



SAP® and OpenText® Documentum® Integration
Providing a Seamless, Employee Self-Service Information System

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Introduction

SAP® has integrated with OpenText® and Documentum® products for many years. The Documentum product capabilities in document management and archiving, version management, records management, and robust content security complement many of SAP's products that need a backend repository to house unstructured content, as well as to provide downstream business capability.

As a systems integration and enterprise content management solutions firm with expertise in Documentum and SAP, Armedia, LLC, is a natural partner for government and commercial clients looking to integrate SAP with various ECM products.

In this case study, we'll present the challenges faced by a Fortune 100 company moving from an older, legacy employee information system to SAP HRMS and SuccessFactors®, while providing its worldwide employees a modern, seamless, functionally consistent information system. We will describe how Armedia partnered with our customer and another consulting and integration services firm that specializes in SAP to quickly build the desired solution. We will describe the Documentum product stack and system integration architecture.

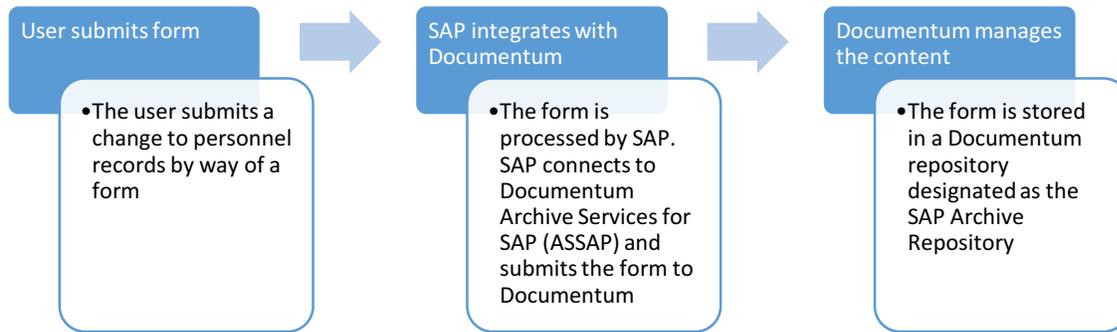
Description

Recently, a customer contacted Armedia about a project in which they were already deeply engaged. It had hit a roadblock. The project was to build an employee-facing information system using HANA Enterprise Cloud® SAP® HRMS and Success Factors® as the core technology. Our initial analysis determined the size and security requirements of the backend SAP® ArchiveLink repository.

The production deadline was rapidly approaching and a lot of work remained. Armedia quickly partnered with our customer and jointly determined additional requirements as well as performance improvements. The requirements are described below.

Process Flow

The integrated SAP/Documentum system to be designed included an additional enhanced workflow to allow employees themselves or authorized personnel to update employee information through a user interface connected to SAP:



The customer’s human resources (HR) manager and other HR employees with the proper authority can access the employee data and content directly in Documentum. The customer’s Records Manager can also view such records but with more restricted access, so that the actual employee content is not accessible, and it is also encrypted within the storage system.

When an employee’s first form is ingested, if there is no employee record in Documentum, then one is created. Subsequent forms are linked to the employee. Ingestion of the form activates a web service which pulls employee data from the legacy system. The application stores it in the new employee record in Documentum. If the employee record already exists in Documentum, changes to the employee data may not be required, but the form is ingested and linked to the existing employee. Documentum manages the “system of record,” records management, retention policies, and content encryption.

Features

Once the requirements and level of effort for the integrated solution were determined, Armedia’s assignment was to build the SAP Archive Link repository for all the SAP employee transaction documents. Here are the business-critical features:

- Full, seamless integration with SAP to ingest transaction content and employee metadata. In this case, the content records consisted of employee information placed into forms, and the archived format is Adobe® PDF.
- Provide for encrypted content within Documentum.
- Provide the capability to store and manage encrypted employee forms.
- Provide the capability to link forms to an employee or groups of employees.
- Provide tiered security including stricter security to access senior executive content.
- Provide records management and retention policies for different types of employee forms.
- Provide the capability to place legal holds on employee records and data via the records management functions.
- Synchronize employee data in Documentum with employee data in the legacy HR system:
 - Accept mass changes affecting all employees which are not associated with a forms transaction.

SAP – Documentum Integration

- Accept Individual employee data changes not associated with a forms transaction.

Solution

Conceptual

A conceptual diagram of the solution is shown below. Note that the application can be accessed remotely by authorized users.

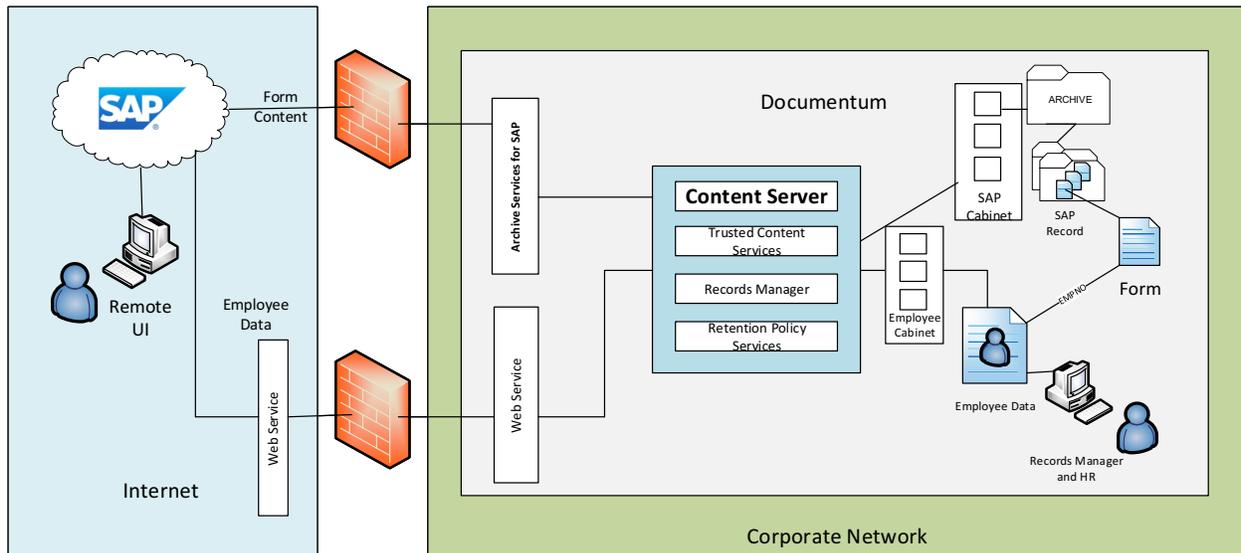


Diagram Description

- All Documentum components are installed in the customer network behind the firewall.
- Archive Services for SAP (ASSAP) is a separate licensed product from Documentum. It handles transaction transmissions from SAP and fetches documents requested by SAP. It processes many types of SAP document types, including PDF, SAP REO format data tables, and SAP print lists.
- Trusted Content Services, Records Manager, and Retention Policy Services extend the Content Server and require a license for the functionality to be activated.
- Trusted Content Services (TCS) provide encryption on the file system as well as secure transmission between servers and clients. In the diagram, TCS encryption acts upon the “archive.”
- Records Manager and Retention Policy Services also extend the Content Server.
- Records Manager exposes logic that allows file plans to be associated with the content. An employee may have many types of content files and they may have different retention requirements.
- Retention Policy Services automate the life cycle states and disposition of the employee records.
- The Web services container represents several services including daily batch processing of some types of employee data transactions.
- Employee data can be accessed by a certified records manager to apply retention policies. The client is the Records Manager client.
- Human Resources can access employee forms content and employee data via the SAPGUI client hosted by HANA Enterprise Cloud®.

The Documentum Stack

Here is the Documentum product stack for this application. It provides “out of box” integration with SAP:

- Documentum Platform (Content Server)
- Archive Services for SAP (ASSAP)
- Trusted Content Services
- Retention Policy Services
- Records Manager
- Webtop
- Documentum Administrator

Armedia has architected and implemented various types of Documentum based solutions since 2002. This experience along with our SAP experience enabled us to quickly determine the required products, infrastructure and support needed.

ASSAP is one of several SAP integration products by Documentum. It provides a service to store a SAP artifact such as a PDF, a SAP print list, a dataset (REO), and other SAP “documents” in a Documentum archive.

Custom Solution

ASSAP provides a way to use Documentum as the archive (the SAP® ArchiveLink) for employee forms. It does not provide a way to link the forms to an employee with data in a legacy employee data system. Armedia designed and built a function to support this use case .

When an employee submits a form to update data, the transaction triggers the web service, which runs in the background, to access legacy employee data and send it to Documentum. This functionality supports Records Management, Retention Policies, and searching employee data and forms.

Additional Requirements

Armedia discovered new requirements during the original implementation phase, and we were able to include them without affecting the total project budget. They include the following:

Employee Record Holds

In the case of an actionable incident that requires them to be secured for legal purposes, such as a tax audit, the custom application places a hold on the employee record or records if more than one is affected. This prevents access and modification except by authorized customer representatives. We leveraged a previously developed Armedia tool that can lock one to many types of records and it prevent modifications and deletions.

Mass Update

The new system was to operate *day-forward*; that is, there no requirement to migrate the legacy data prior to putting the new system in production. Employee data would be migrated as needed. Legacy data would still be accessed in the old system. The migration strategy evolved to create the Documentum employee data as of the date of a form transmission, and legacy data would then be migrated to the new system as needed.

We also found a need to migrate data in the case of updates not associated with a form transaction. If only employee metadata was changed and there was no form associated with it, then a service running on the legacy system side would fetch the data and pass it to Documentum to update existing employee data. It could handle a single employee or multiple employees at one time. Changes are collected daily and run in batch at night.

Performance Improvements

To improve performance, banner content is managed by SAP. If the banner content were stored in Documentum, the process load would be too high for the Documentum infrastructure, which was sized for fewer transactions. The banner content structure provides fast response and could be transitioned into the solution without a major impact to the customer's employee community. The deployment was phased in among small groups in HR resulting in a smooth transition.

Integration Technology

ASSAP cannot pass attributes associated with an employee to Documentum, such as employee number or employment date, but this employee data is needed to support records management and enforce retention policies within Documentum. In our integration solution, a forms transaction triggers a web service, designed by Armedia, to grab the employee data or modify existing data whenever a form was transmitted to Documentum. The custom process makes the link between the form just processed and the employee it relates to, all within Documentum.

For mass changes affecting large numbers of employees, another web service sends those changes to Documentum and the employee data is updated. For individual changes, there is a process that runs daily to take individual changes and applies them within Documentum to the employee record.

The SAP record transaction ID is computed in SAP. The SAP record cannot be read, and its format is not visible. There is no discernable link to a specific employee; the custom web service creates that association inside Documentum. The record content is encrypted, and its location path is a computed value making unauthorized access or access outside of Documentum and SAP impossible.

Security

Employees located worldwide can access their information via SAP, but they do not have direct access inside Documentum. There are security restrictions which prevent unauthorized access to executive employee data.

There are several layers and types of security:

- Executive level employees require higher level permissions to view their records.
- Restrictive security settings prevent unauthorized browsing, fetching, and reading.
- Forms content is encrypted in the Documentum repository by Trusted Content Services.
- Content is securely transmitted using features in Trusted Content Services.
- Documentum follows all major data security standards. Examples include:
 - FIPS 140-2 content encryption compliance
 - PCI, PII DSS compliance
 - DoD 5015
- Documentum data security includes Access Control Lists, object level permissions, default security settings for the entire repository, Operating System security, exclusion and inclusion of

specific employees in specific authorized groups, denial of access to computer engineers and Documentum administrators.

Technical Challenges

The SAP UI and source is provided by a Cloud service transferring data to a secure network application. HANA Enterprise Cloud offers SAP as a service. Legacy data is located in another HR data system. The customer's data and content had to be secure inside their network and all connections had to meet the strict security policy. Some issues had to be addressed including policy configurations, IP addresses and ports.

Conclusion

Despite the schedule risks, the client chose Documentum because it provides a backend, SAP Archive Link with robust features out of the box. This, combined with custom functionality, provides the following benefits to Armedia's customer:

- Secure 24x7 employee and retiree access to the customer's HR system from anywhere in the world.
- A view to SAP Human Resources and Success Factors hosted in HANA Enterprise Cloud.
- Seamless integration with legacy employee data system outside of SAP.
- Documentum records management and retention policies.
- Documentum's standards based content and data security features.
- Legal holds on employee records.

About Armedia, LLC

Armedia is a technology firm, focusing on information and content management solutions. Armedia has industry-acclaimed expertise, services and products in Content Intelligence, Big Data Analytics, Case Management, Enterprise Content Management, Open Source and Mobile Technologies. Armedia has experience providing these services on various platforms, including: Alfresco, Drupal, EMC Documentum, IBM FileNet, Microsoft SharePoint and the Apple iPad. Armedia has also won many industry and business awards, including: Stevie Website of the Year, InfoWorld 100, multiple Inc 5000, Pacesetter, Atlanta's Best Places to Work, Atlanta's Best and Brightest. Armedia's mission is to provide world-class solutions to its clients and assist them in achieving tangible returns on their technology investments.

Armedia is a GSA Schedule IT-70 holder, and is CMMI Level 3 appraised. Armedia has offices in Atlanta, GA and Vienna, VA.