

SAP S/4HANA Cloud Integration with ServiceNow Configuration Guide

For SAP Cloud Integration Suite

Version 1.0 – June 2021

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1 Introduction

This document provides an overview of the artifacts delivered as part of the SAP S/4HANA Cloud Integration with ServiceNow for the SAP Integration Suite. The document discusses some of the common configuration steps needed before deploying the Integration Flows within the package. Read this guide carefully before configuring the integration content.

1.1 Coding Samples

Any software coding and/or code lines/strings ("Code") included in this documentation are only examples and are not intended to be used in a productive system environment. The Code is only intended to better explain and visualize the syntax and phrasing rules of certain coding. We do not warrant the correctness and completeness of the Code given herein.

1.2 Internet Hyperlinks

The documentation may contain hyperlinks to the Internet. These hyperlinks are intended to serve as a hint about where to find related information. We do not warrant the availability and the correctness of this related information or the ability of this information to serve a particular purpose.

2 Overview

The integration of SAP S/4HANA Cloud and ServiceNow processes can be customized. It is expected that you customize the process as per your business requirements. Adjustments can be made at different components, including:

- Adjustment to the integration flow externalized parameters,
- Adjustments to the ServiceNow setup,
- Adjustment to the mapping step to reflect the possible custom properties in ServiceNow.

In case changes have been made to the `sys_user` and `cmn_cost_center` tables in ServiceNow to include custom fields, XSD needs to be generated using the Eclipse Plugin. These XSDs need to be uploaded to the integration flow and the mapping adjusted accordingly.



3 Preparing the Systems for Integration

3.1 Prerequisites

To configure the integration content using this guide, you need to have access and authorizations to the systems listed below.

Access required:

- SAP S/4HANA Cloud Tenant Details
- SAP Integration Suite Tenant Details
- ServiceNow Tenant Details

Authorization required:

- SAP S/4HANA Cloud Tenant Details
 - Appropriate authorizations for the technical user that will be used to connect to the SAP S/4HANA Cloud Tenant.
- SAP Integration Suite Tenant Details.
 - AuthGroup.IntegrationDeveloper
- ServiceNow Tenant
 - Appropriate authorizations for the technical user that will be used to connect to the ServiceNow Tenant.

3.2 Adapter Installation

Installing the ServiceNow adapter is a prerequisite to use this Integration Package. For the adapter installation refer to the *ServiceNow Adapter and Plug-in Installation Guide* that is included as part of the ServiceNow adapter package.

3.3 Plug-in Installation

For the Eclipse plug-in (or Workbench) installation refer to the *ServiceNow Adapter and Plug-in Installation Guide* that is included as part of the ServiceNow adapter package.

4 Configuration

SAP S/4HANA Cloud, ServiceNow, and SAP Integration Suite need to be configured and prepared before the integration content package can be configured and deployed. Follow the steps mentioned in the next sections.



4.1 Configuration in SAP S/4HANA Cloud

A Technical Communication User is needed to call OData services in SAP S/4HANA Cloud from the Integration Suite. Communication Users in SAP S/4HANA Cloud are used for inbound communication and for processing messages in the system. The created technical user needs to have all the appropriate authorization to read user data.

4.2 Configuration in ServiceNow

This integration package is configured using basic Authentication toward ServiceNow. It is however also possible to use OAuth. Details of how to configure OAuth can be found in ServiceNow Adapter guides that can be obtained from within the ServiceNow adapter zip file.

A Technical Communication User is needed in ServiceNow to perform all integration calls from the Integration Suite. The created technical user needs to have all the appropriate authorization to create and update the sys_user table in ServiceNow.

4.3 Configuration in SAP Integration Suite

In this section, the settings of the integration flows are discussed, including the prerequisites, parameters of the Sender and Receiver systems, as well as others specific to each iFlow.

4.3.1 Replicate SAP S/4HANA Cloud Users to ServiceNow Users

This integration flow enables the replication of users from SAP S/4HANA Cloud to ServiceNow. The integration needs to be scheduled (if scheduled to recur) and checks for any changed or modified user data in SAP S/4HANA Cloud. Figure 4.1 depicts the business process to be implemented.



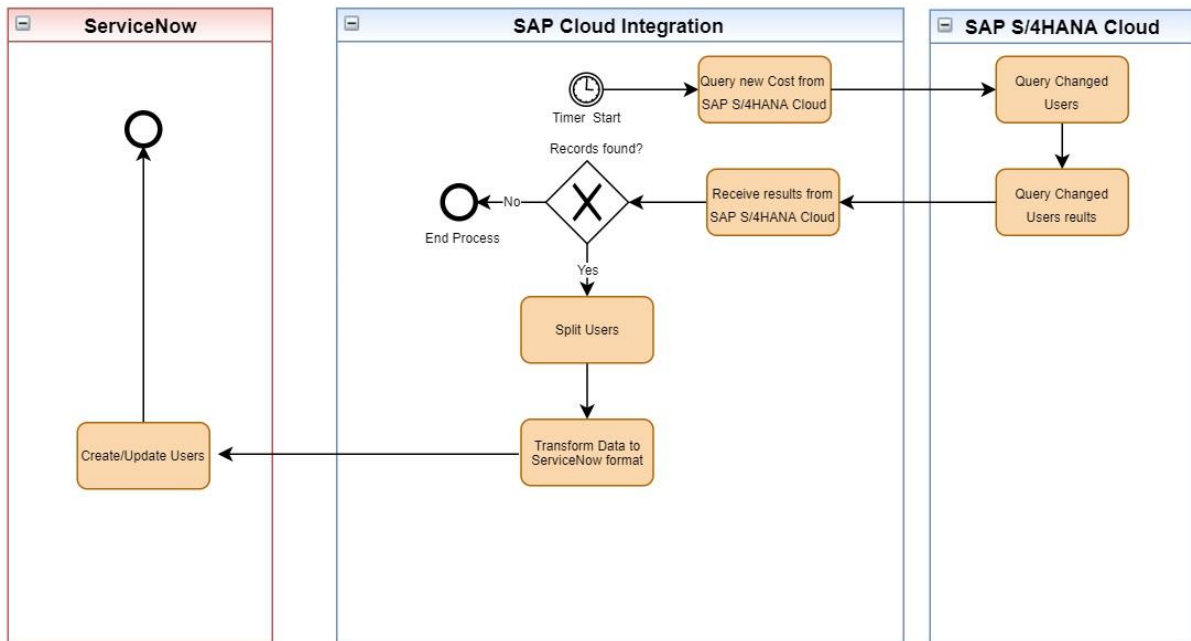


Figure 4.1 Process Diagram

The SAP Cloud Integration implementation of the process in Figure 4.1 is shown in Figure 4.2.

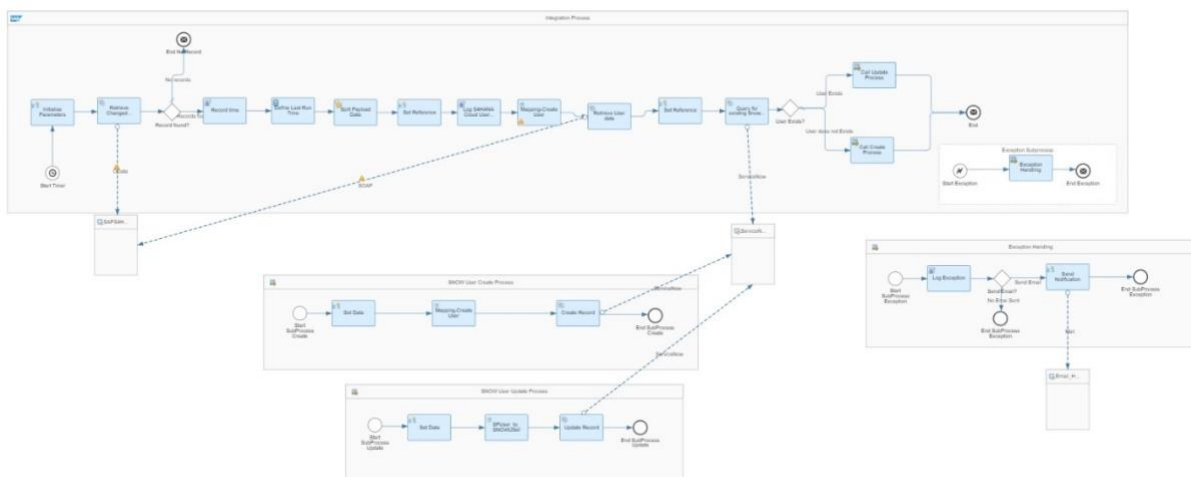


Figure 4.2 Integration Flow

4.3.1.1 Prerequisites

The following actions need to be performed as a prerequisite:



- Deploy the security artifacts that will be required during the configuration of integration content.
- Users need to define the time zone in configuration and the first time run date and hour from when to start replicating.

4.3.1.2 Deploying User Credentials in SAP Cloud Integration

To enable the Integration Flows to run, Credentials for both ServiceNow and SAP S/4HANA Cloud in the Cloud Integration Tenant need to be deployed. These are discussed in the next sections.

4.3.1.2.1 Deploying User Credentials for ServiceNow

This is necessary to connect to ServiceNow using basic Authentication (username and password). Follow the steps below:

1. In your SAP Cloud Integration tenant go to Monitor.
2. In Manage Security click on Security Material.
3. Click on the Add dropdown and select User Credentials.
4. Specify the name and description of the User Credential.
5. Fill in the username and password of your technical ServiceNow User.
6. Click on Deploy.

4.3.1.2.2 Deploying User Credentials for SAP S/4HANA Cloud

This is necessary to connect to SAP S/4HANA Cloud using basic Authentication (username and password). Follow the steps below:

1. In your SAP Cloud Integration tenant go to Monitor.
2. In Manage Security click on Security Material.
3. Click on the Add dropdown and select User Credentials.
4. Specify the name and description of the User Credential.
5. Fill in the username and password of your technical ServiceNow User.
6. Click on Deploy.

4.3.1.3 Configuration

Follow the below steps to configure the integration flow:

1. Open the integration flow "Replicate SAP S/4HANA Cloud Users to ServiceNow Users".
2. Click on Configure.
3. Configure "Timer". You can choose between:



- Run Once:** iFlow will be executed only once, can be used for the initial load.
- Schedule on Day:** iFlow will be executed on a specific date/time.
- Schedule to Recur:** iFlow will be executed at a regular interval and will replicate the changes from the source system to the target system (suggested mode).

Figure 4.3 Configure Timer

Note: Replace the default values of the parameters in the configurations based on your scenario and landscape.

4. Go to Receiver.
5. Configure the "Receiver" connector named "S4HANA_Cloud" to fit your specific landscape. See Figure 4.4.

Figure 4.4 Configure Receiver SAP S/4HANA Cloud for OData

The description of each of the fields in Figure 4.4 is presented in the table below.

Parameter	Description
S4HANA_Cloud_ODATA_Host	Specify the API hostname of your SAP S/4HANA Cloud to consume an OData Service. The hostname is part of the Address. Example: myxxxxx.s4hana.ondemand.com



S4HANA_Cloud_ODATA_Port	Specify the API port number of your SAP S/4HANA Cloud to consume the OData Service. Example: 443
Authentication	Specify the Authentication method to be used. The default value is Basic.
Credential Name	Specify the name of the credential you have deployed for SAP S/4HANA Cloud. This was discussed in Section 4.3.1.2.2.
CSRF Protected	Specify whether or not to activate the "CSRF Protected" option.

Table 1 Configure Receiver SAP S/4HANA Cloud for OData

Figure 4.5 Configure Receiver SAP S/4HANA Cloud for SOAP

The description of each of the fields in Figure 4.5 is presented in the table below.

Parameter	Description
S4HANA_Cloud_SOAP_Host	Specify the API hostname of your SAP S/4HANA Cloud to consume a SOAP Service. The hostname is part of the Address. Example: my305049.s4hana.ondemand.com

Credential Name	Specify the name of the credential you have deployed for SAP S/4HANA Cloud. This was discussed in Section 4.3.1.2.2.
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Table 2 Configure Receiver SAP S/4HANA Cloud for SOAP

6. Configure the “Receiver” connector named “ServiceNow”. See Figure 4.6.

Figure 4.6 Configure Receiver ServiceNow

The description of each of the fields in Figure 4.6 is presented in the table below.

Parameter	Description
Address	Specify the hostname of your ServiceNow tenant. Example.: https://dev11111.service-now.com
Authentication	Specify the Authentication method to be used. The default value is Basic.
Basic Credential Name	Specify the name of a deployed User Credentials artifact that holds the username and password used to authenticate with ServiceNow. This was discussed in section 4.3.1.2.1.

Table 3 Configure Receiver ServiceNow

Configure the “Receiver” connector named “Email_Handler”. See Figure 4.7.



Timer **Receiver** More

Receiver:

Adapter Type:

Connection

Address:

Credential Name:

Processing

From:

To:

Subject:

Figure 4.7 Configure Receiver Mail Server

The description of each of the fields in Figure 4.7 is presented in the table below.

Parameter	Description
Address	Specify a combination of the hostname and port of your email Server. Example.: smtp.gmail.com:587
Basic Credential Name	Specify the name of a deployed User Credentials artifact that holds the Username and Password used to authenticate with the mail server.
From	Specify the email address from which the exception notification should come from.
To	Specify the email address where to sent the exception notification to.
Subject	Specify the template to be used as a subject of your email.

Table 4 Configure Receiver Mail Server

7. Configure “More” as shown in Figure **4.8**.



Receiver **More**

Type:	All Parameters
BodyLogging:	TRUE
EnableMailNotification:	TRUE
HeaderLogging:	FALSE
InitialQueryDate:	2020-01-01T09:13:28
PropertyLogging:	FALSE
Timezone:	CET

Figure 4.8 Configure More options

The description of each of the fields in Figure 4.8 is presented in the table below.

Parameter	Description
InitialQueryDate	<p>This date is used as a starting point for the query to retrieve changed users in SAP S/4HANA Cloud. The date is written using the format: YYYY-MM-DDT'hh:mm:ss</p> <p>Example: 2021-01-01T00:00:00.</p> <p>In case you use the date in the example, the first time the integration flow runs, all users' data that have been changed from "2021-01-01T00:00:00" will be synchronized to ServiceNow. The integration Flow then keeps track of the last time it has run. The subsequent run will query data from the last time the integration flow run.</p>
BodyLogging	Possible values "TRUE" / "FALSE". Specify "TRUE" to log the Message Body (Not recommended in a live environment). Use "FALSE" as a default value.
HeaderLogging	Possible values "YES" / "NO". Specify "YES" to log Message Headers. Use "FALSE" as a default value.
PropertyLogging	Possible values "TRUE" / "FALSE". Specify "TRUE" to log Message properties (Not recommended in a live environment).



	Use "FALSE" as a default value.
TimeZone	Specify the timezone to be used. The default value is CET.
EnableMailNotification	Possible values "TRUE" / "FALSE". In case the value is set to "TRUE", the integration Flows will send a notification to the email address specified in the To field of the Mail server. See Table 4. The notification is sent in case an exception occurs.

Table 5 Configure More options

8. Save and Deploy.

4.3.1.4 Integration Message Mapping

In case your organization uses custom fields in ServiceNow, you might need to customize the provided integration flow and adapt it to your needs. Users should update the existing solution by creating a new XSD using the Eclipse ServiceNow Workbench Plug-in, change this schema in the message mapping, and add custom connections as needed.

4.3.2 Replicate Cost Centers from SAP S/4HANA Cloud to ServiceNow

This integration flow enables the replication of newly created Cost Centers from SAP S/4HANA Cloud to ServiceNow. The integration needs to be scheduled (if scheduled to recur) and checks for any new Cost Centers data in SAP S/4HANA Cloud. Figure 4.9 depicts the business process to be implemented.

Note: This integration is meant to synchronize Cost Centers based upon creation date. It only picks newly created Cost Centers. It is possible to synchronize specific Cost Centers using the "CostCenters" external property in the Integration Flow.



4.3.2.2 Deploying User Credentials in SAP Cloud Integration

To enable the Integration Flows to run, Credentials for both ServiceNow and SAP S/4HANA Cloud need to be deployed in the Cloud Integration Tenant. These are discussed in the next sections.

4.3.2.2.1 Deploying User Credentials for ServiceNow

This is necessary to connect to ServiceNow using basic Authentication (username and password). Follow the steps below:

1. In your SAP Cloud Integration tenant go to Monitor.
2. In Manage Security click on Security Material.
3. Click on the Add dropdown and select User Credentials.
4. Specify the name and description of the User Credential.
5. Fill in the username and password of your technical ServiceNow User.
6. Click on Deploy.

4.3.2.2.2 Deploying User Credentials for SAP S/4HANA Cloud

This is necessary to connect to SAP S/4HANA Cloud using basic Authentication (username and password). Follow the steps below:

1. In your SAP Cloud Integration tenant go to Monitor.
2. In Manage Security click on Security Material.
3. Click on the Add dropdown and select User Credentials.
4. Specify the name and description of the User Credential.
5. Fill in the username and password of your technical ServiceNow User.
6. Click on Deploy.

4.3.2.3 Configuration

Follow the below steps to configure the integration flow:

1. Open the integration flow.
2. Click on Configure.
3. Configure "Timer". You can choose between:
 - Run Once:** iFlow will be executed only once, can be used for the initial load.
 - Schedule on Day:** iFlow will be executed on a specific date/time.
 - Schedule to Recur:** iFlow will be executed at a regular interval and will replicate the changes from the source system to the target system (suggested mode).



Figure 4.11 Configure Timer

Note: Replace the default values of the parameters in the configurations based on your scenario and landscape.

4. Go to Receiver.
5. Configure the "Receiver" connector named "S4HANA_Cloud" to fit your specific landscape. See Figure 4.12.

Figure 4.12 Configure Receiver SAP S/4HANA Cloud for OData

The description of each of the fields in Figure 4.12 is presented in the table below.

Parameter	Description
S4HANA_Cloud_ODATA_Host	Specify the API hostname of your SAP S/4HANA Cloud to consume an OData Service. The hostname is part of the Address. Example: myxxxxx.s4hana.ondemand.com
Credential Name	Specify the name of the credential you have deployed for SAP S/4HANA Cloud. This was discussed in Section 4.3.1.2.2.



CSRF Protected	Specify whether or not to activate the “CSRF Protected” option.
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Table 6 Configure Receiver SAP S/4HANA Cloud for OData

6. Configure the “Receiver” connector named “ServiceNow”. See Figure 4.13.

Figure 4.13 Configure Receiver ServiceNow

The description of each of the fields in Figure 4.13 is presented in the table below.

Parameter	Description
Address	Specify the hostname of your ServiceNow tenant. Example.: https://dev11111.service-now.com
Authentication	Specify the authentication method to be used. Note that Basic authentication is selected by default.
Basic Credential Name	Specify the name of a deployed User Credentials artifact that holds the username and password used to authenticate with ServiceNow. This was discussed in Section 4.3.1.2.1.

Table 7 Configure Receiver ServiceNow

7. Configure the “Receiver” connector named “Email_Handler”. See Figure 4.14.



Figure 4.14 Configure Receiver Mail Server

The description of each of the fields in Figure 4.14 is presented in the table below.

Parameter	Description
Address	Specify a combination of the hostname and port of your email Server. Example.: smtp.gmail.com:587
Basic Credential Name	Specify the name of a deployed User Credentials artifact that holds the Username and Password used to authenticate with the mail server.
From	Specify the email address from which the exception notification should come from.
To	Specify the email address where to sent the exception notification to.
Subject	Specify the template to be used as a subject of your email.

Table 8 Configure Receiver Mail Server

8. Configure “More” as shown in Figure 4.15.



Timer Receiver **More**

Type:	All Parameters
CostCenters:	
EnableMailNotification:	TRUE
ExceptionLogging:	FALSE
InitialQueryDate:	2021-01-01T00:00:00
LogMessageBody:	FALSE
LogMessageHeader:	FALSE
LogMessageProperty:	FALSE

Figure 4.15 Configure More options

The description of each of the fields in Figure 4.15 is presented in the table below.

Parameter	Description
CostCenters	Specify a list of Cost Centers separated by a comma. Only fill in this field in case you would like to synchronize a specific set of cost centers. In which case the integration flow will replicate the specified Cost Center without checking the creation or update dates.
EnableMailNotification	Possible values "TRUE" / "FALSE". In case the value is set to "TRUE", the integration Flows will send a notification to the email address specified in the To field of the Mail server. See Table 4. The notification is sent in case an exception occurs.
ExceptionLogging	Possible values "TRUE" / "FALSE". Specify "TRUE" to log the exception (Not recommended in a live environment). Use "FALSE" as a default value.
InitialQueryDate	<p>This date is used as a starting point for the query to retrieve created cost centers in SAP S/4HANA Cloud. The date is written using the format: YYYY-MM-DDT'hh:mm:ss.ss</p> <p>Example: 2021-01-01T00:00:00.</p> <p>In case you use the date in the example, the first time the integration flow runs, all cost centers' that have been created from "2021-01-01T00:00:00" will be synchronized</p>



	to ServiceNow. The integration flow then keeps track of the last time it has run. The subsequent run will query data from the last time the integration flow run.
LogMessageBody	Possible values "TRUE" / "FALSE". Specify "TRUE" to log the Message Body (Not recommended in a live environment). Use "FALSE" as a default value.
LogMessageHeader	Possible values "YES" / "NO". Specify "YES" to log Message Headers. Use "FALSE" as a default value.
LogMessageProperty	Possible values "TRUE" / "FALSE". Specify "TRUE" to log Message properties (Not recommended in a live environment). Use "FALSE" as a default value.

Table 9 Configure More options

9. Save and Deploy.

4.3.2.4 Integration Message Mapping

In case your organization uses custom fields in ServiceNow, you might need to customize the provided integration flow and adapt it to your needs. Users should update the existing solution by creating a new XSD using the Eclipse ServiceNow Workbench Plug-in, change this schema in the message mapping, and add custom connections as needed.

5 Appendix

5.1 Generating Schema from Eclipse Plug-in and Replacing Standard Schema Used in Integration Flow

Currently, the integration package uses standard fields and properties provided in ServiceNow. In case other custom fields are needed; a new XSD must be generated with the ServiceNow Eclipse Plug-in, the default XSD on mapping must be replaced by the created one, and these fields should also be mapped.

Steps to create an XSD:

1. Open Eclipse.
2. Go to Windows > Perspective > Open Perspective > Other.



3. Select ServiceNow Adapter and click Open.
4. Go to XSD Generator.
5. Select a Version.
6. Select an Operation. First Create, then Update.
7. Select the ServiceNow Table. Example: cmn_cost_center
8. Select Request XSD for both the Create and Update Operations.
9. Click on Save XSD and select a folder.
10. Replace default XSD from mapping in SAP Cloud Integration to the recently created XSD.

