

SAP BUSINESS TECHNOLOGY PLATFORM | EXTERNAL

Technical Configuration Guide

Order Fulfillment for Utilities

THE BEST RUN 

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Overview

This document provides technical information about what needs to be configured to run the Workflow Management package *Order Fulfillment for Utilities*. The main audience of this document are technical personas, such as IT administrators or developers. The document describes what needs to be done to make the solution run. It mainly focuses on technical configuration aspects such as destinations, and less on business configuration aspects that can be done by a key user or business process expert.

Involved Solution Components

This chapter provides an overview of the solution components involved in SAP Cloud for Utilities that are used to run *Order Fulfillment for Utilities*.

- SAP Integration Suite
- SAP Workflow Management (subscribed service)
- SAP Cloud for Utilities Foundation (subscribed service)
- SAP Business Rule (subscribed service)
- SAP Process Visibility (subscribed service)
- SAP S/4 HANA Utilities

General Prerequisites

This chapter provides an overview of general prerequisites in SAP Cloud for Utilities that need to be met to run the Workflow Management package.

Note! In an order-to-provisioning scenario, this package follows the “Determine Business Scenario” package.

Procedure

Before using the Workflow Management package *Order Fulfillment for Utilities*, make sure that the following requirements are fulfilled:

1. [Global account](#) on SAP Business Technology Platform
 - You have an enterprise account on the SAP Business Technology Platform
 - You have set up the subaccount and spaces in the Cloud Foundry environment
2. SAP Business Technology Platform Services
 - You have set up the [Workflow Management Service](#) in your SAP Business Technology Platform cockpit,
 - You have set up the [SAP Integration Suite](#) tenant
 - You have configured SAP Cloud for Utilities Foundation (subscribed service)
3. Target Systems as in use:
 - You have configured SAP Subscription Billing
 - You have configured SAP S/4 HANA Utilities

Order Fulfillment for Utilities

SAP Integration Suite Artifacts

This chapter provides an overview of integration content in SAP Cloud for Utilities that can be used to run the Workflow Management package *Order Fulfillment for Utilities*.

Representation of Integration Flows involved in the process:

Integration Flows for Assign Fulfillment Process and Execute Order Fulfillment Process

Integration Flows serves to send/receive data to external systems. In Integration Flows it is possible to manipulate with data, for example, doing fields mapping. Tables 1 and 2 represent the list of Integration Flows to support Assign Fulfillment Process and *Execute Order Fulfillment process*.

Table 1. Integration Flows for Assign Fulfillment Process

Integration Flow Name	Integration Flows endpoint	Detailed Description
Get Business Partners Key Mappings	/http/mmdBusinessPartners	The purpose of this Integration is to retrieve the business partner key mappings from MDI and send the response to SAP Workflow Management.
Get Contract Accounts from SAP S/4HANA	/http/GetContractAccount	The purpose of this Integration Flow is to get contract account from S4HANA corresponding to S4 business partner and payment Details and send the response to SAP Workflow Management.

Table 2. Integration Flows for Execute Order Fulfillment Process

Integration Flow Name	Integration Flows endpoint	Detailed Description
Create Utility Sales Contracts in SAP S/4HANA	/http/CreateUtility	The purpose of this Integration Flow is to create a fulfill Utility/Deregulated order in SAP Cloud for Utilities foundation and send the response to SAP Workflow Management.
Create Non-Commodity Subscriptions in SAP Subscription Billing	/http/CreateNCSubscription	The purpose of this Integration Flow is to create a fulfill Subscription order in SAP Cloud for Utilities foundation and send the response to SAP Workflow Management.
Create Service Orders in SAP S/4HANA	/http/CreateServiceOrder	The purpose of this Integration Flow is to create a fulfill Service order in SAP Cloud for Utilities foundation and send the

Integration Flow Name	Integration Flows endpoint	Detailed Description
		response to SAP Workflow Management.
Create Sales and Distribution Orders in SAP S/4HANA	/http/CreateSDOrder	The purpose of this integration flow is to create a fulfill Physical order in SAP Cloud for Utilities foundation and send the response to SAP Workflow Management.

View SAP Help [Integration Guide](#) for more details.

Process Artifacts

The cycle consists of multiple subprocesses around the following steps:

A customer order is documented; the order is fulfilled, or the service is scheduled. SAP Cloud for Utilities with Workflow Management service enables you to manage these processes, pinpoint inefficiencies, and identify opportunities for improvement.

This chapter provides an overview of process artifacts in SAP Cloud for Utilities that are created to run Workflow Management Package *Order Fulfillment for Utilities*.

Process for Assign Order Fulfillment Process

A process based on the SAP Workflow Management allows you to quickly orchestrate tasks that span across people, applications, and organizations. Table 3. represents the list of processes defined to support the *Assign Order Fulfillment Process* artifact.

Table 3. Process.

Process	Detailed Description
Assign Order Fulfillment Process	This process indicates what type of item is ordered by the customer and calls the specified follow-up process (follow-up process is one of the variants for Execute Order Fulfillment)

Table 4 represents the list of workflows defined to support the *Assign Order Fulfillment Process* artifact.

Table 4. Workflows for Assign Order Fulfillment Process.

Workflows	Detailed Description
Get Master Data Integration Data	Workflow for getting the MDI data in the Assign Fulfillment Process in SAP Cloud for Utilities
Get Contract Account	Workflow for getting the contract account in the Assign Fulfillment Process in SAP Cloud for Utilities
Assign Fulfillment Process	Process is used to determine the consecutive Execute Order

Workflows	Detailed Description
	Fulfillment process scenario

Table 2. Process Attributes. represents the list of attributes defined to support the *Assign Order Fulfillment Process* artifact.

Table 2. Process Attributes.

Process Attributes	Detailed Description
Order ID	Customer Order ID from Customer order

Variants for Assign Order Fulfillment Process

The variants serve as extension points of the default process.

Procedure

Before using the process variants to run the Workflow Management Package *Order Fulfillment for Utilities*, make sure that the following requirements are fulfilled:

1. Configure Process Variants
 - You have configured process variants using the Process Flexibility Cockpit
 - Open Workflow Management Package *Order Fulfillment for Utilities*
 - Go to Process Variants and create the process variant.
 - **Note! There are mandatory steps already available.**
 - Make the necessary changes by dragging-and-dropping available steps into variant editor.

2. Activate Process Variants Using Process Flexibility Cockpit
 - Save and activate the process variant.

Table 6. Variants.

Variant	Workflow Definition Id	Detailed Description
Assign Fulfillment Process	assignfulfillmentprocess	This process variant indicates what type of item is ordered by the customer and calls the specified follow-up process (follow-up is one of variants for Execute Order Fulfillment).

Business Rules for Assign Order Fulfillment Process

SAP Business Rules allow you to simplify the management of decision logic across SAP solutions, encapsulate the business logic, and support the reuse of decision logic across different business processes. Table 7. Rules represents the list of rules to support the *Assign Order Fulfillment Process* artifact.

Please find more details on Business Rule configuration in the Parameters/Defaults section.

Table 3. Rules.

Rules	Detailed Description
DetermineOrderFulfillmentProcess	Business Rule to determine the dedicated Order Fulfillment process.
GetContractAccount	Business Rule Service to get contract account in SAP Cloud for Utilities.

Procedure

Before using the business rules to run the Workflow Management Package *Order Fulfillment for Utilities*, make sure that the following requirements are fulfilled:

1. Configure Business Rules
 - Configure business rules using the Process Flexibility Cockpit.
 - Open Workflow Management Package *Order Fulfillment for Utilities*,
 - Go to Decisions and choose the decision you would like to adjust,
 - Go to the Rules section and click *Edit* to make the necessary changes,
2. Activate Decisions Using Process Flexibility Cockpit
 - Save and release the version of the Decision.

Process for Execute Order Fulfillment

A process based on the SAP Workflow Management allows you to quickly orchestrate tasks that span across people, applications, and organizations. Table 8. Process represents the list of processes defined to support the *Execute Order Fulfillment* process.

Table 4. Process.

Process	Detailed Description
Execute Order Fulfillment	This process includes activities to fulfill specific order items. Subscription order items will be processed in the SAP Subscription Billing system; Service order items, Physical product items and Utility items will be processed in the S/4 HANA Utilities system.

Table 9. Workflows represents the list of workflows defined to support the *Execute Order Fulfillment* process.

Table 5. Workflows.

Workflows	Detailed Description
Fulfill Order Item	Workflow to fulfill order item in SAP S/4HANA

Workflows	Detailed Description
Update SAP Cloud for Utilities Foundation	Workflow to update SAP Cloud for Utilities Foundation in Fulfill Order Item process

Table 10. Process Attributes represents the list of attributes defined to support the *Execute Order Fulfillment* process.

Table 10. Process Attributes.

Process Attributes	Detailed Description
Order ID	Customer Order ID from Customer order

Variants for Execute Order Fulfillment

The variants serve as extension points of the default process.

Procedure

Before using the process variants to run the Workflow Management Package *Order Fulfillment for Utilities*, make sure that the following requirements are fulfilled:

1. Configure Process Variants
 - You have configured process variants using the Process Flexibility Cockpit
 - Open Workflow Management Package *Order Fulfillment for Utilities*
 - Go to Process Variants and create the process variant

Note! There are mandatory steps already available.
2. Activate Process Variants Using Process Flexibility Cockpit
 - *Save* and *activate* the process variant

Table 11. Variants.

Note: This is an example for variants that can be created. Please note that for the Commodity Process in the de-regulated you will need to download the package *German Market Extension to Order Fulfillment for Utilities* as well.

Variant	Workflow Definition Id	Detailed Description
Fulfill Service Product Order Item	fulfillserviceproductorderitem	This process variant is used to fulfill service order item.
Fulfill deregulated Commodity Product Order Item	fulfillderegulatedcommodityproductorderitem	This process variant is used to fulfill deregulated utility order item.

Variant	Workflow Definition Id	Detailed Description
Fulfill regulated Commodity Product Order Item	fulfillregulatedcommodityproductorderitem	This process variant is used to fulfill regulated utility order item.
Fulfill Physical Product Order Item	fulfillphysicalproductorderitem	This process variant is used to fulfill physical order item.
Fulfill Non-Commodity Subscription Order Item	fulfillnoncommoditysubscriptionorderitem	This process variant is used to fulfill subscription order item.

Business Rules for Execute Order Fulfillment Process

SAP Business Rules allow you to simplify the management of decision logic across SAP solutions, encapsulate the business logic, and support the reuse of decision logic across different business processes. Table 12 Rules represents the list of rules to support the *Execute Order Fulfillment Process* artifact.

Table 12. Rules.

Rules	Detailed Description
DetermineServiceEndpointForTargetSystems	Business Rule to determine the target system's endpoint URL.
RequestBusinessSystemID	Business Rule to request the respective system ID for the target system.
RequestOrderItemType	Business Rule Service to request order item type.

Please find more details on Business Rule configuration in the [Parameters/Defaults section](#).

Procedure

Before using the business rules to run the Workflow Management Package *Order Fulfillment for Utilities*, make sure that the following requirements are fulfilled:

3. Configure Business Rules
 - Configure business rules using the Process Flexibility Cockpit
 - Open Workflow Management Package *Order Fulfillment for Utilities*
 - Go to Decisions and choose the decision you would like to adjust
 - Go to the Rules section and click *Edit* to make the necessary changes
4. Activate Decisions Using Process Flexibility Cockpit
 - Save and release the version of the decision

Visibility Scenario for Order Fulfillment for Utilities

SAP Process Visibility enables process excellence, process transparency, and process transformation by providing one view of a process, regardless of where it runs – SAP or non-SAP, cloud or on-premise.

Table 6. Visibility.

Visibility Scenario	Detailed Description
Visibility Scenario for Order Fulfillment for Utilities	This visibility scenario ensures that the process transparency layer can monitor what process is called next based on the received item and the fulfillment of the order.

Procedure

Before using the process visibility to run the Workflow Management Package *Order Fulfillment for Utilities*, make sure that the following requirements are fulfilled:

1. Configure Process Visibility Dashboard
 - Configure the Process Visibility Dashboard using the Process Flexibility Cockpit
 - Open Workflow Management Package *Order Fulfillment for Utilities*
 - Go to Visibility Scenarios and choose the visibility scenario you would like to adjust
 - Make the necessary changes
2. Activate Process Visibility Dashboard using Process Flexibility Cockpit
 - *Save* and *activate* the Process Visibility Dashboard

Parameters/Defaults

Determine Order Fulfillment Process

If				Then	
order.Type	order.Sales Org	order.Distribution Channel	order.Division	Identification Id	Grouped Flag

In order for the Business Rule to execute correctly the decision table should be maintained in the rule itself. A decision table expression sequentially processes business rules based on a set of inputs. At runtime, the input data that is supplied to the decision table is compared against the defined conditions, starting with the first row. All cells are evaluated by checking the column value against a number of range comparisons. For each cell, a boolean result is returned. If all cells in a row are evaluated as true, the evaluation stops, and the expression returns the result associated with the current conditions. Otherwise, processing continues with the next table row until either a matching set of conditions is found, or the end of the table is reached.

Table 15 represents the list of defaults that are set to support an order items grouping by specific preset of attributes and trigger the subsequent process for grouped or not grouped order items. See chapter *Business Rules* for more information.

The Decision table of the rule consists of 2 parts – Condition part described by “If” part of the statement and result part described by “Then” part of the statement. The result will be returned in case if specific condition is evaluated as *true*.

In this specific Business rule condition consist of input values of Item structure defined in Data Objects: order type, order sales org, order distribution channel, and order division values passed from the workflow context and result consists of Identification ID and grouped flag which value provides the ID of the subsequent process that should be triggered after an execution of this Business rule.

Grouped flag can be set to true or false and by this process can be influenced to group or not to group similar items.

This is just an example how business rule can be filled. Input and result of business rule can be adjusted based on the customer requirement. The “order.type” and “Identification” columns should not be changed. The remaining columns are configurable.

Table 7. Defaults. Determine Order Fulfillment Process

Rules	Detailed Description						
Determine Order Fulfillment Process	Project Name		Determine Order Fulfillment Process				
	Project Id		9d14d2f362e34740b0bf47fe84d74a15				
	Rule Name		Determine Order Fulfillment Process				
	Rule Id		0fceb0aa9c02469c971a7cacd315c360				
	Input				Result		
	order.Type_ (example values below)	order.Sales Org (example values below)	Order.Distribution Channel (example values below)	Order.Division (example values below)	Identification Id (example values below)	Grouped Flag (example values below)	isDeregulated (example values below)
	= 'UMT1'	= 'U100'	= 'U1'	= '02'	'fulfillphysicalproductorderitem'	true	false
	= 'USB1'	= 'U101'	= 'U1'	= '01'	'fulfillnoncommoditysubscriptionorderitem'	true	false
	= 'UDRE'	= 'U101'	= 'U1'	= '01'	'preparestartofsupplyforgermanmarketcommunication'	false	true
	= 'USB1'	= 'U100'	= 'U1'	= '01'	'fulfillnoncommoditysubscriptionorderitem'	true	false
= 'UCM1'	= 'U100'	= 'U1'	= '01'	'fulfillregulatedcommodityproductorderitem'	true	false	
= 'USB1'	= 'U100'	= 'U1'	= '01'	'fulfillserviceproductorderitem'	true	false	
= 'USB1'	= 'U100'	= 'U1'	= 'U1'	'fulfillphysicalproductorderitem'	true	false	

Decision Table

If				Then		
order.Type	order.Sales Org	order.Distribution Chan...	order.Division	Identification Id	Grouped Flag	isDeregulated
= 'UMT1'	= 'U100'	= 'U1'	= '02'	'fulfillphysicalproduc...	true	false
= 'USB1'	= 'U101'	= 'U1'	= '01'	'fulfillnoncommodity...	true	false
= 'UDRE'	= 'U101'	= 'U1'	= '01'	'preparestartofsuppl...	false	true
= 'USB1'	= 'U100'	= 'U1'	= '01'	'fulfillnoncommodity...	true	false
= 'UCM1'	= 'U100'	= 'U1'	= '01'	'fulfillregulatedcom...	true	false
= 'USV1'	= 'U100'	= 'U1'	= '01'	'fulfillserviceproduct...	true	false
= 'UMT1'	= 'U100'	= 'U1'	= '01'	'fulfillphysicalproduc...	true	false

Determine Service Endpoint for Target Systems

In this specific Business Rule conditions consist of input values of item structure defined in Data Objects: item type and item action values passed from the workflow context and result consists of URL and system which will be used to execute the following steps of the process.

This is just an example how business rule can be filled. Input and result of business rule can be adjusted based on the customer requirement. The first three columns of the Input table should not be changed. The “system” column is configurable.

Table 8. Defaults. Determine Service Endpoint for Target System

Rules	Detailed Description				
Determine Service Endpoint for Target Systems	Project Name		Determine Service Endpoint for Target Systems		
	Project Id		af355833cce64024899fa40c42398b93		
	Rule Name		Determine Service Endpoint for Target Systems		
	Rule Id		cbd39a2acf99491dba456f183ca9aa0f		
	Input				
	item.type	Item.action <i>(example values below)</i>	url <i>(example values below)</i>	System <i>(example values below)</i>	
	'UDRE'	'fulfill'	'/http/CreateUtility'	'C4UCLNT340'	
	'USB1'	'fulfill'	'/http/CreateNCSubscription'	'c4u-sb'	
	'UCM1'	'fulfill'	'/http/CreateUtility'	'C4UCLNT340'	
	'USV1'	'fulfill'	'/http/CreateServiceOrder'	'C4UCLNT340'	
'UMT1'	'fulfill'	'/http/CreateSDOrder'	'C4UCLNT340'		

Decision Table				
If		Then		
type is equal to	action is equal to	url	system	
'UDRE'	'fulfill'	'/http/CreateUtility'	'C4UCLNT340'	
'USB1'	'fulfill'	'/http/CreateNCSubscription'	'c4u-sb'	
'UCM1'	'fulfill'	'/http/CreateUtility'	'C4UCLNT340'	
'USV1'	'fulfill'	'/http/CreateServiceOrder'	'C4UCLNT340'	
'UMT1'	'fulfill'	'/http/CreateSDOrder'	'C4UCLNT340'	

Request Business System ID

In this specific Business Rule conditions consist of input values of item structure defined in Data Objects: process name value passed from the workflow context and result consists of MDISourceSystem and S4SystemForCA which will be used to execute the following steps of the process.

In this example, the system names “C4U_340” and “commerce” refer to the system names defined for each business key. These names come from each destination that the business partner is replicated to. Every time the business partner is replicated, the target system sends back a response with the business name (the value is taken from value mapping).

In the case of SAP S/4HANA, the communication is point to point (not through integration flows), so the business system name is returned from the SAP S/4 HANA Utilities (“C4U_340”) system. In the case of SAP Commerce Cloud (“commerce”), it is the source and not a target of SAP Master Data Integration. Hence, the incoming message from SAP Commerce Cloud has the business name “commerce” and the SAP Commerce Cloud business partner number.

The full list of systems names (for SAP Master Data Integration) is defined in the Value Mapping artifact under (Constants, constant) <=> (MDM, BusinessSystemName).

This is just an example how business rule can be filled. Input and result of business rule can be adjusted based on the customer requirement. The first column of the Input table should not be changed. The “S4SystemForCA” and “MDISourceSystem” columns are configurable.

Table 9. Defaults. Request Business System ID

Rules	Detailed Description		
Request Business System ID	Project Name	Determine Service Endpoint for Target Systems	
	Project Id	af355833cce64024899fa40c42398b93	
	Rule Name	Request Business System ID	
	Rule Id	f0c7a3da18bb462e95004b0ba776bea1	
	Input	Result	
	process.name <u>(example values below)</u>	S4SystemForCA <u>(example values below)</u>	MDISourceSystem
	'getCA'	'C4UCLNT340'	'commerce'

Decision Table		
If	Then	
process name is equal to	S4SystemForCA	MDISourceSystem
'getCA'	'C4UCLNT340'	'commerce'

Destinations

This chapter provides an overview of destinations in SAP Cloud for Utilities that are used to run Workflow Management Package *Order Fulfillment for Utilities*.

Procedure

Before using Workflow Management Package *Order Fulfillment for Utilities*, make sure that the following requirements are fulfilled:

1. Configure Destinations in SAP Business Technology Platform
 - Configure a destination with SAP Business Rules called *BR* and use service instance details to make the connection <https://bpmruleruntime.{wfm-tenant}.hana.ondemand.com>
 - Configure a destination with SAP Integration Suite called *CPI* and specify the URL such as <https://{cpi-tenant}.hana.ondemand.com>
 - Configure destinations using SAP Workflow Management called *BPM* and use service instance details to make the connection, <https://{wfm-tenant}.hana.ondemand.com>

SAP Help [Link](#) on how to set up destinations.

Note! Destination types are HTTP supported and based on OAuth 2.0 Client Credentials or Basic Authentication.

Communication System, Communication Arrangement

This chapter provides an overview of the communication system and arrangements in SAP Cloud for Utilities that need to be configured to run the solution.

Roles/Authorizations

In SAP Cloud for Utilities, business processes include an optional activity that is used to handle the approval process.

[Authorization Configuration - SAP Help Portal](#)

Procedure

Before using the process defined to run the Workflow Management Package *Order Fulfillment for Utilities*, make sure that the following roles are assigned to users (see table below).

For additional help see [Workflow Management Roles](#)

Table 10. Roles

Role	Description
WMDeveloper	Permission to access Manage Packages that allows you to perform the following actions: <ul style="list-style-type: none">• View Workflow Management Packages• Create, edit, save, and activate Workflow Management Packages• Export and import Workflow Management Packages• Delete Workflow Management Packages
WMBusinessExpert	Permission to access Process Flexibility Cockpit that allows you to perform the following actions: <ul style="list-style-type: none">• Discover and explore pre-delivered Workflow Management Packages• Import Workflow Management Packages Configure process variants, decisions, and visibility scenarios within Workflow Management Packages
WMAdmin	Permission to access Manage Packages that allow you to perform the following actions: <ul style="list-style-type: none">• View Workflow Management Packages• Export and import packages• Delete Workflow Management Packages

Lifecycle Management

SAP recommends that you create additional accounts for testing, quality assurance, and production, so that you have distinctive separation of data and authorizations for each. Ideally, this setup follows the same separation that you use in your back-end system, minimizing external exposure of production data. New accounts are not preconfigured, so you will need to set up the SAP Business Technology Platform accordingly.