



SAP® PartnerEdge®

# Partner Certification Academies for SAP BTP

## Developing with SAP Integration Suite

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FOR INTERNAL SAP AND PARTNER USE ONLY

# Intro

# Agenda

## Day 1

- Intro
- BTP Fundamentals
- API Provisioning
  - SAP Open Connectors
  - SAP API Management
  - SAP API Business Hub
  - Exercises
- Consuming and Processing APIs
  - SAP Cloud Integration
  - Exercises

## Day 2

- SAP Integration Advisor
  - Product details
  - Exercises
- Model Extension (Exercises)
  - Cleaning Up Message Data
  - Configuring Outbound Communication
  - Building a Second iFlow for Internal Notification
  - Handling of Errors
  - Deploying and Testing iFlows
- Outro

# Value of Partner Certification Academies



## Expand Skills

Gain expertise with SAP BTP to build on a unified platform & help customers accelerate innovation

## Enhanced Learning

Get a clear understanding of the courses and certification expectations at an accelerated pace

## SAP Experts

Engage with SAP experts to help navigate the content & get your questions answered live

## Free certification\*

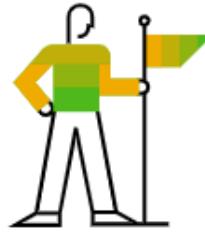
Eligible partners can get the cost of certification attempt(s) reimbursed\*

# Certification drives career growth and greater earning potential



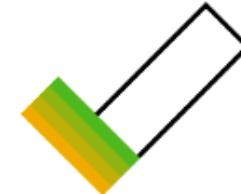
**28%**

salary or wage  
increase



**61%**

promotion and  
job advancement



**76%**

greater job  
satisfaction



**76%**

increased respect  
from peers



**74%**

more work autonomy  
and independence



**91%**

increased  
confidence in  
abilities

Source: [SAP Global Certification Infographic](#)

# Certifications are key for the new Partner Competency Framework

## Visualization of Branding & Logos on Partner Assets



- Earned competencies, no specialization details



- Single earned competency, with earned specializations

## Partner Finder

### Partner Example

A screenshot of the SAP Partner Finder interface. At the top, there are navigation links: 'At a Glance', 'Services', and 'Loca'. Below that, there is a heading 'We Transform. SAP® Solutions into Value' with a play button icon. Underneath, there is a 'Partner Value Prop' section with 'Contact Partner' and 'Share' buttons. A 'Competencies' section lists 'Business Technology Platform' and 'Customer Experience' with a '4 more' link. To the right, there is a thumbnail image of a wind turbine and a road.

- Identify best fit partners based on experience and capabilities
- Customer to get competency and specialization details of each partner

Specializations	ESSENTIAL		
	SOLUTION CONSULTANTS	DELIVERED PROJECTS	SPECIAL-ZATIONS
Database and Data Management	3	1	1
Application Development and Integration	3	1	
Analytics and Planning	3	1	
ADVANCED			
	SOLUTION CONSULTANTS	DELIVERED PROJECTS	SPECIAL-ZATIONS
	5	3	2
EXPERT			
	SOLUTION CONSULTANTS	DELIVERED PROJECTS	SPECIAL-ZATIONS
	10	5	3
			1

# How does it work?



# Partner Certification Academies for SAP BTP

## Developing with SAP Integration Suite

Pre-requisite	February 28	March 2	March 14
	Duration: 2,5 hours	Duration: 2,5 hours	Duration: 1 hour
<ul style="list-style-type: none"><li>• Understanding of basic concepts of cloud computing and web development</li></ul>	<ul style="list-style-type: none"><li>• Fundamentals</li><li>• API Provisioning</li><li>• Consuming and Processing APIs</li></ul>	<ul style="list-style-type: none"><li>• SAP Integration Advisor</li><li>• Model Extension</li></ul>	<ul style="list-style-type: none"><li>• Ask the Expert</li></ul>

This Academy is based on the [Developing with SAP Integration Suite learning journey](#) content which is part of the preparation for the associated certification exam [SAP Certified Development Associate - SAP Integration Suite \(C\\_CPI\\_14\)](#).

Please note that learning journey content and certification exam questions change occasionally and it is your own responsibility to ensure you are up to date with the latest learning content.

# Slides and recordings availability

My files > External sharing > ExtSuite

Name ▾

 Americas

 APJ

 EMEA

Access URL: [IntSuite](#)

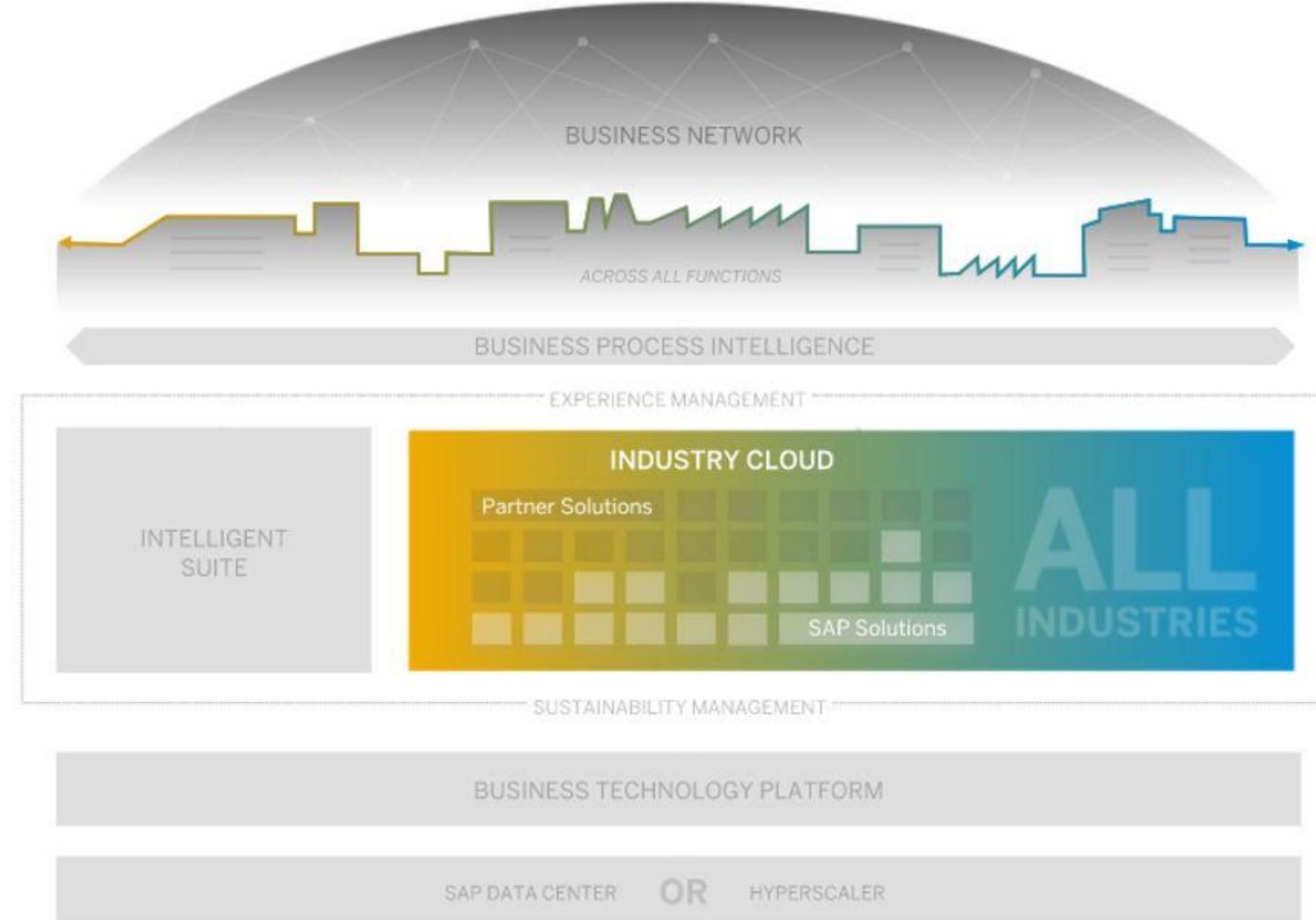
Password: btp

Expires: May 21<sup>st</sup> 2023

# Part 1: Fundamentals

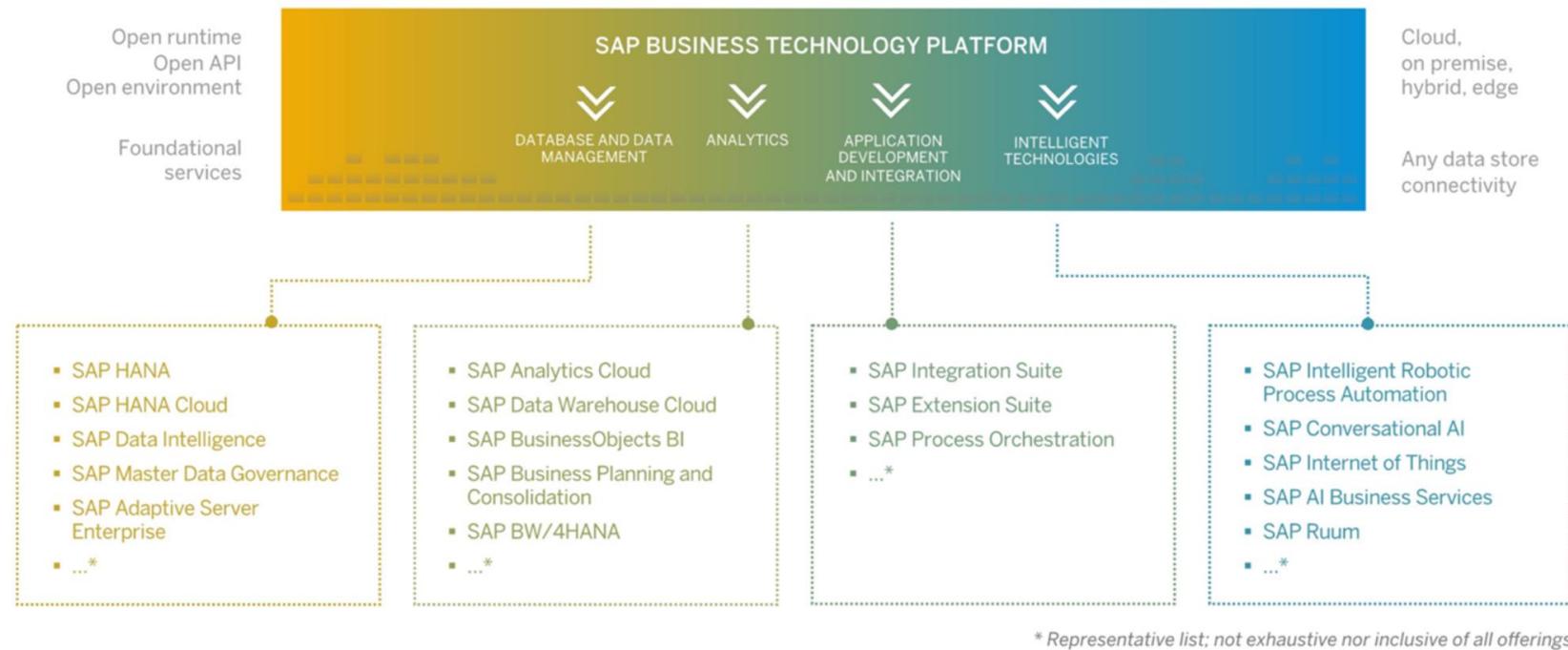
# What is SAP Business Technology Platform (BTP) ?

- A technology platform that brings together data and analytics, artificial intelligence, application development, automation, and integration in one, unified environment
- An innovation platform optimized for SAP applications in the cloud
- The foundation of Intelligent Enterprise



# 4 Technical Pillars of BTP

- Database and Data Management
- Analytics
- Application Development and Integration
- Intelligent Technologies



# Frequent Technical Concepts in Work with BTP

- High-Level Coding Model: SAP Business Application Studio, CAP, RAP, Fiori, SAP OData APIs...
- Low Code/No Code: Workflow Management & business processes, UI themes, Domain Modelling, ...
- Cloud-Native Foundation: Event Mesh, Logging, Identity Management, Kubernetes, Microservices, Serverless Functions...
- Hyperscalers: AWS, Azure, Google Cloud, Alibaba



# Identify right BTP environment for your project

- Three possible environments
  - Cloud Foundry
    - Open-source PaaS enabling developers to deal with complete application development lifecycle
  - ABAP
    - Technically lives in Cloud Foundry
    - Focused on application extensions to ABAP-based products like S/4HANA
  - Kyma
    - Based on Kubernetes
    - Focused on potential to extend monolithic applications by using microservices and serverless functions
- Legacy environment: NEO

# Additional Information on BTP

- BTP Trial/ Free Tier Model difference
  - Free Tier Model provides productive account right away with services capacity limit. It can be easily converted to a paid tier without losing any work
  - BTP Services overview [page](#) at SAP Discovery Center
- Two commercial models
  - Subscription-based model
  - Consumption-based model
    - Pay-As-You-Go
    - Cloud Platform Enterprise Agreement (CPEA)

# Exercise : Create SAP BTP Trial Account

- Use SAP developers mission <https://developers.sap.com/tutorials/hcp-create-trial-account.html> to create the account
- Overview of the trial account and cockpit

# Training Use Case Description

- Training based on [Developing with SAP Integration Suite](#) learning journey
- Fictional company eCarHero owns car fleet and orders parts from its suppliers. For easier processing, the supplier requires an SAP purchase order in SOAP format.
- The message for a successful order is deposited in a special Slack channel.
- The task of the training is to implement an integration scenario using SAP Integration Suite and its four core capabilities: SAP Cloud Integration, SAP API Management, SAP Open Connectors and SAP Integration Advisor

# Part 2: API Provisioning

# Key Integration Principles

- Typical use case for the BTP Integration Suite:
  - A company on the journey to transform into an intelligent enterprise with a very heterogeneous software landscape consisting of SAP and non-SAP components.  
The systems and services have different operational models and interfaces for communication but the integration between components was identified as an integral part of the company's transformation.  
The SAP Integration Suite helps to cope with this transformation.
- 4 core principles of SAP integration strategy:
  - Out-of-the-Box Integration (integration supports end to end processes and provides pre-packaged integration artefacts)
  - Open Integration : besides SAP to SAP, open for any third-party integration as well as custom extensions.  
The approach is based on public APIs.
  - Holistic Integration (support for all types of integration use cases: process, data, user, IoT...)
  - AI-Driven Integration (crowd-based machine learning to speed up integration development with precise suggestions)
- SAP Integration Suite consists of other components, but it offers four core capabilities:
  - SAP API Management
  - SAP Integration Advisor
  - SAP Cloud Integration
  - Open Connectors

# Exercise : Subscribe to SAP Integration Suite

- Open BTP Cockpit inside of your BTP Trial account
- Go to Services Marketplace and find SAP Integration Suite
- Subscribe to the service by activating it
- Add the four mentioned core capabilities of the Integration Suite (SAP Cloud Platform Integration, SAP API Management, SAP Open Connectors, and the SAP Integration Advisory Methodology)
- Assign necessary role collections for your user so you can view and administer individual services
  - In BTP Trial Cockpit, Security → Users section, select “Default Identity Provider” next to your username and assign yourself all of the available permissions. This is done only for trial, not for productive environments
  - The result should be as in the second screen here
  - If in your case additional permissions are needed, [here](#) you could check the list of all role collections

The screenshot shows the SAP BTP Cockpit interface. The left sidebar has a tree structure with 'Service Marketplace' selected under 'Services'. The main area displays a card for 'Integration Suite' with the subtext 'Integrate applications, services, and systems across landscapes.' A search bar at the top right contains the text 'integration suite'.

The screenshot shows the 'Role Collection Assignment' screen. It displays a table of role collections with checkboxes next to them. Four checkboxes are checked: 'APIManagement.SelfService.Administrator', 'APIPortal.Administrator', 'APIPortal.Guest', and 'APIPortal.Service.CatalogIntegration'. The 'Assign Role Collection' button at the bottom right is highlighted with a red border.

# Describing Open Connectors

- An Open Connector is a pre-built API integration that enables connection into a specific API Provider endpoint, e.g. Salesforce
- Connectors share common services including discovery, search query, pagination, bulk uploading and downloading, logging and interactive documentation.
- Designed to unify developer experience across all kinds of applications and services. For example, Open Connector for CRM Hubs provides harmonized APIs independent of a particular CRM. Still, SAP seeks to support the richer set of APIs than a single application provides, even when not all connectors in that category share the resource. For example, Salesforce Sales Cloud has APIs that many other CRM applications inside of the package do not support.
- SAP keeps connectors up to date, the same as other out-of-the-box integration resources
- Each connector is a multi-tenant connector supporting an unlimited number of authenticated accounts with no additional code required
- SAP Open Connectors enables connections to more than 160 third-party APIs. Based on this, it creates a standardized REST/OData interface that is easy to use. Specifically, in a combination with SAP API Management, a page in API Business Hub Enterprise can be created.

# Exercise: Create an API based on Slack

- The notification about a new Purchase Order is to be delivered via Slack. For technical reasons, we will encapsulate access to Slack inside of SAP API management. You will create an API based on an Open Connector instance.
- Start by creating a Slack account and a workspace by logging to <https://slack.com/>. Set “newpurchaseorders” to be the workspace name and “Training” to be the project name. Skip unnecessary steps.
- Create a channel with the name “notifications” that will be used to push purchase order notifications. Skip adding people to the channel.
- Now enter the Integration Suite setup navigating down the path: SAP BTP Cockpit → Trial Subaccount → Services → Instances and Subscriptions -> Integration Suite
  - Find “Extend Non-SAP Connectivity” among individual suite capabilities as that one is Open Connectors, click on three dots and choose “Create Connectors” to start building your first connector
  - In the Connectors section, find Slack and click on “Authenticate” to establish communication between Slack and Open Connectors capability
  - In the next screen, enter “newpurchaseorders” in the name area. Select the OAuth Scope field. Add “chat:write” into the first position, but do not forget the comma and the space after the inserted string.
  - Click Create Instance.

- You will be redirected to Slack where click on Allow will automatically exchange authentication data between the Integration Suite and Slack
- You will be back in Open Connector setup pages now.
  - Go back to Connectors section, select your connector and then the API Docs tab
  - Test the Slack instance by selecting the endpoint GET /channels and click Try it out
  - By clicking Execute now you should get a response with list of all channels from your workspace
  - Note down channel ID property of your channel
  - Now test writing a message to Slack by using POST /channels/{channelId}/messages. Click Try it out by providing the channel id value as a parameter, before that.
  - By clicking the gear icon in the bottom left of the Open Connectors menu, you would be able to copy and save Organization Secret and User Secret

The screenshot shows the SAP Integration Suite interface. The left sidebar has links for Home, Connectors (which is selected), Instances, Common Resources, Formulas, Activity, and Security. The main content area is titled 'Instances' with a search bar and a list item 'newpurchaseorders'. To the right, the 'API Docs' tab is selected under the 'Slack' connector. The 'GET /channels/{channelId}/history' endpoint is shown with its description: 'List the history of messages in a channel. boolean will result in an error.' Below it are 'PATCH /channels/{channelId}/messages' (Update a message in a channel) and 'POST /channels/{channelId}/messages' (Create a message in a channel). A 'Parameters' section details the required fields: 'Authorization' (header), 'channelId' (path), and 'body' (body). The 'body' parameter is expanded to show a JSON schema example:

```

{
  "text": "string",
  "title": "string"
},
{
  "name": "string",
  "style": "string",
  "text": "string",
  "type": "string",
  "value": "string"
},
[
  {
    "attachment_type": "string",
    "callback_id": "string",
    "color": "string",
    "fallback": "string",
    "text": "string"
  }
],
"text": "here is the first message!"
}
  
```

The status bar at the bottom right says 'Setting is public.'

# Explaining SAP API Management

- With SAP API Management you can publish, promote, and oversee APIs in a secure and scalable environment. You can also empower developer communities to monetize data and digital assets in new channels, devices, and UIs.
- It means some of the key benefits of SAP API Management are:
  - Common platform to efficiently define and publish APIs
  - Related APIs are bundled and offered as a product
  - Comprehensive consumption analytics capabilities
  - Monetization feature for all API providers
  - Improved security added by the system
  - Access control capability enabled by use of the system
  - Manipulation of payloads
  - Provided testing facility
  - Automatic scaling in runtime executed by SAP API Management
- In essence API Management functions as a middleware between a source API and one you want to externalize at a different URL

- Now navigate to the API Management system by locating “Manage APIs” tile and by clicking on “Design APIs” link inside of it
- Choose Configure in the menu on the left, then APIs and then click on Create to add an API Provider.
- Enter “Slack\_Workspace\_for\_Orders” for name.
- In Connection tab choose Open Connectors as Type and select Region to be the one from your trial.
- Enter Organization and User secret that you took from Open Connectors menu.
- Click Save at the upper right corner

The screenshot shows the SAP API Portal interface. The top navigation bar includes the SAP logo and the text "API Portal". Below the navigation, there's a breadcrumb trail: "Add API Provider" > "Slack\_Workspace\_for\_Orders". On the left, a sidebar with icons provides access to Overview, Connection, and Catalog Service Settings. The main content area is titled "Connection" and contains the following fields:

- Type:** Open Connectors
- Region:** Europe (Frankfurt) - Trial
- Host:** api.openconnectors.trial.eu10.ext.hana.ondemand.com
- Port:** 443
- Organization Secret:** (redacted)
- User Secret:** (redacted)

- Still inside of SAP API Management:
  - Get back to API design panel by choosing Design icon (pencil) and select “APIs”  
Here we will expose a new API.
  - Click Create to add a new API, select “API Provider” type and select “Slack\_Workspace\_for\_Orders”. Then click Discover to pre-fill other elements.
  - Choose newpurchaseorders Open Connectors instance and click OK
  - Enter “v1” for Version below.  
You should be seeing something like the screen here:
  - Click Create and Save to finish creating a new API.
- As the last step deploy your new API by executing the action
- Go to Test utility now by finding the Test icon in the menu and select “APIs”
  - Choose “Slack\_v1” (this should have been your automatically-generated API name) in the APIs, GET method and select the URL ending with “v1/Slack/channels” in the list
  - After clicking Send you should get response with all Slack channels available

The screenshot shows the 'Create API' dialog box. In the 'Select' section, the 'API Provider' radio button is selected. The 'API Provider' dropdown is set to 'Slack\_Workspace\_for\_Orders' and the 'Discover' button is highlighted with a red box. The 'URL' field contains '/elements/api-v2/'. In the 'API Details' section, the 'Name' field is 'Slack\_v1', 'Title' is 'Slack', 'API State' is 'Active', 'Host Alias' is '453eabftrial-trial.integrationsuitetrial-apim.eu10.hana.ondemand.com', 'API Base Pa...' is 'v1/Slack', 'Version' is 'v1', and 'Service Type' is 'REST'. A 'Documentation' checkbox is checked with a blue circle. The 'Create' button at the bottom right is also highlighted with a red box.

- The last step in this exercise is to create a product in the API Management portal out of your deployed API provider
  - In Design -> APIs choose Products
  - Make the following selections/entries in the Overview tab:
    - Name: supplier\_slack
    - Title : Supplier Slack
    - Quota: 10000
    - Requests Every: 1 ; Month(s)
  - In APIs click Add and select “Slack\_v1”, if that is how you have named your API
  - Now just open API Business Hub Enterprise portal by using “API Business Hub Enterprise” link in the menu in the upper right corner and immediately. You can get back to the Integration Suite home page immediately, though it is required that you open the portal page once after you activate the capability and before you execute your first publish
  - Now again, from the page of your “supplier\_slack” API product, click Publish
  - Observe that you can track the status of the product in API Business Hub Enterprise portal

# Exercise: Creating an Enterprise Page In SAP API Business Hub

- You want to release the previously created API product in a centrally accessible place within your organization. To do this, you will create an SAP API Business Hub Enterprise page with the released APIs.
- As mentioned, you access API Business Hub Enterprise page by clicking on the API Business Hub Enterprise link on the top-right of the API Portal home screen
- Click on Manage in the main menu, go to Manage Users and then Registered Users
  - Enter an administrator e-mail address to send notifications to and confirm.
  - Select the + icon in the Registered Users area and add a user with the property values below and save:
    - User ID: The user ID or email address of your trial account
    - First Name and Last Name: Choose any name
    - Email ID: The email address of your trial account
    - Assigned Roles: Assign all available roles
    - Reason: Choose any reason
    - Country/Region: Choose any country
- Now go to My Workspace link in the main menu to create an application
  - Click plus to create the application and set “Supplier Slack App” for its name
  - Add a product and choose “Supplier Slack” that was created in the previous exercises and save the app changes
  - You will find the Application Key displayed in the page, which is required for all calls. Copy and save it for later use.

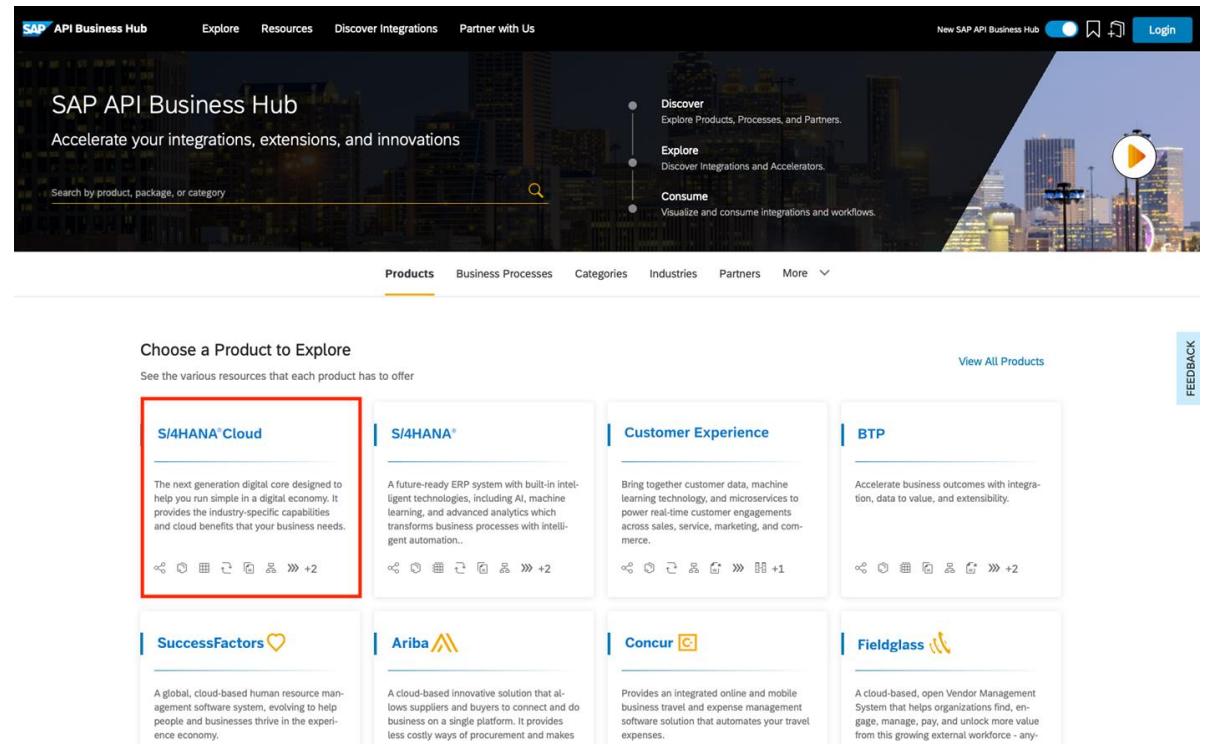
- For the last part of the exercise, it is planned that we create a new Slack channel to send test messages to it
  - Go to Home of the SAP API Business Hub and select “Supplier Slack”
    - Now select the exact API in the list (“Slack\_v1” probably)
    - Select Channels group in the left
    - Select “POST/channels” API and choose the Try out button
    - Insert the previously saved API Key into the Authorization header field
    - Set the name to be “purchaseorder<current date>” (for example, purchaseorder031021)
    - Look for the ID of your channel in the response message and save it.
  - Now, navigate to Channels → POST /channels/{channelId}/messages and choose Try out
    - Insert the previously saved API Key in the Authorization header field and the channel ID in the channelId field.
    - Insert a test message for the JSON value under "text" key inside the request body (e.g. check031021)
    - Click Execute
    - It is important that now you note down the Request URL and save it for later use
    - Navigate to the Slack channel and make sure the message was received

```
{
  "channel": "C03LSKG706A",
  "ok": true,
  "message": {
    "bot_profile": {
      "deleted": false,
      "name": "CE DEV App",
      "id": "B03LZ86UKC2",
      "team_id": "T03LJJJE10PR",
      "icon_url": "https://ce-dev-app.s3.eu-central-1.amazonaws.com/icon/icon_16x16.png"
    }
  }
}
```

# Part 3: Consuming and Processing APIs

# Exercise: Searching APIs

- In this exercise we will discover the OData service for SAP S/4HANA and test and consume it
- Access SAP API Business Hub by entering <https://api.sap.com/> address into your browser
- Choose S/4HANA Cloud
- In the top content bar, choose APIs → OData V2 and search for “Purchase Order”. Review the content.
- In the top content bar, choose Try Out
- On the left side navigational bar, select Purchase Order → GET. You can optionally adjust parameters, for example, limit the number of results to be returned, then select Run
- View the returned purchase orders and take note of the API key. You will use this to enhance your iFlow in the following lessons
- Also, from the Configuration section in Overview page, copy the API sandbox URL and save it



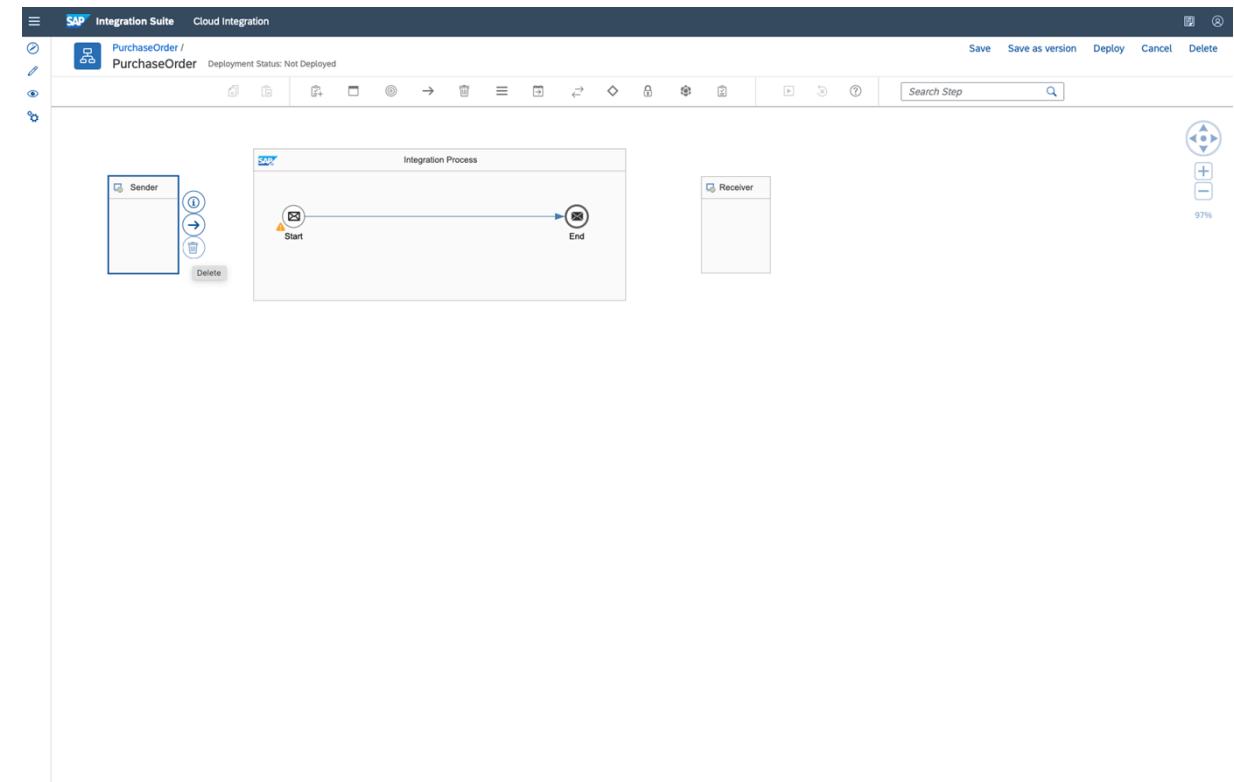
The screenshot shows the SAP API Business Hub homepage. At the top, there's a navigation bar with links for Explore, Resources, Discover Integrations, and Partner with Us. To the right of the navigation is a login button and a 'New SAP API Business Hub' toggle. Below the navigation, there's a main banner with the text 'SAP API Business Hub' and 'Accelerate your integrations, extensions, and innovations'. A search bar is located below the banner. To the right of the banner, there's a sidebar with three sections: 'Discover', 'Explore', and 'Consume'. The 'Discover' section is expanded, showing 'Explore Products, Processes, and Partners'. The 'Explore' section shows 'Discover Integrations and Accelerators'. The 'Consume' section shows 'Visualize and consume integrations and workflows'. Below the sidebar, there's a cityscape background. The main content area is titled 'Choose a Product to Explore' and lists several products: S/4HANA® Cloud (highlighted with a red box), S/4HANA®, Customer Experience, BTP, SuccessFactors, Ariba, Concur, and Fieldglass. Each product card contains a brief description and a set of icons for navigation.

# In General on SAP Cloud Integration

- SAP Cloud Integration helps you to connect cloud and on-premise applications with other SAP and non-SAP cloud and on-premise applications.  
These end-to-end process integrations are supported through the exchange of messages.
- The solution enables users to build integration flows (iFlows) that describe message transport between the source and the target system and transformations executed on the content. It is basically a specification of how a message is processed
- For the process of building iFlows (also dubbed integration artefacts) an enterprise-level graphical editor is provided where implementers can configure the most complex iFlows and do coding only when they choose to incorporate scripting elements.
- Multiple related integration flows are grouped in a single integration package
- A large base of out of the box integration packages is available in SAP API Business Hub and ready to download
- The system was known as Cloud Platform Integration until recently

# Exercise: Create iFlow Purchase Order

- Navigate to your SAP Integration Suite tenant and select the Cloud Integration capability by selecting “Create Integrations” link inside of “Build Integration Scenarios” tile
  - Now you are in a utility where iFlows can be built. Click Create to create a new integration package
  - Name the package “PO\_scenario”
  - Go to Artifacts tab now and add a new integration flow
  - Name the iFlow “PurchaseOrder”
  - Now edit the iFlow and observe the default content
  - Select the Sender, Receiver, Connector, Start Message and End Message events and select Delete to remove the elements as we will not need those



# Integration Flow and Its Components

- Let us discuss elements which the graphical editor provides for one to build integration flows:
  - Senders and Receivers
  - Adapters (technical protocols used to connect a sender or a receiver to the tenant)
    - Examples: SOAP, OData, HTTPS, AS2, SFTP
    - Types: pushing (initiated by external calls) and polling (triggered by timer)
  - Events (Start Message, End Message, Terminate Message, Start Event, End Event...)
  - Message Transformation:
    - Convert messages from one format to another
    - Examples: Content Modifier, Converter, Decoder, Filter, Script...
  - Mappings: logic that maps input message structure with the required format for the output message structure
  - Message routing (Multicast, Join, Splitter, Gatherer...)
  - Local integration processes (subroutines invoked by single or looping process call)

- Now we will enhance the iFlow to process purchase order data from the OData service provided via the SAP API Business Hub that was introduced in the previous lesson.  
You will set a timer in order to request PO data each time the iFlow is deployed. This means that every time the iFlow runs, the PO data is retrieved via the OData API in the SAP API Business Hub.
- From Events add a Timer object and make sure the Scheduler is set to Run Once
- Save
- Now, from the Transformations menu add a Content Modifier element. It will be used to add the API key (obtained previously) to your request header
  - Position it after the timer and connect the two elements
  - Change the name of the Content Modifier to “Set APIKey header”
  - Navigate to the Message Header tab, choose Add, and enter the APIKey you previously took note of (Action: Create, Name: “APIKey”, Type: Constant, and for the value paste your API key)
  - Now use Externalization feature to move the API Key string out of the iFlow implementation itself and have the iFlow enabled for automatic deployments between different environments:
    - Instead of the current value enter {{key}} to parametrize it and click Externalize as in the screenshot below
    - Now, in the Externalization window click on token in the value column, which will open an Update Value dialog. For Default Value enter the APIKey value and choose OK

Action	Name	Type	Data Type	Value	Default
Create	APIKey	Constant	String	EzaN9P2NKQuLj8e9TWMGZXOWwtXi...	

- Add a Request Reply object (Calls -> External calls) and connect the previous Content Modifier element to it
- Add a Receiver object (Participant menu)
  - Name it “API\_Business\_Hub”
  - Connect the Request Reply object and the Receiver and select OData → OData V2 for the connector type
  - In the configuration for the OData connector (Connection tab, Address field) enter the API sandbox URL you took note of while searching the API Hub
  - Deselect the CSRF token fetch
  - In the Processing tab, set the value of Resource Path to be "A\_PurchaseOrder"
  - To narrow down the query, copy the query on the right to the Query Options in Processing tab
  - Enter APIKey as Request Header in the HEADER DETAILS and METADATA DETAILS sections
  - Save

The screenshot shows the SAP OData Processing configuration interface. The 'Processing' tab is active. In the 'Query Options' field, the query string is highlighted with a red box: '\$select=PurchaseOrder,CompanyCode,PurchaseOrderType,PurchasingDocumentDeletionCode,PurchasingProcessingStatus,CreatedByUser,CreationDate,LastChangeDateTime,Supplier,PurchaseOrderSubtype,Language,PaymentTerms,CashDiscount1Days,CashDiscount2Days,NetPaymentDays,CashDiscount1Percent,CashDiscount2Percent,PurchasingOrganization,PurchasingDocumentOrigin,PurchasingGroup,PurchaseOrderDate,DocumentCurrency,ExchangeRate,ExchangeRateIsFixed,ValidityStartDate,ValidityEndDate,SupplierQuotationExternalID,SupplierRespSalesPersonName,SupplierPhoneNumber,SupplyingSupplier,SupplyingPlant,IncotermsClassification,CorrespncExternalReference,CorrespncInternalReference,InvoicingParty,ReleasesIsNotCompleted,PurchasingCompletenessStatus,IncotermsVersion,IncotermsLocation1,IncotermsLocation2,ManualSupplierAddressID,IsEndOfPurposeBlocked,AddressCityName,AddressFaxNumber,AddressHouseNumber,AddressName,AddressPostalCode,AddressStreetName,AddressPhoneNumber,AddressRegion,AddressCountry,AddressCorrespondenceLanguage&\$filter=PurchaseOrder eq '4500000011''. Other fields like 'Resource Path' (A\_PurchaseOrder), 'Content Type' (Atom), and 'Request Headers' (APIKey) are also visible.

```
$select=PurchaseOrder,CompanyCode,PurchaseOrderType,PurchasingDocumentDeletionCode,PurchasingProcessingStatus,CreatedByUser,CreationDate,LastChangeDateTime,Supplier,PurchaseOrderSubtype,Language,PaymentTerms,CashDiscount1Days,CashDiscount2Days,NetPaymentDays,CashDiscount1Percent,CashDiscount2Percent,PurchasingOrganization,PurchasingDocumentOrigin,PurchasingGroup,PurchaseOrderDate,DocumentCurrency,ExchangeRate,ExchangeRateIsFixed,ValidityStartDate,ValidityEndDate,SupplierQuotationExternalID,SupplierRespSalesPersonName,SupplierPhoneNumber,SupplyingSupplier,SupplyingPlant,IncotermsClassification,CorrespncExternalReference,CorrespncInternalReference,InvoicingParty,ReleasesIsNotCompleted,PurchasingCompletenessStatus,IncotermsVersion,IncotermsLocation1,IncotermsLocation2,ManualSupplierAddressID,IsEndOfPurposeBlocked,AddressCityName,AddressFaxNumber,AddressHouseNumber,AddressName,AddressPostalCode,AddressStreetName,AddressPhoneNumber,AddressRegion,AddressCountry,AddressCorrespondenceLanguage&$filter=PurchaseOrder eq '4500000011'
```

# Part 4: SAP Integration Advisor

# In General on SAP Integration Advisor

- Solves the biggest problem faced in B2B, A2A and B2G integration: multiple business partners who use different industry standards must come together
- The supported standards (“type systems”) in the application’s terminology are: SAP IDocs, ASC X12, cXML, ICA Test, ISO, Odette, SAP S/4HANA Cloud OData, SAP S/4HANA Cloud SOAP, SAP S/4HANA On Premise IDoc, UN/CEFACT and UN/EDIFACT
- Uses a crowd-based machine learning approach to help you speed up your integration development up to 60% by providing mapping suggestions

- How it works
  - Implementer browses the library of type systems and chooses accordingly
  - He creates a message implementation guideline (MIG) object for the source system.  
The MIG contains all the information SAP IA will need to implement a customized message interface toward the system.

A proposal service, trained based on previous artefacts will suggest fields to include in the MIG.

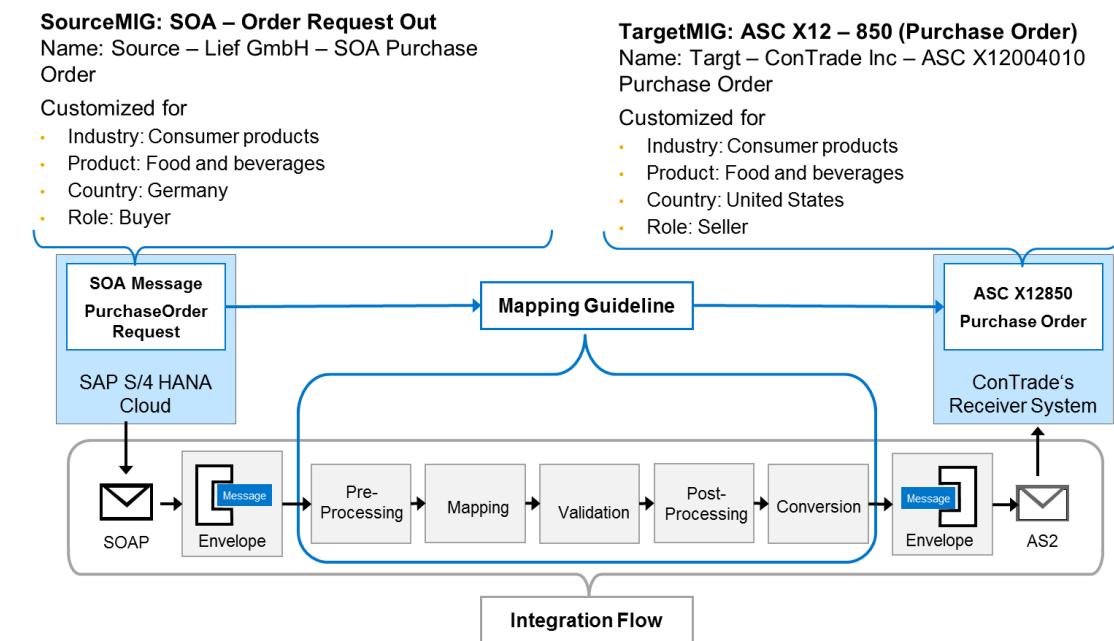
- He creates a MIG for the target system by applying the same procedure
- Then a mapping guideline (MAG) object should be created to define mapping between standards used in the two systems (two MIGs) .

The proposal service of Integration Advisor should be used to get mapping suggestions, based on existing, deployed integration artifacts.

In addition to the mapping, MAG also defines the following operations: pre and post processing, validation and conversion.

By registering a MAG you are helping others to simplify their integration development

- In the end, user generates runtime artifacts (XSLT Mappings) out of the MAG, that he can use in it different integration solutions like SAP Cloud Integration and SAP Process Orchestration.



# Exercise: Create Message Implementation Guidelines (MIGs)

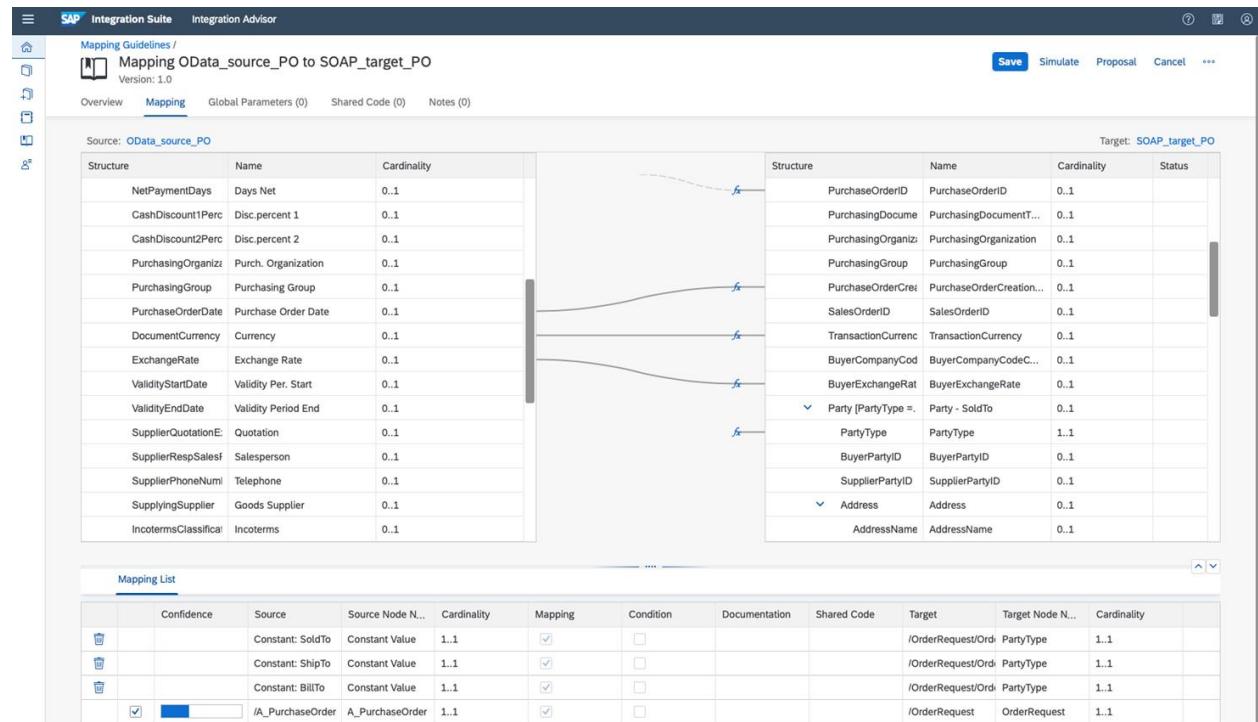
- Data that eCarHero provides to its supplier is in OData format, but the supplier requires a SOAP message format to easily work with the PO data. In order to accommodate the different structures of interfaces in the source and target system, you will now leverage the Integration Advisor capability within SAP Integration Suite.
- Enter Integration Advisor from the Suite home page, by using “Implement Interfaces and Mappings” tile dedicated to this capability
- Start by creating the source message implementation guide (MIG)
  - Click on three dots in the tile and then “Create MIGs”.
  - Search for “SAP S/4HANA Cloud OData” type system
  - In Messages tab search for “PurchaseOrder” as that is the group of APIs we are interested in and select “A\_PurchaseOrder” result group and the last version of it
  - Skip the XML file upload
  - Enter “OData\_source\_PO” as name and select Out as Direction
  - For Business Context and Partner Business context make selections as described in (1) in the next slide and create the MIG
  - In Structure tab right-click on A\_PurchaseOrder and choose to Select all to include all properties for now
  - Click “Get Proposal” to get suggestions for fields to include in the MIG. The suggestion is based on previously deployed artefacts
  - Deselect fields which are listed in (2) in the next slide and Save
- Enhance the source MIG
  - For Language field, Codelist tab add a new codelist of type “ISO 639-1” and select only “de” and “en” as languages
  - Apply the same for AddressCorrespondenceLanguage and do similar for DocumentCurrency

- (1)
  - Provide the following business context of eCarHero to help IA make accurate proposals:
    - Add Motor vehicles and Vehicle bodies and trailers as product classification.
    - Add Automotive as Industry Classification.
    - Add Germany as Country/Role.
    - Add Buyer as Business ProcessRole.
    - Add Create Order and Request Order as Business Process.
  - Provide the following business partner context for eCarHero's supplier to help IA make accurate proposals:
    - Add Hand Tools and Paints and primers and finishes as product classification.
    - Add Industrial Machinery and Components as Industry Classification.
    - Add United States as Country/Role.
    - Add Supplier as Business ProcessRole.
    - Add Create Order and Request Order as Business Process.
- (2)
  - PurchasingDocumentDeletionCode
  - CreatedByUser
  - LastChangeDateTime
  - PurchasingDocumentOrigin
  - SupplyingPlant
  - ReleaseIsNotCompleted
  - PurchasingCompletenessStatus
  - IsEndOfPurposeBlocked
  - to\_PurchaseOrderItem\* and its sub-nodes
- (3)
  - Provide the following business context as the supplier to help IA make accurate proposals:
    - Add Hand Tools and Paints and primers and finishes as product classification.
    - Add Industrial Machinery and Components as Industry Classification.
    - Add United States as Country/Role.
    - Add Supplier as Business ProcessRole.
    - Add Create Order and Request Order as Business Process.
  - Provide the following business partner context for eCarHero to help IA make accurate proposals:
    - Add Motor vehicles and Vehicle bodies and trailers as product classification.
    - Add Automotive as Industry Classification.
    - Add Germany as Country/Role.
    - Add Buyer as Business ProcessRole.
    - Add Create Order and Request Order as Business Process.

- Create a target MIG
  - Create another MIG by starting from the type system “S/4HANA Cloud SOAP”
  - Select OrderRequest object (EDI/Buyer), 1905 version, name it “SOAP\_target\_PO” and select “In” as direction
  - For Business Context and Partner Business context make selections as described in (3) in the previous slide and create the MIG
  - In Structure tab, for OrderRequest node, right-click and select all
  - Click Get Proposal to get suggestions for fields to include in the MIG  
You should decide if it makes sense to follow the suggestions or execute mapping on your own. There might be no suggestions due to the small size of the database of previous mappings
- Enhance the target MIG by adding qualifiers
  - In MIG Codelists, add a new codelist, set its id to be “CL\_PARTYTYP” and name it “Codelist for Party types”
  - Save and add SoldTo, BillTo, ShipTo, ShipFrom (the same for Name and Value) as code values and save again
  - Select OrderRequest → Order → Party → PartyType in the Structure tab
  - In Codelist tab in the right, add a new codelist and select CL\_PARTYTYP
  - In Details tab add a qualifier (Qualifiers table) and select Party
  - Right-click on the Party node in the left menu and select Qualify Node → SoldTo → Add
  - Right-click on Party again and select Duplicate Qualified Node → BillTo → Add and repeat this step for the ShipTo and ShipFrom information
  - Save

# Exercise: Create Mapping Guidelines (MAGs)

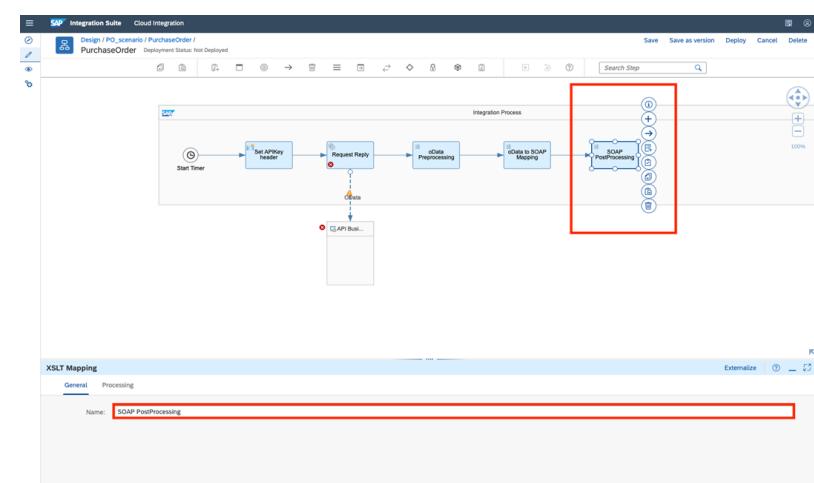
- Click on Design icon in the menu (Pencil) and select MAGs to create a new MAG
- Create a new MAG and select MIGs created in the previous step to be the source and the target MIGs for this MAG
- Save the new MAG
- Use Get Proposal option so Integration Advisor can provide mapping suggestions
- Use Select Best Proposal to choose the mapping selection which was assessed by IA to be the best fit
- If no suggestions were provided, add mappings as suggested in the Learning Journey
- Add some manual mappings to get feeling for the mapping service.  
Try linking IncotermsVersion from the source with IncotermsVersion from the target
- Save updates



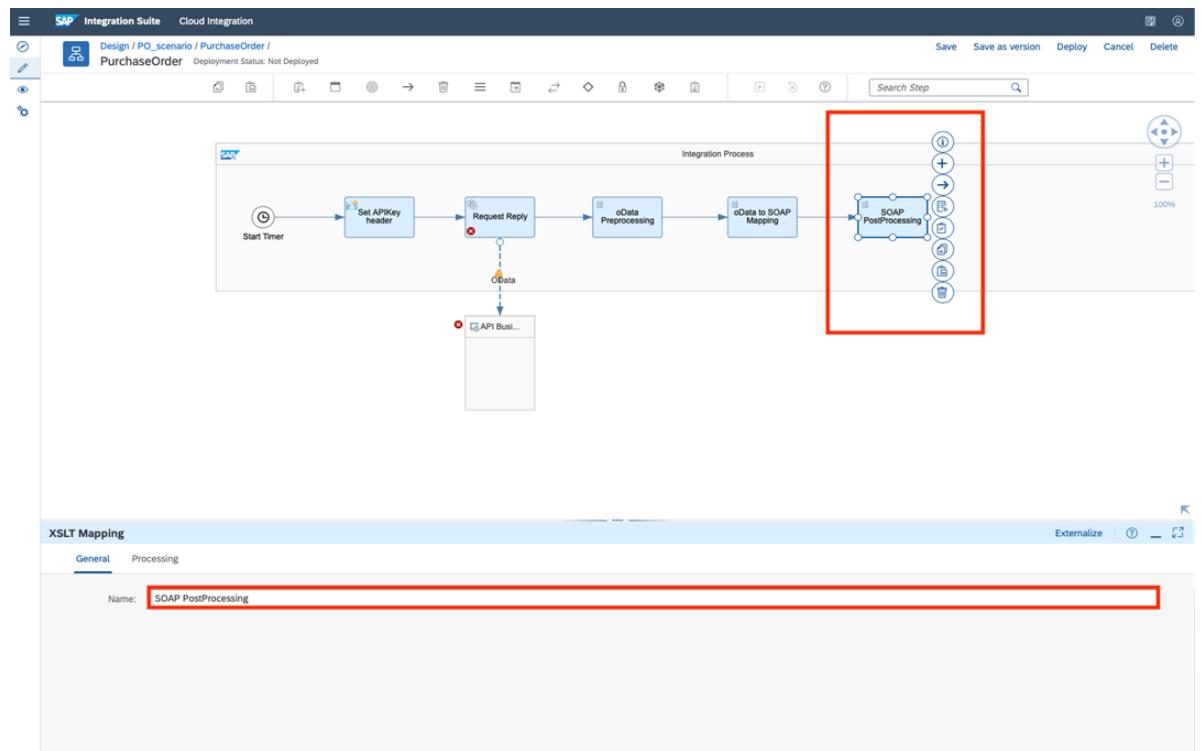
# Exercise: Consuming SAP Integration Advisory Artifacts

- Choose export from actions inside the MAG and choose SAP Cloud Integration Runtime Artifacts option
- Store the exported archive in you local and pay attention to three files inside of the archive (screens in the right) we will be using
- Navigate back to “PO\_Scenario” package and PurchaseOrder artifact inside of it, in Edit mode
- Add a new XSLT Mapping element, right behind Request Reply object and connect those
  - Name it “OData PreProcessing”
  - In Processing tab, choose to upload “OData\_source\_PO\_preproc.xsl” - a file from the downloaded archive

Name	Größe	Art	Hinzugefügt am
Mapping_OData_source_PO_to_SOAP_target_PO	-- Ordner	Heute, 16:41	
SOAP_target_PO	-- Ordner	Heute, 16:41	
SOAP_target_PO_testdata_ICA.xml	3 KB	XML	Heute, 16:41
SOAP_target_PO_postproc.xsl	4 KB	XSL stylesheet	Heute, 16:41
SOAP_target_PO_preproc.xsl	4 KB	XSL stylesheet	Heute, 16:41
SOAP_target_PO_RD.xsd	18 KB	XML document	Heute, 16:41
OData_source_PO	-- Ordner	Heute, 16:41	
OData_source_PO_testdata_ICA.xml	2 KB	XML	Heute, 16:41
OData_source_PO_postproc.xsl	4 KB	XSL stylesheet	Heute, 16:41
OData_source_PO_preproc.xsl	3 KB	XSL stylesheet	Heute, 16:41
OData_source_PO_RD.xsd	11 KB	XML document	Heute, 16:41
Mapping_OData_source_to_SOAP_target_PO.xsl	94 KB	XSL stylesheet	Heute, 16:41



- Add another XSLT Mapping element, right behind the previous one and connect those directly
  - Name it “OData to SOAP Mapping” and in the Processing tab choose to upload a resource: “Mapping\_OData\_source\_PO\_to\_SOAP\_target \_PO.xsl” file from the downloaded archive
- Add the third XSLT Mapping element, right behind the second one and create a direct connection
  - Name it “SOAP PostProcessing” and in the Processing tab choose to upload a resource: “SOAP\_target\_PO\_postproc.xsl” file from the downloaded archive
- When you click Save your iFlow will be enhanced with mappings generated out of SAP Integration Advisor



# Part 5: Model Extension (Exercises)

# Exercise: Cleaning Up Message Data

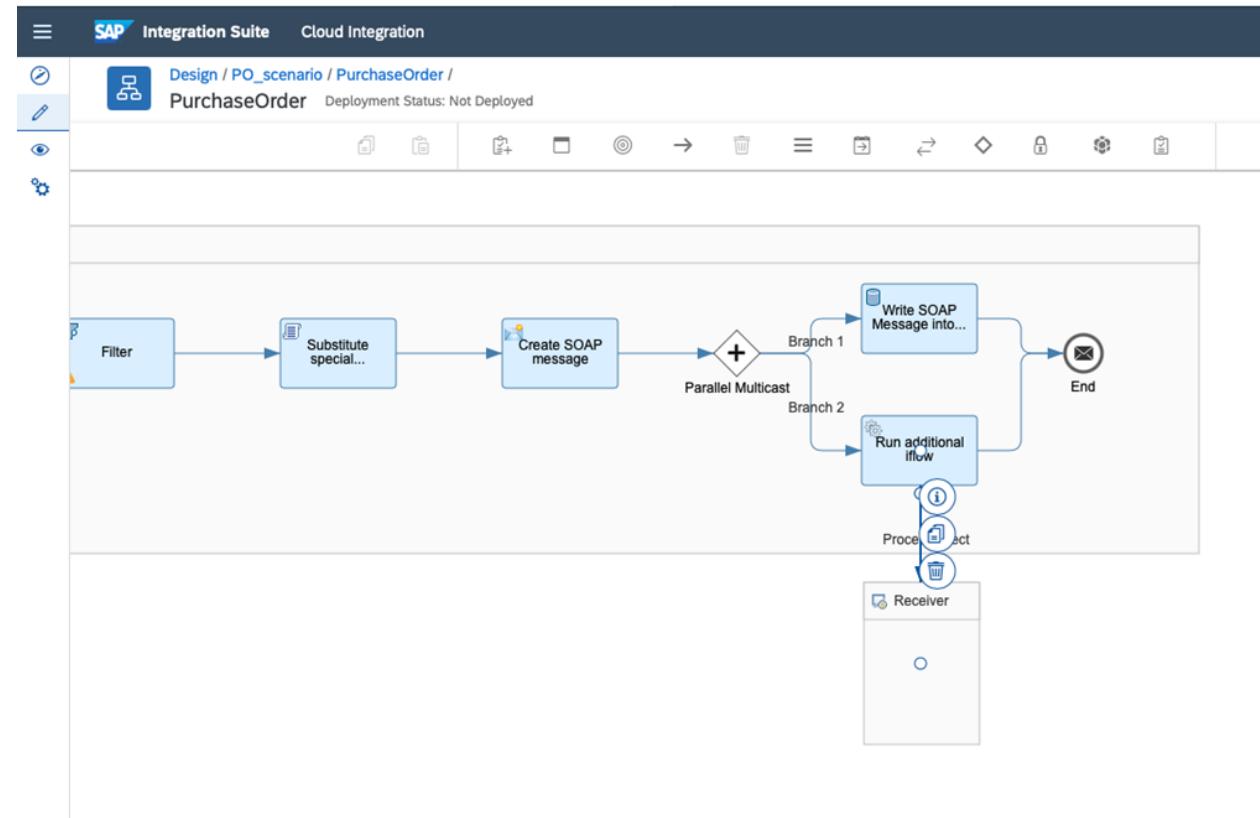
- This section deals with operations needed to clean and reformat a message processed by the iFlow
- Download content from [the link](#), where among other files you have scripts needed for this chapter.
- From Transformations menu, add a Filter element and position it right after the last XSLT Transformation element in PurchaseOrder iFlow
  - Optionally change its name, but set XPath Expression in Processing tab to be “/OrderRequest” to extract the referenced message portion inside of the specified element
  - Save in the end
- We need to add a script to perform URL encoding of angle brackets
  - Again from Transformation menu, add a Groovy script element and position it right after the existing Filter. Name it “Substitute special characters”
  - Upload “sub\_special\_characters.groovy” file from the downloaded package linked above and upload it as a local resource inside of the Script element to define the script body
- Add another Content Modifier element that we will use to form the SOAP message
  - Name it “Create SOAP message” and put it right behind the groovy script and connect the two
  - Copy/paste the snippet below into the Message Body text field:

```
<soap:Envelope  
xmlns:soap="http://www.w3.org/2001/12/soap-envelope"  
soap:encodingStyle="http://www.w3.org/2001/12/soap-encoding">  
<soap:Body xmlns:m="http://www.example.org/PurchaseOrder">  
  <m:Contents>${in.body}</m:Contents>  
</soap:Body>  
</soap:Envelope>
```

# Exercise: Configuring Outbound Communication

- Here we will extend the existing iFlow to include message multicasting (sending to multiple branches), where one will execute an operation to store order data for 30 days while the other one will call a different iFlow, used to send the message to Slack
- For the start, add a Parallel Multicast element right after the last element in PurchaseOrder iFlow and connect the two
- To create the first (upper) branch add a Write element available in Data Store Operations group in Persistence menu.
  - Connect the multicast element with it
  - Name it “Write SOAP Message into Data Store”
  - Switch to Processing tab and set Data Store Name to be “SOAPPurchaseOrder”
  - Set Entity Id to be “PurchaseOrder\_4500000011”
  - Tick the next checkboxes: Select Encrypt Stored Message, Overwrite Existing Message, and Include Message Headers
- Add an End Message event from Events menu and connect the previous Write element with it
- You might notice that at the top far left of the Integration Process pool box, an error indicator displays. Highlight the Integration Process pool box to access its configuration menu, move to the Processing tab and set the Transaction Handling to Not Required. The error might get rendered only after you click Save.

- Create the second multicast branch by adding a Request Reply element and name it “Run additional iFlow”. Connect the element to the existing End Message Event
- Add a Receiver element and link the previous element to it with a ProcessDirect element
- In the Connection tab for the ProcessDirect element enter “/PO\_scenario/PO\_Slack” as the receiver address. This is the address of an iFlow that we will create soon



# Exercise: Building a Second iFlow for Internal Notification

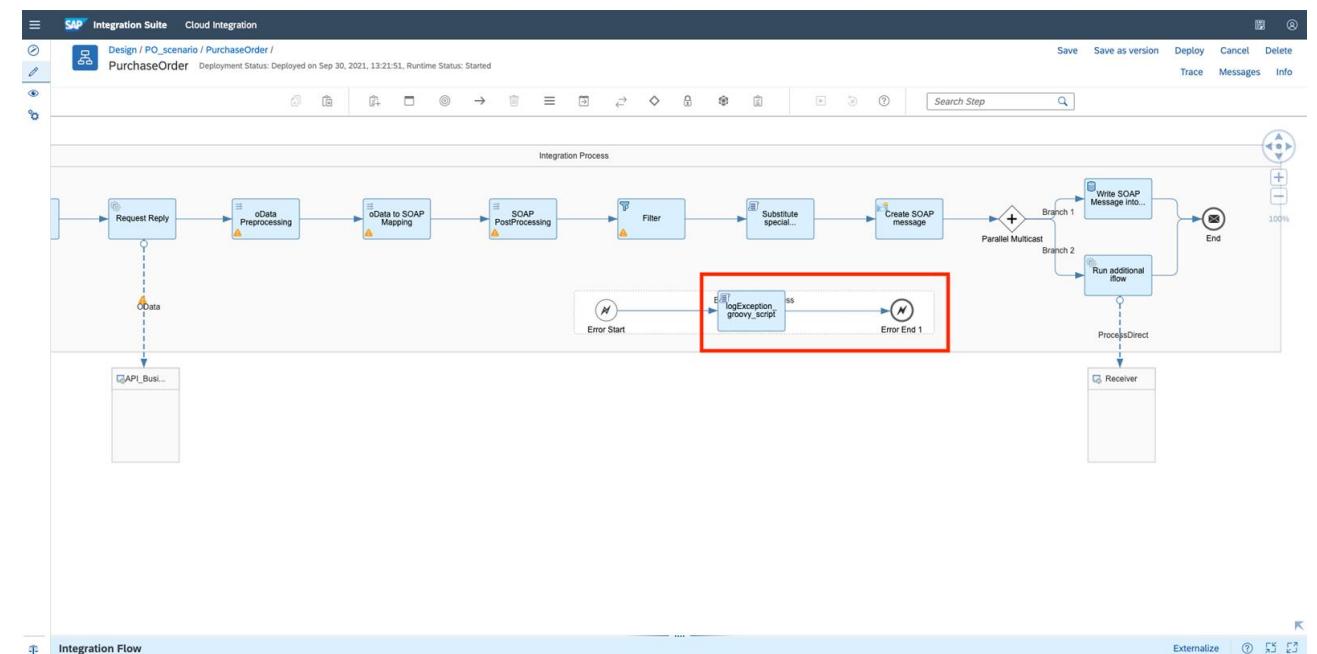
- The goal here is to build an iFlow which uses the Open Connector we built to send messages to Slack
- Get back to the PO\_scenario integration package and add a new iFlow artifact and name it “PO\_Slack”
  - Edit the iFlow and rename the Sender element to “PurchaseOrder”
  - Connect the element with Start Message by adding a ProcessDirect adapter.
    - In the Connection tab, set the address to be “/PO\_scenario/PO\_Slack”
  - Add a new Content Modifier element
    - Name it “setCommunication Parameters”
    - Add a message header with the following selection: for Action set Create, for Name “APIkey”, for Type set Constant and for the value use your API Business Hub key that you have extracted from the portal itself
    - Add the following row to Exchange Property tab: set Action to Create, Name to “poid”, Type to XPath, Data Type to “java.lang.String” and set “4500000011” for the Value. Use Externalize for Value
    - Add another row to Exchange Property: set Action to Create, Name to “ChannelID”, Type to Constant, for the Value use saved channel id obtained before from SAP API Business Hub Enterprise
    - Set Message Body content should be:  
  { "text": "Message successful processed with Purchase Order ID: \${property.poid}" }

- Add a new Request Reply element, connect the last Content Modifier to it and name the new element “Send Message”
- Add a Receiver object and name it “Slack\_Supplier”
- Add a HTTP communication adapter between the last two elements with the following parameters:
  - For Address field you need the URL of the published API used to push messages to Slack. Go to API Management -> API Business Hub Enterprise -> “Supplier Slack App” -> “Supplier Slack” product -> APIs -> Details. Here you have the URL for the whole API product, stored inside of “APIProxy URL” field  
You need to add the relative path for the specific API call but in a parametrized form.  
The resulting URL should be similar to this: [https://5c11715dtrial-trial.integrationsuitetrial-apim.eu10.hana.ondemand.com:443/5c11715dtrial/v1/Slack/channels/\\${property.ChannelID}/messages](https://5c11715dtrial-trial.integrationsuitetrial-apim.eu10.hana.ondemand.com:443/5c11715dtrial/v1/Slack/channels/${property.ChannelID}/messages)
  - Set the following field/value pairs: Proxy Type: Internet, Method: Post, Authentication: None
  - Save the iFlow as a new version
- Test the new iFlow
  - Remove Start Message element and add a Timer (Events menu).
    - Set Run Once for the timer
  - Create a new Content Modifier element, with name “test”, and place right between the timer and the existing “Set Communication Parameters” Content Modifier
    - Set its body expression to be: <PurchaseOrderID>4500000011</PurchaseOrderID>
  - Save the modified iFlow content as a new version
  - Execute Deploy action located in the upper right
  - In the main menu go to Monitor, then Integrations and then Manage Integration Content and set Log Level to Trace, for PO\_Slack iFlow
  - Deploy and when done go to Monitor Message Processing and check the last message.
  - To increase the level of information change the Log Level to Log and then in the same cycle check the last message in Monitor Message Processing
    - For the specified message check Message Content and content of the Payload tab
  - Go to Slack and check message in your channel
  - At the very end revert the iFlow to the version which was stored above and did not contain test-related updates

## Exercise: Handling of Errors

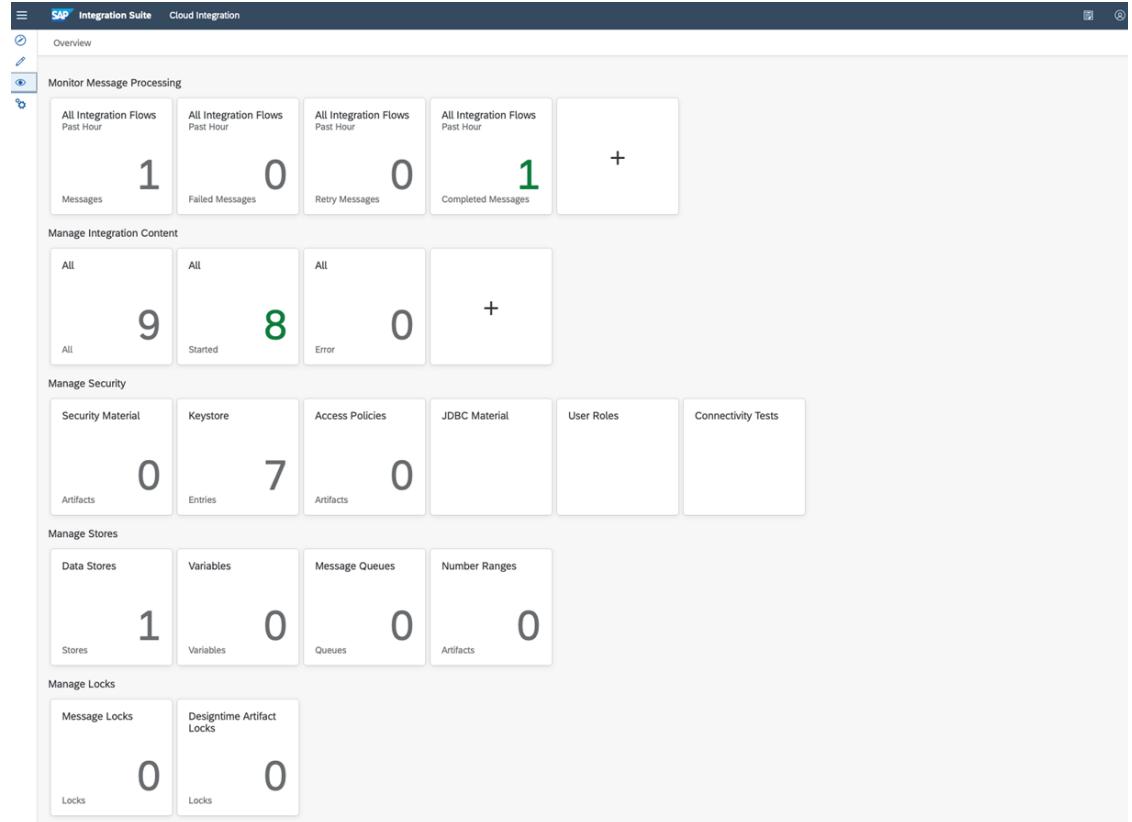
- Now we should learn how to use a script collection inside of an iFlow and then how to introduce exception handling to your integration artefacts
- Click Edit in the Artifacts tab of PO\_Scenario integration package
- Click Add to create a script collection object and choose to upload your previously downloaded script collection zip file "SC\_ACL.zip" (it is inside of "provided\_integration\_content" folder)
  - Name it "SC\_PO", optionally add a description and choose OK
  - Run Deploy available in the actions menu
- Now we need to import the script to the PurchaseOrder iFlow.  
Open the configuration view of the iFlow by double-clicking the Integration Process pool.  
Navigate to Resources → Add References → Script Collection.  
Select the "SC\_PO" script collection and choose OK.

- Let us use the script collection now and also learn how to use exception handling. From Processes menu item add an Exception Subprocess and position it anywhere inside of the Integration Process Pool.
- Choose Transformation → Script → Groovy Script and place it within the Exception subprocess
- Change the script name to “logException\_groovy\_script” and enter “logException” for Script Function in the Processing tab
- In the Processing tab, choose Select, then Referenced Resources. Choose the utils script and choose OK to proceed.
- Now we would want to change the subroutine so the message status becomes Failed when an exception occurs.  
For this replace End Message element with an Error End Event element.  
The last step is shown in the screen here



# Exercise: Deploying and Testing iFlows

- Edit PO\_scenario package and navigate to Artifacts tab. Deploy PO\_Slack at first, then deploy PurchaseOrder. If errors occur you will immediately be notified
- In the exercise “Build a Second iFlow for Internal Notification” in Part 5, a timer was used to simulate incoming PO messages. It has to be replaced, if you have not done so already.
  - Edit the iFlow PO\_Slack and replace the Timer element with a Start Message element
  - Connect the Sender PurchaseOrder to Start Message by adding a Process Direct adapter
  - In the Connection tab, enter “/PO\_scenario/PO\_Slack” for address.
  - Re-deploy both iFlows PO\_Slack and PurchaseOrder.
- Monitor the iFlow by accessing the section from a direct link in the left-side menu. Observe all present views and edit Manage Stores - Data Stores tile to view the SOAP message that was saved to the data store



- Get back to the integrations monitor panel and go to Monitor Message Processing → All Integration Flows - Messages to view the deployed iFlow and the SOAP message that is being persisted within the data store.  
Notice that just an overview is available as the Log Level for the iFlow was set to Info.

- We will elevate the Log Level now. From the Overview, choose Manage all integration content → All. Select your iFlow. Set Trace as the Log Level and deploy the iFlow
- Go back to Monitor Message Processing → All Integration Flows – Messages.  
Now you will be able to inspect Payloads and will have more information about eventual crashes.
- This should help you fix errors you need to remove and have the exercise completed.  
If errors do not tell you enough you should read individual lesson again and try to fix the configuration error.  
When this gets done the lesson will become complete.

# Outro

# Slides and recordings availability

My files > External sharing > ExtSuite



Name ▾



Americas



APJ



EMEA

Access URL: [IntSuite](#)

Password: btp

Expires: Dec 31<sup>st</sup> 2022

# Certification preparation

## General rules about questions

- Questions
  - are simple and objective.
  - can be single choice or multiple choice, which will be clearly indicated.
- Multiple-choice questions
  - number of correct answers is given as part of the question.
  - question is considered correct only if all correct alternatives are selected.
    - i.e. multiple-choice questions **cannot** be partially correct. They are either correct or wrong.

# Certification preparation

## Important Exam Process and Security Guidelines

- An on-site exam:
  - is proctored in person by an exam supervisor
  - requires 2 forms of valid identification (not expired)
    - at least one government-issued photo ID
  - personal items (cell phones, bags, notepads, organizers, etc.) not allowed
- An online exam:
  - requires stable internet
  - is proctored remotely via Zoom (both webcam and entire desktop)
  - requires government-issued photo ID (not expired) via webcam
  - is only released by the exam supervisor after checking the exam environment
    - requires you to be in a quiet and secure room alone throughout the exam
    - you will be asked to rotate your webcam around the room
    - only one screen may be active.
    - cellphones/tablets and recording devices are forbidden
  - requires you use the Questionmark Secure browser to access the exam

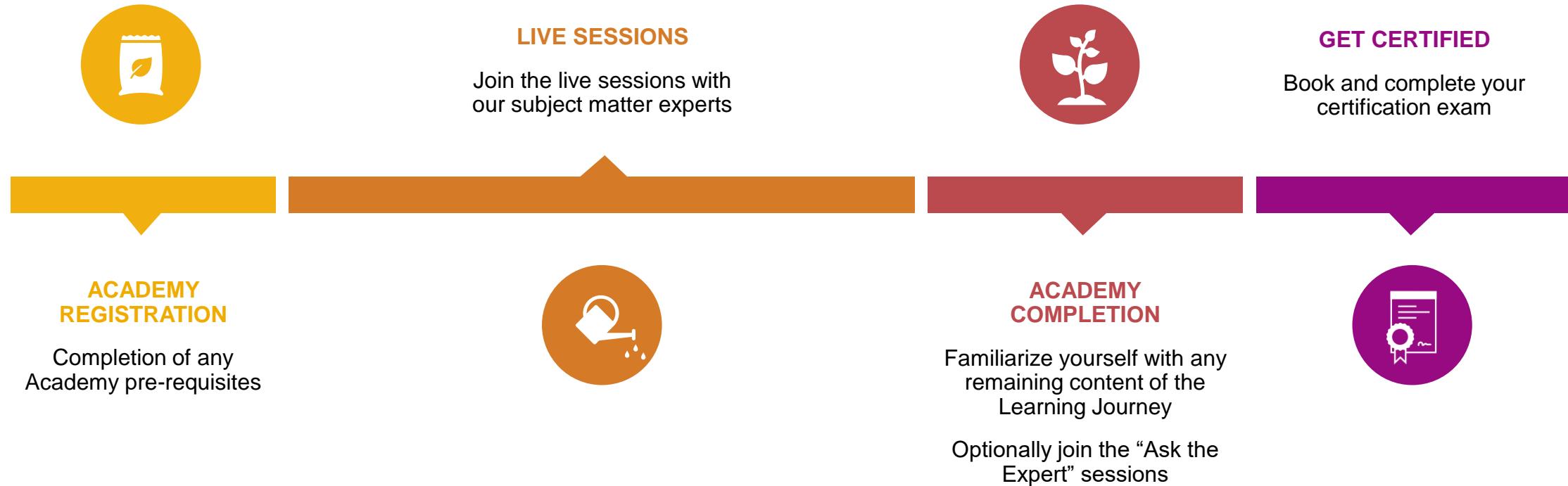
# Take SAP Certification Exams in your own language

With a new translation tool, SAP can now provide real-time machine translation from English to eight other languages: Chinese, French, German, Japanese, Korean, Portuguese, Russian, and Spanish

Please read [this blog](#) for additional details.

The screenshot shows a SAP Consultant Certification exam interface. At the top, it says "SAP Consultant Certification" and "May 18 2021 Logged in as: SAPdemo@questionmark.com". The main content area displays a question about SAP BPC options. On the right side, there is a "Translation" panel with a red border around its header and content. The panel has a "Language" dropdown set to "English". Below it is a list of eight languages: Chinese (简体中文), English, French (Français), German (Deutsch), Japanese (日本語), and Korean (한국어). The "French (Français)" option is currently selected, indicated by a cursor icon over its name. At the bottom of the screen, there are navigation buttons: "Next Question > Assessment Navigator" and "Submit".

# What are the next steps?



# Certification Incentive

- ✓ Reimbursement certification attempt costs\*
- ✓ Partner needs to certify at least 5 consultants\*
- ✓ Available to eligible PE Sell partners\*

\* Please check all eligibility criteria and details on the incentive [here](#).

Funding for this initiative is limited and applications will be accepted on the first come first served basis until the fund is exhausted or until December 15th, 2023.

The screenshot shows a web browser displaying the SAP PBC (Partner Cloud) website. The top navigation bar includes the SAP logo, 'PBC', a search bar labeled 'Search for Service', and user icons for shopping cart and profile. Below the header, a breadcrumb trail shows 'Innovation | Partner Cloud Certification Initiative'. To the right, there are tabs for 'At a Glance' (which is selected), 'Description', 'Details', and 'Reviews'. The main content area features a large image of a man in a suit talking on a mobile phone while driving a car. Overlaid text reads 'Partner Cloud Certification Initiative' and 'Partner Cloud Certification Initiative – limited time offer, up to €7,500 reimbursement for partner learning and cloud certification. To help accelerate cloud transformation, SAP launched an exciting offering that is critical for partner cloud consultants. This offer will provide funding for each eligible partner to equip with the latest skills and knowledge related to the Competency Framework, increase the number of certified consultants, and enhance delivery capacity and capability.' Below the image, a section titled 'PE Benefit' states 'Taxes calculated during checkout' and includes buttons for 'Apply', 'Share', and 'Save'.

# Purchasing certification exam attempts

The screenshot shows the SAP TRAINING website. At the top, there's a navigation bar with links for 'Explore catalog', 'SAP Learning Hub', 'SAP Certification', and 'More'. Below the navigation is a search bar with placeholder text 'Enter keyword to search for courses, certifications or training paths'. The main content area features a teal header with the course title 'CER001 SAP Certification Exam, One Attempt' in white. Below the title, there are sections for 'Delivery Methods' (SAP Certification), 'Level' (Certification), and 'Languages' (English). A 'Solution Release' status of '010' is shown with a question mark icon. On the right side, there's a 'Chat Now' button. The bottom section contains 'Course announcements' (listing validation and proctoring details), 'Course information' (listing a 12-month access period), and 'Content' (listing a single attempt). A 'Price' of '200.00 € (EUR)' is highlighted in yellow, followed by a note 'Price excludes tax.' and a blue 'Add to basket' button.

This screenshot shows the SAP TRAINING website for the 'SAP Certification Exam, Six Attempts' product. The layout is identical to the first screenshot, with a teal header and a search bar. The course title is 'CER006 SAP Certification Exam, Six Attempts'. Below the title, it lists 'Delivery Methods' (SAP Certification), 'Level' (Certification), and 'Languages' (English). A 'Solution Release' status of '010' is shown. On the right, there's a 'Chat Now' button. The bottom section contains 'Course announcements' (listing validation and proctoring details), 'Course information' (listing a 12-month access period), and 'Content' (listing up to six attempts). A 'Price' of '500.00 € (EUR)' is highlighted in yellow, followed by a note 'Price excludes tax.' and a blue 'Add to basket' button.

# Ask your “off-line” questions in the SAP BTP Learning community

The screenshot shows the SAP BTP Learning community homepage. At the top, there's a navigation bar with links for Groups, Partner Groups, SAP Events, Help, and user icons. Below the header is a search bar and a main title "SAP BTP Learning". The page displays several posts:

- Welcome learners! Join in this new and exciting collaboration experience.** (Post by AB on 11-10-2021)  
6226 views, 14 comments, 32 likes.
- How to get certified as an SAP BTP expert - in 3 simple steps** (Post by AB on 11-16-2021)  
7901 views, 12 comments, 24 likes.
- SAP Learning Tips & Tricks: How to Bookmark a Lesson** (Post by AB on 12-03-2021)  
946 views, 0 comments, 1 like.

At the bottom, there's a "Group Activity" section with a post from AB about corrections to a learning journey. A red circle highlights the "Join Group" button in the sidebar.

The screenshot shows the SAP BTP Learning community homepage. The layout is similar to the first one, with a search bar and main title "SAP BTP Learning". The page displays several posts:

- Welcome learners! Join in this new and exciting collaboration experience.** (Post by AB on 11-10-2021)  
6226 views, 14 comments, 32 likes.
- How to get certified as an SAP BTP expert - in 3 simple steps** (Post by AB on 11-16-2021)  
7901 views, 12 comments, 24 likes.
- SAP Learning Tips & Tricks: How to Bookmark a Lesson** (Post by AB on 12-03-2021)  
946 views, 0 comments, 1 like.

At the bottom, there's a "Group Activity" section with a post from AB about corrections to a learning journey. A red circle highlights the "Ask a question" button in the sidebar.

# Complement your certification related learning with SAP HANA Academy

Check out the [blog post](#) for current and coming topics

Denys van Kempen 

May 10, 2022 | 8 minute read

## Get Certified – SAP Integration Suite | SAP BTP Certification Video Tutorials

5 comments 10 likes 5,830 views

Interested to get SAP BTP certified? Here is a video tutorial series from the SAP HANA Academy to help you reach your goal.

- Get Certified – SAP Integration Suite << this article
- Get Certified – SAP Extension Suite
- Get Certified – SAP HANA Cloud

For earlier articles about SAP BTP certifications, see

- Get Certified: C\_CPI\_14 | SAP Certified Development Associate – SAP Integration Suite
- Get Certified: C\_CPE\_13 | SAP Certified Development Associate – SAP Extension Suite
- Get Certified: C\_SAC | SAP Certified Application Associate – SAP Analytics Cloud
- Get Certified: C\_HCADM | SAP Certified Technology Associate – SAP HANA Cloud
- Get Certified: C\_HCMOD\_01 | SAP Certified Technology Associate – SAP HANA Cloud
- Get Certified: C\_HCDEV\_01 | SAP Certified Development Associate – SAP HANA Cloud

Questions? Please post as comment.

Useful? Give us a like and share on social media.

Thanks!

Dive directly into the [video playlist](#) of the first topic covered – SAP Integration Suite



### SAP BTP Certifications: SAP Integration Suite

16 videos • 644 views • Updated yesterday



Video tutorials to prepare for the SAP Certification SAP Certified Development Associate - SAP Integration Suite (C\_CPI\_14):  
<https://learning.sap.com/learning-jou...>

For the article (blog post), see  
<https://blogs.sap.com/2022/05/10/get-...>

Exclusive for SAP Partners, make sure also to check out the schedule for the live sessions  
<https://bit.ly/partneredge-certificat...>



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	<p>SAP Integration Suite Certification   API Management</p> <p>SAP HANA Academy</p>

# Schedule for all Q1 2023 Partner Certification Academies for SAP BTP

<u>Learning Journey</u>	<u>Associated Certification</u>	<u>Schedule &amp; Registration links</u>		
		NA/LAC	EMEA	APJ/ANZ
<a href="#">Explore SAP Analytics Cloud</a>	<a href="#">SAP Certified Application Associate - SAP Analytics Cloud</a>	<a href="#">Mar 14,16,28</a>	<a href="#">Mar 14,16,28</a>	<a href="#">Mar 14,16,28</a>
<a href="#">Build side-by-side extensions on SAP BTP</a>	<a href="#">SAP Certified Development Associate - SAP BTP Extension Developer</a>	<a href="#">Mar 7,9,16</a>	<a href="#">Mar 14,16,28</a>	<a href="#">Mar 7,9,28</a>
<a href="#">Developing with SAP Integration Suite</a>	<a href="#">SAP Certified Development Associate - SAP Integration Suite</a>	<a href="#">Feb 21,23 / Mar 7</a>	<a href="#">Feb 28 / Mar 2,14</a>	<a href="#">Feb 21,23 / Mar 8</a>
<a href="#">Utilize SAP Build for Low-Code/No-Code Applications and Automations for Citizen Developers</a>	<a href="#">SAP Certified Citizen Developer Associate - SAP Build Low-code/No-code Applications and Automations</a>	<a href="#">Feb 21,23 / Mar 7</a>	<a href="#">Feb 28 / Mar 2,15</a>	<a href="#">Mar 7,9,21</a>

Last date is the optional Ask-the-Expert session

Latest schedule and information can always be found [here](#).

# Thank you.

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