



Simplifying Enterprise Integration
with the Workday Integration Cloud

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The Burden of Enterprise System Integration

For an enterprise to thrive in today's hyper-connected business and social environment, it needs to have access to necessary and relevant data that enable, employees, partners, and customers to have an engaging and useful experience.

The challenge of identifying, connecting, and using the appropriate data and functionality becomes harder as enterprises adopt more software and data repositories. There's simply more stuff to connect and manage.

Contained within its internal applications and repositories, an enterprise probably has every piece of data that could be to customers, partners, and their own employees. But if this data isn't delivered to the right people in a meaningful way, then an organization simply isn't making the most of its data and missing opportunities in the process. Yet for IT departments, integration usually appears seems both daunting and never-ending. Few, however, would disagree that integrating enterprise IT assets is one of the most critical elements of a company's business and IT strategies.

At Workday, integration is not just a task in the overall software development process. Workday applications are built with integration as a primary element to serve customers' needs effectively, our applications first need to connect existing systems to new ones, in order to drive future growth and change.

Integration is not about ripping out your core systems and re-learning a new way of conducting business. When done correctly, integration delivers a vastly improved version of the way you do things, and prepares your organization for the future.

Let's be clear; integration of enterprise applications is complex, time-consuming, and hard. For many IT departments, just keeping up with different types of platforms and architecture scenarios requires a substantial investment of time and often happens at the expense of other IT necessities.

Integration is a concern for both business and IT managers. Those involved with any part of implementing business requirements into IT capabilities will deal with the issues of integration regularly. This is especially true when an enterprise begins using cloud applications since they offer a more flexible model for accessing and sharing real-time data. The work will be strenuous, but the result will be hugely advantageous.

The Problem with Traditional ERP

Traditional ERP applications were built primarily on a client-server model that did not consider the need for sharing and communicating with other applications. To remedy this disconnect, application programming interfaces (APIs) were added later to accommodate system-to-system integration. This approach increased the options available for integrations, but unfortunately also greatly increased the cost and complexity of building and supporting them. In addition, much of the integration to traditional ERP was completed at a data level using SQL. Typically, achieving a more comprehensive integration from the ERP system to necessary bolt-on systems required significant programming, which only added to the cost, complexity, and rigidity of these integrations.

The Workday Approach: Integration in the Cloud

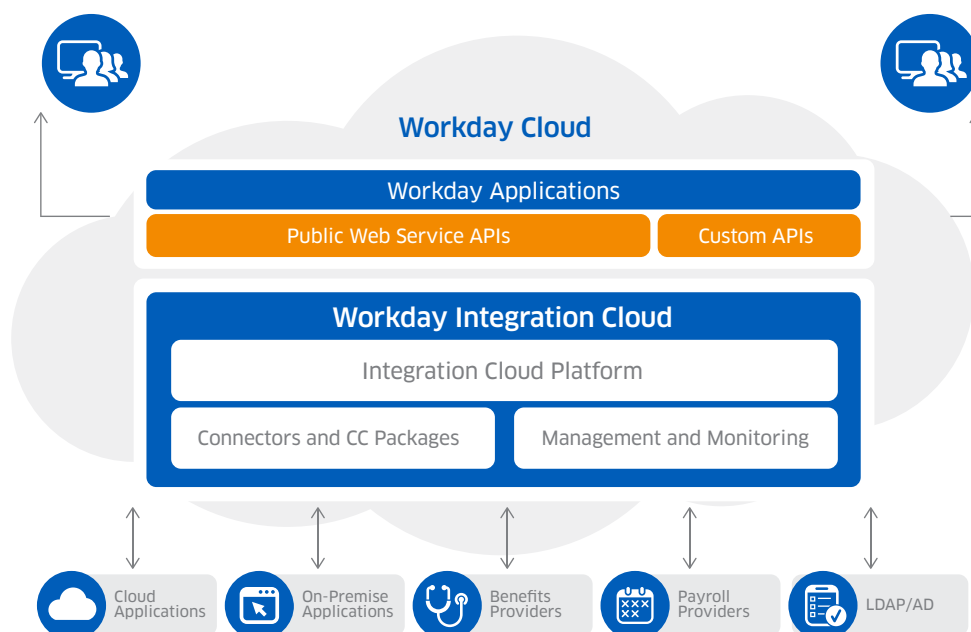
Human capital, payroll, and financial management systems must interact in a variety of ways with other internal and external systems and data sources. Unlike legacy enterprise application providers, Workday understands the importance of integration to core systems-of-record because integration has been a fundamental architectural and application design criteria from the company's inception.

Workday thinks that connectivity to other applications and resources should be simpler to build, deploy, manage, and evolve over time. This is a significant and long-awaited change from the way integration is currently done for most enterprise systems. By offering a variety of packaged solutions and integration tools as well as the ability to deploy integrations to the Workday Cloud, Workday helps relieve the burden of systems integration.

To simplify systems integration, Workday provides the following solutions and tools:

1. **Open, Standards-Based Web Services APIs.** At the foundation of our approach, Workday provides comprehensive standards-based web services APIs to support all integrations to and from Workday. Workday APIs are not only organized by functional areas, but they also automatically inherit the security permissions of the user executing the calls.
2. **Integration Cloud Platform.** The Workday Integration Cloud Platform is a proven, enterprise-class Integration-Platform-as-a-Service (iPaaS) that enables Workday, customers, and partners to build, deploy, and manage integrations to and from Workday in the Workday Cloud.
3. **Integration Cloud Connect.** Workday offers a growing ecosystem of packaged integrations and connectors. These offerings are 100 percent built, supported, and maintained by Workday as well as run and managed in the Workday Cloud. This vendor-supported approach significantly shifts the cost, risk, and burden of integrations from the customer to Workday and significantly accelerates implementation times.

Workday Integration Cloud



Why Use Workday for Integration?

Clearly, you can build any integration you need to the Workday API using your own middleware technology; MuleSoft, Boomi, TIBCO, or Oracle Fusion Middleware are just a few of the middleware tools used by Workday customers. However, there are several major advantages to using the Workday Integration Cloud:

- Integrations surface naturally inside the Workday user interface. You can view the integrations, launch them, schedule them, secure them, include them in Workday business processes, configure notifications around them, and audit and log them—all from within the Workday user experience.
- Both packaged and custom integrations run on Workday software and hardware infrastructure in our data centers. You do not need to license or use any on-premise integration middleware platform, which can greatly simplify the deployment and management of integrations especially when the majority of the integrations are connecting to Workday
- Finally Workday's integration tools are also highly optimized for efficiently building integrations to and from Workday. Purpose-built packaged components handle much of the plumbing aspects of integration-building, freeing you to focus on the critical business logic.

Overall, Workday's packaged integrations and tools are widely proven in a variety of demanding situations and offer a lower-cost, lower-risk path to delivering needed integrations in support of your deployment.

Workday Embraces Open, Standards-Based Web Services APIs

At the core of Workday are open standards-based APIs that give complete programmatic access to business operations and processes. These web services-based APIs provide an integration format (SOAP or REST) that is interoperable with all the leading client-side languages and integration middleware platforms. In addition, the Workday APIs are fully versioned, which means customers that build an integration against any particular release of Workday are guaranteed those integrations will continue to work across future Workday updates.

The Workday APIs contains the following service categories:

- **Business Services** are the primary way to programmatically interact with Workday and directly correspond with the major functional areas of Workday (e.g., Staffing, Benefits, or Financial Management). The operations within these services correspond with business events and business objects within Workday (such as "Hire Employee" within Staffing or "Get Journal" within Financial Management). Operations return extensive data sets but can also be configured via "Response Groups" to return a subset of possible data (e.g., contact information, position information, etc.).
- **Reporting Services**, also known as Reports-as-a-Service (RaaS), provide a flexible, user-defined means to get data out of Workday. All of the reports created using Workday's built-in report writer can be set up to deliver data via RSS, REST (JSON), or traditional SOAP-based messages with the simple click of a checkbox. This includes customer-defined calculated fields. Reporting Services effectively provide a mechanism within Workday for customers to define and create their own custom APIs. If only a subset of fields within Workday Human Capital Management services are needed for a specific integration, then a custom API

that contains only those needed fields can be built. Workday or any third-party integration tool can then consume this API.

- **Outbound Messaging Services** are used to provide real-time notifications to external applications when business events occur within Workday. For example, the workflow behind the “Hire” event in Workday could be configured to publish an outbound message to a subscribing third-party system. Upon receipt of the real-time notification, the subscribing system could then query Workday (using the public API) to get details about the “Hire” (e.g., employee information, job-related information, etc.) and then take appropriate action.
- **Monitoring Services** expose Workday integration infrastructure status to external applications so integrations can be enriched with additional functionality. For example, external applications can monitor the execution of integration events that are happening within Workday. With this level of information, external applications can see not only the status of their current integrations but also gain insight into when and how data will come from Workday prior to the events occurring. This

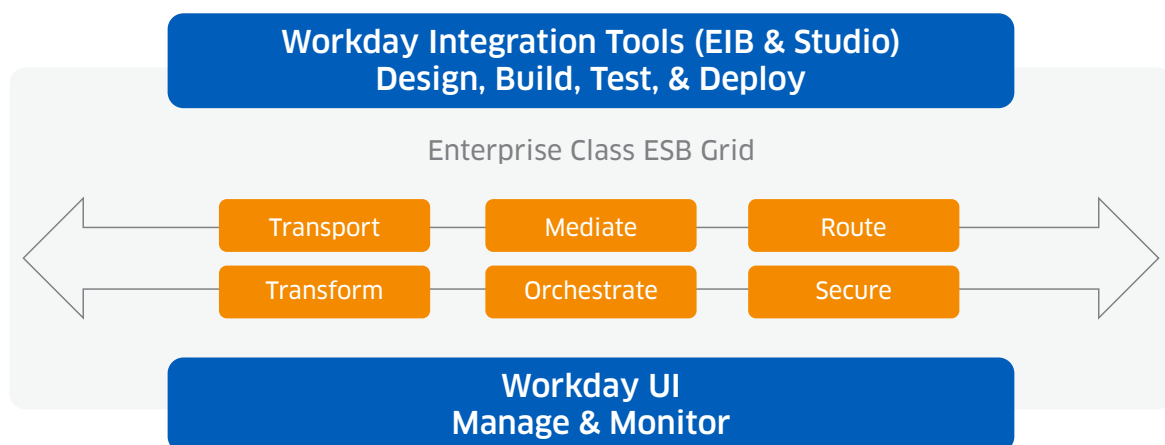
type of transparency gives business users greater visibility into inter-system processing than ever before.

Workday Integration Cloud Platform

Workday’s Integration Cloud Platform is a proven, enterprise-class Integration-Platform-as-a-Service (iPaaS) for building, deploying, and managing integrations to and from Workday. All integrations are deployed to and run in the Workday Cloud without the need for any on-premise footprint or middleware. Workday also provides management and monitoring services embedded in the Workday user interface.

Powering all of Workday’s integration capabilities is a best-of-breed Enterprise Service Bus (ESB) architecture that enables Workday’s integrations to scale, interconnect, and support the latest industry standards, protocols, and formats. Workday’s ESB is a core component of the Workday Integration Cloud and provides universal and open standards-based connectivity for virtually all types of business applications, information, and processes.

Integration Cloud Platform



Powerful Integration Tools

Powerful integration tools simplify custom integrations for both business managers and IT. Workday offers tooling for common and simple integration scenarios as well as the complex ones that customers face today. These two offerings include Enterprise Interface Builder and Workday Studio.

Enterprise Interface Builder (EIB)

The Workday Enterprise Interface Builder (EIB) tool provides an easy-to-use graphical and guided interface to define Workday-based inbound and outbound integrations without requiring any programming. Both business and IT users can use EIB to address a variety of integration needs.

Outbound EIBs



Outbound EIBs are used to extract information from Workday. The results can be stored in the customer's tenant for future use or sent out to any target system for further processing. Over three-quarters of outbound EIBs currently in production send a file to an external destination via FTP automating the delivery of data to external systems.

To create an outbound EIB, users need to only go through three main steps:

- 1. Get Data:** In the "Get Data" phase, a data source is specified. In 95 percent of the cases, this is a custom report (RaaS). If you are specifying a Report Data Source, you can choose the format in which the report results are delivered: normal XML, simplified XML, CSV, JSON, GData, or RSS. Do not worry if these sound confusing—they just mean you can get data straight out of the system in a variety of formats which may minimize or remove the need for subsequent transformation. It is also possible to specify a Workday Web Service endpoint as the data source for an EIB.
- 2. Transform:** At this point, you can either choose to use your own XSLT transformation or use the "Custom Report" transformation which is a UI-based editor for transformations (you don't need to know any XSLT). The "Custom Report" transformation is usually selected when the source is a report. Custom XSLT transformations must be uploaded. This step is optional if there is no need to alter the output of the source data.
- 3. Deliver:** The output can either be attached back to your tenant, or alternatively delivered to an external endpoint. Supported transports are FTP, SFTP, FTPS, HTTPS, email, and AS/2. You can optionally compress or encrypt documents with a PGP key. You can also control the created filename, any sequence numbers, and document retention policies where appropriate. Once an EIB is defined, any authorized user can run it. When it runs to completion, its status (and any associated output files) can be viewed by searching for the EIB run (and its associated integration event record).

Inbound EIBs



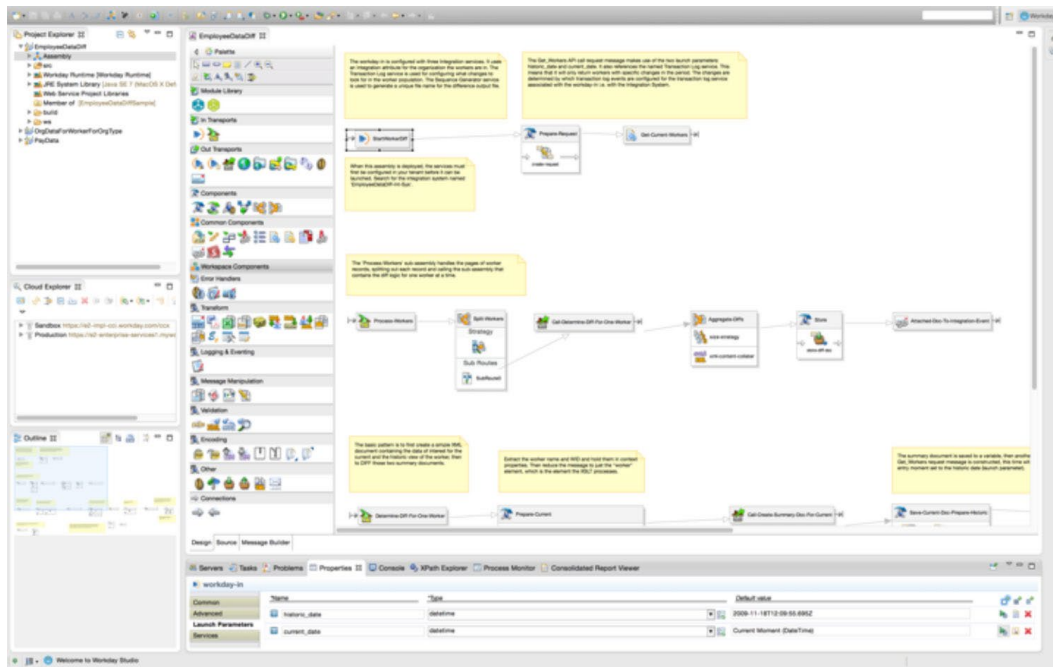
Inbound EIBs are a mirror image of the outbound EIB use case. For a number of use cases, it is convenient to upload information directly to the Workday system. In this case, an inbound file is provided and associated with a transformation. This transformation will convert the data into a format suitable for sending to a particular Workday web service. In order to simplify this process, Workday can generate a default spreadsheet for any inbound (add or update) operation.

	A	B	C	D
1	Base Pay & Bonus - (Required)			
2	Area	Required		Required
3	Restrictions	Required	Information Only	Required
4	Format	Lookup		YY-MM-DD
5	Fields	My Company Employee ID	tn	Effective Date
6				
7				
8				
9				

Some of these operations include mass payroll, time off, benefit adjustments, and other standard HR and financial operations. All you need to do is take the generated spreadsheet, add data to it, and then use EIB to import it to the customer tenant and insert or update all the records. The Workday Integration Cloud will proactively notify any errors in the load process and highlight the cells in the input spreadsheet causing the problem. These delivered spreadsheets can also be customized so you can specifically identify the columns you need, add comments to help guide other users who will be inputting the data, hide irrelevant fields, etc.

Workday Studio

Workday Studio is a powerful development tool that enables customers and partners to build sophisticated integrations to and from Workday applications. These integrations are deployed and run on integration servers in Workday’s data center. Aimed at skilled developers and offered as a set of plug-ins to the Eclipse IDE, Workday Studio offers a rich, graphical development environment in which a user can drag and drop a variety of reusable components.



When to Use Workday Studio

Workday Studio provides a comprehensive set of capabilities for the identification, development, and management of integration tasks. Enterprises that use Workday Studio typically have one or more of the following requirements:

- Multiple data sources and/or delivery requirements
- Scalable and efficient processing of large data sets (up to tens of gigabytes)
- Complex looping or branching logic based on dynamic data or external variables
- Sophisticated change detection requirements
- Complex error handling scenarios and corresponding need to react differently to error conditions
- Need for rigorous source code control, unit testing, debugging, logging, and other formal development disciplines
- Need to extend with custom capabilities implemented in Java, Spring, or a third-party service

- Need to develop related integrations for other services which also offer an Eclipse-based development environment

Workday Integration Cloud Connect

Workday Integration Cloud Connect consists of a growing number of pre-built integrations packaged as connectors and Cloud Connect packages to complementary solutions that are 100% built, supported, and maintained by Workday. 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 certified and tested across updates and patches
- Treated like any other part of the product, with a published product roadmap

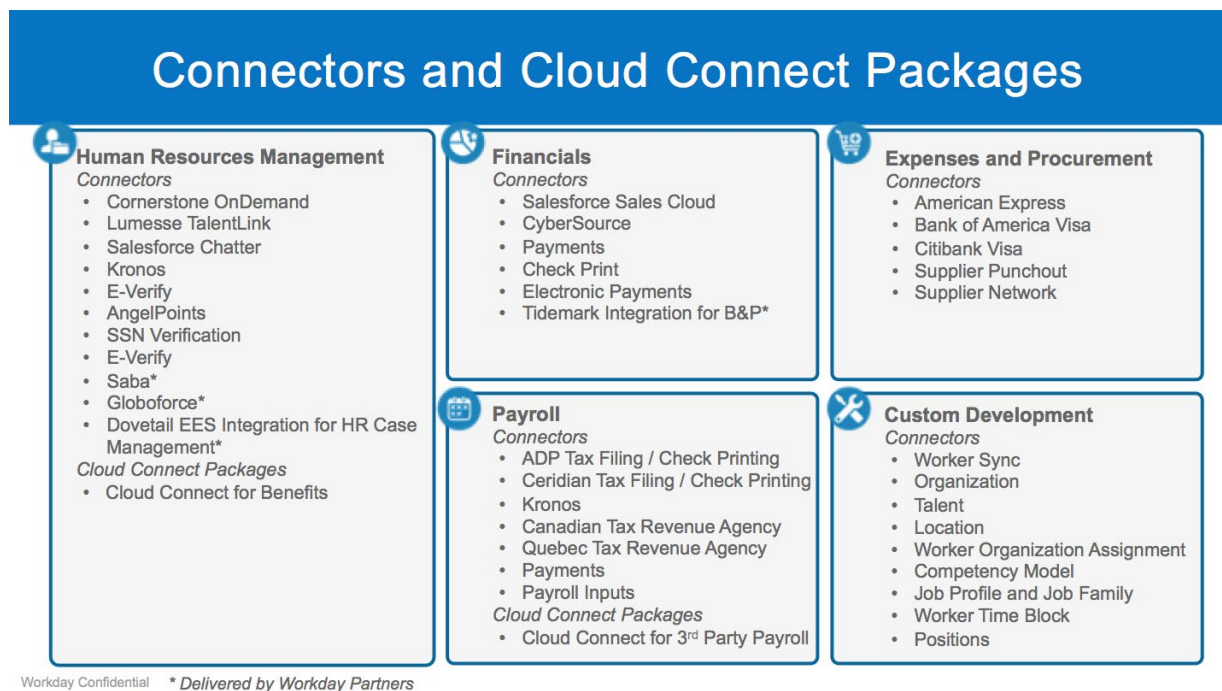
What Are Connectors?

Connectors are pre-built integrations that are designed, implemented, and supported by Workday. They drastically reduce the implementation time required to complete an end-to-end integration by providing the processing logic, data transformation, and error handling details required to integrate third-party systems such as Kronos, ADP, Ceridian, Salesforce, Cybersource, Cornerstone, and others. All connectors are configurable to accommodate differences in customer situations (such as customizations of your third-party system) and run in the Workday Cloud, releasing you from the burden of having to maintain a separate integration infrastructure.

Connectors are managed just like any other Workday application and are kept up to date with the same overall Workday update schedule. Updates include reacting to Workday core applications—for compliance and additional application features—as well as updates to the latest tooling and infrastructure. In addition, Workday works with third-party partners to manage a joint roadmap to ensure the integration is kept up-to-date as the third-party application evolves.

What Is a Cloud Connect Package?

Workday provides a collection of connectors for speeding integration implementation with third-party systems. Each Cloud Connect package contains a collection of connectors for orchestrating an end-to-end integration with the processing logic and error handling required on the Workday side of the integration. In addition, connectors provide change detection, rule-based data mapping, field validation, and formatting. These Cloud Connect packages include connectors to known and unknown third-party systems or standards. For the cases where the integrated third-party system is unknown, customers are responsible for completing the integration by implementing the necessary logic (it may require formatting and possibly transformations) to tie it to the third-party system they are looking to integrate with Workday. Customers also have the flexibility to customize the orchestration of services within the Cloud Connect package to match their specific requirements for the integration. Integrations completed using Cloud Connect packages run inside the Workday Cloud, and all



Cloud Connect packages are managed, maintained and supported by Workday.

Integration Cloud Connect offers the following Cloud Connect packages across Workday's breadth of business applications:

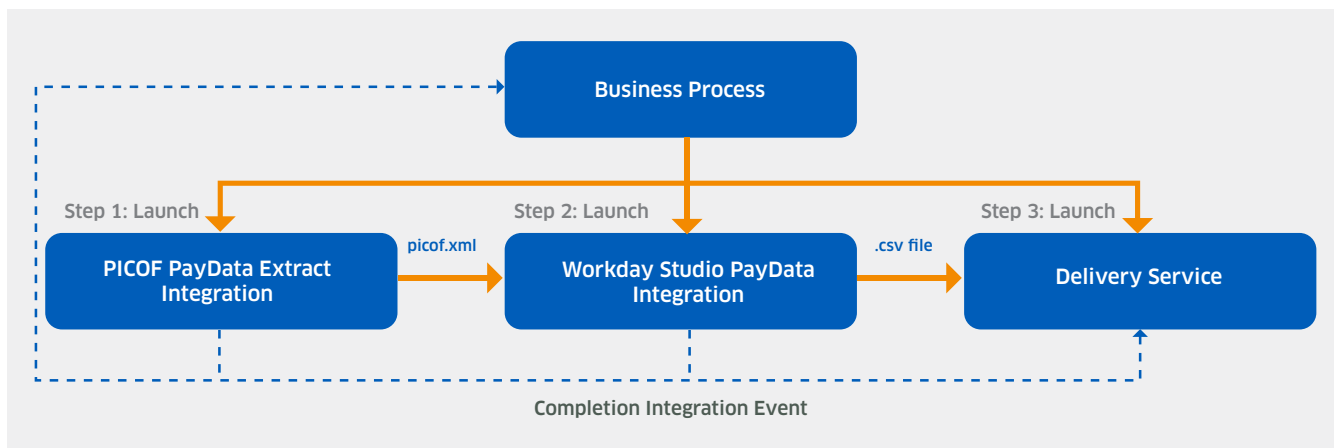
- **Cloud Connect for Benefits** - Extends Workday Human Capital Management (HCM) by providing integration to a growing catalog of benefits providers including health insurance, health and flexible spending accounts, retirement savings plans, life insurance, AD&D insurance, and COBRA administrators.
- **Cloud Connect for Third-Party Payroll** - Extends Workday HCM by providing integrations to third-party payroll providers and aggregators.

Putting It All Together: A Payments Example

As an example, consider a customer who is using Workday Studio to create a one-time payments integration to a third-party payroll vendor. This sample combines a number of aspects of the integration approach that has been described in this document:

1. Use a packaged connector to define the behavior of the base one-time-payments integration.
2. Call this integration on a scheduled basis from within a business process.
3. Once the integration completes, forward a reference to the generated document to a second (Workday Studio-built) integration, which further processes this output by transforming it into a new file format.
4. Initiate an approval and delivery sequence from within the business process framework whereby the final file proposed for delivery to the payroll vendor can be reviewed and approved in a normal workflow.
5. Once approvals are complete, deliver the file to the configured third-party endpoint, again powered by the business process framework.

All of the above is fully logged and audited, and any issues or errors that arise along the way can readily be corrected and the process restarted.



The Workday Developer Network

The Workday Developer Network is an online community for developers to collaborate around Workday applications and integrations. This developer network provides a variety of resources and training material on Workday's integration solutions as well as the opportunity to interact with the Workday ecosystem. The community is the place to get all latest news relating to Workday's integration offerings, view the latest Workday Web Service API documentation, take part in forum discussions, contribute an article, or share useful code. Workday is also committed to providing a rich ongoing supply of real-world sample integrations that you can be used as a basis for your development efforts.

Visit our Workday Developer Network for more information about Workday's cloud-based approach to integration.

Workday's Vision: Simplifying Integration in the Cloud

Until now, the best option offered by traditional ERP vendors to support integration to their solutions was a low-level API. With the emergence of Software-as-a-Service (SaaS) as a delivery model for enterprise solutions, innovative vendors such as Workday are providing new approaches that simplify the creation, deployment, and maintenance of integrations. Just as Workday simplifies the deployment, management, and upgrades associated with enterprise applications through a SaaS-based delivery model, Workday also simplifies application integration by moving the development, deployment, and management of integrations to the Workday Integration Cloud.



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