



SAP SuccessFactors Integration Guide



Introduction

SAP SuccessFactors offers extensive HCM solutions in Workforce Administration and Talent Management. However, no HR system can stand on its own without integrating with other HR processes, non-HR processes, and external vendors. Well-designed integrations are critical components for a success of a cloud application such as SuccessFactors. However, working with a cloud application such as SuccessFactors also means that you do not have an ability to create programming codes (e.g. ABAP, Java, SQL, etc.) directly in the cloud application. Therefore, it requires some upfront planning and analyses to ensure that you have the right strategies for your integration needs. Here are 5 key success factors I would like to share with the SuccessFactors community:

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Consider all available integration options

SAP SuccessFactors offers extensive HCM solutions in Workforce Administration and Talent There are multiple ways to integrate data in and out of SuccessFactors and other applications. Each option offers different capabilities and limitations. Some are better for automation. Some enable real-time integration. Some are simpler to implement. Pick the right tools based on capabilities, limitations, and required efforts.

API's and Integration Middleware

API's and Integration Middleware API's present the most capabilities as well as complexities when integrating with SuccessFactors. All employee data of all SuccessFactors modules are available for read/write using the available API's. In addition, some of the system configurations (e.g. configured picklists) can be read using available API's. There are two different API protocols used in SuccessFactors. SFAPI's are SOAP API's and offers useful features relating to change validation and effective dates. OData are RESTful API's and they are good for data queries and imports. Some vendors offer predefined integrations that can connect directly to SuccessFactors APIs. However, in most cases, you will need to use an integration middleware where you would build integration flows that manage API calls, file handling, data mapping, and data conversions. Some of the often-used integration middleware are SAP Cloud Platform Integration, SAP PI, and Dell Boomi.

SuccessFactors Integration Center

SuccessFactors Integration Center is a transaction within SuccessFactors that allows a business user to create integration solutions without requiring technical programming skills. SAP provides predefined integration templates and a user can create their own templates as well. Behind Integration Center is a light version of Cloud Platform Integration (discussed later in this guide). You can think of Integration Center as "Cloud Platform Integration Light" for technically in tune business users. There are certain limitations to using Integration Center compared to a full version of Cloud Platform Integration. Only OData API's (also discussed later in this article) are available for use in Integration Center, which make it not ideal where multiple API calls and data joins are required. No programming or scripting languages are supported, so it's not possible to create complex mapping or processing. Integration Center is able to read/write to a file server, FTP, make API calls to external systems.

SuccessFactors SFTP (SF SFTP)

SAP provides an SFTP server for all SuccessFactors customers. This is a very useful tool for importing and exporting files to and from SuccessFactors. You can use SuccessFactors transactions and reports to manually import or export files to/from SF SFTP. You can also define scheduled jobs in SuccessFactors Provisioning to drop files in or pick up files from the SF SFTP. These jobs are easy to set up, but you are limited import-export processes pre-defined in Provisioning.

Pick the right middleware

As mentioned above, when working with API's, it's almost always necessary to work with an integration middleware that manages API calls, file handling, data mapping, and data conversions. Consider API's and data files as passive end-points. An integration middleware performs all the active roles in an integration process to read files, make API calls, and manipulate data in between. There are many integration middleware's available on the market. However, there are three that are noteworthy because they offer a lot of predefined integration solutions for SuccessFactors.

SAP Cloud Platform Integration

SAP Cloud Platform Integration (formerly called HANA Cloud Integration or HCI) is a cloud based integration middleware offered by SAP. It replaces Dell Boomi as the SAP licensed and endorsed integration middleware for all new SuccessFactors customers. SAP provides predefined integration flows that connects SuccessFactors with a lot of common endpoints (e.g. SAP Onpremise, ADP, Kronos, etc.). Cloud Platform Integration was introduced in the year 2012 and it is still evolving in its capabilities and features. Its integration development platform on web UI is quite limited at this time, so it is necessary to use Eclipse as a local development platform to create integration flows and deploy into Cloud Platform Integration. However, SAP has recently announced a plan to expand development features on the web UI and transition away from Eclipse to fully web-enabled integration development. The target date of this transition is set for June 6th, 2018. Currently, there are limited predefined tools for process controls, logging, and error handling, but more can be added to your integration processes using programming or scripting languages such as Java, JavaScript or Groovy. It is a good idea to build a library of reusable scripts for process controls, logging, and error handling when building integration flows in Cloud Platform Integration.

SAP PI

SAP PI is an on-premise integration middleware. It is fully capable of performing all the required functions to integration SuccessFactors with other applications and vendors. SAP provides many predefined integrations flows as in SAP Cloud Platform Integration. However, because PI is an on-premise application, customers are expected to keep up to date with the latest versions of integration flows provided SAP. SAP PI is an ideal middleware when integrating SuccessFactors with other SAP cloud and on-premise software products such as SAP, Concur, Ariba, etc.

Dell Boomi

Dell Boomi used to be the middleware of choice by SAP for cloud integration middleware. Similar to Cloud Platform Integration and PI, there are a lot of standardly delivered integrations for integrating SuccessFactors with SAP On-premise and other external applications. It is also a very mature product that has been on the market for a long time and has a large active developer community that shares a wealth of knowledge online. It comes with a lot of predefined tools for process controls, logging, and error handling, so it is not necessary to build such tools using scripting languages. However, SAP is moving away from Boomi and offering Cloud Platform Integration as the cloud integration middleware for all customers new to SuccessFactors.

Understand SFAPI'S and OData API'S

As mentioned above, SFAPI's and OData API's are on different protocols. SFAPIs are "legacy" APIs that existed before OData APIs. However, this does not mean that SFAPI's have been completely replaced by OData API's. Because SFAPI's use the SOAP protocol, they sometimes have additional capabilities that are not available using OData API's which are on REST protocol. OData API's tend to perform simpler queries and update tasks than SFAPI's. There are certain objects in SuccessFactors such as MDF (Metadata Framework) objects that cannot be accessed using SFAPI's and require OData API's. Conversely, there are some objects in SuccessFactors that are available only using SFAPI, but SAP is continually working the expand on OData API library.

CompoundEmployee

The CompoundEmployee API is an SFAPI. It's a particularly important API for its built-in features for change validation and handling of effective dated employee data. When working with HR data, it is sometimes very important to be able to identify employee records that have been changed since the last integration run. Also, much of HR data have specific validity periods, and it's important that the records with the correct validity periods are sent to external systems. Such tasks are often much more complex than querying on 'changed on' dates and 'effective as of' dates. CompoundEmployee API has built-in capabilities for effective date filtering and change detection that are not possible when using OData API's alone. It is very important to fully understand these features of CompoundEmployee API and use them correctly as per the requirements of the integrations.

Since Q1 2017, there has been a BETA version of OData CompoundEmployee API that provides the same effective date filtering and change detection features as the SFAPI version. This is part of SAP's on-going plan to phase out SFAPI's in favor of OData API's.

OData API's

While simpler in construction than SFAPI's, OData API's often the ideal tools for making simple queries and updates in SuccessFactors. Often, OData API's work with a smaller set of data objects and SFAPI's and therefore have faster response times. However, if data need to be read from a wide range of data objects in SuccessFactors, using OData API's may more API calls to SuccessFactors than SFAPI's thereby impacting the overall performance of an integration. In general, it is recommended to use OData API's unless there are specific capabilities that are available only in SFAPI's or SFAPI calls offer better system performance.

Include process controls and performance management

When working with API's and integration middleware, it's important to build in proper process controls in integration flows. By process controls, we mean minimizing API call's, performance tuning API calls, managing cached data, optimizing loop handling, and so on. In most integrations, a lot of integration defects and performance issues can be avoided proactively if proper process controls are included in the initial integration design. When process controls are neglected in an initial integration design, your integration will be error-prone and have poor performance requiring you to revise your integration design to add in the necessary processes controls after the fact. This results in clunky integration designs, higher costs, and prolonged implementation timelines.

Include proces logging and error handling

Without proper process logging and error handling in an integration flow, it becomes very difficult to detect when errors occur and to identify root causes when errors are detected. In extreme cases, you may have an integration that abends completely with little or no indication of the source of the error. By including proper process logging in your integration flows, you are able to quickly identify root causes of errors without too many efforts. Process logging also gives a good indication of the performance of an integration. With proper error handling, you can ensure errors in an integration process do not go undetected and avoid situations where an entire integration flow abends. Dell Boomi already provides a lot of tools for process logging and error handling. Currently, SAP Cloud Platform Integration provides a limited set of tools for process logging and error handling. However, it is possible to quickly create your own process logging and error handling within an integration flow using scripting languages. As mentioned previously, it is a good idea to build a library of reusable tools and sub-processes in Cloud Platform Integration for process controls, process logging, and error handling.

About Exaserv

Exaserv is a Global SuccessFactors Solution Provider. Our main packaged solution "Exaserv One", combines the SuccessFactors subscription together with deployment, customer care and continuous improvement in a single fee per employee per month. Exaserv One truly creates a "no-worry" full predictable scenario for our customers.

Exaserv's clients range from small organizations (300 employees), to large global organizations, which include 10,000+ employees. Our global teams located in North America, Europe and Asia, guarantee customer care from the initial transaction through the entire lifecycle of the SuccessFactors environment.

At Exaserv, we believe solving HCM challenges requires a flexible approach. While every organization is unique, our primary focus is to work together to enhance the best practice scenarios with your company culture and guide you through the Talent Journey as One.



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