

UiPath Accelerators for SAP ECC & SAP S/4HANA

For following Lines of Businesses:
Basis Administration, Finance, Manufacturing,
Sales, Sourcing and Procurement

For SAP BAPI technology

March 2021

Description	3
About.....	3
Use cases	3
Prerequisites	4
On UiPath side	4
On SAP side	4
Concept of the reusable components	5
Naming convention.....	5
Quick start overview	5
Workflows using SAP BAPI functionality.....	6
Explanation of folder structure	7
Overall folder structure	7
Folder structure of individual workflows	7
Folder structure of data configuration (argument) file	7
Explanation of configuration files	8
Business data file	8
Worksheet "SRC_Contents"	8
Worksheet "Content"	9
Worksheet "SRC_Log"	10
Additional log information	10
Data configuration (argument) file	11
Additional Processing	12
Additional processing: Pattern [1]	13
Additional processing: Pattern [2]	13
Additional processing: Pattern [3]	14
Additional processing: Pattern [4]	14
Additional processing: Pattern [5]	14
Additional processing: Pattern [6]	14
Additional processing: Pattern [7]	14

Description

This document describes how to use UiPath Accelerators for SAP ECC and SAP S/4 HANA.

These packages are designed to be used in English (EN) and Japanese (JA) SAP environments.

Depending on the setting of the customer SAP environment (Version, Component, Business AddIns, setting of parameters, etc), it might be necessary to adjust the workflows.

About

The packages include workflows, which can be also used as test cases for most common SAP WinGUI transactions for SAP ECC and SAP S/4 HANA systems.

The packages contain the most required business applications/transactions, which are fully automated and serve as automation master templates for SAP Robotic Process Automation and SAP Test Automation.

The customer must use/provide his own business data. The automations themselves are ready to go without any significant changes or adoptions.

Each prebuilt automation asset (xaml-file) contains a set of activities, which allow the customer to perform the corresponding actions in the system e.g., Create Sales Order

The focus of the packs is set to use native SAP BAPI interface to ensure high stability, reliability, and reusability of components.

Use cases

Create and perform repetitive tasks, use the accelerators for mass upload and mass changes of data.

Prerequisites

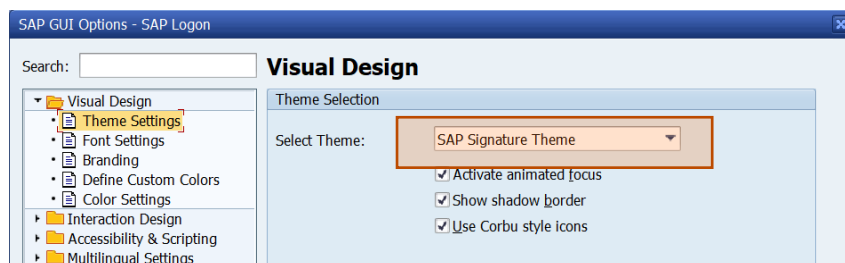
The packages were developed and tested on the SAP ECC6.0, SAP S/4 HANA 1809 and SAP S/4 HANA 1909 versions. The following prerequisites are required on both UiPath and SAP side to ensure the proper functionality.

On UiPath side

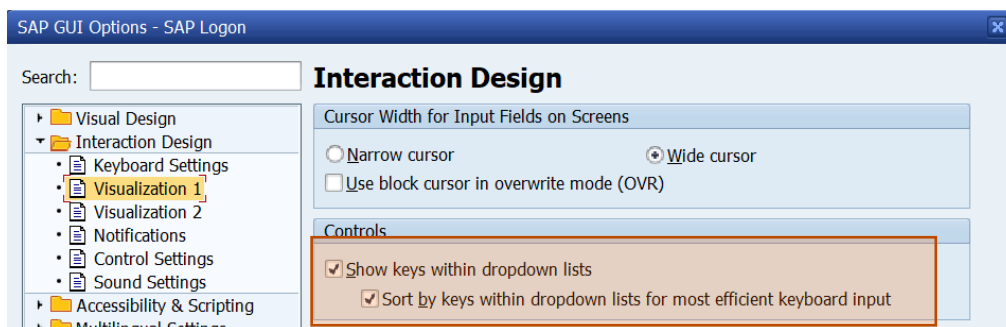
- UiPath Studio 20.10 and UIAutomation Package 20.10 and recommended versions
- UiPath.SAP.BAPI.Activities 2.2 and higher need be installed, follow the online documentation <https://docs.uipath.com/activities/docs/about-the-sap-bapi-activities-pack>
- An overview of supported SAP WinGUI versions can be found in online documentation <https://docs.uipath.com/studio/docs/about-sap-wingui-automation>
- **Do not start Excel when executing. Excel must be closed during the execution!**

On SAP side

- Required SAP WinGUI scripting settings are available in online documentation <https://docs.uipath.com/studio/docs/sap-wingui-configuration-steps>
- Only one active SAP session is recommended to avoid conflicts in the screen determination process
- When using a SAP WinGUI base environment, please log on to SAP before executing
- The user should have an authorization rights to run BAPI, the BAPI Function modules should be allowed.
- When using an SAP WinGUI, please ensure that the SAP Signature Theme is chosen



- Check "Show keys within dropdown list" in SAP Logon, in Interactive Design settings



Concept of the reusable components

The Foundation Pack is a prerequisite for all other packages, it contains a complementary set of workflows, which are necessary for the correct functionality of individual components.

Extract Foundation pack to the folder of your choice and add all required individual workflows to the same folder.

Note: If you would like to use Accelerators for both SAP ECC and SAP S/4HANA, do not store or mix the artefacts in the same folder. Please use complete separated folder structure for SAP ECC and for SAP S/4HANA to avoid any version conflicts.

Naming convention

For easy identification, the following naming convention is used. Let us look at the example

SRC_BAPI_PO_CREATE1_v2.2_EN

SRC	UiPath Reusable Component for SAP – is an abbreviation of individual workflow
BAPI_PO_CREATE1	BAPI function module name , which can be found in SAP. If you need to learn more about each function module, use transaction SE37
v2.2	The version of workflows
EN	The language of the file

The files and folders with the abbreviation “**E**” at the end, means that the component is suitable for SAP ECC

Folders / XAML-Files (Example)

SRC_BAPI_SALESORDER_CHANGE_v2.2_**E** / .xaml – for SAP ECC
 SRC_BAPI_SALESORDER_CHANGE_v2.2 / .xaml – for SAP S/4HANA

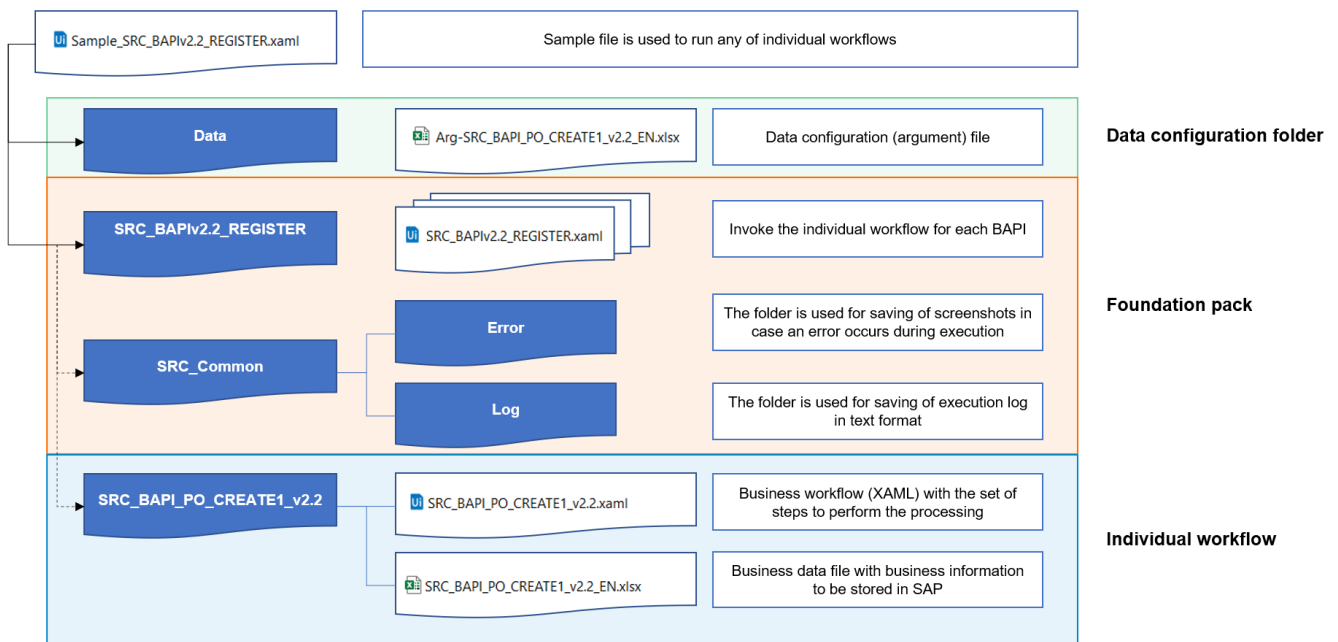
Quick start overview

1. Download and extract the Foundation pack
2. Download and extract the individual workflow inside the Foundation pack folder
Eg. Folder SRC_BAPI_PO_CREATE1_v2.2_EN
3. Fill in the data configuration file and move the “Arg-SRC_BAPI_PO_CREATE1_v2.2_EN.xlsx” file to the Data folder of the Foundation pack
4. Fill in the business data file for the specific individual workflow
Eg. SRC_BAPI_PO_CREATE1_v2.2_EN.xlsx
5. Run “Sample_SRC_BAPIv2.2_REGISTER.xaml” for testing or directly “SRC_BAPIv2.2_REGISTER.xaml” for an unattended scenario.

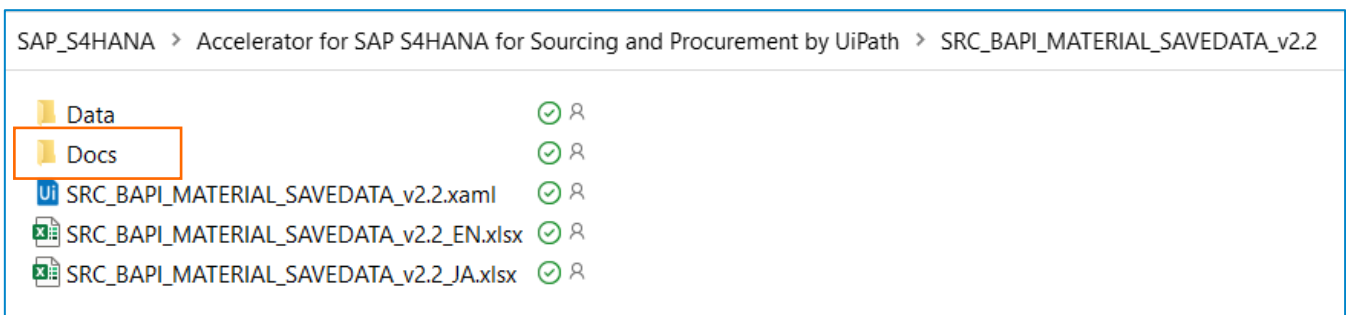
All details, see in the following chapter!

Workflows using SAP BAPI functionality

1. With help of Sample_SRC_BAPIv2.2_REGISTER.xaml it is possible to start and perform any of the prebuild and predefined workflows.
2. SRC_BAPIv2.2_REGISTER.xaml will call and invoke individual workflows, the configuration data will be submitted and configured only once in the data configuration folder. The results of the execution are stored in SRC_Common\Error and SRC_Common\Log
3. Individual workflows eg. SRC_BAPI_PO_CREATE1_v2.2.xaml are using data from SRC_BAPI_PO_CREATE1_v2.2_EN.xlsx, which will be entered into SAP



Note: In some of the packages, we have added **Docs** folder, which provide more explanations or even give an example of usage.

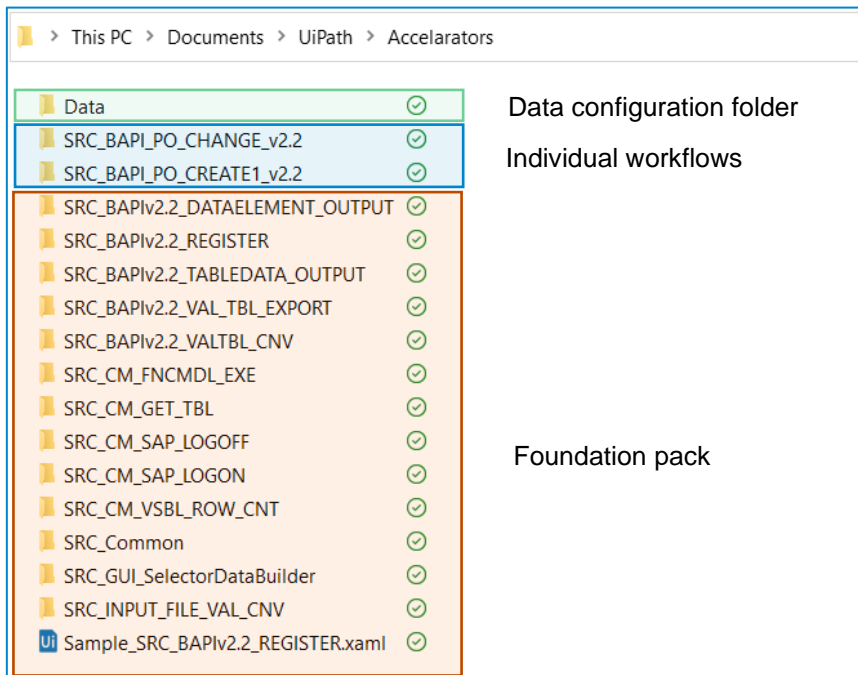


Explanation of folder structure

Overall folder structure

Foundation pack and individual workflows and Data folder for configuration files

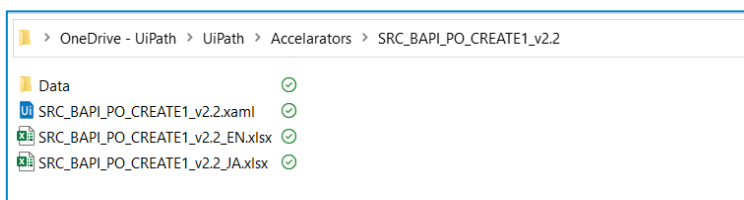
Sample_SRC_BAPIv2.2_REGISTER.xaml – is used to run any of the individual workflows.



Folder structure of individual workflows

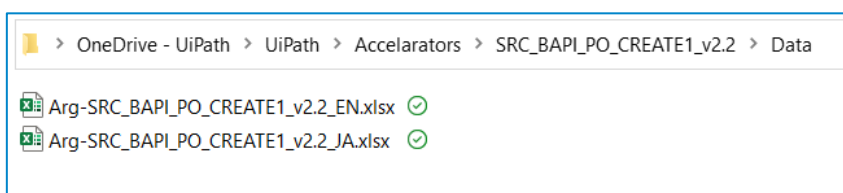
SRC_BAPI_PO_CREATE1_v2.2.xaml
SRC_BAPI_PO_CREATE1_v2.2_EN.xlsx
SRC_BAPI_PO_CREATE1_v2.2_JA.xlsx

Business workflow with the set of steps to perform the processing
Business data file with information to be stored in SAP in English
Business data file with information to be stored in SAP in Japanese



Folder structure of data configuration (argument) file

Arg-SRC_BAPI_PO_CREATE1_v2.2_EN.xlsx - Data configuration (argument) file in English
Arg-SRC_BAPI_PO_CREATE1_v2.2_JA.xlsx - Data configuration (argument) file in Japanese



Explanation of configuration files

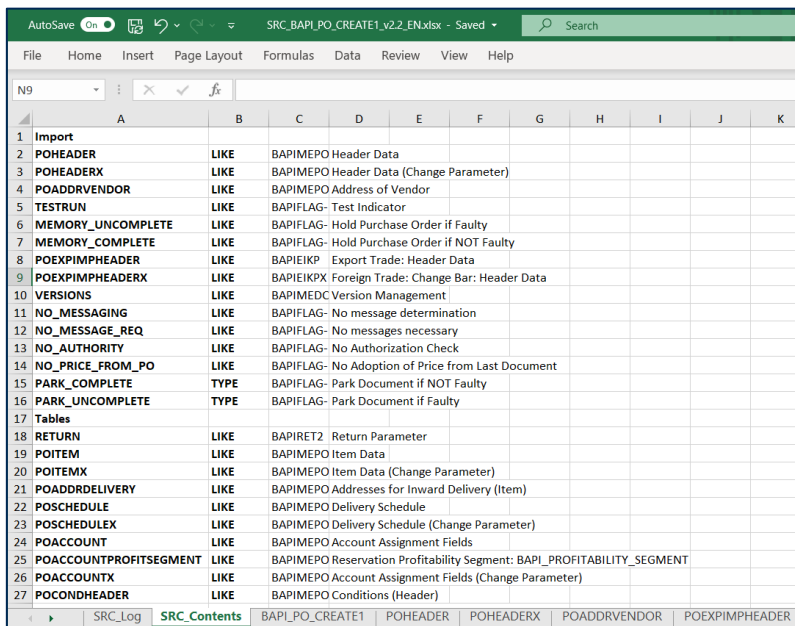
Business data file

Business data file provide a business information to be stored in SAP and will be processed by BAPI.

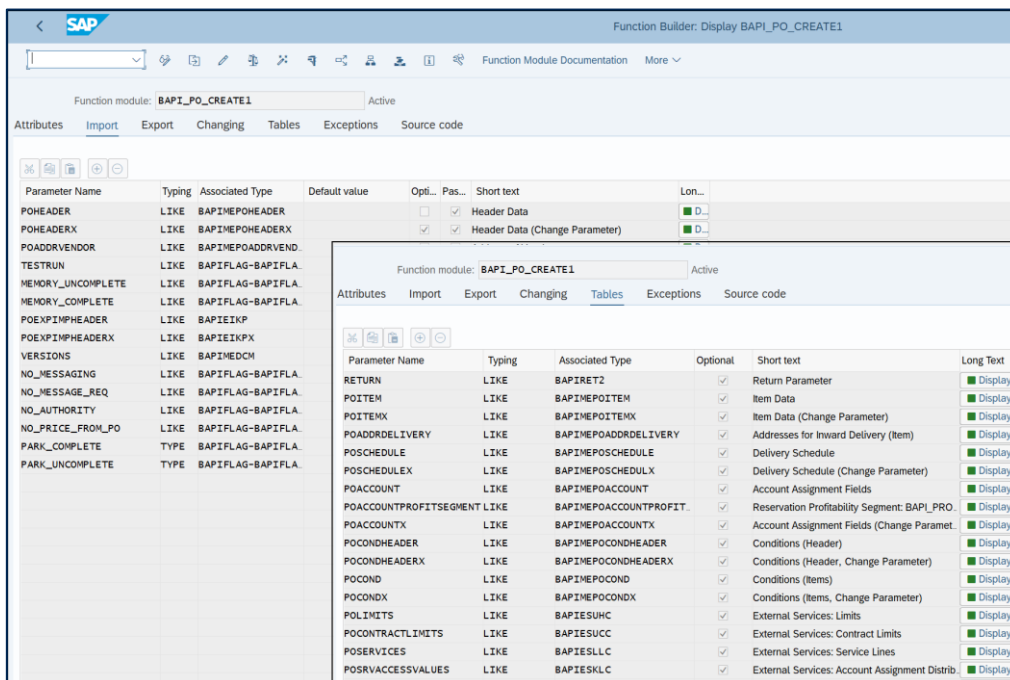
SRC_BAPI_PO_CREATE1_v2.2_EN.xlsx

Worksheet "SRC_Contents"

Provide a full overview of all information available in BAPI, it corresponds to the view displayed in transaction Code SE37 in the "Import" Tab and "Tables" Tab.



	A	B	C	D	E	F	G	H	I	J	K
1	Import										
2	POHEADER	LIKE	BAPIEPO Header Data								
3	POHEADERX	LIKE	BAPIEPO Header Data (Change Parameter)								
4	POADDRVENDOR	LIKE	BAPIEPO Address of Vendor								
5	TESTRUN	LIKE	BAPIFLAG- Test Indicator								
6	MEMORY_UNCOMPLETE	LIKE	BAPIFLAG- Hold Purchase Order if Faulty								
7	MEMORY_COMPLETE	LIKE	BAPIFLAG- Hold Purchase Order if NOT Faulty								
8	POEXPIMPHEADER	LIKE	BAPIEIKP Export Trade: Header Data								
9	POEXPIMPHEADERX	LIKE	BAPIEIKPX Foreign Trade: Change Bar: Header Data								
10	VERSIONS	LIKE	BAPIMEDC Version Management								
11	NO_MESSAGING	LIKE	BAPIFLAG- No message determination								
12	NO_MESSAGE_REQ	LIKE	BAPIFLAG- No messages necessary								
13	NO_AUTHORITY	LIKE	BAPIFLAG- No Authorization Check								
14	NO_PRICE_FROM_PO	LIKE	BAPIFLAG- No Adoption of Price from Last Document								
15	PARK_COMPLETE	TYPE	BAPIFLAG- Park Document if NOT Faulty								
16	PARK_UNCOMPLETE	TYPE	BAPIFLAG- Park Document if Faulty								
17	Tables										
18	RETURN	LIKE	BAPIRET2 Return Parameter								
19	POITEM	LIKE	BAPIEPO Item Data								
20	POITEMX	LIKE	BAPIEPO Item Data (Change Parameter)								
21	POADDRDELIVERY	LIKE	BAPIEPO Addresses for Inward Delivery (Item)								
22	POSCHEDULE	LIKE	BAPIEPO Delivery Schedule								
23	POSCHEDULEX	LIKE	BAPIEPO Delivery Schedule (Change Parameter)								
24	POACCOUNT	LIKE	BAPIEPO Account Assignment Fields								
25	POACCOUNTPROFITSEGMENT	LIKE	BAPIEPO Reservation Profitability Segment: BAPI_PROFITABILITY_SEGMENT								
26	POACCOUNTTX	LIKE	BAPIEPO Account Assignment Fields (Change Parameter)								
27	POCONDHEADER	LIKE	BAPIEPO Conditions (Header)								



Parameter Name	Typing	Associated Type	Default value	Opti...	Pas...	Short text	Lon...
POHEADER	LIKE	BAPIEPOHEADER		<input type="checkbox"/>	<input checked="" type="checkbox"/>	Header Data	■ D...
POHEADERX	LIKE	BAPIEPOHEADERX		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Header Data (Change Parameter)	■ D...
POADDRVENDOR	LIKE	BAPIEPOADDRVEND.					
TESTRUN	LIKE	BAPIFLAG-BAPIFLA.					
MEMORY_UNCOMPLETE	LIKE	BAPIFLAG-BAPIFLA.					
MEMORY_COMPLETE	LIKE	BAPIFLAG-BAPIFLA.					
POEXPIMPHEADER	LIKE	BAPIEIKP					
POEXPIMPHEADERX	LIKE	BAPIEIKPX					
VERSIONS	LIKE	BAPIMEDCH					
NO_MESSAGING	LIKE	BAPIFLAG-BAPIFLA.					
NO_MESSAGE_REQ	LIKE	BAPIFLAG-BAPIFLA.					
NO_AUTHORITY	LIKE	BAPIFLAG-BAPIFLA.					
NO_PRICE_FROM_PO	LIKE	BAPIFLAG-BAPIFLA.					
PARK_COMPLETE	TYPE	BAPIFLAG-BAPIFLA.					
PARK_UNCOMPLETE	TYPE	BAPIFLAG-BAPIFLA.					

Parameter Name	Typing	Associated Type	Optional	Short text	Long Text
RETURN	LIKE	BAPIRET2	<input checked="" type="checkbox"/>	Return Parameter	■ Display
POITEM	LIKE	BAPIEPOITEM	<input checked="" type="checkbox"/>	Item Data	■ Display
POITEMX	LIKE	BAPIEPOITEMX	<input checked="" type="checkbox"/>	Item Data (Change Parameter)	■ Display
POADDRDELIVERY	LIKE	BAPIEPOADDRDELIVERY	<input checked="" type="checkbox"/>	Addresses for Inward Delivery (Item)	■ Display
POSCHEDULE	LIKE	BAPIEPOPOSCHEDULE	<input checked="" type="checkbox"/>	Delivery Schedule	■ Display
POSCHEDULEX	LIKE	BAPIEPOPOSCHEDULX	<input checked="" type="checkbox"/>	Delivery Schedule (Change Parameter)	■ Display
POACCOUNT	LIKE	BAPIEPOACCOUNT	<input checked="" type="checkbox"/>	Account Assignment Fields	■ Display
POACCOUNTPROFITSEGMENT	LIKE	BAPIEPOACCOUNTPROFIT.	<input checked="" type="checkbox"/>	Reservation Profitability Segment: BAPI_PRO.	■ Display
POACCOUNTTX	LIKE	BAPIEPOACCOUNTTX	<input checked="" type="checkbox"/>	Account Assignment Fields (Change Paramet.	■ Display
POCONDHEADER	LIKE	BAPIEPOCONDHEADER	<input checked="" type="checkbox"/>	Conditions (Header)	■ Display
POCONDHEADERX	LIKE	BAPIEPOCONDHEADERX	<input checked="" type="checkbox"/>	Conditions (Header, Change Parameter)	■ Display
POCOND	LIKE	BAPIEPOCOND	<input checked="" type="checkbox"/>	Conditions (Items)	■ Display
POCONDIX	LIKE	BAPIEPOCONDIX	<input checked="" type="checkbox"/>	Conditions (Items, Change Parameter)	■ Display
POLIMITS	LIKE	BAPIESUHC	<input checked="" type="checkbox"/>	External Services: Limits	■ Display
POCONTRACTLIMITS	LIKE	BAPIESUCC	<input checked="" type="checkbox"/>	External Services: Contract Limits	■ Display
POSERVICES	LIKE	BAPIESLLC	<input checked="" type="checkbox"/>	External Services: Service Lines	■ Display
POSRVACCESSVALUES	LIKE	BAPIESKLC	<input checked="" type="checkbox"/>	External Services: Account Assignment Distrib.	■ Display

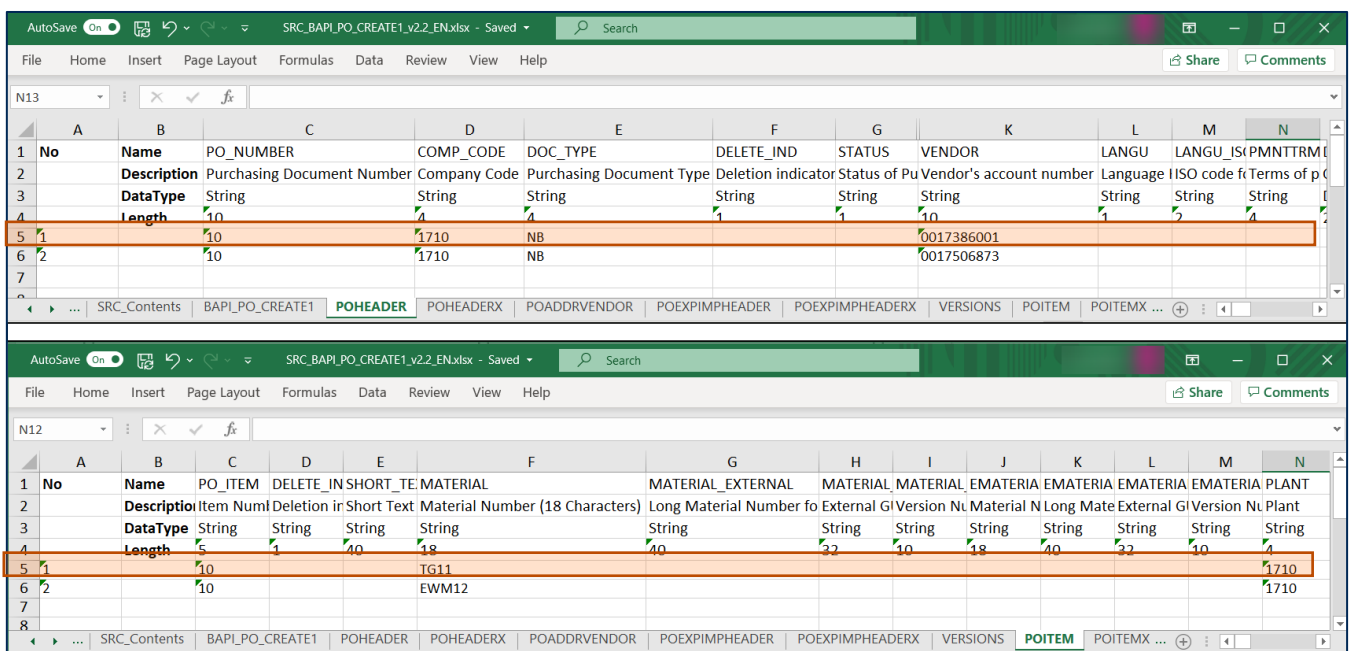
Worksheet “Content”

Each Worksheet/Tab in the Excel file contain the data, which are needed to be fulfilled to create a particular document, e.g., Purchase Order. Which fields are mandatory and which are optional is depending on the customer's system, please verify with your internal SAP team.

Let's have a look at **POHEADER** Tab

- No identification number for processing eg., 1,2,3,4,5....
- Name corresponds to a separate field in SAP
- Description description of the field in SAP
- DataType type of data, allowed to be entered. e.g. String for Text, Decimal for Numbers
- Length max. length of data entries

The same is valid for all other Tabs, see one more example **POITEM** Tab



No	Name	PO_NUMBER	COMP_CODE	DOC_TYPE	DELETE_IND	STATUS	VENDOR	LANGU	LANGU_IS(PMNTTRM)
1	Description	Purchasing Document Number	Company Code	Purchasing Document Type	Deletion indicator	Status of Pu	Vendor's account number	Language	ISO code fi Terms of p
2	DataType	String	String	String	String	String	String	String	String
3	Length	10	4	4	1	1	10	1	2
4									
5	1	10	1710	NB			0017386001		
6	2	10	1710	NB			0017506873		
7									

No	Name	PO_ITEM	DELETE_IN SHORT TE	MATERIAL	MATERIAL_EXTERNAL	MATERIAL	MATERIAL	EMATERIA	EMATERIA	EMATERIA	EMATERIA	PLANT
1	Description	Item Num	Deletion in Short Text	Material Number (18 Characters)	Long Material Number fo	External GI	Version N	Material N	Long Mate	External GI	Version N	Plant
2	DataType	String	String	String	String	String	String	String	String	String	String	String
3	Length	5	1	10	18	10	10	18	10	10	10	4
4												
5	1	10		TG11								1710
6	2	10		EWM12								1710
7												
8												

Each line across every tab represents a new entry in SAP.

On the example above:

- First line: the purchase order for company code 1710 and document type NB for vendor 0017386001 will be created with one item line with material TG11 in plant 1710.
- Second line: the purchase order for company code 1710 and document type NB for vendor 0017506873 will be created with one item line with material EWM12 in plant 1710.

In total the BAPI will create 2 purchase orders.

PLEASE CONSIDER THE REQUIRED LENGTH OF THE STRING!

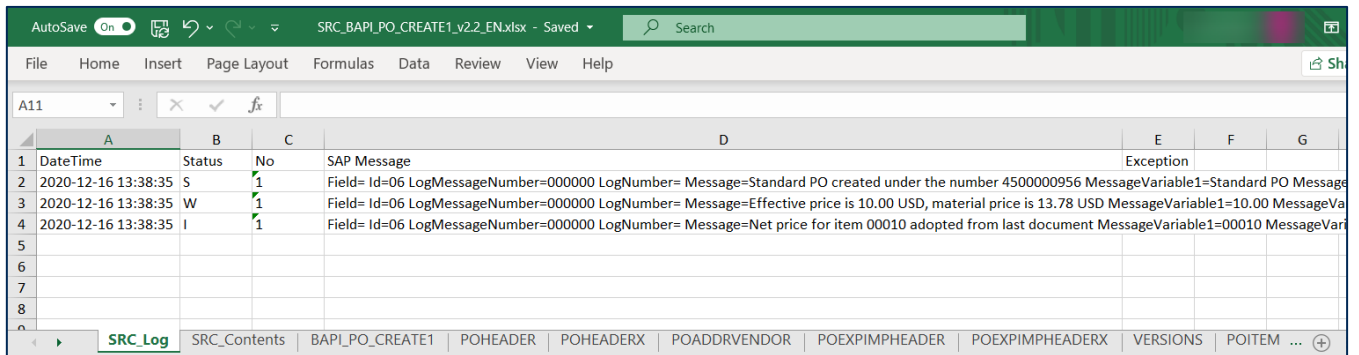
Eg. Vendor Account Number must have 10 characters:

- if you will enter in Excel the Vendor like “12345678” it will be not accepted by SAP
- if you will enter in Excel the Vendor like “0012345678” it will be accepted by SAP

Worksheet "SRC_Log"

The SRC_Log Worksheet will be created after BAPI processing. It contains the processing result log with the following information

- **DateTime** timestamp of the processing
- **Status** status of processing – (S)uccess, (W)arning, (E)rror, (I)nformation
- **SAP Message** technical message from SAP BAPI interface
- **Exception** exception message in case of failed processing



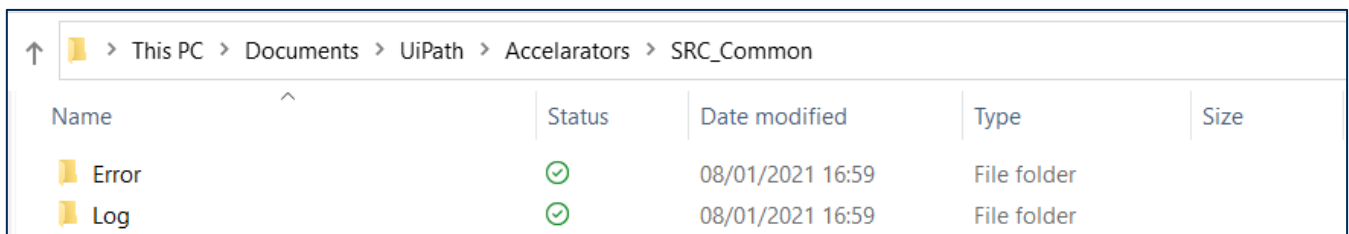
	A	B	C	D	E	F	G
1	DateTime	Status	No	SAP Message	Exception		
2	2020-12-16 13:38:35	S	1	Field= Id=06 LogMessageNumber=000000 LogNumber= Message=Standard PO created under the number 4500000956 MessageVariable1=Standard PO Message			
3	2020-12-16 13:38:35	W	1	Field= Id=06 LogMessageNumber=000000 LogNumber= Message=Effective price is 10.00 USD, material price is 13.78 USD MessageVariable1=10.00 MessageVa			
4	2020-12-16 13:38:35	I	1	Field= Id=06 LogMessageNumber=000000 LogNumber= Message=Net price for item 00010 adopted from last document MessageVariable1=00010 MessageVar			
5							
6							
7							
8							

Additional log information

Additional information about BAPI processing is stored in a central place and provides more insights.

Navigate to the folder SRC_Common on the level of the foundation package

- The folder **Error** is used for the saving of screenshots in case an error occurs during process execution
- The folder **Log** is used for the saving of execution logs in text format



Name	Status	Date modified	Type	Size
Error	✓	08/01/2021 16:59	File folder	
Log	✓	08/01/2021 16:59	File folder	

The log destination can be configured in the data configuration file.

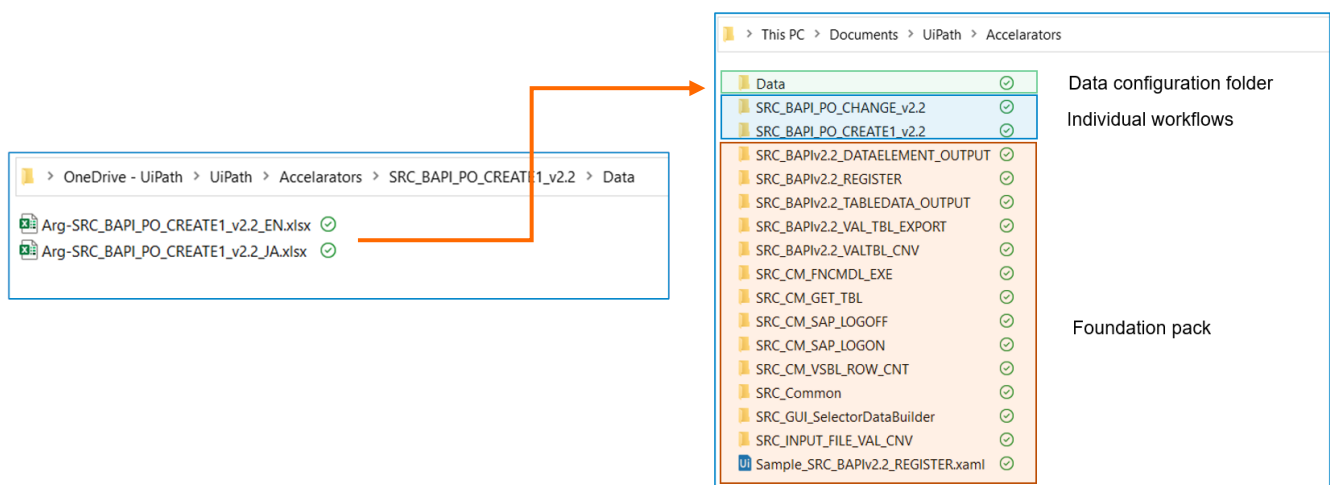
Data configuration (argument) file

Data configuration (argument) file contains information about the SAP system, mode of login, login information, paths to the logs and other useful configuration.

Eg. Arg-SRC_BAPI_PO_CREATE1_v2.2_EN.xlsx

Arg-SRC_BAPI_PO_CREATE1_v2.2_EN.xlsx - Saved		
File Home Insert Page Layout Formulas Data Review View Help		
C46		
A B C		
Name	Value	Description
BAPIName	BAPI_PO_CREATE1	Function module name to execute (BAPI name)
InputFilePath	SRC_BAPI_PO_CREATE1_v2.2\SRC_BAPI_PO_CREATE1_v2.2_EN.xlsx	Relative path of the file for input data.
CallWorkflowPath	SRC_BAPI_PO_CREATE1_v2.2\SRC_BAPI_PO_CREATE1_v2.2.xml	Relative path of the workflow.
DataCountSheet	POHEADER	Sheet name for header data.
Client	804	The SAP client you want to log into. (Input is allowed from 000 to 999)
Language	EN	The log in language you want to use. (EN : English, JA : Japanese)
SncLibraryPath		The full path and name of the SNC shared library that you want to use.
SncMode	0	Determines whether connections are secured with SNC. (0 : does not use SNC, 1 : uses SNC)
SncPartnerName		The Identity that you want to use for the destination server, if required by your SNC solution.
SncQOP		The Quality of Service that you want to use for SNC communication for the destination server. (1 : Authentication Only, 2 : Integrity Protection, 3 : Privacy Protection, 8 : Default, 9 : Maximum Security)
SncSSO		The credentials that you want to use when using SNC. (0 : Login with User/Password, 1 : Login with SNC Identity)
AdvancedParameters		A list of name value pairs, separated by semicolons, for any additional RFC Configuration parameters.
AppServer		The hostname of the SAP Application Server.
LogonGroup		The logon group from which the message server selects an application server.
MessageServer		The hostname of the SAP system's central instance message server.
SAPRouter		The SAP Router through which you want to establish a connection.
StatefulConnection	True	Indicates whether you want to establish a stateful connection. By default, this field is set to True.
SystemID	S4H	The SAP system's three-letter system ID.
SystemNumber	00	The SAP system's number.
Commit	X	Commit execute flag. (X : Execute commit, Other than X : Do not execute commit)
LogFolderPath	SRC_Common\Log	Relative path of the folder for output log data.
LogFileName	SRC_Result.log	Output log data filename.
LogType	EXCEL	Output Type of log data (TEXT : Text type, EXCEL : Excel type)
LogOutputLine	100	Number of output to Excel file.

Data configuration (argument) file from the individual workflow **must be moved** to the overall Data configuration folder to ensure a proper behavior and functionality of the accelerators.



Additional Processing

In addition to basic configuration processing, individual processing is added to the workflow described as "Additional processing" in the following list.

Workflow Name	Additional processing				
SRC_BAPI_REQUISITION_CREATE_v2.2					
SRC_BAPI_PO_CREATE1_v2.2					
SRC_BAPI_PO_CHANGE_v2.2					
SRC_BAPI_GOODSMVT_CREATE_v2.2	1		3		
SRC_BAPI_GOODSMVT_CANCEL_v2.2	1		3		
SRC_BAPI_INCOMINGINVOICE_CREATE_v2.2	1		3		
SRC_BAPI_INCOMINGINVOICE_CANCEL_v2.2	1		3		
SRC_BAPI_RESERVATION_CREATE1_v2.2					
SRC_BAPI_RESERVATION_DELETE_v2.2					
SRC_BAPI_MATPHYSINV_CREATE_MULT_v2.2					
SRC_BAPI_MATPHYSINV_COUNT_v2.2					
SRC_BAPI_MATPHYSINV_POSTDIFF_v2.2					
SRC_BAPI_SALESORDER_CREATEFROMDAT2_v2.2					
SRC_BAPI_SALESORDER_CHANGE_v2.2					
SRC_BAPI_OUTB_DELIVERY_CREATE_SLS_v2.2	1				
SRC_BAPI_OUTB_DELIVERY_CHANGE_v2.2	1		3		
SRC_LE_DELIVERY_UPDATE_v2.2		2			
SRC_BAPI BILLINGDOC_CREATEMULTIPLE_v2.2	1				
SRC_BAPI BILLINGDOC_CANCEL1_v2.2	1				
SRC_BAPI_PRODORD_CREATE_v2.2				4	5
SRC_BAPI_PRODORD_RELEASE_v2.2				4	
SRC_BAPI_ROUTING_CREATE_v2.2				4	
SRC_BAPI_PLANNEDORDER_CREATE_v2.2				4	
SRC_BAPI_PLANNEDORDER_DELETE_v2.2					
SRC_BAPI_PRODORDCONF_CREATE_TT_v2.2	1			4	
SRC_BAPI_PRODORDCONF_CANCEL_v2.2					5
SRC_BAPI_ACC_DOCUMENT_POST_v2.2					
SRC_BAPI_ACC_DOCUMENT_REV_POST_v2.2					
SRC_BAPI_ASSET_ACQUISITION_POST_v2.2				4	
SRC_BAPI_ASSET_REVERSAL_POST_v2.2				4	
SRC_BAPI_KEYFIGURE_CREATEMULTIPLE_v2.2			3		
SRC_BAPI_ACC_STAT_KEY_FIG_POST_v2.2					
SRC_BAPI_INCOMINGINVOICE_PARK_v2.2			3		
SRC_RFC_SAVE_TEXT_v2.2			3		

SRC_BAPI_MATERIAL_SAVEDATA_v2.2					
SRC_BAPI_BUPA_CREATE_FROM_DATA_v2.2			3		
SRC_BAPI_BUPA_BANKDETAIL_ADD_v2.2			3		
SRC_BAPI_BANK_CREATE_v2.2					5
SRC_BAPI_PROFITCENTER_CREATE_v2.2					
SRC_BAPI_COSTCENTER_CREATEMULTIPLE_v2.2			3		
SRC_BAPI_FIXEDASSET_CREATE1_v2.2					
SRC_BAPI_COSTCENTERGROUP_CREATE_v2.2					5
SRC_BAPI_PROFITCENTERGRP_CREATE_v2.2					5
SRC_BAPI_BOM_UPLOAD_SAVE_v2.2					5
SRC_BAPI_PROJECTDEF_CREATE_v2.2					5
SRC_BAPI_WBS_CREATE_v2.2					6
SRC_BAPI_NETWORK_MAINTAIN_v2.2					7
SRC_BAPI_PROJECT_MAINTAIN_v2.2			4		5

Additional processing: Pattern [1]

If the document is registered with reference to other documents/details, there is a possibility to lock BAPI according to the processing speed.

Therefore, about BAPI which is [1] in "Additional processing" of the above list, in addition to the basic configuration, it is configured to execute the process repeatedly (up to 5 times) until the lock is released. (It is possible to set "Delay Time" in CheckRetryCase.xml in SRC_BAPIv2.2_REGISTER included in SRC Common Components. If the error occurred, wait for several seconds, and retry BAPI.)

Additional processing: Pattern [2]

To register using the function module that is possible to be updated externally, it is necessary to set pre-processing and post-processing according to the environment.

Example: LE_DELIVERY_UPDATE

In the same function module, picking and goods issue confirmation processing is completed.

Get the exception message when an error occurs SAP. (If the message does not occur, the processing is set to Successful completion.)

In our environment, Additional processing: pattern [2] is set because of the data inconsistency. When using this BAPI, please add appropriate logic according to each environment so that data inconsistency does not occur.

- Picking quantity can exceed shipping quantity to process.
 - o This cause is the method of the reorganization of the decimal point when creating Excel worksheet, and setting decimal system of the user who executes BAPI. Even if the data is entered correctly, the error might occur. Be sure to add settings that are appropriate for your environment. (It is created so that the error will occur if you do not add and use it.)
- Multiple shipment confirmation documents are generated for one shipment and one picking.
 - o When executing the commit process after the test, multiple shipment confirmation documents could be registered. Therefore, BAPI_TRANSACTION_COMMIT is always executed as a countermeasure.
- VBELN_VL (shipment document) of the same worksheet as VBELN (continuation document for sales management) of VBPOK_TAB is completed process even if the other Number and missing Number.
 - o Since no message is outputted from SAP, this function ends normally. However, it has been confirmed that the goods issue confirmation cannot be completed for the goods issue document and status such as archived is entered. When using this BAPI, please use it after adding the necessary check logic when importing input data.

Additional processing: Pattern [3]

When the process ends normally, the processing result is a blank BAPI.
A configuration is added to display the required processing results for each type of RETURN.

Additional processing: Pattern [4]

When the process ends normally, the processing result is a blank BAPI.
A configuration is added to display the required processing result.

Additional processing: Pattern [5]

When the process is completed normally, the process result message is "000".
A fixed message is added and output to the log so that it can be determined that the process ended normally.

Additional processing: Pattern [6]

This function is registered WBS by executing the following 4 BAPIs.
After the 4 BAPIs are registered successfully, the processing is completed using "BAPI_TRANSACTION_COMMIT".
("BAPI_TRANSACTION_COMMIT" is provided in "SRC_BAPIv2.2_REGISTER")
If the error occurs in the following any 4 BAPIs, it is possible to occur in the short dump.

- "BAPI_PS_INITIALIZATION" (Initialization)
- "BAPI_BUS2054_CREATE_MULTI" (WBS registration)
- "BAPI_BUS2054_SET_STATUS" (WBS status change)
- "BAPI_PS_PRECOMMIT" (PS precommit process)

Additional processing: Pattern [7]

This function is registered Network by executing the following 4 BAPIs.
After the 4 BAPIs are registered successfully, the processing is completed using "BAPI_TRANSACTION_COMMIT".
("BAPI_TRANSACTION_COMMIT" is provided in "SRC_BAPIv2.2_REGISTER")
If the error occurs in the following any 4 BAPIs, it is possible to occur in the short dump.

- "BAPI_PS_INITIALIZATION" (Initialization)
- "BAPI_BUS2002_CREATE" (Network registration)
- "BAPI_BUS2002_ACT_CREATE_MULTI" (Change Network)
- "BAPI_PS_PRECOMMIT" (PS precommit process)