Simplifying Enterprise Integration with the Workday Integration Cloud
The Burden of Enterprise System Integration

The integration of enterprise systems is an expensive and complex issue for most IT organizations. Regardless of the applications—on-premise, cloud-based, or a combination of both—systems integrations typically eat away a good percentage of most IT budgets. Instead of innovating and adding direct value to the business, IT staffs are spending more and more time on their integration infrastructure (e.g., middleware upgrades, security patches, database updates, and router replacements).

Do not assume you have to shoulder the heavy burden of enterprise systems integrations alone. Different systems, disparate technologies, continuously growing costs, never-ending maintenance, and immeasurable support headaches—with issues such as these, isn’t it time to demand more from your solutions provider? Modern enterprise vendors like Workday are ready to help.

The Problem with Traditional ERP

Traditional ERP applications were built primarily on a client-server model that did not take into consideration the need for information, data-processing, and communication compatibilities with other systems. To remedy this disconnect, application programming interfaces (APIs) were added later to accommodate system-to-system integration. This low-level 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 necessarily need to interact in a variety of ways with other internal and external systems and data sources. Unlike traditional enterprise application providers, Workday understands the importance of integration to core systems of record and started with integration as fundamental architectural and application design criteria. Workday’s approach is for connectivity to other applications and resources to be simpler to build, deploy, manage, and evolve over time—a significant and long-awaited change from the cost, complexity, and rigidity of connecting to traditional 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 to relieve customers of the historical 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.

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 integrations to and from Workday and deploy and manage them in the Workday Cloud.

3. **Integration Cloud Connect.** Workday offers a growing ecosystem of packaged integrations and connectors to customers. These offerings are 100% 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.
Why Use Workday for Integration?
Clearly, you can build any integration you want against the Workday API using your own middleware technology of choice, for example Microsoft.NET, TIBCO, or Oracle Fusion Middleware. Many Workday customers do just that. 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 application.

- Both packaged and custom integrations run on Workday’s software and hardware infrastructure in our data centers. You do not need to license or use any on-premise integration middleware, which can greatly simplify the deployment and management of integrations.

- Finally, although completely based on open standards, Workday’s integration tools are also highly optimized for efficiently building integrations to and from Workday. Purpose-built packaged components that handle much of the plumbing aspects of integration-building free 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/WSDL 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 categories of service:

- Business Management 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 XML, 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. This API can then be consumed by Workday or any third-party integration tool.
• 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.

• Infrastructure Services expose Workday metadata 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 metadata, 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 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 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

Workday Integration Tools
Design, Build, Test, and Deploy

Enterprise Class ESB Grid

Transport  Mediate  Route
Transform  Orchestrate  Secure

Workday UI
Manage and Monitor
Powerful Integration Tools Simplify Custom

Integrations for Both Business and IT

Workday offers a set of easy-to-use integration tools designed to solve many of the common integration use cases that customers face today.

Enterprise Interface Builder (EIB)

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

Outbound EIBs

Outbound EIBs are used to extract information from the Workday system, and either attach it back to the customer’s tenant for future use or reference or send it somewhere for further processing. Over three-quarters of outbound EIBs currently in production send a file to an external destination via ftp. To create an outbound EIB, users need to only take three steps:

1. Get Data
   In the “Get Data” phase, a data source is designated. In 95% of 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. Don’t 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. You can also specify a Workday Web Service endpoint as the data source for an EIB.

2. Transform
   At this point, you can either choose from the set of predefined (XSL) transforms, or specify a new one that you will define. The out-of-the-box options include transforms to CSV and Excel formats. New transforms must be uploaded as valid XSLTs.

3. Deliver
   The output resulting from executing the EIB can either be attached back to your tenant, or alternatively delivered to an external endpoint. Supported transports are SFTP, FTPS, HTTPS, email, WebDav, 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, it can be run by any authorized user. 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

For a number of use cases, especially bulk ones, it is convenient to upload information directly to the Workday system. In this case, an inbound file is provided and associated with a custom transformation. This transformation will convert the data into a format suitable for sending to a particular Workday Web Service. It is a mirror-image of the outbound EIB use case.

In order to simplify this process, Workday generates a default spreadsheet for the most common set of bulk update operations. These operations include mass payroll, time off, benefit adjustments, etc. All you need to do is take this generated spreadsheet, add data to it, and then use EIB to import it to the system and update all the records. The system will proactively notify you of any errors in the load process, and will even highlight which cells in the input spreadsheet caused 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

What Is Workday Studio?

Workday Studio is a powerful development tool enabling customers and partners to build sophisticated integrations to and from Workday. These integrations are deployed and run on your behalf 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 that handle the “plumbing” aspects of integration building, freeing you to focus on the critical business logic. Workday has been using this valuable tool for years to deliver all of our packaged integrations and connectors as well as the EIB.
Use Workday Studio to unlock the power of Workday’s integration infrastructure:

- Run your Workday Studio integrations like any other Workday integration—configure, launch, schedule, monitor, and even audit your integrations.
- Use powerful and productive development tools optimized for interacting with your Workday tenant.
- Build sophisticated and highly customizable integrations without the need to own or manage any on-premise integration middleware or servers.
When to Use Workday Studio
If the integration you want to develop has any one of the following characteristics, it is a good candidate for a Workday Studio integration:

- Multiple different data sources and/or delivery requirements
- Scalable and efficient processing of potentially very 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 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 packaged integrations and connectors 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 are certified and tested across updates and patches; and
- treated like any other part of the product, with a published product roadmap.

What Is a Packaged Integration?
Workday offers customers complete packaged integration solutions that are built on an open, standards-based API and hosted within the Workday Cloud. This set of integration solutions is delivered, maintained, and supported by Workday and currently includes integration to 160+ benefit carriers, Kronos, TalentLink, Safeguard, Salesforce, Cybersource, and others. Packaged integrations allow customers to leverage their current investments without adding additional costs and overhead within their IT departments.

What Is a Connector?
In addition to packaged integrations, Workday also provides Connectors, which are slightly different from packaged integrations in that they provide a framework for building an integration of a certain type based on integration templates. Examples of Connectors include the Workday Payroll Interface, which reduces the time, cost, and complexity of integrating to third-party payroll providers.

Connectors are configured integrations that generate an intermediate file output format that contains all the needed data and is subsequently transformed to (or from) a specific vendor format. For example, Workday generates a “Workday” format document, expressed as either XML or CSV, for connecting to a third-party payroll system that may not be offered as a packaged integration. In this case, you can then simply do the “last mile” yourself (using Workday’s integration tools), leveraging the packaged Connector, which already represents a large part of the effort.
Other Connectors, such as the “Payment Connector” and the “Punchout Connector,” are built to standards that are well structured and consistently adopted by third-party systems. In these cases, customers can configure these Connectors to work with any third-party system (e.g., a bank or supplier) that adheres to the standard.

Integration Cloud Connect consists of the following six sub-networks:

- **Cloud Connect for HCM** - Extends Workday HCM by integrating to partners that provide capabilities including: recruiting, learning, time and attendance, and account provisioning (LDAP/Active Directory).

- **Cloud Connect for Benefits** - Extends Workday 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 Workday Payroll** - Extends Workday Payroll by integrating to partners that provide capabilities, including: time and attendance, tax filing, check printing, and direct deposit.

- **Cloud Connect for Third-Party Payroll** - Extends Workday HCM by providing integrations to third-party payroll providers and aggregators.

- **Cloud Connect for Spend Management** - Extends Workday Spend Management by integrating to partners that provide capabilities, including: electronic payments, corporate card transactions, and support for ‘punchout’ to vendors.
• **Cloud Connect for Financials** - Extends Workday Financials by integrating to partners that provide capabilities, including: customer relationship management, electronic payments, and customer payments via credit card.

**Putting It All Together: Payments Example**
One of the first examples shipped with Workday Studio shows how 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. Subsequent to this, and again from within the business process framework, initiate an approval and delivery sequence 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 re-started.
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. Get all the latest news relating to Workday’s integration offerings and view the latest Workday Web Service API documentation, or take part in discussions on the forums, contribute an article, or share some useful code you’ve written. Workday is also committed to providing a rich ongoing supply of real-world sample integrations which you can use as a basis for your development efforts.

Visit our Workday Developer Network for more information about our 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 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.