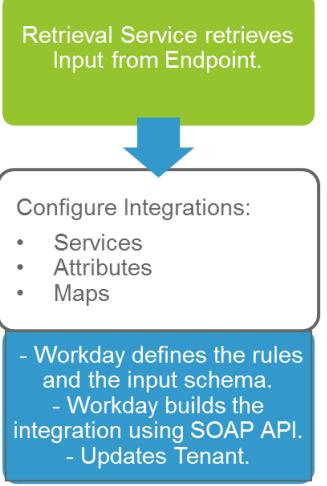
Connector	Studio	Avoid EIB
<ul style="list-style-type: none">• Use when available• Built-in Change Detection• Transaction Log Service• Performance-tested• Use Document Transformation or Studio to enrich output	<ul style="list-style-type: none">• Supports Transaction Log• Allows complex logic• Scales to large data sources (paging)	<ul style="list-style-type: none">• Requires complex calculated fields• Computing differences with calc fields is costly• Would need to maintain multiple calc fields

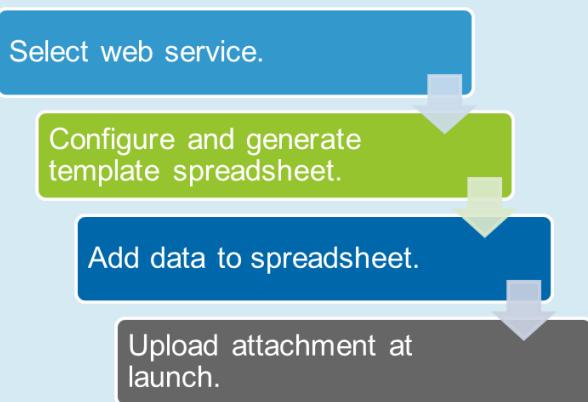
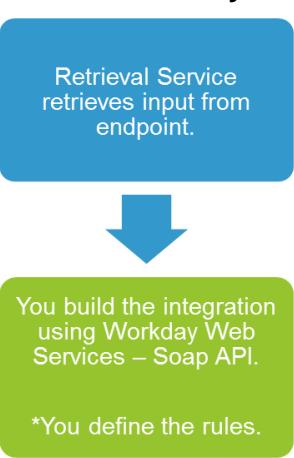
INBOUND RECOMMENDATIONS

Connector	EIB	Studio
<ul style="list-style-type: none">• Use when available• Performance-tested• Generally supports XML and CSV schemas without transformation• Can use DT to transform XML	<ul style="list-style-type: none">• Supports spreadsheet templates for user loads• Supports Import Web Services• Scheduling possible, but not recommended	<ul style="list-style-type: none">• Supports Import Web Services• Scales to large data sources (splitting, document iteration)• Can transform multiple formats

DESIGN PATTERNS

Pattern	Benefits/Limitations
Outbound Connector <div style="display: flex; align-items: center; justify-content: space-between;"> <div style="flex: 1; padding: 10px;"> <p>Configure Integrations:</p> <ul style="list-style-type: none"> • Services • Attributes • Maps • Transaction Log </div> <div style="flex: 1; padding: 10px; border: 1px dashed gray; margin-right: 20px;"> <p>Workday defines the rules... and the output. Workday builds the integration using Soap API.</p>  </div> <div style="flex: 1; background-color: #90EE90; color: white; padding: 10px; text-align: center;"> <p>Delivery Service delivers output to Endpoint.</p> </div> </div>	<ul style="list-style-type: none"> • Delivered • Built-in change detection • Works for Full File and Changed File • Can filter by the Transaction Log • Reasonable if only a restricted number of field overrides (< 30) • Avoid overrides that use calculated field prompts • Out of the box support for the required output format • Delivery service supports the file delivery requirements
Outbound Connector with Document Transformation <div style="display: flex; align-items: center; justify-content: space-between;"> <div style="flex: 1; padding: 10px;"> <p>Configure Integrations:</p> <ul style="list-style-type: none"> • Services • Attributes • Maps • Transaction Log </div> <div style="flex: 1; padding: 10px; border: 1px dashed gray; margin-right: 20px;"> <p>Workday defines the rules and the output. Workday builds the integration using Soap API.</p>  </div> <div style="flex: 1; background-color: #FFB703; color: white; padding: 10px; text-align: center;"> <p>Document Transformation Integration System to transform the output of Workday Connector.</p>  </div> <div style="flex: 1; background-color: #90EE90; color: white; padding: 10px; text-align: center;"> <p>Delivery Service delivers output (of DT) to Endpoint.</p> </div> </div>	<ul style="list-style-type: none"> • Document Transformation specifically designed to work with Connectors • ETV and XTT availability • Document Transformation can include integration maps and attributes • Reasonable if only a restricted to 3 or fewer transformations (otherwise, use Studio) • Runs in 2 hours or less • Delivery service supports the file delivery requirements
Outbound Connector with Studio <div style="display: flex; align-items: center; justify-content: space-between;"> <div style="flex: 1; padding: 10px;"> <p>Configure Integrations:</p> <ul style="list-style-type: none"> • Services • Attributes • Maps • Transaction Log </div> <div style="flex: 1; padding: 10px; border: 1px dashed gray; margin-right: 20px;"> <p>Workday defines the rules and the output.</p>  </div> <div style="flex: 1; background-color: #FFB703; color: white; padding: 10px; text-align: center;"> <p>Workday Studio Integration System transforms the output of Workday Connector</p>  </div> <div style="flex: 1; background-color: #90EE90; color: white; padding: 10px; text-align: center;"> <p>Delivery Service Delivers Transformed Output to Endpoint.</p> </div> </div>	<ul style="list-style-type: none"> • Connector exists and outputs most of the required data fields • Use Studio to enrich output of Workday Connector • Reasonable if multiple and complex XSLT stylesheets are required (ETV/XTT available as of WD28) • Integration can complete in less than 2 hours

Pattern	Benefits/Limitations
Outbound EIB  <p>Select data source.</p> <p>Select transformation.</p> <p>Define delivery method.</p>	<ul style="list-style-type: none"> Fully Custom Low complexity; no error handling No change detection No integration maps or attributes Reasonable if all data can be retrieved in a single data source No paging logic (Soap API) One transformation only (ETV/XTT not supported) One destination endpoint 2 hour XSLT limit
Outbound Workday Studio  <p>You build the integration using Workday Web Services.</p> <ul style="list-style-type: none"> • Soap API • Custom Report <p>*You define the rules</p> <p>Delivery Service delivers output to Endpoint.</p>	<ul style="list-style-type: none"> Fully Custom Integration maps, attributes, and launch parameters Split large input files Aggregate data More than one data source (multiple calls to Workday and/or externally) Multiple output files Multiple transformations (ETV/XTT supported as of WD28) Support for non-XML schemas Conditional logic and complex error handling capabilities
Inbound Connector  <p>Retrieval Service retrieves Input from Endpoint.</p> <p>Configure Integrations:</p> <ul style="list-style-type: none"> • Services • Attributes • Maps <p>- Workday defines the rules and the input schema. - Workday builds the integration using SOAP API. - Updates Tenant.</p>	<ul style="list-style-type: none"> Connector interface includes all the data elements that need to be imported into Workday Supports XML and CSV schemas Retrieved file could be transformed by document transformation if XML

Pattern	Benefits/Limitations
Inbound EIB  <p>Select web service.</p> <p>Configure and generate template spreadsheet.</p> <p>Add data to spreadsheet.</p> <p>Upload attachment at launch.</p>	<ul style="list-style-type: none"> User-driven, bulk data import Single file is imported Single web service is invoked Manual upload External file size < 300 MB (attachments < 30 MB; images <1MB)
Inbound Workday Studio  <p>Retrieval Service retrieves input from endpoint.</p> <p>You build the integration using Workday Web Services – Soap API.</p> <p>*You define the rules.</p>	<ul style="list-style-type: none"> Iterate through multiple files Invoke multiple service operations Supports any Public WWS Conditional logic Complex validation and error handling



Resource: This guide is a static document; limitations may change between updates. Refer to the Workday Administration Guide “Reference: Integrations and Web Service Limits” for the most up-to-date integration system resource limits.



Reference: Integrations and Web Service Limits

Reference: Integrations and Web Service Limits

API Request Limits

To ensure resource availability for all customers, Workday throttles API requests under high load, based on available resources. If Workday throttles an API request, Workday sends a 429 HTTP response code to the requester. Workday recommends that you implement an exponential back-off retry mechanism for the process that generates the API requests.

Workday throttles these types of API requests:

- Workday Web Services (WWS) API
- Workday REST API
- Workday Reports-as-a-Service (RaaS)

Connectors: Runtime Boundaries

To ensure resource availability for all customers, Workday terminates any Connectors (including Document Transformation) that:

- Generate more than 3 gigabytes (GB) of files during the integration run.
- Generate any single file larger than 250 MB during the integration run.
- Use more than 15 GB of memory during processing. Integrations can use several times the amount of memory that the output files require.

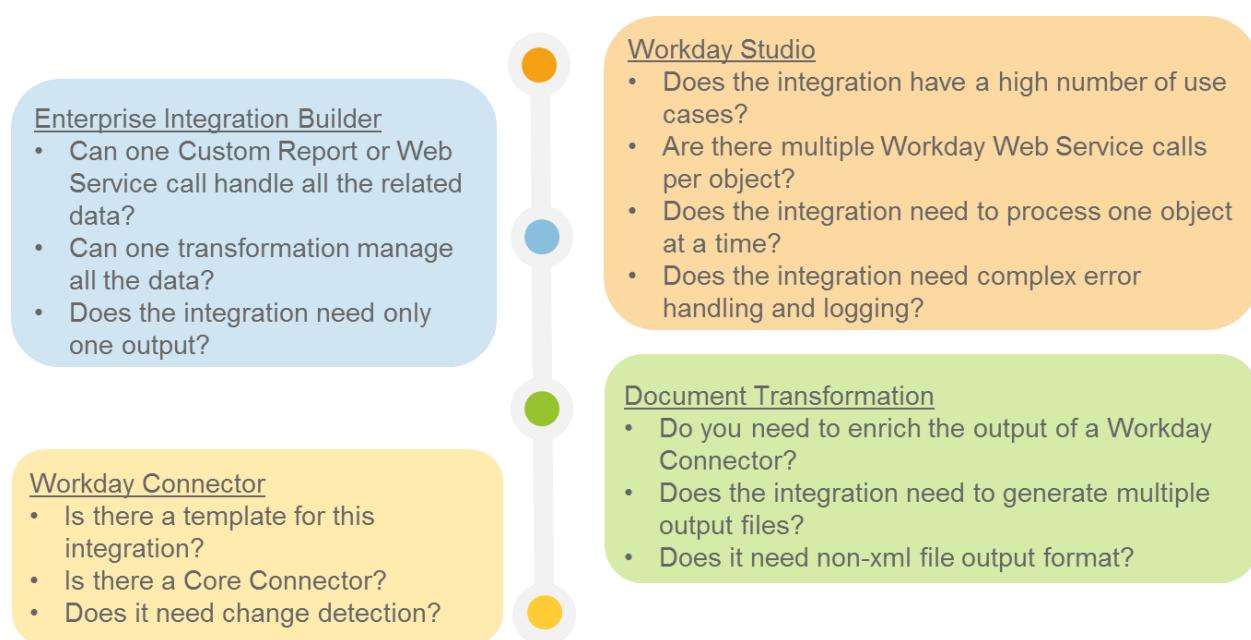
A Connector can process for up to 30 hours. Workday terminates Connectors that spend more than 30 hours processing. Depending on resource availability, Workday pauses long-running Connectors and restarts them when resources become available. The paused time is not included in the 30 hours processing time limit.

Document Transformation: Runtime Boundaries

When you transform large amounts of data, Document Transformation can consume several times the amount of memory that the source data requires. Although Document Transformations that transform a large amount of data have a high risk of malfunctioning, Workday still attempts to complete all Document Transformations. The maximum amount of memory that Workday allocates to a Document Transformation is 15 gigabytes (GB).

165 - Reference: Integrations and Web Service Limits

ORDER OF CONSIDERATION





ACTIVITY 7.1 – DISCUSS INTEGRATION SCENARIOS

Business Case: Workday supports several integration options that perform similar functions but have distinct advantages and limitations. As a group, we will discuss the following scenarios to decide which tool(s) is the best for the job.

- We are not asking you to build these scenarios, just to discuss which technology potentially fits best.
- In some cases, there may be more than one possibility.
- Do not hesitate to consider “what-if” conditions. E.g., EIB would work if a certain assumption were true.

SCENARIO 1

I need to output a list of active employees that have changes to either their position and/or compensation data in the past week.

SCENARIO 2

I have an integration that I need to merge the results of a call to get position and job profiles in Workday. I need to transform the output into a .csv file and deliver to an SFTP server. This integration may process 1 position, or 100 positions, or more.

SCENARIO 3

I need to process an incoming a plain text file to update locations in Workday.

SCENARIO 4

I need to output a list of active employees. The output will include position and compensation data about each employee. The output must be a .csv file that is comma separated with each value in double quotes. If there is a value missing in the required Social Security Number field, I need an error message to be displayed on the integration event.

SCENARIO 5

I need to process an inbound xml file that contains a list of positions. It is mostly formatted correctly but needs a couple of changes to the source XML before updating Workday. This small file will never contain more than 25 positions at a time.

SCENARIO 6

I need to process an XML file that contains time off requests. I need to go through each request off and validate the worker’s status, state of residence, and social security number. Once validated, I will update Workday. If a worker fails any of the validations, their record will not be updated in Workday, but will be written out to a log error file.

SCENARIO 7

I have a small group of Workers that are happy to manually enter a time off request but do not have access to Workday. If I can provide them with a template, they can populate it and email the file back to me.

SCENARIO 8

Our Financials department needs to send us new organizations, updates to existing organizations, as well as be able to deactivate organizations. They are internal and are agreeable to the format of the file.

SCENARIO 9

Run a report to get a list of active employees from a specified supervisory organization hired between a set of dates, generate a .csv file and deliver it to secured endpoint.

SCENARIO 10

I need to process the Hire Employee process on an inbound xml file. I need to verify the position is available for each future employee and that each one has an existing pre-hire ID. If the position is not available for hire, I need to generate an error log for that record. If the position is available and they do not have an existing pre-hire ID, I need to create the pre-hire record before I process the hire. If the position is available and the pre-hire exists, I need to hire in Workday.

SCENARIO 11

I need to send position information to a system of record.

What do I need to consider for this outbound integration?

SCENARIO 12

I am receiving a file with a list of workers that have personal data updates.

What do I need to consider for this inbound integration?



APPENDIX A – CLASS EVALUATIONS

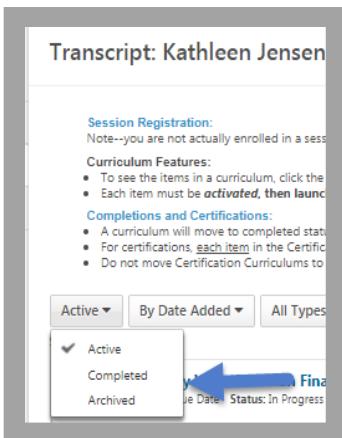
CLASS EVALUATION (SESSION WITHIN A CURRICULUM): AVAILABLE AT THE START OF THE LAST DAY OF CLASS

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
View	TITLE (CLICK ON TO SEE COURSE DESCRIPTION)				
All Training	Activated Training	Not Activated Training			
Prerequisite Requirements (Min. required: 0)		Section			None
<input checked="" type="radio"/> Next Steps		Note	Completed	None	None
Report Writer (Min. required: 1)		Section	Completed	None	None
<input checked="" type="radio"/> Report Writer		Session	Cancelled	Select Session	
<input checked="" type="radio"/> Report Writer		Session	Cancelled	Select Session	
<input checked="" type="radio"/> Report Writer		Session	Cancelled	Select Session	
<input checked="" type="radio"/> Report Writer - Learn Independent		Event	Completed (Equivalent)	Select Session	
Workday Report Designer (BIRT) (Min. required: 1)		Section			None
<input checked="" type="radio"/> Workday Report Designer (BIRT)		Session	Registered	Launch Evaluate	

CLASS EVALUATION (WITHIN A CURRICULUM): 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.



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

4. 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.)
5. Click **Evaluate**.

Curriculum

View All Training Activated Training Not Activated Training

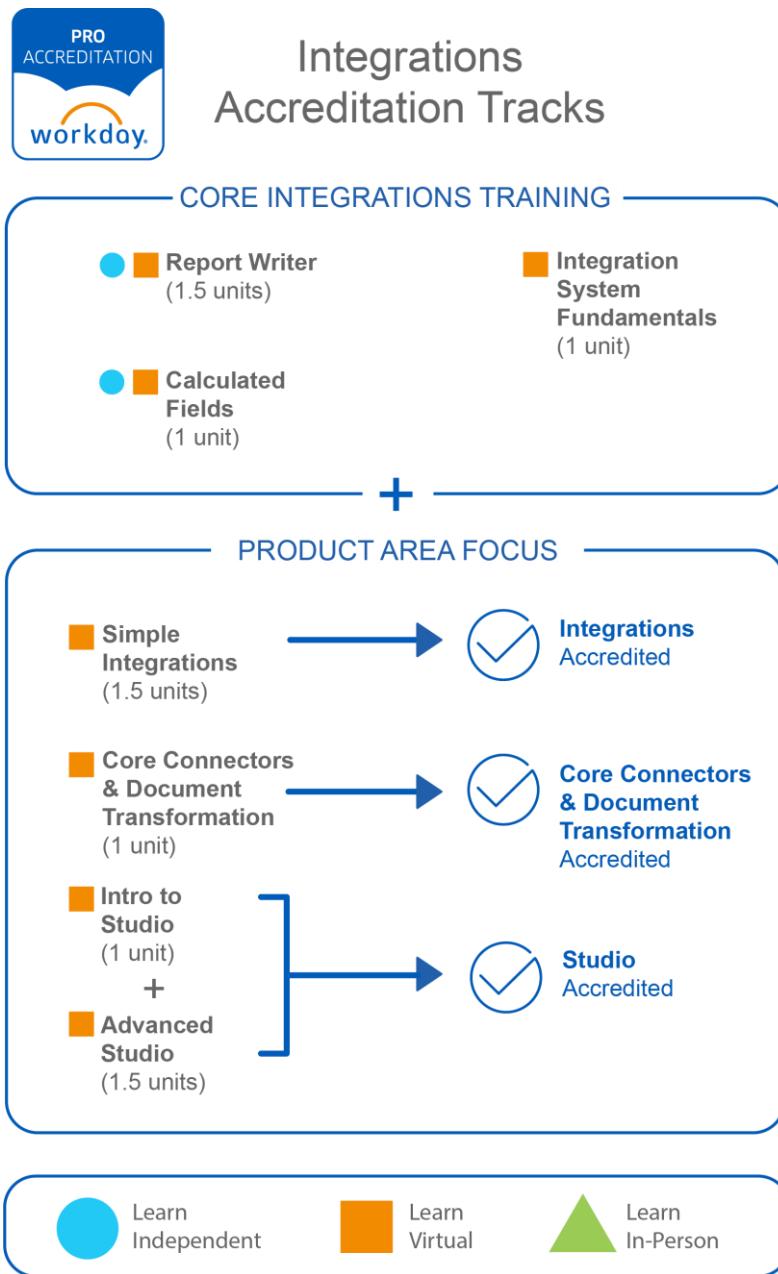
TITLE (CLICK ON TO SEE COURSE DESCRIPTION)

	TYPE	STATUS	OPTIONS	DETAILS
Prerequisite Requirements (Min. required: 0)	Section	Completed	None	None
<input checked="" type="checkbox"/> Next Steps	Note	Completed	None	None
Report Writer (Min. required: 1)	Section	Completed	None	None
<input checked="" type="checkbox"/> Report Writer	Session	Completed	Select Session	
<input checked="" type="checkbox"/> Report Writer	Session	Cancelled	Select Session	
<input checked="" type="checkbox"/> Report Writer	Session	Cancelled	Select Session	
<input checked="" type="checkbox"/> Report Writer - Learn Independent	Event	Completed (Equivalent)	Select Session	
Workday Report Designer (BIRT) (Min. required: 1)	Section	Completed	Evaluate	
<input checked="" type="checkbox"/> Workday Report Designer (BIRT)	Session	Completed		

APPENDIX B – 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

APPENDIX C: ACTIVITY ANSWER KEY

INTRODUCTION

This section contains answers to questions posed throughout the activities in this course.

CHAPTER 2 ANSWERS

ACTIVITY 2.2 – ADD BUSINESS OBJECTS TO RAAS

Task #2: Compare Simple XML to Workday XML

- 6A. Compare the Simple XML to the Workday XML. What do you notice about the business objects? Simple XML only contains object descriptors; no Integration IDs; multiple instances are collapsed into a single element; dates don't include time zone offset.
- 6B. Compare the actual URLs of the Workday XML and the Simple XML. What is the difference between them? The Simple XML URL includes &format=simplexml.
- 6C. What is controlling the element names of the fields in the Workday XML? For example, if you wanted to change the value of <wd:AvailabilityDt> to <wd:AvailabilityDate>, where is that action performed? Report definition – Column Heading Override XML Alias.
- 6D. When viewing the Workday XML, the document contains a namespace of wd="urn:com.workday.report/WICT_RW_Positions". Where in the report definition is that defined? Report definition – Advanced tab.

ACTIVITY 2.3 – FIND INTEGRATION IDS

Task #1: Use the UI to view Reference IDs

Object	Integration ID Type	Value
Organization	Organization_Reference_ID	Executive_Management_supervisory
Position	WID	ae5982654df8420dacc5f530e096215b
Time Type	Position_Time_Type_ID	Full_time
Location	Location_ID	San_Francisco_site

Task #2: Use the Integration IDs report to view Integration IDs

Business Object	Instance	Integration ID Type	Value
Language	French	WID	67327bff5f014925a36d37d2ef380159
Language	Russian	Language_ID	234.4
Country	United States	WID	bc33aa3152ec42d4995f4791a106ed09

Appendix C: Activity Answer Key

Business Object	Instance	Integration ID Type	Value
Country	Canada	ISO_3166-1_Alpha-2_Code	CA
Employee Type	Regular	WID	9459f5e6f1084433b767c7901ec04416
Supervisory Organization	IT HelpDesk Department	WID	af6d7f10878340d186121b9d88ae1b5d
Supervisory Organization	Field Sales – North American Group	Organization_Reference_ID	Field_Sales_NA_supervisory
General Event Subcategory	Request Compensation Change > Adjustment > Performance	General_Event_Subcategory_ID	Request_Compensation_Change_Adjustment_Performance

Task #3: USE the View Reference IDs report to view Reference IDs

Business Object	Instance	Reference ID Type	Value
Absence Plan	Floating Holiday Plan	Absence_Plan_ID	FH_USA
Compensation Plan	General Salary Plan	Compensation_Plan_ID	SALARY_Salary_Plan

CHAPTER 3 ANSWERS

DEMO 3.1 – REVIEW SOAP REQUESTS AND RESPONSES USING SOAPUI

Task #3: Create Request to Get Positions

7A. How many positions (Total Results) did Workday find based on our request? 536.

7B. How many total pages of results does this represent? 6.

7C. How many results were returned to SoapUI based on our request? 100.

7D. Which page was returned? 1.

7E. What types of positional data are included in the response? Position Reference, Supervisory Organization, Effective Date, Position Definition Data, and Closed.

Task #4: Modify Request to Return 5 Positions

4A. How many positions (Total Results) did Workday find based on our request? 536.
Is this different from the last request? No, our filter did not limit the scope of the data.

4B. How many total pages of results does this represent? 108.
Is this different from the last request? Yes, there are fewer records per page.

4C. How many results were returned to SoapUI based on our request? 5.

Why this number? Specified by the Count filter.

4D. Which page was returned? 1

4E. How would you modify the request to get the next 5 positions? Set Page filter to 2.

4F. How would you modify the request to return all positions for a given supervisory organization? Include Request Criteria to limit the data scope by organization.

Task #5: Modify Request to Retrieve IT HelpDesk Positions

4A. How many positions (Total Results) did Workday find based on our request? 8.

Is this different from the last request? Yes, the scope is limited to IT HelpDesk.

4B. How many total pages of results does this represent? 2

Is this different from the last request? Yes, there are fewer total records.

4C. How many results were returned to SoapUI based on our request? 5.

Why this number? Specified by the Count filter.

4D. What is a friendlier alternative to the WID to specify an organization? You can use Organization Reference ID.

Task #6: Modify Request to Retrieve Qualification Data

4A. How many results were returned to SoapUI based on our request? 5.

Is this different from our previous request? No, the criteria returns the same records.

4B. What Response Groups are now included in the output? Position Data and Qualification Data.

4C. Are any Response Groups missing that were in previous responses? Position Reference; defaults no longer apply if Response Groups are selected.

CHAPTER 4 ANSWERS

ACTIVITY 4.3 – COMPARE WORKDAY OUTPUT TO XSLT

Task #1: Compare Report Output to XSLT

3. Review the XSLT file and compare to the report definition. Find three errors. Incorrect namespace, ID element missing closing tag, wd:AvailabilityDt misspelled in xsl:value-of select attribute.

CHAPTER 6 ANSWERS

ACTIVITY 6.1 – LAUNCH WORKDAY STUDIO INTEGRATION

Task #1: Review Integration Services Configuration

- 4A. What is the value of the **Testing Mode** attribute? Yes.
- 4B. What is the name of the Integration Map? Worker Type.
What values are being mapped? Contingent Worker (Casual) and Employee (Emp).
- 4C. What is the Launch Parameter? Supervisory Organization. Is it Required? Yes.
- 6A. How many Integration Sequencers have been configured? 2.
- 6B. What are their Format/Syntax values? Positions_Final_[yyyy]-[MM]-[dd]_[seq].xml and
Positions_Original_[yyyy]-[MM]-[dd]_[seq].xml.

Task #2: Launch a Studio Integration

- 4A. What is the Status? Completed With Errors.
- 4B. Are there any Error or Warning messages? 2 Errors.
- 4C. Which tab shows the launch parameter value? Integration Details.
- 4D. What files were output? Positions_Orig_1-.xml and Positions_Final_1-.xml.
- 4E. Are any of the files Deliverable? Positions_Final_1-.xml only.
- 5A. How are the files different? Positions_Final has a simpler structure with uppercase tags, no namespaces, external mapped Worker Types, and Position ID and Availability values as attributes.
- 5B. Where do you see the value of the Integration Attribute? As an attribute in the Final file only.

CHAPTER 7 ANSWERS

ACTIVITY 7.1 – DISCUSS INTEGRATION SCENARIOS

Scenario 1

I need to output a list of active employees that have changes to either their position and/or compensation data in the past week.

Core Connector: Position is delivered and has built-in change detection.

Scenario 2

I have an integration that I need to merge the results of a call to get position and job profiles in Workday. I need to transform the output into a .csv file and deliver to an SFTP server. This integration may process 1 position, or 100 positions, or more.

Workday Studio can make multiple web service calls and is the best tool to scale to an unknown number of records.

Scenario 3

I need to process an incoming a plain text file to update locations in Workday.

Workday Studio. There is no connector for inbound locations, and document transformation and EIB can only process an XML input.

Scenario 4

I need to output a list of active employees. The output will include position and compensation data about each employee. The output must be a .csv file that is comma separated with each value in double quotes. If there is a value missing in the required Social Security Number field, I need an error message to be displayed on the integration event.

Connector + Document Transformation. Core Connector: Worker can provide the employee data (including position and compensation). Document Transformation can easily convert XML to the specific CSV format and apply simple validation.

Workday Studio would only be necessary if you wanted to handle the error.

Scenario 5

I need to process an inbound xml file that contains a list of positions. It is mostly formatted correctly but needs a couple of changes to the source XML before updating Workday. This small file will never contain more than 25 positions at a time.

Inbound EIB can apply XSLT for transformation and is a good option to import a small volume of “trusted” data that does not need additional processing.

Scenario 6

I need to process an XML file that contains time off requests. I need to go through each request off and validate the worker's status, state of residence, and social security number. Once validated, I will update Workday. If a worker fails any of the validations, their record will not be updated in Workday, but will be written out to a log error file.

Studio is the only Workday option for conditional, branching logic (including file processing) based on custom validation.

Scenario 7

I have a small group of workers that are happy to enter time off requests manually but do not have access to Workday. If I can provide them with a template, they can populate it and email the file back to me.

Inbound EIBs can produce spreadsheet templates that allow users to bulk load data into a web service without developing a complicated transformation.

Scenario 8

Our Financials department needs to send us new organizations, updates to existing organizations, as well as be able to deactivate organizations. They are internal and are agreeable to the format of the file.

The Organization Inbound Connector can perform all of those functions, and supports both a CSV and an XML schema.

An Inbound EIB based on the Add Update Organization operation could perform the same function. You would have less support but gain the use of spreadsheet templates.

Scenario 9

Run a report to get a list of active employees from a specified supervisory organization hired between a set of dates, generate a .csv file and deliver it to secured endpoint.

Outbound EIB using RaaS with CSV as the alternate output format is the simplest option to deliver the file to a single endpoint.

Core Connector: Worker could also provide the data if a report was not a requirement. (You would need to configure Document Transformation [XTT] and Document Delivery steps in the business process.)

Scenario 10

I need to process the Hire Employee process on an inbound xml file. I need to verify the position is available for each future employee and that each one has an existing pre-hire ID. If the position is not available for hire, I need to generate an error log for that record. If the position is available and they do not have an existing pre-hire ID, I need to create the pre-hire record before I process the hire. If the position is available and the pre-hire exists, I need to hire in Workday.

Workday Studio could handle the multiple service calls and conditional processing in a single assembly.

However, all of the listed requirements can be handled by an Inbound EIB using a spreadsheet template based on the Hire Employee web service operation. This would require that the user launch the EIB multiple times with the “Add Errors to Attachment” option.

Scenario 11

I need to send position information to a system of record.

What do I need to consider for this outbound integration?

Data source and criteria, change detection, data structure and mapping, transport protocol, data volume, etc.

Scenario 12

I am receiving a file with a list of workers that have personal data updates.

What do I need to consider for this inbound integration?

Which Workday web service operation, data structure and mapping, transport protocol, data volume, etc.