SAP SuccessFactors Integrations: Integration Center and SAP Cloud Integration
The recommendations in this document are based on the functionality available up to SAP SuccessFactors release mentioned above. Future functionality can impact the recommendations provided by this document. We strive to keep these recommendations up-to-date, however, in case you find that recent new functionality has not yet been considered in the latest version of this document, please reach out to your Customer Success Manager / Partner Delivery Manager or send an email to SAPSuccessFactorsIDPDoc@sap.com.

Implementation Design Principles (IDPs) for SuccessFactors solutions are delivered by SAP for helping customers and partners on how to choose the most appropriate strategy and solution architecture for SuccessFactors implementations. IDPs are compiled taking into consideration the experience of many implementation projects and addressing frequent business requirements as well as real-life implementation challenges. They are continuously reviewed and updated as product functionality evolves. In addition, the reader is advised to read and familiarize with essential and additional product-related documentation which includes Implementation Guides, SAP Notes, SAP Knowledge Base Articles, and additional assets as referenced in this document see chapter 6.
TABLE OF CONTENTS

1 TERMINOLOGY ......................................................................................................................... 4
2 ABSTRACT ............................................................................................................................... 4
3 INTRODUCTION ......................................................................................................................... 4
4 BUSINESS REQUIREMENTS .................................................................................................. 5
5 DETAILED SOLUTION ............................................................................................................. 5
  5.1 SCHEDULING ....................................................................................................................... 5
  5.2 USAGE OF APIs ................................................................................................................... 6
  5.3 FIELD MAPPING OPTIONS ................................................................................................. 6
  5.4 SECURITY ............................................................................................................................ 6
  5.5 SENDER AND RECEIVERS ................................................................................................. 6
  5.6 REUSABILITY AND INTEROPERABILITY ............................................................................ 7
  5.7 INBOUND INTEGRATIONS ................................................................................................. 7
  5.8 AUTHENTICATION MECHANISM ....................................................................................... 7
  5.9 AVAILABILITY OF ODATA APIs ....................................................................................... 8
  5.10 STRATEGY .......................................................................................................................... 8
6 REFERENCES ............................................................................................................................. 8
1 TERMINOLOGY

The following table explains some abbreviations used in this document.

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>EC</td>
<td>Employee Central</td>
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<tr>
<td>ERP</td>
<td>SAP Enterprise Resource Planning often referred in the document pertains to SAP HCM on premise system</td>
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<tr>
<td>MDF</td>
<td>Meta Data Framework</td>
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<tr>
<td>RBP</td>
<td>Role Based Permissions</td>
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<td>UI</td>
<td>User Interface</td>
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<td>CPI</td>
<td>SAP Cloud Platform Integration</td>
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<td>IC</td>
<td>Integration Center</td>
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<tr>
<td>SFTP</td>
<td>Secure File Transfer Protocol</td>
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2 ABSTRACT

Frequent questions arise from SuccessFactors implementation projects on which tools can be used in order to develop and monitor all the required integrations with the existing system landscape. This document discusses the choice of using SuccessFactors Integration Center and SAP Cloud Platform Integration for building integrations and provides recommendations on when to use which tool.

3 INTRODUCTION

Integration Center is a built-in tool offered within a SuccessFactors for creating, testing and monitoring inbound and outbound integrations. Multiple output file types can be used (from simple CSV to XML or JSON). The storing of the output can be done in a secure way on SFTP servers and various scheduling options can be implemented (from fixed time scheduling to event-driven triggers through Intelligent Services). Integration Center also has a catalog of pre-packaged integrations which can be deployed and used in the customer instance.

SAP Cloud Platform Integration (CPI) is cloud middleware solution which allows creation, deployment and monitoring of integrations. These integrations can be between SAP On-Premise, SAP Cloud-based solutions and third-party applications. It offers an extensive set of options for connectivity, message transformation, authentication and even offers pre-packaged integrations to integrate SAP solutions with other SAP Solution and even third-party products. SAP Cloud Platform Integration is the recommended for medium to high complex integrations, whereas SuccessFactors Integration Center is recommended for simple integrations. For example: for integrations requiring complex orchestration and transformation, requiring multiple receivers or multiple hierarchical column CSV based output, CPI is the tool of choice whereas for simple integrations requiring data extraction from OData entities with minimal mapping and single column-based outputs, SuccessFactors Integration Center is a more attractive option. Integration Center does support multiple columns for EDI/Stacked formats.
4 BUSINESS REQUIREMENTS

Customers, especially bigger ones, have a complex system landscape. Business processes run across systems and the HR system is usually in the middle of all of this, since most of the other systems require some of the data stored there.

As a result, there is a need to integrate the HR system with all other systems in a way which allows the customer to build those integrations in efficient way and ensures that the outcome of this is a secure, performant, high available, maintainable and operateable integration solution.

Building integrations in an efficient way translates into the ask, that it is easy an technical possible to build what is needed. While the first one can be achieved by an easy to use, code free design time, like the integration center, the 2nd one will need a integration technology that can cope with the different integrations channels (APIs, FTP, iDOCs...), orchestration and transformations need required by the involved systems.

Especially for this requirement the following chapters will compare the capabilities of the Integration Center and SAP Cloud Platform Integrations to guide customers and partners to choose the right tool.

5 DETAILED SOLUTION

5.1 Scheduling

The Integration Center offer various scheduling options for the interfaces: from a one-time only run (very useful in case of testing or one-time cutover-related activities) to multiple executions per day or once per day/week/month/year.

The option to schedule multiple times per day in the Integration Center is limited to 6 executions per day for a maximum of 5 integrations. In some cases, the interfaces need to run more often than this (e.g. once every 5 minutes) – for these cases, CPI can be used. CPI also offers the “Run Once” option in addition to the scheduling options:

- Daily: either to run once per day at a specific time or one can schedule it to run in specific time intervals (as low as once per second).
- Weekly: in a specific day of the week.
- Monthly: in a specific day of the month.
An additional feature of Integration Center is that instead of having a scheduled run, one can decide for a “live” interface triggered by the events available in Intelligent Services. This means that as soon as an event is triggered in SuccessFactors (e.g. Hire/Rehire/Termination etc.) interface is also triggered defined in Integration Center with Intelligent Services. The same technical options can be used for integrations with third-party systems which need to receive the updated data as soon as the event is triggered (and approved by all the involved workflows) in EC.

5.2 Usage of APIs

Integration Center allows integration via OData APIs from SuccessFactors. Usage of SFAPIs is deprecated except for CompoundEmployee API. Integration Center does not support CompoundEmployee API. Therefore, integration requiring the usage of CompoundEmployee API (e.g. in the case of employee master data replication), currently can only be used separately via a cloud middleware such as SAP Cloud Platform Integrations.

5.3 Field Mapping options

Integration Center offers options to add fixed-value fields, calculated fields (e.g. string-based concatenations/derivations, sums between several values etc.) and even the use of if-then-else conditions for filling a calculated field depending on values from other fields. In case the mapping requires a logic more complex than that – then CPI can be used – to handle complex calculations. CPI also offers the possibility to create your own logic in lines of code through groovy scripts.

5.4 Security

Integration Center supports certificate-based authentication, PGP encryption and even outbound integration using OAuth 2.0. In case the integration requires even more stringent checks and additional layer of security such as message level encryption then CPI can be used because it offers various encoding and decoding options. Refer the SAP Help documentation for detailed explanation on security features supported by Integration Center.

5.5 Sender and Receivers

Integration Center supports various types of senders and receivers such as SFTP, SuccessFactors, REST, SOAP, though it supports, at the time writing this document, a single sender and receiver (except for up to 3 SFTP receivers to put the same result on multiple destinations). Please refer SAP Help for any future updates on this topic. In case the integration requires multiple senders and receivers with complex orchestration logic such requiring merging data from multiple incoming messages, calling CPI at different point in time, or those integrations requiring temporary storage of data in the middleware, in all such scenarios CPI can be used for implementation.
5.6 Reusability and Interoperability

SuccessFactors allows reusing integrations developed on Integration Center and also an integration can be built from a template chosen from a catalog of templates. This is performed by downloading and uploading the integration definition (.icd extension) in the respective SuccessFactors instances. Additionally, scheduled simple file output integrations created can be re-used in CPI as well. Such an integration created in Integration Center, the corresponding CPI Artefacts can be downloaded and then imported into CPI for further usage. See figure below. In other words, these CPI artefacts can also act as an accelerator and to develop more complex logic in CPI over the imported integration from Integration Center.

![Integration Center Export Options](image)

It is not needed to import all the CPI artefacts from the Integration Center; using one or two of the artefacts can also help save some effort as compared to implementing everything from scratch. For example: In an integration involving SuccessFactors, the XSD file in CPI can be used as a source structure for message mapping and the XSL file can also be imported into CPI as a basis for creating more complicated XSLT mapping transformations.

5.7 Inbound integrations

Integration Center can be used for creating and monitoring inbound integrations to SuccessFactors, using CSV based files as an input source. Integration Center Execution Manager even provide logging capabilities for API calls. Below are some of the most common use cases for this feature:

- Employee and organisational data can be updated in SuccessFactors using Integration Center with flat file as a source. An example of such an update could include employee profile updates with CSV file as a source.

- Once recruitment data is migrated into the system, it cannot be updated or deleted through another load process. In the case of recruiting data migration, updating and deleting will be a manual activity. This is unlike the other types of data migration such as the migration of employee and organisational data. To avoid such a manual activity, an inbound integration can be used to update values for the candidate data. Please note that Integration Center does not support delete operation, therefore any deletions still need to be manual or CPI integrations can be developed for such a purpose.

- Integration Center can be used to update MDF objects. Though MDF objects are exposed as OData APIs, updates to such objects via APIs may not be possible for all of them. For example: Picklist OData APIs are read only, therefore Integration Center also does not allow any update operation with such APIs.

5.8 Authentication mechanism

Integration Center offer two main options:

- Basic authentication (username and password).

For any other complex authentication requirements such as integrations requiring mutual authentication (server as well as client authentication), CPI would be the preferable option. Refer the SAP Help documentation for detailed explanation on these topics.

5.9 Availability of ODATA APIs

Integration Center currently supports OData V2 APIs from the Employee Central, Recruiting, Performance Management, Goals and Succession. Therefore, any integration in Integration Center can only be designed with the available OData APIs from these modules. In order to develop any integration with any other module, for e.g. LMS with new OData V4 APIs, CPI would be the preferred option.

5.10 Strategy

Integration Center is the tool to use in case of low complexity inbound and outbound integrations. The easy-to-use intuitive UI offering a visual representation of the data model available in SuccessFactors, allows even consultants with no technical background to get actively involved in integrations. SAP Cloud Platform Integration remains the perfect solution for complex integrations. The various scheduling options offered by CPI enable the flexibility needed by all types of integrations and the extra layers of security for encoding and decoding messages can be a useful feature for transferring sensitive data.

As a general conclusion, Integration Center and CPI complement each other in terms of the options available to a customer for the implementation of integrations. CPI in general can be used for integration scenarios, therefore the factors that can influence the decision when to use Integration Center for any integration scenario are covered in the sections above. Few other factors that can influence such a decision are listed below:

• Cost: The cost of development any integration in CPI involves additional time for development, specialized skills as well as license costs. Comparatively Integration Center is more intuitive (drag and drop to select OData entities) and it is easy to learn even for a non-technical user with a knowledge of the underlying data model.
• Usage: If the integration is supposed to be executed only once then in terms of the cost, maintenance, it would be beneficial to develop this in Integration Center.
• API based Sender: In case the integration requires API based calls outside of SuccessFactors on both sender and receiver, then CPI would be preferred, as Integration Center currently only supports SFTP as a source.

6 REFERENCES

SAP Help Portal

• SuccessFactors Integration Center
• Cloud Platform Integration