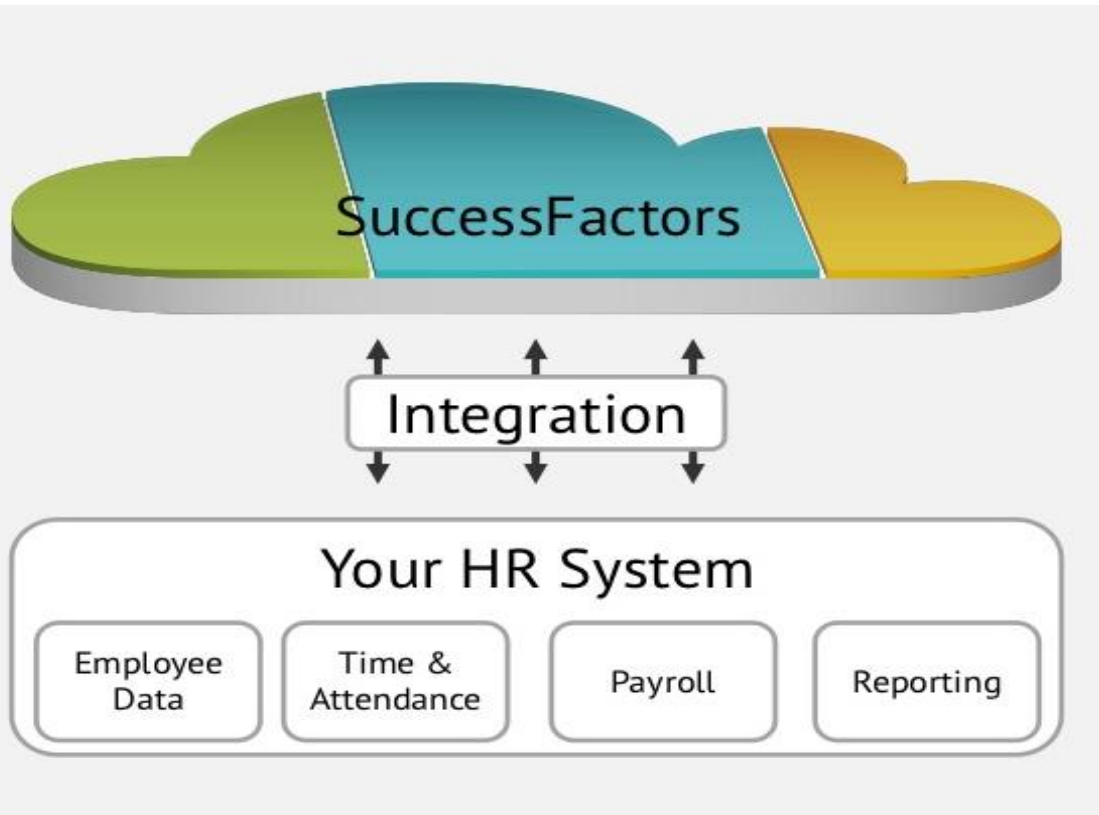


# Integration between SAP ERP HCM and SuccessFactors BizX

Trygve Berg, Capgemini

# Agenda



- Background and requirements for SuccessFactors integration
- Batch SAP ERP HCM export
- SuccessFactors BizX import
- OData API updates
- Monitoring routines
- Authorizations in SuccessFactors BizX
- Integration experiences and recommendations
- Questions and answers

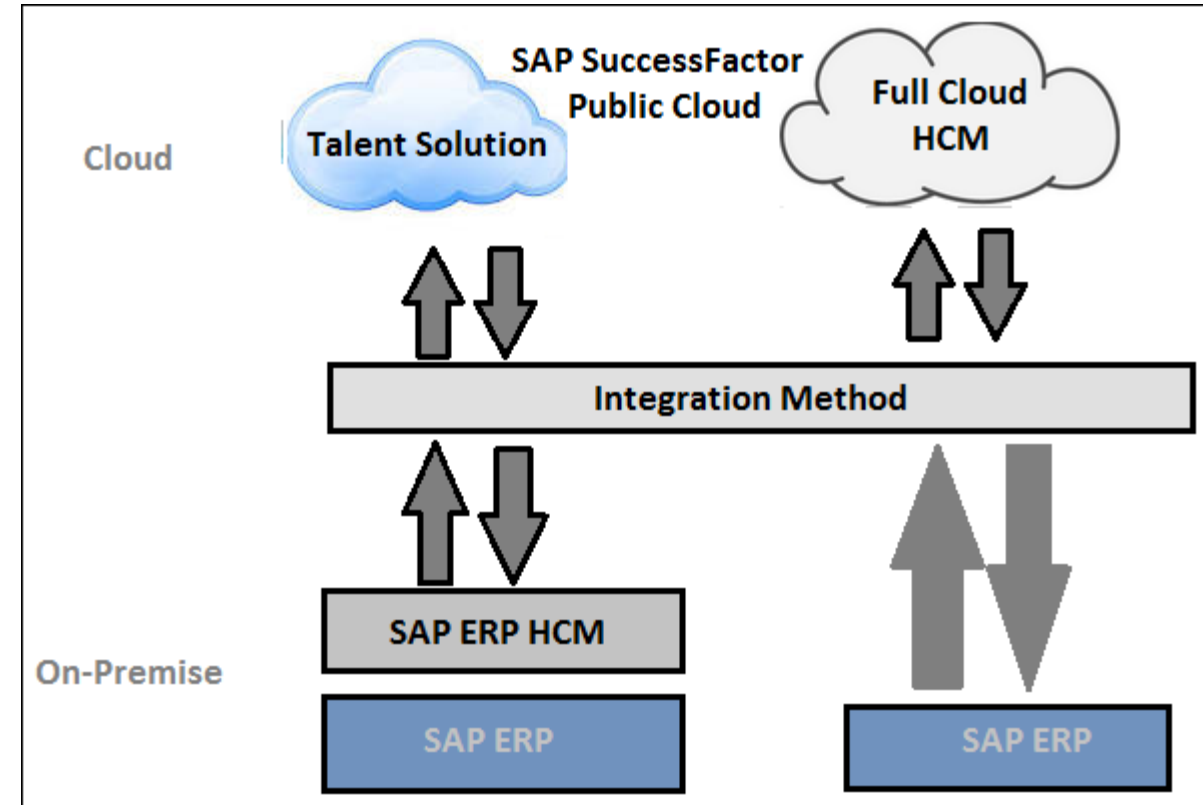


# Background information



# Background and requirements for SuccessFactors integration

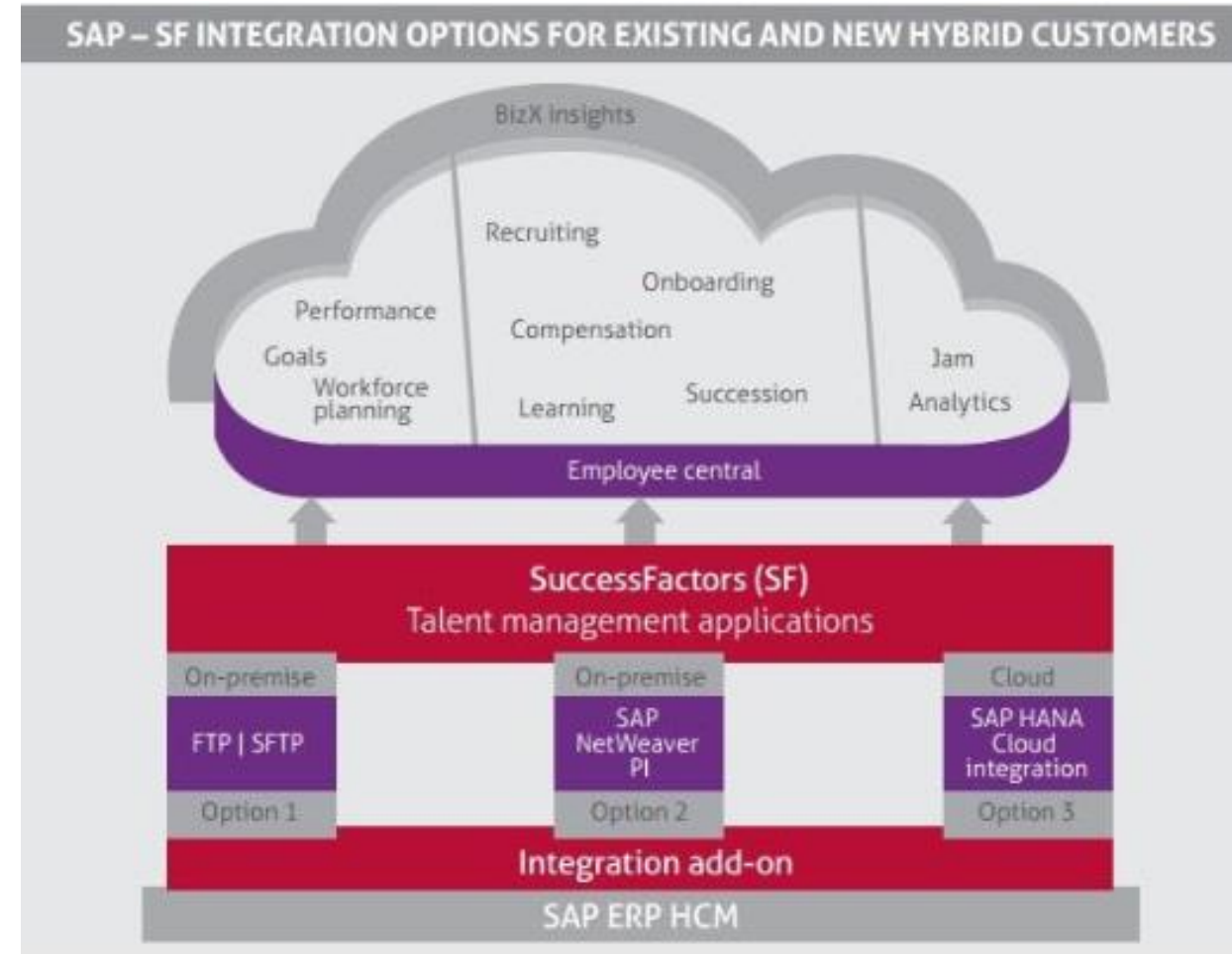
- Businesses with a SAP ERP HCM system that want to start using a SuccessFactors module (Performance and Goals, Learn,) are often due to a more intuitive, modern and standard user interface
- Upgrades and maintenances are done by the cloud vendor
- Need the On-Premise SAP ERP HCM system due to other HCM modules still not available in HCM cloud
- The SAP ERP HCM system will continue as source for employee data, organization data and authorizations
- The integration should keep employee and organization data in sync between SAP ERP HCM and SAP SuccessFactors
- Users that are withdrawn in SAP ERP HCM should be defined Inactive in SuccessFactors





# SAP – SuccessFactors integration options for a Hybrid solution

- SAP provide an Integration add-on to export employee and organization data, requiring data, compensation data from SAP ERP HCM system to SuccessFactors BizX
- There are different options to integrate to SuccessFactors from SAP ERP HCM to import the exported employee and organization data
- This presentation will show Option 1 and that require use of file transfer by Middleware between sFTP folders
- Sync of employee and organization data will be a prerequisite for the SuccessFactors BizX modules



Batch export from SAP ERP HCM



# Export from SAP ERP HCM - Configurations

- Add-on: SAP ERP HCM and SuccessFactors BizX integration installed on SAP ERP HCM
- Configuration from IMG (Customizing Implementation Guide) in SAP ERP HCM
- Define valid Variant for program RH\_SFI\_SYNCHRONIZE\_EMPL\_DATA
- Define filename and path for exported files
- Define a sFTP folder for the exported files

▼ SFIHCM03	SFIHCM03: HCM integration with SuccessFa
▶ SAPK-60008INSFIHCM03	SFIHCM03 600: SP 0008
▶ SAPK-60009INSFIHCM03	SFIHCM03 600: SP 0009
▶ SAPK-60010INSFIHCM03	SFIHCM03 600: SP 0010
▶ SAPK-60011INSFIHCM03	SFIHCM03 600: SP 0011

**Display IMG**

Existing BC Sets | BC Sets for Activity | Activated BC Sets for Activity

Structure

- ▶ Production
- ▶ Production Planning for Process Industries
- ▶ Project System
- ▼ Personnel Management
  - ▶ Integration Settings for SuccessFactors Employee Central Payroll
  - ▼ Integration Add-On for SAP ERP HCM and SuccessFactors BizX
    - ▶ Basic Settings
    - ▶ Integration Scenario for Recruiting Data
    - ▼ Integration Scenario for Employee Data
      - Define File Path and Name for Storing the Generated Files
      - Specify Allowed Variants for Delta Extraction
      - Define Name Format for Fields FIRSTNAME and LASTNAME
      - Enhance Extraction of Employee Data
      - Run Extraction of Employee Data and Organizational Data
      - Perform Extraction of Employee Data in Pre-Hire Period
      - Discontinue Data Extraction for Group of Employees
      - ▶ Business Add-Ins (BADIs)



# Export from SAP ERP HCM – Add-On program

- SAP program: RH\_SFI\_SYNCHRONIZE\_EMPL\_DATA
- Open program with Variant defined in IMG
- Period:
  - «Reporting Period» Today
  - Delta include changes since previous day (run)
- Selection criterias:
  - Can define the Selection Criteria fields
  - Identify employees to be included and excluded
- Default Settings:
  - «Forced Synchronization» marked define a Full export
  - Delta include changes after previous export job
  - A Full export clear the Delta table
  - Possible to use middleware or save file to file share
  - Path to the sFTP folder defined in the IMG

**Sync Employee Data with SuccessFactors (with Delta and Inactive Logic)**

🏠 📄 ⓘ 🖨️ 🔄 🔍 Search Help

Period

Reporting Period: Today

Selection Criteria

Personnel Number	<input type="text"/>	
Employment Status	3	
Company Code	= 1001	
Personnel area	<input type="text"/>	
Personnel subarea	<input type="text"/>	
Employee group	1	
Employee subgroup	= YV	

Default Settings

Extraction Variant:

Forced Synchronization

Middleware

File Transfer with Path:

E-Mail:

Extraction Language: EN

Log Error Messages only

Ignore Data Prov. Warnings

No Validation of Manager & HR





# Export from SAP ERP HCM –Add-On program

- Predefined fields in the addon and some are Required by SAP
- Each field can have one of the following values
  - pre-defined value
  - Exclude
  - Own Implementation
- If the predefined values in the field are not the wanted value then «Own Implementation» can be used
- «Own Implementation» is a Badi (ABAP custom program) that are defined to return a specific value
- The ABAP program search for the wanted value in SAP ERP HCM tables like HRP1000, HRP1001, PAXx,,

Fields			
Status	Infotype 0000 / STA...	Required	<input checked="" type="checkbox"/>
User ID	Central Person ID	Required	<input checked="" type="checkbox"/>
User Name	Own Implementation	Required	<input checked="" type="checkbox"/>
First Name	Infotype 0002	Required	<input checked="" type="checkbox"/>
Last Name	Infotype 0002	Required	<input checked="" type="checkbox"/>
Middle Name	Own Implementation	Required	<input type="checkbox"/>
Gender	Infotype 0002 / Stan...	Required	<input type="checkbox"/>
Email	User Data	Required	<input checked="" type="checkbox"/>
Manager	Own Implementation	Required	<input checked="" type="checkbox"/>
Human Resource	Infotype 0001 / Pers...	Required	<input checked="" type="checkbox"/>
Department	Infotype 0001 / OrgU...	Required	<input type="checkbox"/>
Job Code	Own Implementation	Required	<input type="checkbox"/>
Division	Own Implementation	Required	<input type="checkbox"/>



# Export from SAP ERP HCM –Add-On program

- 15 Custom field to include own fields in the export
- The Custom fields used will be mapped to agreed SuccessFactors field names
- Custom fields not used can be defined Exclude and will not be included in the export

Custom 6	Own Implementation	Required	<input type="checkbox"/>
Custom 7	Infotype 0001 / Empl...	Required	<input type="checkbox"/>
Custom 8	Own Implementation	Required	<input type="checkbox"/>
Custom 9	Own Implementation	Required	<input type="checkbox"/>
Custom 10	Own Implementation	Required	<input type="checkbox"/>
Custom 11	Exclude	Required	<input type="checkbox"/>
Custom 12	Exclude	Required	<input type="checkbox"/>
Custom 13	Exclude	Required	<input type="checkbox"/>
Custom 14	Exclude	Required	<input type="checkbox"/>
Custom 15	Exclude	Required	<input type="checkbox"/>



# Export from SAP ERP HCM – Employee Data

- The exported Employee data CSV file contain the following fields and values for each user:
  - STATUS,USERID,USERNAME,FIRSTNAME,LASTNAME,MI,GENDER,EMAIL,MANAGER,HR,DIVISION,DEPARTMENT,LOCATION,COMPANYEXITDATE,JOBCODE,TIMEZONE,HIREDATE,COUNTRY,EMPID,TITLE,ADDR1,REVIEW\_FREQ,LAST\_REVIEW\_DATE,CUSTOM01,CUSTOM02,CUSTOM03,CUSTOM04,CUSTOM05,CUSTOM06,CUSTOM07,CUSTOM08,CUSTOM09,CUSTOM10,CUSTOM11,CUSTOM12,CUSTOM13,CUSTOM14,CUSTOM15,MATRIX\_MANAGER,DEFAULT\_LOCALE,PROXY,CUSTOM\_MANAGER,SECOND\_MANAGER

Data for a test user:

STATUS	USERID	USERNAME	FIRSTNAME	LASTNAME	MI	GENDER	EMAIL	MANAGER	HR	DIVISION	DEPARTMENT	LOCATION	JOBCODE	TIMEZONE	HIREDATE
active	99999999	test	Walter	Watson		M	xxx@xx.cc	1111111111	zzzz	N/A	N/A	N/A	HR	CET	09/24/1988

- Column A – STATUS
  - This column determines if the employee is a valid user in the system.
  - Active = Denotes a current user in the system
  - Inactive = Denotes that a user is on leave-of-absence or terminated
- Column B – USERID
  - This column includes the unique identifier of the employee.
  - The USERID is a system identifier permanently associated with the employee. USERIDs must be at least 4 characters long and can never be changed, even if the employee changes their name
- The CSV files contain one line per user and have values separated with comma

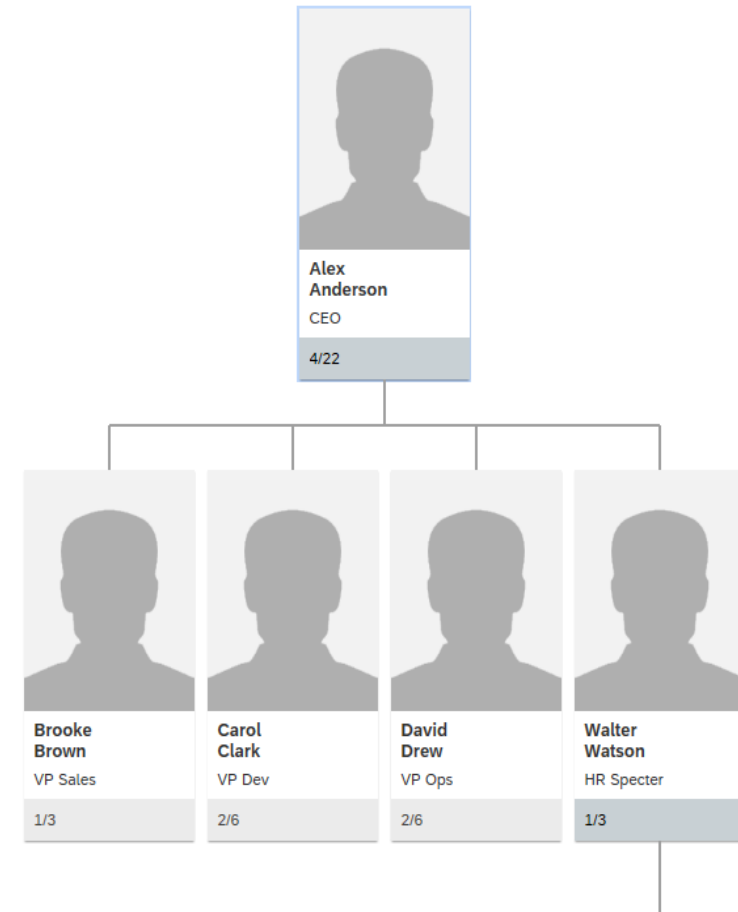


# Export from SAP ERP HCM – Employee Data

- The fields match the SuccessFactors BizX fields and the values are updated during import
- Important that correct values are defined and imported to SuccessFactors.
- These field values will build the organization structure and the structure can be a starting point for authorizations in SuccessFactors

The example show org structure for some test users

- Not all SuccessFactor BizX fields are included in the Add-on program for SAP ERP HCM and SuccessFactors integration
- Based on functional needs in SuccessFactors modules there could be needed to export other Employee data fields to be available in SuccessFactors





# Export from SAP ERP HCM – Extended Employee Data

- Use of several SuccessFactors modules could require a custom ABAP program to export Extended Employee Data
- This is supplement data (background data) for SuccessFactors users in addition to the basic user data from the add-on program
- Possible to download a template to show the field syntax and new fields can be added

^UserId	dateOfBirth	nationality	dateOfPosition
999999999	xxx	Norwegian	10.01.2007

- One field need to be a unique identification for employee and this is the UserId field
- The new fields have to be defined in SuccessFactors BizX and the values will then be updated during import
- The Extended Employee Data export program should be able to run a Full or a Delta export



# Export from SAP ERP HCM – MDF Positions

- Positions could be needed in SuccessFactors modules (Succession, Recruiting) and they can be exported from a custom developed ABAP program. These fields are not included in the Add-on for SAP ERP HCM and SuccessFactors integration.
- Possible to download a MDF Position import template that show all fields
- Fields like below could be updated with values during executing the program:  
code,externalName.en\_US,externalName.nb\_NO,externalName.en\_DEBUG,effectiveStatus,effectiveStartDate,cust\_Position Longname,incumbent,positionCriticality.externalCode,cust\_BusinessArea,cust\_OrganisationalUnit,cust\_BusinessCluster,cust \_ProcessArea,cust\_Dicipline,cust\_Specialisation,cust\_OrganisationalLevel,parentPosition.code,cust\_LeaderPosition

code	externalName.en_US	externalName.nb_NO	externalName.en_DEBUG	effectiveStatus	effectiveStartDate	cust_PositionLongname	incumbent
22222222	Consultant	Consultant	Consultant	A		Consultant	99999999999

The unique identifications are code (Position ID) and incumbent (Central Person number for employee)  
- Connect position to employee

- The field values are evaluated from SAP ERP HCM in table like HRP1000 and structures
- The ABAP program should support Delta and Full export



# Export from SAP ERP HCM – Batch jobs

- Scheduled nightly SAP batch jobs to run the exporting programs just after midnight due to possible long runtime

**Job Overview**

Refresh Release Stop Spool Job log Step Job details Application servers

Job overview from: 08.10.2019 at: : :  
to: 09.10.2019 at: : :  
Selected job names: HR\_SYNCHRONIZE [REDACTED]  
Selected user names: \*

Scheduled  Released  Ready  Active  Finished  Canceled  
 Event-Driven Event ID:  
 ABAP program Program name :

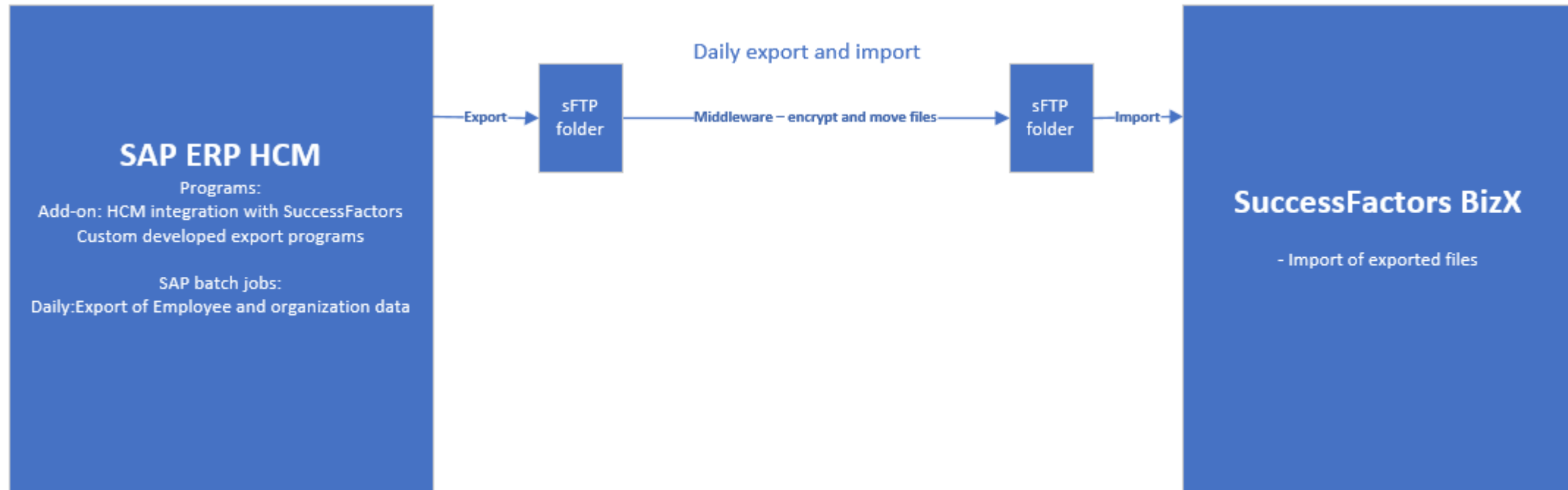
JobName	Spool	Job doc	Job CreatedB	Status	Start date	Start Ti	End date	End time	Duration(s)	Delay (sec)
<input type="checkbox"/> HR_SYNCHRONIZE_ [REDACTED]			[REDACTED]	Released					0	0
<input type="checkbox"/> HR_SYNCHRONIZE_ [REDACTED]			[REDACTED]	Finished	08.10.2019	00:05:01	08.10.2019	04:27:13	15.732	1
*Summary									15.732	1

- For the Employee Data export job for about 50000 employees, the SAP batch job take about 4-6 hours to complete
- The Delta export will include employee data changes for previous day (previous delta run)



# Export from SAP ERP HCM – Moving the files to SuccessFactors

- The scheduled exporting program save CSV files in the file share defined in the IMG
- Middleware like SSIS (SQL Server Integration Services) could check for all exported files in the file share
- Middleware should PGP encrypt and move the CSV files to SuccessFactor sFTP folder for import





Import to SuccessFactors BizX



# Import to SuccessFactors BizX

- Define Schedule import jobs in SuccessFactors provisioning
- The import jobs will first decrypt the files and then run an import to SuccessFactors BizX
- The exported CSV files should be imported in the following sequence:
  1. Employee data
  2. Extended Employee data
  3. Positions data
- Suggest to send an import log email to a common mailbox for monitoring the import status
- Possible to manually start the import jobs from SuccessFactors Provisioning if error during scheduled import

## Import Employee Data

Use a CSV file to upload multiple user records. Please note that the import process could take several minutes.

Tip: Not sure what data fields to include in your file? [Download a blank CSV template](#)

[Monitor Job](#)

The screenshot shows the 'Import Employee Data' form. The 'Type' section is expanded, showing 'Basic Import' as the selected option. Below it are several checkboxes for additional actions: 'Send Welcome Message', 'Process inactive Employees', 'Validate Manager and HR fields', 'Automatic Manager Transfer', 'Automatic insertion of new manager as next document recipient if not already', 'Automatic Inbox Document Transfer To New Manager', 'Automatic En Route Document Transfer To New Manager', 'Automatic Completed Document Copy to New Manager', and 'Automatic Document Removal'. At the bottom, there is a 'Choose File' button (highlighted with a red box) and a 'File Encoding' dropdown menu set to 'Unicode (UTF-8)'.

A large, solid red abstract shape that resembles a stylized arrow or a curved banner, pointing from the right side of the image towards the left. It occupies the right half of the frame.

OData API update of  
frequent and smaller data in  
SuccessFactors



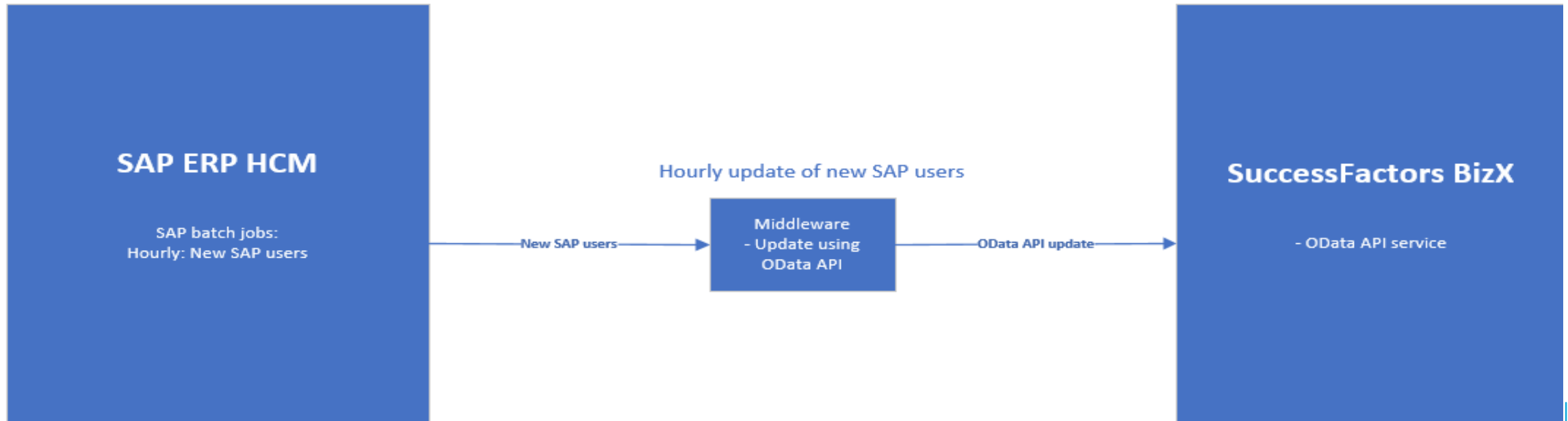
# Frequent update of user data in SuccessFactors

- Some solutions could require more frequent updates of SAP users data in SuccessFactors than the daily export/import routine
- These tasks will then require more realtime updates of user data.
- The frequent updates often include required fields to be able to perform specific tasks in SuccessFactors.
- The remaining field values will be updated during the nightly export/import of user data to SuccessFactors
- Frequent updates and updates of less data volume can be done using OData API against SuccessFactors



# OData API updates against SuccessFactors BizX

- ABAP programs in SAP ERP HCM can't communicate directly with SuccessFactors web service using OData API commands
- Have to use a Middleware (like Azure Logic Apps) to connect to the SuccessFactors web service
- The Middleware receive the user data from SAP ERP HCM in CSV format, authenticate and then update the users in SuccessFactors BizX using OData API commands
- The OData API update of user data in SuccessFactors BizX can be done with a batch update.
- The remaining user data fields in SuccessFactors will be updated during next daily export and import





# OData API updates against SuccessFactors BizX

POST https://[redacted]/odata/v2/upsert?\$format=json Send Save

Params Authorization Headers (2) Body Pre-request Script Tests Settings Cookies Code Comments

TYPE  
Basic Auth

The authorization header will be automatically generated when you send the request. [Learn more about authorization](#)

Preview Request

Heads up! These parameters hold sensitive data. To keep this data secure while working in a collaborative environment, we recommend using variables. [Learn more about variables](#)

Username

Password

Show Password

POST https://[redacted]/odata/v2/upsert?\$format=json

Params Authorization Headers (2) Body Pre-request Script Tests Settings

▼ Headers (2)

	KEY	VALUE	DESCRIPTION
<input checked="" type="checkbox"/>	Accept	application/json	
<input checked="" type="checkbox"/>	Content-Type	application/json	
	Key	Value	Description

POST https://[redacted]/odata/v2/upsert?\$format=json Send Save

Params Authorization Headers (2) Body Pre-request Script Tests Settings Cookies Code Comments

● none ● form-data ● x-www-form-urlencoded ● raw ● binary ● GraphQL <sup>BETA</sup> JSON ▼

```
1 [{"__metadata":{"uri":"https://[redacted]/odata/v2/User(userId='99999999')"},"userId":"99999999","username":"test","firstName":"test","lastName":"test","status":"active","custom07":"External (3)"}]
```



Monitoring import to  
SuccessFactors BizX

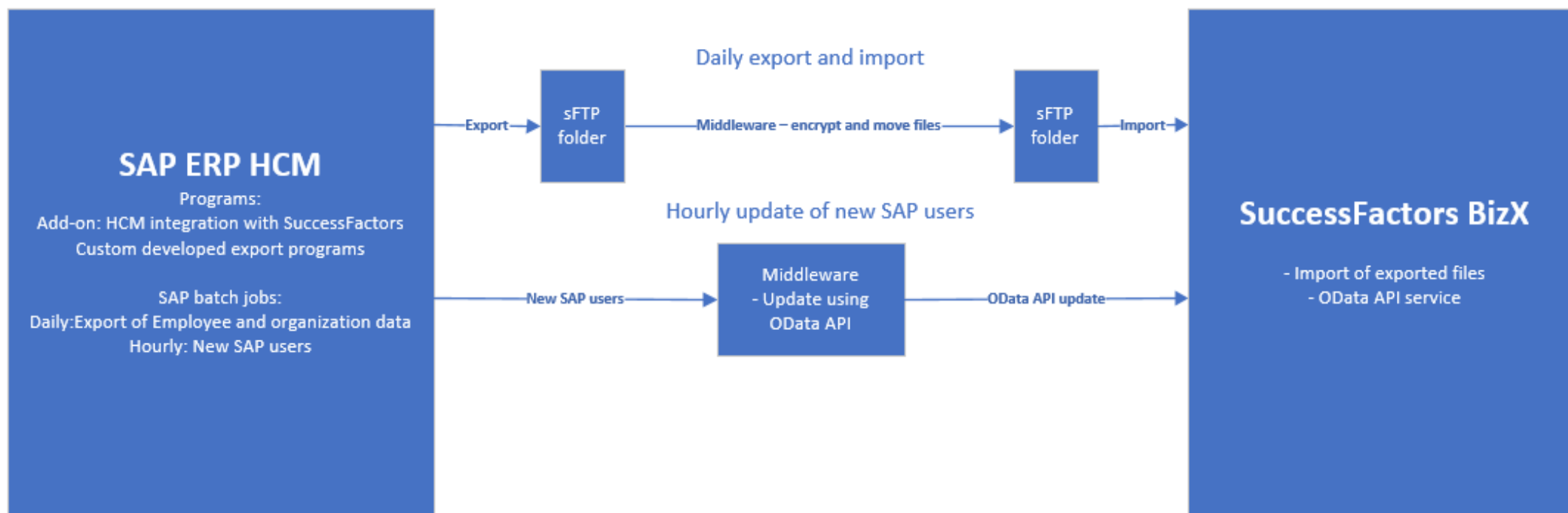


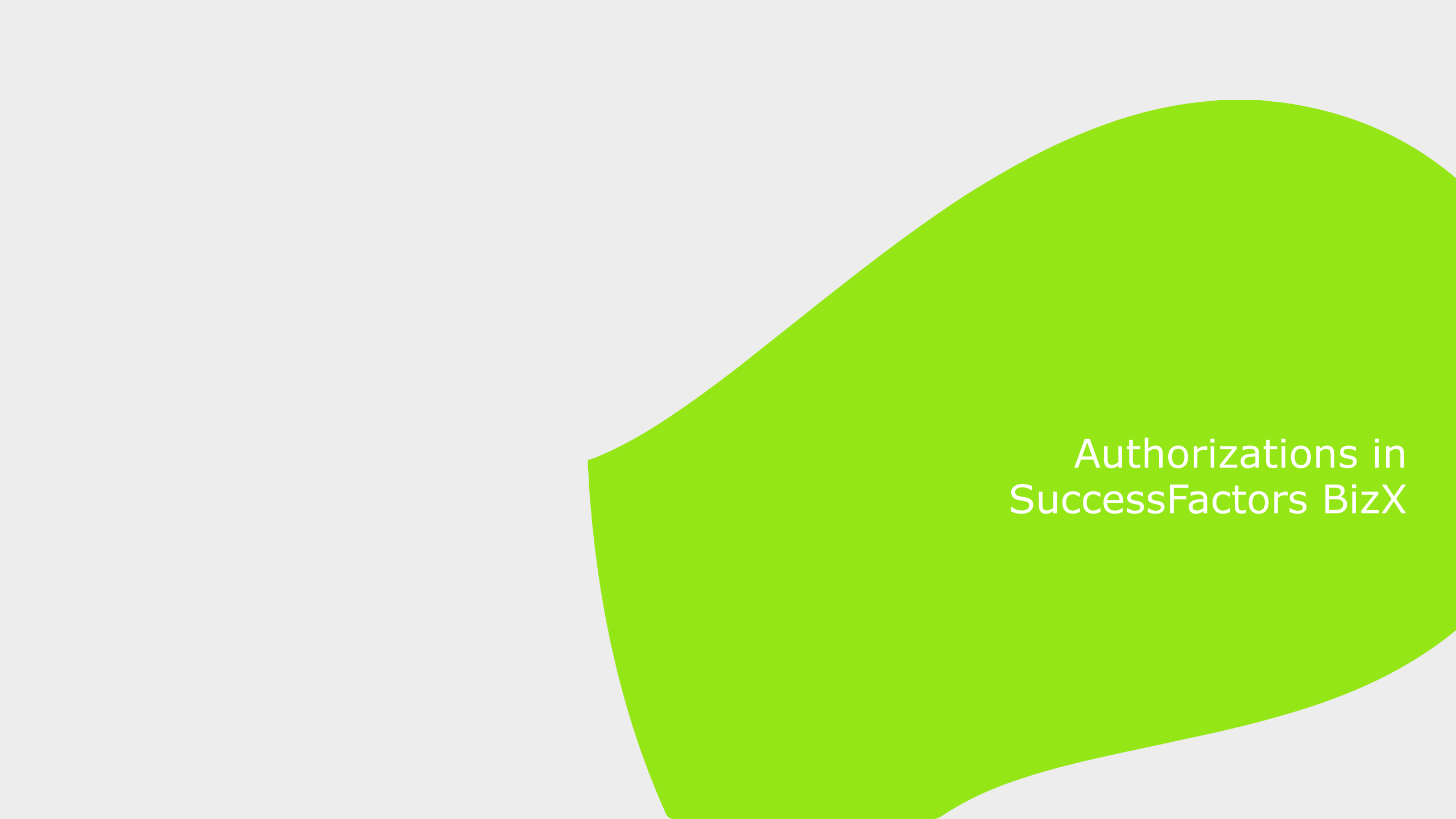




# Monitoring the SAP and SuccessFactors integration

- Important to verify that the Delta imports to SuccessFactors BizX are completed successfully
- Errors in the integration should be solved same day (before next Delta) to keep the systems in sync
- Reported errors could be related to definitions in SAP ERP HCM, SuccessFactors BizX or the middleware
- Suggestion to keep the systems in sync:
  - Define a Monthly Full export and import
  - Run a check on Active users in SAP ERP HCM and SuccessFactors BizX





# Authorizations in SuccessFactors BizX



# Authorizations in SuccessFactors BizX

- SuccessFactors have av Role Based Permissions (RBP) based on roles and groups (Granted and Target)
  - Granted groups define what users will have the different roles
  - Roles give access to modules, settings and data
  - Target groups define the user group they have access to



- Internal employees, External employees, Managers/Matrix Managers are identified in the exported Employee data CSV file and can be assigned specific roles in SuccessFactors
- A Manager can have an Employee role and a Manager role + access to direct reports.
- HR personnel could have access to users in defined organizational units
- Only one SAP ERP HCM role can be included in the export for each user (Administrator, HR support personnel)
- Users that need a special access in SuccessFactors can apply for a role in SAP ERP HCM and receive the special role in SuccessFactors.



Integration experiences and  
recommendations



# Integration experiences and recommendations

- Require high level of Metadata and functional knowledge to identify what SAP fields and values should be included in the SAP ERP HCM and SuccessFactors integration
- Identifying the SuccessFactors fields require time and testing. New Successfactors modules will often require new fields to be included in the integration.
- Important to define a robust schedule of the export and import jobs that can handle smaller unpredicted issues in the integration.
- Daily monitoring and error fixing related to the integration are crucial to have the two systems in sync.
- The SuccessFactors modules are more or less useless if updated user and organization data are not imported to SuccessFactors
- Define and agree on a Authorization concept (Role Based Permission) that give imported users access to data and other users in Successfactors based on access in SAP ERP HCM.

A large, bright green abstract shape, resembling a stylized leaf or a curved banner, is positioned on the right side of a light gray background. The shape has a smooth, curved top edge and a slightly irregular bottom edge. The text "Questions and answers" is centered within the green area in a white, sans-serif font.

Questions and answers