



PUBLIC

2024-02-07

# Prepackaged Integration with SAP Field Service Management

# Content

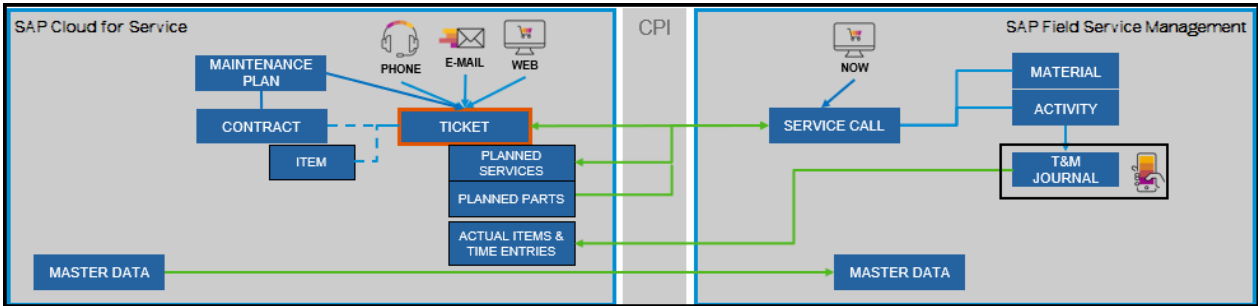
<b>1</b>	<b>Overview</b> .....	<b>3</b>
<b>2</b>	<b>Configure SAP Field Service Management</b> .....	<b>4</b>
<b>3</b>	<b>Configure SAP Service Cloud</b> .....	<b>7</b>
<b>4</b>	<b>Configure SAP Cloud Integration</b> .....	<b>12</b>
<b>5</b>	<b>Develop Custom Integration Flows</b> .....	<b>25</b>
<b>6</b>	<b>Configure SAP S/4HANA On-Premise or SAP ERP to Replicate Stock</b> .....	<b>33</b>
<b>7</b>	<b>Additional Configuration for SAP Field Service Management</b> .....	<b>36</b>
<b>8</b>	<b>Additional Configurations for SAP Service Cloud</b> .....	<b>37</b>
<b>9</b>	<b>Replicate Master Data</b> .....	<b>40</b>
<b>10</b>	<b>Configure Automatic Replication of Tickets</b> .....	<b>55</b>
<b>11</b>	<b>Integrate Tickets</b> .....	<b>56</b>
<b>12</b>	<b>Integration at the User Interface Level</b> .....	<b>81</b>
<b>13</b>	<b>Troubleshooting</b> .....	<b>85</b>
13.1	System Unavailability during Integration .....	85
<b>14</b>	<b>More Information</b> .....	<b>86</b>

# 1 Overview

Integrating SAP Service Cloud with SAP Field Service Management (FSM) enables to achieve the end to end service process.

While the omnichannel support and initial ticket planning are done in SAP Service Cloud, the scheduling and field service execution on the mobile device are handled in SAP Field Service Management. The updates flow from one system to the other based on the defined scope.

The following image depicts the process flow of this integration:



# 2 Configure SAP Field Service Management

Learn about the configurations to be performed on the SAP Field Service Management system to enable integration with SAP Service Cloud.

## 2.1 Configure Account and Company

As an administrator, set up account and company in the SAP Field Service Management system. The account and company that you configure here are used for the integration with SAP Cloud for Customer.

### Set up an Account

Provision an SAP Field Service Management tenant. For more information, see <https://docs.coresystems.net/>. After you provision a tenant in the SAP Field Service Management system, you get an FSM account, a password, and a **SUPERUSER** role with a password.

### Set up a Company

To create a company in the SAP Field Service Management system, follow these steps:

#### Note

When you log on to the system as an administrator, make sure that the *Sign in with User* option is enabled.

1. Navigate to *Companies* and click *Create*.
2. On the *Create Company* window, enter the required details. Make sure, you select **standalone** for *Type*.
3. Click *Save*.

## 2.2 Create the OAuth Client

As an administrator, create an OAuth client so that it can be deployed in the SAP Cloud Platform Integration system.

To create the OAuth client, follow these steps:

1. Navigate to *Clients* and click *Create*.

2. In the *Create Client* window, enter the required details. Make sure that you select *CLIENT\_SECRET* for *Client Authentication Method*.
3. In the *User Groups* section, select *Admin*. This assigns user group to the company that you have created for this integration.
4. Click *Save*.

## 2.3 Configure Business Rules for T&M Approval

As an administrator, select the business rules that must be enabled to approve T&M journal.

The business rules to be enabled are as follows:

- SAMPLE - Newly created Efforts require approval to be synchronized to the ERP
- SAMPLE - Newly created Expenses require approval to be synchronized to the ERP
- SAMPLE - Newly created Material require approval to be synchronized to the ERP
- SAMPLE - Newly created Mileage require approval to be synchronized to the ERP
- SAMPLE - Update responsible person of all checklists linked to an activity when releasing the activity to technician

## 2.4 Configure the FSM Connector

As an administrator, configure the FSM connector in the SAP Field Service Management system.

To configure the FSM connector, follow these steps:

1. Go to ► *Company* ► *FSM Integrations* ► *FSM Connector* ► and check *Enabled* to set it to **true**.
2. Set up the endpoint where you want to send the notifications.
3. In the *Current configuration* section, set up the Ticket iflow endpoint with the following information:

Field	Description
URL	Enter the SAP Field Service Management to SAP Service Cloud Ticket iflow endpoint. For example, <a href="https://c****-iflmap.hcisb.int.sap.eu2.hana.on-demand.com/http/FSM/C4C/Ticket">https://c****-iflmap.hcisb.int.sap.eu2.hana.on-demand.com/http/FSM/C4C/Ticket</a>
Auth method	Basic
Auth user	A CPI user who has <b>ESBMessaging.send</b> role
Auth password	The password of the auth user.
Integration Type	C4C

4. In the *Extended configuration* section, enable the following options if they are set as **in scope**:

Option	Field	Description
Attachment Enabled	Attachment Url	<p>Enter the CPI iflow endpoint URL for attachment replication.</p> <p>For example: <code>https://c****-iflmap.hcisb.int.sap.eu2.hana.ondemand.com/http/FSM/C4C/Attachments</code></p> <div data-bbox="1040 506 1427 674" style="border: 1px solid #ccc; background-color: #f9f9f9; padding: 5px;"> <p><b>Note</b></p> <p>The <b>Attachments</b> in the url is user defined, but it has to be unique to your CPI tenant.</p> </div>
Contact Enabled	Contact Url	<p>Enter the CPI iflow endpoint URL for contact replication.</p> <p>For example: <code>https://c****-iflmap.hcisb.int.sap.eu2.hana.ondemand.com/http/FSM/C4C/ContactPersonRelationship</code></p> <div data-bbox="1040 978 1427 1146" style="border: 1px solid #ccc; background-color: #f9f9f9; padding: 5px;"> <p><b>Note</b></p> <p>The <b>ContactPersonRelationship</b> in the url is user defined, but it has to be unique to your CPI tenant.</p> </div>

5. Click [Save](#).

# 3 Configure SAP Service Cloud

As an administrator, configure SAP Service Cloud so that it can send notifications to the iFlows of SAP Cloud Platform Integration.

## 3.1 Enable Integration

As an administrator, enable the feature in SAP Service Cloud.

Go to [Business Configuration](#) > [Implementation Projects](#) > [Your Project](#) > [Edit Project Scope](#) > [Questions](#) .  
Expand [Communication and Information Exchange](#) > [Integration with External Applications and Solutions](#) and then select [Integration with SAP Field Service Management](#). Enable the scoping questions relevant to your business process and click *Finish*.

## 3.2 Create a Communication System

A communication system represents an external system for communication. A communication system is also the reference for the ID mapping maintained in your cloud solution.

### Prerequisites

Do the following:

1. From KeyStore, download the SAP Cloud Integration (CI) root certificates.
  1. Log on to the CI system.
  2. Go to [Operation View](#) > [KeyStore](#) > [Current](#) , and download the following certificates:
    - [sap\\_baltimore cybertrust root](#)
    - [sap\\_verisign class 3 public primary certification authority - g5](#)
2. Import the CI root certificates to the SAP Service Cloud trust center.
  1. Log on to the SAP Service Cloud system as an administrator.
  2. Go to [Administrator](#) > [Common Tasks](#) > [Edit Certificate Trust List](#) > [Upload](#) , and upload the CI root certificates.

## Procedure

To enable integration with SAP Field Service Management, you must create a new communication system (and not use an existing one).

To create a communication system in SAP Service Cloud, follow these steps:

1. Log on to SAP Service Cloud as an administrator.
2. From the *Administrator* work center, select *Communication Systems*.
3. Click *New*.
4. On the *New Communication System* screen, in the *Basic Information* section, enter the following details:

Field	Description
ID	ID or name of the system to be connected.
Host Name	The CI tenant link.
System Access Type	Internet

### Note

In *System Instances*, the *System Instance ID* must be the same as the company ID created in the SAP Field Service Management.

5. Click *Save and Close*.
6. On the newly created communication system, click *Actions*, and set the system to *Active*.

## 3.3 Configure Communication Arrangements

To enable the integration between an on-premise system and the cloud solution, you must configure and activate the communication arrangements. You can create communication arrangements in bulk by entering common information at one go.

You must configure the Communication Arrangement for Communication Scenarios: Ticket Integration with SAP Field Service Management, and Product Category Integration To External Systems.

To create the communication arrangement for Ticket Integration with SAP Field Service Management, follow these steps:

1. Log on as an administrator, and go to ► *Administrator* ► *General Settings* ► *Communication Arrangement* ► *New* ✎.
2. On the *New Communication Arrangement* screen, in the *Communication Scenarios* section, select *Ticket Integration with SAP Field Service Management*, and then click *Next*.



- On the *Define Business Data* tab, in the *Communication System* section, enter the following details, and click *Next*:

Field	Description
System Instance ID	Enter <i>FSM</i> .
Code List Mapping	Select <i>Tickets Integration</i> .

- On the *Define Technical Data* tab, enter the required information for outbound communication, and click *Next*.
- Review the settings and click *Finish* to confirm.
- Select the newly added communication arrangement and click *Edit*.
- In the *Communication Credentials* step, provide the inbound and outbound credentials.
  - If you use inbound communication, select the *Authentication Method* in the *Inbound Communication Credentials* section. In the *User ID* field, click *Edit Credentials*.  
Based on the selected authentication method, you must define the credentials of the communication user as described in the following table:

#### Note

The user ID of the communication user is created automatically.

Authentication Method	Settings
SSL Client Certificate	<p>If you use this authentication method, do one of the following:</p> <ul style="list-style-type: none"> <li>Upload the public key certificate that has been provided by your communication partner as part of provisioning. You can also receive it on creating an incident in the component for your respective SAP Middleware (LOD-HCI/ LOD-PI).</li> <li>If the communication partner can't provide a certificate, then create a PKCS#12 key pair file (password encrypted, containing a public key certificate and a private key) and provide the credentials to your communication partner. To upload a PKCS#12 file, follow these steps:               <ol style="list-style-type: none"> <li>Click <i>Certificate</i> and select the relevant <i>Upload Certificate</i>.</li> <li>Click <i>Ok</i>.</li> </ol> <p>To create a PKCS#12 key pair file, follow these steps:</p> <ol style="list-style-type: none"> <li>Click <i>Certificate</i> and select <i>Create and Download Key Pair</i>.</li> <li>Enter a name for the PKCS#12 file and save it.</li> <li>Define a password for the PKCS#12 file and click <i>OK</i>. The details of the certificate are displayed.</li> <li>Click <i>OK</i>.</li> </ol> </li> </ul>

Authentication Method	Settings
User ID and Password	<p>If you use this authentication method, you must define a password as follows:</p> <ol style="list-style-type: none"> <li>1. Select <a href="#">Change Password</a>.</li> <li>2. Enter a password.</li> </ol> <div style="border: 1px solid #ccc; padding: 5px; margin-top: 10px;"> <p><b>Note</b></p> <p>You need the user ID and password while configuring the receiver communication channel in SAP Middleware.</p> </div> <ol style="list-style-type: none"> <li>3. Click <a href="#">OK</a>.</li> </ol>

- If you use outbound communication, select the [Authentication Method](#) in the [Outbound Communication Credentials](#) section. Based on the selected authentication method, you must define the credentials of the communication user as described in the following table:

Authentication Method	Settings
SSL Client Certificate	SAP System Key Pair (recommended)
User ID and Password	Trusted Third-Party Key Pair

8. In the [Technical Data](#) tab, do the following:
  - Click [Edit Advanced Settings](#). For each of the communication scenarios, check the details on the [Outbound](#) tab and maintain the [Path](#) field.

#### → Remember

Enter the same path maintained in the **address** field of the sender adapter configuration of integration flows.

- Click [Save and Reactivate](#).

## Set Communication Arrangement Filters

Filters in Communication Scenario Business Partner Replication to SAP Business Suite are also enabled for Ticket Integration with SAP Field Service Management.

If needed, you can maintain the four outbound scenario filters:

- Block Contact Persons from being sent
- Block Prospects from being sent
- Send Business Partners with In Preparation status
- Send merged Business Partners

## Procedure

To set communication arrangement filters in SAP Service Cloud, follow these steps:

1. Log on to SAP Service Cloud as an administrator.
2. From the *Administrator* work center, select *Communication Arrangement Filters*.
3. Click *Add Row*.
4. In the new row, specify the *New Communication Partner* and the *Communication Scenario Name*.
5. In the *Filters table*, add rows for different filters.

# 4 Configure SAP Cloud Integration

Configure the iFlow in SAP Cloud Integration (CI) to replicate master data and tickets between SAP Service Cloud and FSM.

## Note

Upgrade your iflows to the latest version. Check the [Change Log](#) of the iflows for the version details.

## Prerequisites

- You need to download root certificates for the following URLs:
  - <cluster>.coresuite.com
  - <cluster>.coresystems.net
  - C4C Tenant URL
- Import root certificates to the CI KeyStore.  
Import C4C and FSM root certificates. FSM root certificates can be downloaded from the <https://letsencrypt.org/certificates> service (copy and paste into your browser address bar)

## Caution

The root certificates are subject to periodic changes and hence check [here](#) for the latest updates.

## Sample Code



```
https://letsencrypt.org/certs/trustid-x3-root.pem.txt
```

Go to **Operations View > KeyStore > Add**, and click *Certificate*.

- Deploy the OAuth2 credentials of FSM.  
In CI, click **Operations View > Security Material > Add > OAuth2 Credentials** and enter details as shown in the following table:

Field	Description
Name	Enter a name. For example, <b>FSM_INT_CLIENT_CREDENTIALS</b> .
Grant Type	Select <i>Client Credentials</i> .
Description	Enter a description.
Authentication URL	Enter <a href="https://auth.coresuite.com/api/oauth2/v1/token">https://auth.coresuite.com/api/oauth2/v1/token</a>

Field	Description
Client ID	Enter the client ID that is created in SAP Field Service Management.
Client Secret	Enter the client secret as generated in SAP Field Service Management.
Client Authentication	Select <i>Send as Request Header</i> .
Include Scope	Select this checkbox to include scope.
Scope	Enter <i>General</i> .
Content Type	Select <i>application/x-www-form-urlencoded</i> .

- Deploy the SAP Service Cloud business user credentials for SAP Service Cloud OData access for business partner relationship.  
In CI, click [Operations View](#) > [Security Material](#) > [Add](#) > [User Credentials](#) .
- Deploy the user credentials of SAP Service Cloud communication system, configured for the inbound communication (if user credentials are used as authentication).  
In CI, click [Operations View](#) > [Security Material](#) > [Add](#) > [User Credentials](#) .

## 4.1 Configure the iFlow Parameters

Configure the iFlow parameters for the SAP Service Cloud and SAP Field Service Management integration.

For all integration flows of direction SAP Service Cloud to SAP Field Service Management:

- **Address:** Configure the address field.
- **Authorization:** Configure the authorization role or the SAP Service Cloud client certificate based on the SAP Service Cloud outbound arrangement authorization method used.

## Replicate Contact Person Relationship to SAP Field Service Management

Parameter	Description
Receiver	Select <i>FSM</i>
FSM host name	Enter the host URL. For example, <a href="https://ds.coresuite.com/ds/api/directory/v1/accounts/{FSM-account-name}">https://ds.coresuite.com/ds/api/directory/v1/accounts/{FSM-account-name}</a> .
FSM account name	Enter the FSM account name.
Company	Enter the company name.

Parameter	Description
Complete Payload	Keep the false option to avoid sending the whole set of data during the delta change and the possibility of overwriting the correct data.
Client Identifier	Enter the Client ID.
Credential name	Enter the OAuth2 credential of FSM that you deployed.

## Replicate Employee to SAP Field Service Management

Parameter	Description
Receiver	Select <i>FSM</i>
FSM host name	Enter the host URL. For example, <a href="https://de.coresuite.com">https://de.coresuite.com</a> .
FSM account name	Enter the FSM account name.
Company	Enter the company name.
Client Identifier	Enter the Client ID.
Credential name	Enter the OAuth2 credential of FSM that you deployed.

## Replicate Registered Product to SAP Field Service Management

Parameter	Description
Receiver	Select <i>FSM</i>
FSM host name	Enter the host URL. For example, <a href="https://de.coresuite.com">https://de.coresuite.com</a> .
FSM account name	Enter the FSM account name.
Company	Enter the company name.
Client Identifier	Enter the Client ID.
Credential name	Enter the OAuth2 credential of FSM that you deployed.

## Replicate Product to SAP Field Service Management

Parameter	Description
Receiver	Select <i>FSM</i>
FSM host name	Enter the host URL. For example, <a href="https://de.coresuite.com">https://de.coresuite.com</a>
FSM account name	Enter the FSM account name.
Company	Enter the company name.
Client Identifier	Enter the Client ID.
Credential name	Enter the OAuth2 credential of FSM that you deployed.

## Replicate Product Category Hierarchy to SAP Field Service Management

Parameter	Description
Receiver	Select <i>FSM</i>
FSM host name	Enter the host URL. For example, <a href="https://de.coresuite.com">https://de.coresuite.com</a>
FSM account name	Enter the FSM account name.
Company	Enter the company name.
Client Identifier	Enter the Client ID.
Credential name	Enter the OAuth2 credential of FSM that you deployed.
Description language	Language code

## Replicate Material Stock to SAP Field Service Management

Parameter	Description
Receiver	Select <i>FSM</i>
FSM host name	Enter the host URL. For example, <a href="https://de.coresuite.com">https://de.coresuite.com</a>

Parameter	Description
FSM account name	Enter the FSM account name.
Company	Enter the company name.
Client Identifier	Enter the Client ID.
Credential name	Enter the OAuth2 credential of FSM that you deployed.

## Replicate Business Partner to SAP Field Service Management

Parameter	Description
Receiver	Select <i>FSM</i>
FSM host name	Enter the host URL. For example, <a href="https://de.coresuite.com">https://de.coresuite.com</a>
FSM account name	Enter the FSM account name.
Company	Enter the company name.
Client Identifier	Enter the Client ID.
Credential name	Enter the OAuth2 credential of FSM.

Parameter	Description
Receiver	Select <i>C4C_Odata</i> .
C4C host url	Enter the SAP Service Cloud host URL. For example, <a href="https://\$\$\$\$\$.dev.sapbydesign.com">https://\$\$\$\$\$.dev.sapbydesign.com</a>
Credential name	Enter the user credential that you deployed for SAP Service Cloud OData access.

## Replicate Service Ticket to SAP Field Service Management

Parameter	Description
Receiver	Select <i>FSM</i>
FSM Ticket connector host name	Enter host URL. For example, <a href="https://{cluster}.coresuite.com">https://{cluster}.coresuite.com</a>
Credential name	Enter the OAuth2 credential of FSM that you deployed.



Parameter	Description
Receiver	Select <i>C4C_Conf</i> .
C4C host url	Enter the SAP Service Cloud host URL. For example, <a href="https://\$\$\$\$\$\$\$.dev.sapbydesign.com">https://\$\$\$\$\$\$\$.dev.sapbydesign.com</a> .
Authentication	Select Basic or Client Certificate.
Credential Name (for Basic)	Enter the user credential name deployed in CI that is configured in the inbound setting of communication arrangement in SAP Service Cloud.
Private key alias	Enter the deployed private key alias of the client certificate in SAP Service Cloud.

Parameter	Description
Tab	Select <i>More</i> .
Client Identifier	Enter the client ID.
Company	Enter the company name.
FSM account name	Enter the FSM account name.
FSM host URL	Enter the host URL. For example, <a href="https://de.coresuite.com">https://de.coresuite.com</a>
FSM_Default_Warehouse_Code	Enter the code value of the default ware house created in FSM.

## Confirm Service Call Replication to SAP Field Service Management

Parameter	Description
Receiver	Select <i>FSM</i>
FSM Ticket connector host name	Enter host URL. For example, <a href="https://et.coresystems.net">https://et.coresystems.net</a> .
Credential name	Enter the OAuth2 credential of FSM that you deployed.

Parameter	Description
Tab	Select <i>More</i> .
Client Identifier	Enter the client ID.
Company	Enter the company name.

Parameter	Description
FSM account name	Enter the FSM account name.

## Replicate Service Call from SAP Field Service Management

Parameter	Description
Receiver	Select <i>C4C</i>
C4C host URL	Enter the SAP Service Cloud host URL. For example, <a href="https://\$\$\$\$\$.dev.sapbydesign.com">https://\$\$\$\$\$.dev.sapbydesign.com</a> .
Authentication	Select Basic or Client Certificate.
Credential Name (for Basic)	Enter the user credential name deployed in CI that is configured in the inbound setting of communication arrangement in SAP Service Cloud.
Private key alias	Enter the deployed private key alias of the client certificate in SAP Service Cloud.

Parameter	Description
Receiver	Select <i>FSM_Attachment</i> .
FSM host URL	Enter the host URL. For example, <a href="https://de.coresuite.com">https://de.coresuite.com</a>
FSM account name	Enter the FSM account name.
Company	Enter the company name.
Client Identifier	Enter the Client ID.
Credential name	Enter the OAuth2 credential of FSM.

Parameter	Description
Tab	Select <i>More</i> .
C4C short tenant ID	Enter the SAP Service Cloud short tenant ID that is entered in the <i>My system</i> field of communication arrangement.

## Replicate Skills to SAP Field Service Management

Parameter	Description
Receiver	Select <i>FSM</i>
FSM host name	Enter the host URL. For example, <a href="https://de.coresuite.com">https://de.coresuite.com</a>
FSM account name	Enter the FSM account name.
Company	Enter the company name.
Client Identifier	Enter the Client ID.
Credential name	Enter the OAuth2 credential of FSM that you deployed.

## Replicate attachments to SAP Field Service Management

Parameter	Description
Receiver	Select <i>FSM</i> .
FSM host URL	Enter the host URL. For example, <a href="https://de.coresuite.com">https://de.coresuite.com</a>
FSM account name	Enter the FSM account name.
Company	Enter the company name.
Client Identifier	Enter the Client ID.
Credential name	Enter the OAuth2 credential of FSM.

Parameter	Description
Receiver	Select <i>C4C_Conf</i>
C4C host URL	Enter the SAP Service Cloud host URL. For example, <a href="https://\$\$\$\$\$.dev.sapbydesign.com">https://\$\$\$\$\$.dev.sapbydesign.com</a>
Authentication	Select Basic or Client Certificate.
Credential Name (for Basic)	Enter the user credential name deployed in CI that is configured in the inbound setting of communication arrangement in SAP Service Cloud.
Private key alias	Enter the deployed private key alias of the client certificate in SAP Service Cloud.

## Replicate Attachments from SAP Field Service Management

Parameter	Description
Receiver	Select <i>C4C</i>
C4C host URL	Enter the SAP Service Cloud host URL. For example, <a href="https://\$\$\$\$\$.dev.sapbydesign.com">https://\$\$\$\$\$.dev.sapbydesign.com</a> .
Authentication	Select Basic <b>or</b> Client Certificate.
Credential Name (for Basic)	Enter the user credential name deployed in CI that is configured in the inbound setting of communication arrangement in SAP Service Cloud.
Private key alias	Enter the deployed private key alias of the client certificate in SAP Service Cloud.

Parameter	Description
Receiver	Select <i>FSM_Attachment</i> .
FSM host URL	Enter the host URL. For example, <a href="https://de.coresuite.com">https://de.coresuite.com</a>
FSM account name	Enter the FSM account name.
Company	Enter the company name.
Client Identifier	Enter the Client ID.
Credential name	Enter the OAuth2 credential of FSM.

## Confirm Attachment Replication to SAP Field Service Management

Parameter	Description
Receiver	Select <i>FSM</i>
FSM Ticket connector host name	Enter the host URL. For example, <a href="https://de.coresuite.com">https://de.coresuite.com</a>
Credential name	Enter the OAuth2 credential of FSM.

Parameter	Description
Tab	Select <i>More</i> .
FSM account name	Enter the FSM account name.

Parameter	Description
Company	Enter the company name.
Client Identifier	Enter the client ID.

## Replicate Contact Person Relationship from SAP Field Service Management

Parameter	Description
Receiver	Select <i>FSM</i>
FSM host URL	Enter the host URL. For example, <a href="https://de.coresuite.com">https://de.coresuite.com</a>
FSM account name	Enter the FSM account name.
Company	Enter the company name.
Client Identifier	Enter the Client ID.
Credential name	Enter the OAuth2 credential of FSM that you deployed.

Parameter	Description
Receiver	Select <i>C4CoData</i>
C4C Base URL	Enter the SAP Service Cloud host URL. For example, <a href="https://\$\$\$\$\$.dev.sapbydesign.com">https://\$\$\$\$\$.dev.sapbydesign.com</a> .
Credential Name	Enter the user credential name that you deployed for SAP Service Cloud OData access.

Parameter	Description
Receiver	Select <i>C4C</i>
C4C Base URL	Enter the SAP Service Cloud host URL. For example, <a href="https://\$\$\$\$\$.dev.sapbydesign.com">https://\$\$\$\$\$.dev.sapbydesign.com</a> .
Authentication	Select Basic <b>or</b> Client Certificate.
Credential Name (for Basic)	Enter the user credential name deployed in CI that is configured in the inbound setting of communication arrangement in SAP Service Cloud.
Private key alias	Enter the deployed private key alias of the client certificate in SAP Service Cloud.

## Confirm Contact Person Relationship to SAP Field Service Management

Parameter	Description
Receiver	Select <i>FSM</i>
FSM host URL	Enter host URL. For example, <a href="https://et.dev.coresuite.com">https://et.dev.coresuite.com</a> .
Credential name	Enter the OAuth2 credential of FSM that you deployed.

Parameter	Description
Tab	Select <i>More</i> .
Client Identifier	Enter the client ID.
Company	Enter the company name.
FSM account name	Enter the FSM account name.

## 4.2 Configure Language Parameters

Configure the language code for objects with an associated language code in SAP Service Cloud.

Objects like: skills, registered products, and notes have fields with a language code in SAP Service Cloud. Before February 2020 the language code was defaulted to **EN** in CPI. Beginning with the February 2020 release, you can configure the language code. The configured language is used for the language-code-dependent fields during the replication process.

Configurable fields:

- *Language Code*: The language code used during the replication process.
- *Fallback Language Code*: Used only if no data is present in the language configured in the *Language Code* field.

The iflows for which language code configuration is available:

- *Replicate Registered Product to Field Service Management* (fields filtered based on language code: Customer Information, Description)
- *Replicate Skills to Field Service Management* (field filtered based on language code: Skills Description)

To configure the language code, open the iflow, select **Configure > More**, then enter the *Language Code* and *Fallback Language Code*.

## 4.3 Configure MIME Type

Configure the mapping between MIME types in SAP Service Cloud and file extensions in SAP Field Service Management.

In SAP Service Cloud, you can configure MIME type mapping for file extensions in Business Configuration scoping. For example: the MIME type `application/pdf` is configured for the file extension `.pdf`.

When an attachment of type `pdf` is added to a registered product or ticket in SAP Service Cloud (or added to service call or activity in SAP Field Service Management), the MIME type is populated as `application/pdf`. SAP Field Service Management stores only the file extension and not the MIME type. Therefore, a predelivered mapping between MIME type and file extension is provided as part of the standard iflow content. Find this value mapping for Field Service Management in the [Artifacts](#) tab.

If more than one MIME type is mapped for a specific file extension, then default values are provided as follows:

Default MIME Code Mapping

C4C Mime Code	FSM Mime Code
image/png	PNG
image/tiff	TIFF
image/gif	GIF
image/jpg	JPG
image/jpeg	JPEG
text/plain	TXT
application/rtf	RTF
text/html	HTML
text/html	HTM
application/xml	XML
application/pdf	PDF
application/vnd.openxmlformats-officedocument.wordprocessingml.document	DOCX
application/msword	DOC
application/vnd.openxmlformats-officedocument.spreadsheetml.sheet	XLSX
application/vnd.ms-excel	XLS
application/vnd.ms-powerpoint	PPT
application/vnd.openxmlformats-officedocument.presentationml.presentation	PPTX
audio/mp4	MP4
message/rfc822	MSG
application/zip	ZIP
image/bmp	BMP

C4C Mime Code	FSM Mime Code
image/ico	ICO
text/calendar	CALENDAR

### Restriction

Replication of attachments fails if even a single attachment with an unmapped MIME type exists in the object instance. If a MIME type configured in SAP Service Cloud tenant isn't found in the predelivered value mapping, then it must be configured in order for replication to work.



# 5 Develop Custom Integration Flows

Extend the standard iflows provided for the integrating SAP Service Cloud and SAP Field Service Management without copying the main iflow.

Using standard iflows ensures that you receive updates to the main iflow seamlessly, without the need to copy your modifications into the updated iflows.

Any DTO in SAP Field Service Management can have multiple extension fields known as **User-Defined Fields** (UDFs). Once UDFs are created in FSM, the respective DTO APIs can be used to replicate data into these fields.


## 5.1 Create FSM Extension Field

Create custom extension fields in SAP Field Service Management.

### Context

Create extension fields for custom data that can be replicated to SAP Service Cloud with SAP Cloud Integration iFlows.

### Procedure

1. Log in to the admin page.
2. Go to the [Companies](#) tab and select the Company connected to SAP Service Cloud, for which you wish to create extension fields.
3. Go to [Custom Objects](#) > [Custom Field Definitions](#) > [Create](#) .
4. Enter the details you require for the extension field.
  - **Name**: FSM field name
  - **External ID**: extension field ID used to replicate value with APIs
  - **Object Type**: FSM DTO for the extension field

Custom fields created here are stored in the **UdfMeta** DTO.

## 5.2 Configure iFlow Extension

Configuration information for extensible iflow interfaces.

The following integration flow interfaces are extensible:

- Replicate Business Partner to Field Service Management
- Replicate Contact Person Relationship from Field Service Management
- Replicate Employee to Field Service Management
- Replicate Product to Field Service Management
- Replicate Registered Product to Field Service Management
- Replicate Service Call from Field Service Management
- Replicate Service Ticket to Field Service Management

To extend the iflows shown here, first complete the following generic configuration:

Receiver Adapter Configuration

Parameter	Description
Receiver	Select <b>Exit_iflow</b>
Address	Enter the sender side adapter's address of customer extension iflow.

For iflows with extensions, go to **Configure > More** tab and set the parameter, **isExtensionEnabled** to **true**. The default value is **false**.

The screenshot shows the configuration interface for a receiver adapter. At the top, there are three tabs: 'Sender', 'Receiver', and 'More', with 'More' being the active tab. Below the tabs, there are several configuration fields:

- Type: All Parameters (dropdown menu)
- Client Identifier: C4C\_DEV
- Fallback Language Code: (empty field)
- isExtensionEnabled: false
- Language Code: EN

For more information regarding the concept of custom extensions to CPI integration flows, please check the blog listed in the related information.

### Related Information

[Extending standard integration flow to support Customer extensions – Part I](#)

## 5.3 Custom Integration Flow Development

Overview of the mapping process for replicating custom extension field data from SAP Service Cloud to SAP Field Service Management.

Field values for user-defined fields (UDFs) for a given DTO in SAP Field Service Management are sent to the integration system through APIs. The field values are stored as a JSON array with key-value pairs where the field name is the metadata and the value is contained in the value tag. An example of this JSON code follows.

### Sample Code

```
[
  {
    "code": "MAT_FSM_001",
    "unitOfMeasure": "Bag",
    "externalId": "MAT_FSM_001",
    "name": "Hitachi Refrigerator",
    "udfValues": [
      {
        "meta": {
          "externalId": "TEST_EXT1_ID"
        },
        "value": null
      },
      {
        "meta": {
          "externalId": "EXT2_UOM_CODE"
        },
        "value": "HUR"
      },
      {
        "meta": {
          "externalId": "EXT1_PRO_CAT"
        },
        "value": "Software"
      }
    ]
  }
]
```

The main integration flows provide an exit point using a process-direct adapter call. The call passes the original message from the source system, and the mapped message from the main iflow, to a custom iflow. In your custom iflow, the SAP Service Cloud extension field is mapped to the corresponding SAP Field Service Management user-defined field. You can also alter the standard field mapping for specific scenarios.

## 5.3.1 Set Up C4C to FSM Replication

In custom iflows, you map the data in the XML structure – the conversion to the JSON is done in the main iflow.

### Procedure

1. Modify the target XSD file from the main iflow and add the udfValues XML node as shown in the following example.



```
1 <xs:schema attributeFormDefault="unqualified"
2   elementFormDefault="qualified"
3   xmlns:xs="http://www.w3.org/2001/XMLSchema"
4 >
5   <xs:element name="Items">
6     <xs:complexType>
7       <xs:sequence>
8         <xs:element name="data" minOccurs="1"
9           maxOccurs="unbounded">
10          <xs:complexType>
11            <xs:sequence>
12              <xs:element name="udfValues" minOccurs="0"
13                maxOccurs="unbounded">
14                <xs:complexType>
15                  <xs:sequence>
16                    <xs:element name="meta" minOccurs="0" maxOccurs="1">
17                      <xs:complexType>
18                        <xs:sequence>
19                          <xs:element type="xs:string" name="externalId"
20                            minOccurs="0" maxOccurs="1" />
21                        </xs:sequence>
22                      </xs:complexType>
23                    </xs:element>
24                    <xs:element type="xs:string" name="value"
25                      minOccurs="0" maxOccurs="1" />
26                  </xs:sequence>
27                </xs:complexType>
28              </xs:element>
29            </xs:sequence>
30          </xs:complexType>
31        </xs:element>
32      </xs:sequence>
33    </xs:complexType>
34  </xs:element>
35  <xs:element type="xs:string" name="code" minOccurs="0" />
36</xs:schema>
```

This XML node is required to map the SAP Service Cloud extension fields into the target XSD structure.

```
<xs:element name="udfValues" minOccurs="0" maxOccurs="unbounded">
  <xs:complexType>
    <xs:sequence>
      <xs:element name="meta" minOccurs="0" maxOccurs="1">
        <xs:complexType>
          <xs:sequence>
            <xs:element type="xs:string"
              name="externalId"
              minOccurs="0"
              maxOccurs="1" />
          </xs:sequence>
        </xs:complexType>
      </xs:element>
      <xs:element type="xs:string"
        name="value"
        minOccurs="0" maxOccurs="1" />
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

```

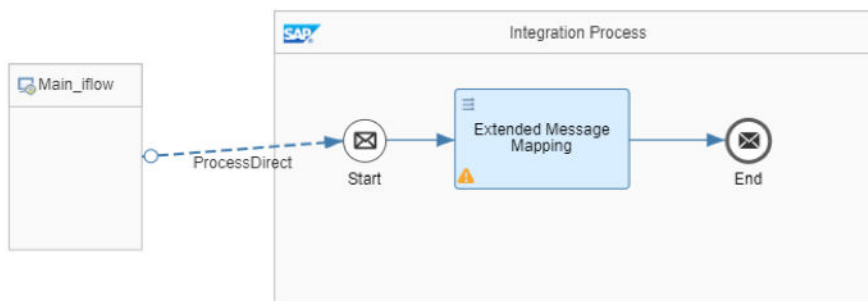
        </
xs:sequence>
        </
xs:complexType>
</xs:element>

```

### Note

If you are using the Service Call API, for example for ticket replication to and from SAP Field Service Management, then the name of the XML node `meta` will be `udfMeta`.

2. Create an inflow in your customer package with the sender side a **process direct** adapter. The adapter address is configured in the main inflow.



3. Set up the mapping module with two messages as input.

The first message is the WSDL of the SAP Service Cloud outbound service interface and the second message is the XSD structure of the SAP Field Service Management DTO from the main inflow. The target is the XSD modified in the first step. An example follows.

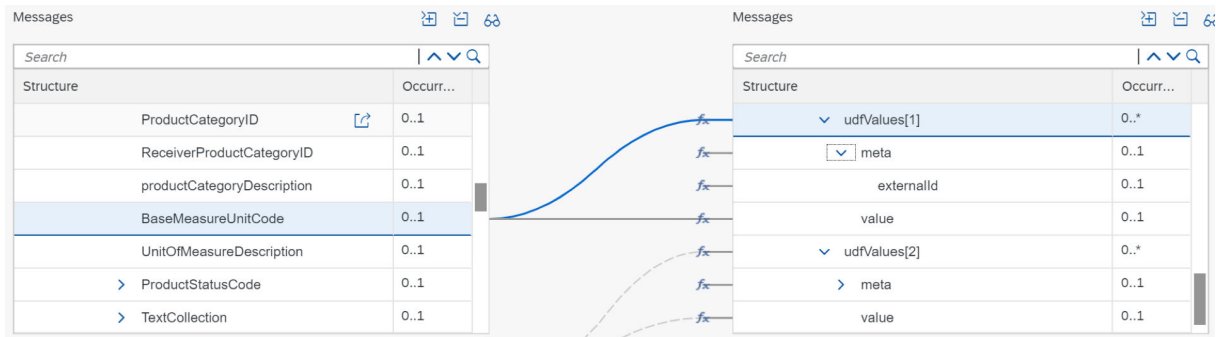
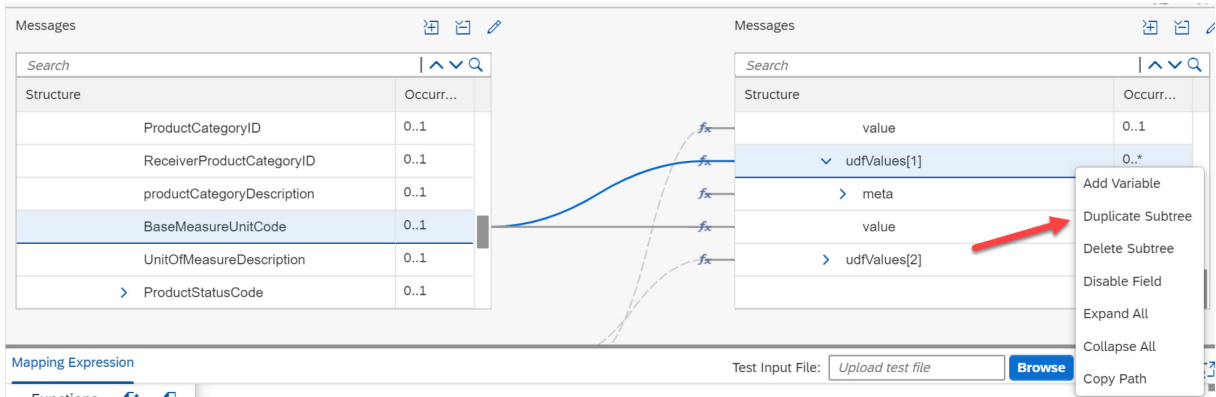
... / PostExit\_Replicate\_product\_c4c\_to\_fsm / C4C\_FSM\_Product\_Exit\_MM / Simulate OK Cancel

**C4C\_FSM\_Product\_Exit\_MM**

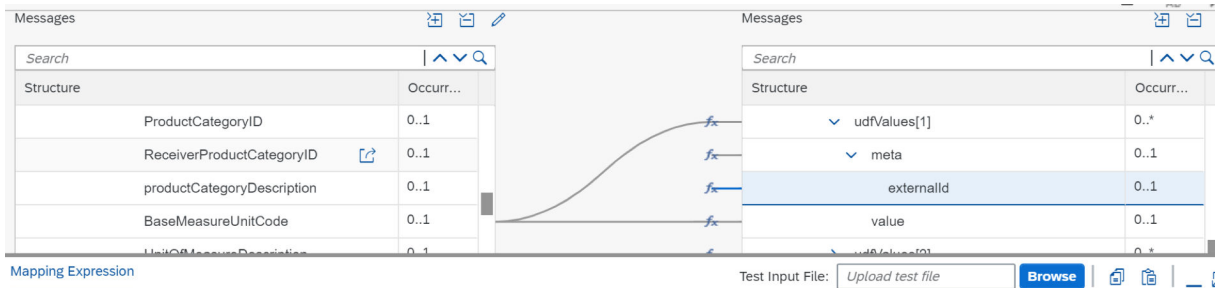
Structure	Occurr...
ns11:Messages	1..1
ns11:Message1	1..1
ns6:MaterialBulkReplicationRequest	1..1
ns11:Message2	1..1
Items	1..1

Structure	Occurre...
ns11:Messages	1..1
ns11:Message1	1..1
Items	1..1
data	1..*

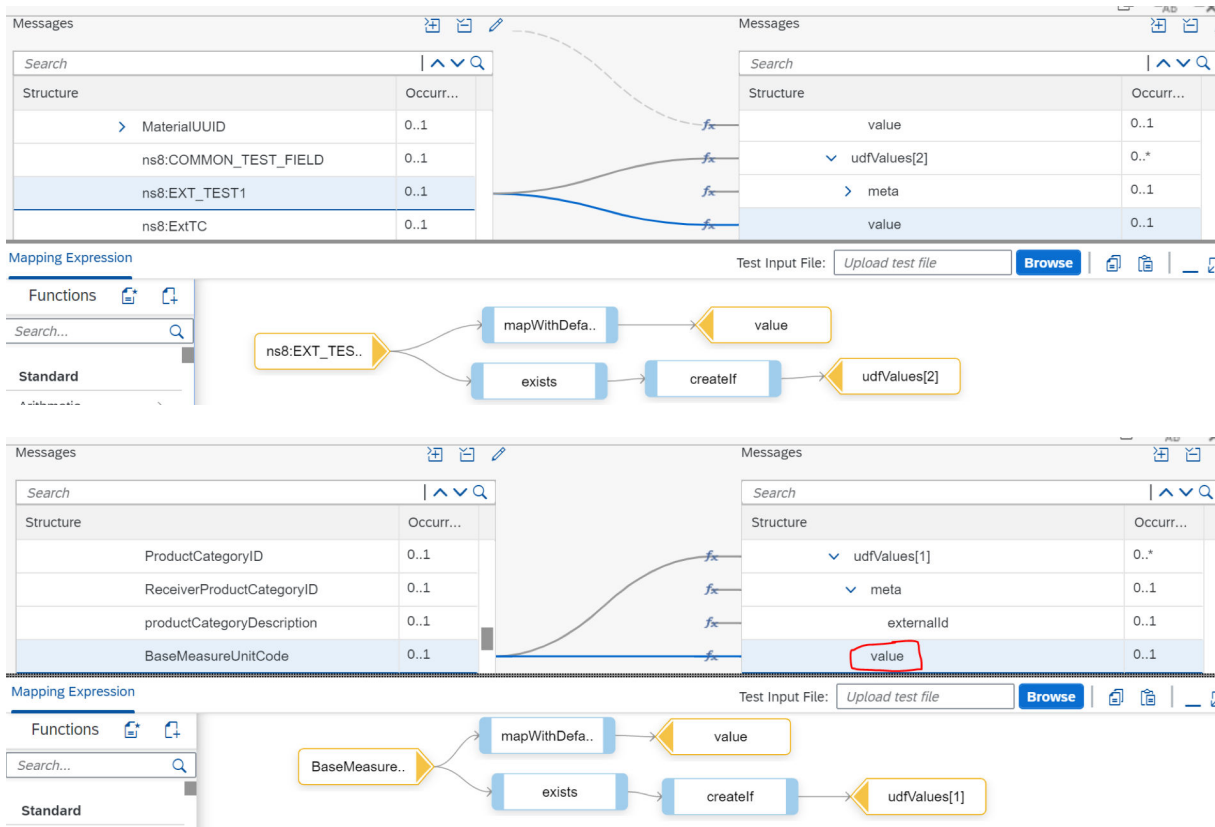
4. Map one `udfValues` node for each extension field to be replicated in SAP Field Service Management. Duplicate the `udfValues` node as required to match the number of extension fields to be mapped.



5. Map the FSM UDF field external ID value in the **externalId** node under **meta**. Note this value from your SAP Field Service Management system and enter it as the value of the externalId node.



6. Map the corresponding value from the SAP Service Cloud payload under the udfValues node (same as the previous step).



## Example

A ZIP archive containing a sample extension iflow that replicates product extension fields from SAP Service Cloud to SAP Field Service Management is available in the related information following this section.

## Related Information

[Example iflow for product extension fields](#)

## 5.3.2 Set Up FSM to C4C Replication

Set up the mapping from SAP Field Service Management user-defined fields to SAP Service Cloud extension fields.

SAP Field Service Management sends the data in JSON format with all the UDF fields under a DTO in a similar JSON array. This JSON input is converted to a corresponding XML structure and is passed to the custom extension iflow in the following XML format.

## Code Syntax

```
<ns1:Messages xmlns:ns1="http://sap.com/xi/XI/SplitAndMerge">
  <ns1:Message1>
    (FSM Message in XML)
  </ns1:Message1>
  <ns1:Message2>
    (Standard output XML from main iflow)
  </ns1:Message2>
</ns1:Messages>
```

Following is an example of a UDF node that is passed within the original FSM message containing all UDF fields and their values. Here in the custom extension iflow, you can write a script to loop through the **udfValues** node and then map the values to the SAP Service Cloud inbound service extended WSDL.

## Output Code

```
<root>
  <udfValues>
    <udfMeta>
      <id>CB358CB381D641FA9B2D87047C71BAAA</id>
      <externalId>TEST_EXT1_ID</externalId>
    </udfMeta>
    <value />
  </udfValues>
  <udfValues>
    <udfMeta>
      <id>CB358CB381D641FA9B2D87047C71B000</id>
      <externalId>EXT2_UOM_CODE</externalId>
    </udfMeta>
    <value>HUR</value>
  </udfValues>
  <udfValues>
    <udfMeta>
      <id>CB358CB381D641FA9B2D87047C71B111</id>
      <externalId>EXT3_PRO_CAT</externalId>
    </udfMeta>
    <value>Software</value>
  </udfValues>
</root>
```



# 6 Configure SAP S/4HANA On-Premise or SAP ERP to Replicate Stock

Configure SAP S/4HANA On-Premise or SAP ERP to replicate Stock to SAP Field Service Management.

## Prerequisite

For SAP ERP, scope the Cloud for Customer Add-in to enable stock replication (support package: SAPK-60050INCODERRINT - CoD ERP Integration Content). For SAP S/4HANA On-Premise, the version depends on the desired scope.

## 6.1 Create Logical System

### Procedure

1. Log on to cross client tenant of SAP ERP.
2. Create a Logical System using transaction **BD54**.

## 6.2 Create Connection

### Procedure

1. Invoke transaction **SM59**.
2. Enter connection type **G** (HTTP Connections to External Server).
3. Enter target host: **<HostName from the Endpoint URL copied from HCI>**.
4. Enter Service No: **443**.
5. Enter Path Prefix: **/cxf/<Path in Address Field of IDoc Adapter>**.
6. Under **LogOn & Security**, choose *Basic Authentication* and provide your HCI user and password.

7. For **Security Options** choose:

Option	Description
SSL	Active
SSL Certificate	Anonym SSL Client

8. Check connection by selecting *Connection Test*. The solution returns the message: 500 internal server error.

## 6.3 Create XML HTTP Port

### Procedure

1. Invoke transaction: **WE21**.
2. Enter Port Type: **XML HTTP**.
3. For *RFC Destination* enter: **HTTP Destination Type G**.
4. For *Content Type* keep the default setting – **Text/XML**.
5. Ensure *SOAP Protocol* is selected.

## 6.4 Create Partner Profile

### Procedure

1. Invoke transaction: **we20**.
2. Create new partner type under *Partner Type LS*.
3. For the partner number, enter the **Logical System** created earlier.
4. for *Partn.Type*, enter: **LS**
5. Add message type **COD\_STOCK\_REPLICATE** under *Outbound Parameters*.

## 6.5 Create Distribution Model

### Procedure

1. Invoke transaction: **BD64**.
2. Create New Model View.
3. Add message type: **COD\_STOCK\_REPLICATE**.
4. Enter sender: **ERP System** or **S/4**.
5. Reciever as: **Logical System** created earlier.
6. Add message type: **COD\_STOCK\_REPLICATE**.
7. Save.

# 7 Additional Configuration for SAP Field Service Management

Learn more about the additional configurations to be done for SAP Field Service Management.

## 7.1 Create a Default Warehouse

As an administrator, create a warehouse to allow each technician access rights to it.

To create a default warehouse, follow these steps:

1. Log on to the master data. (<https://apps.coresystems.net/master-data-management/#/login/>)
2. Navigate to *Items* and on the *Items Settings* page, in the *Warehouses* section, click the add icon.
3. In the *Warehouse* window, enter the required details. Make sure that you select *W000* for *Code*. The *Warehouse owner* field must be left blank so that each technician can access the warehouse.
4. Click *Save*.

## 7.2 Maintain Country And Region

To make sure that the country and region code values of SAP Field Service Management and SAP Service Cloud are the same, download the code list from SAP Service Cloud and upload them on SAP Field Service Management via **POSTMAN** using **Country** and **State DTO**.

# 8 Additional Configurations for SAP Service Cloud

Learn more about the additional configurations to be done for SAP Service Cloud.

## 8.1 Maintain Code List Mapping

As an administrator, maintain code list mapping in the *Code List Mapping for Integration with External Applications and Solutions* activity.

Filter by the **Tickets Integration Mapping Group**, and then maintain code list mapping for the following:

- SAP Cloud for Service ticket type – SAP Field Service Management service call type
- SAP Cloud for Service ticket priority – SAP Field Service Management service call priority
- SAP Cloud for Service ticket user status – SAP Field Service Management service call status
- SAP Cloud for Service Time type and SAP Field Service Management Effort type
- SAP Cloud for Service Contact Title and SAP Field Service Management Contact Title

### Local Data Type Name for the Mappings

- For the mapping of ticket type and service call type, select *BusinessTransactionDocumentProcessingTypeCode - Processing Type Code* and maintain the required values, such as:

Code	Description	External Code
ZCOA	Complaint	-5
ZWF2	Field Service (Z)	-6
SRVO	Service Order	-4
SRRQ	Service Request	-1

- For the mapping of ticket user status and service call status, select *ServiceRequestUserLifeCycleStatusCode - User Status* and maintain the required values, such as:

Code	Description	External Code
5	Completed	-1
2	In Process - Agent Working on it	-2
1	Open	-5

- For the mapping of ticket priority and service call priority, select **DeliveryPriorityCode** and maintain the required values.
- For the mapping of Service Cloud Time type and FSM Effort type, select **TimeTypeCode** and maintain the required values.

- For the mapping of Service Cloud contact title and FSM contact title, select **FormofAddressCode**, and maintain the required values.

#### Note

The Service Cloud contact is a dropdown, whereas FSM Title is an input text. When replicating contact from FSM to Service Cloud, enter the exact salutation such as “Mr.” or “Ms.” as maintained in the External Code in order to successfully replicate the title.

## 8.2 Maintain ID Mapping

As an administrator, maintain the mapping for *FSM Problem Type*.

To maintain the ID mapping, go to ► [Administrator](#) ► [ID Mapping for Integration](#) ►, and in the *Mapping of field*, select *FSM Problem Type*.

## 8.3 Define Rules for Product and Item Processing Type

As an administrator, define the rules for product and item processing type.

### Set FSM Relevance for Item Processing Codes

Maintain FSM relevance in the existing configuration for item processing code using the fine-tuning activity. The ticket items must have FSM relevance set for their item processing type so that they are replicated.

While setting FSM relevance for **Activity** avoid any item processing code which sets the work progress to **Not Relevant**

Navigate to ► [Business Configuration](#) ► [Implementation Projects](#) ► [Your Project](#) ► [Open Activity List](#) ► [Fine-Tune](#) ► [Maintain Item Processing Codes](#) ►, and for the required processing types, set the *FSM Relevance* column to one of the following:

- Activity
- Reserved Material

This setting is used to replicate ticket items from SAP Service Cloud to SAP Field Service Management.

## Define Rules for Creating Items in Tickets for Entities Sent from SAP Field Service Management

For creating items in tickets for the T&M journal entities sent from SAP Field Service Management, you must define rules to determine products and processing type. Navigate to ► [Administrator](#) ► [Service and Social](#) ► [Field Service Management](#) ► [Define Rules for Product and Item Processing Type](#) ►. In the [Define Rules for Product and Item Processing Type](#) page that appears, click [Add Row](#) and enter details in the following columns:

- [FSM Relevance](#) - The available values are:
  - Activity
  - Material
  - Mileage
- Product
- Ticket Type
- Service Org
- Product (output)
- Processing Code (output)

### 8.4 Create Workflow Rules to Replicate Tickets

As an administrator, create workflow rules to automate the [Release to FSM](#) action for a ticket.

To create a workflow rule, follow these steps:

1. Navigate to ► [Administrator](#) ► [Workflow Rules](#) ► [New](#) ►.
2. On the [New Rule](#) page, in the [Enter Basic Data](#) tab, do the following:
  - Add a description
  - Select [Ticket](#) as the business object
3. In the [Define Conditions](#) tab, define the rule conditions.
4. In the [Define Actions](#) tab, do the following:
  - In the [Rule Type](#) field, enter [Action](#).
  - In the [Select Action](#) field, enter [Release to FSM](#).
5. Review and confirm the rule.

# 9 Replicate Master Data

For successful integration, you must first replicate the master data.

You can replicate the following master data from SAP Service Cloud to SAP Field Service Management:

- Customer and Contact
- Product
- Registered Product
- Employee

After the integration with SAP Field Service Management is scoped in, replication of master data is real-time. For example, if any new instance is created or an existing one is updated, it is replicated to SAP Field Service Management.

## 9.1 Customer to Business Partner

Customers from SAP Service Cloud are replicated as Business Partners in SAP Field Service Management.

The mapping is as follows:

SAP Service Cloud (Customer)	SAP Field Service Management (Business Partner)
ID	External ID
Name	Name
Status = Active	Active
Address	Address
Main Contact	Default Contact
Notes	Notes (Remarks)
Phone	Phone 1
Mobile	Mobile
E-mail	Email
Website	Website

For all the replicated *Customer* entities in SAP Service Cloud (Customer, Individual Customers, Prospect), the mapping of *Address* is as follows:

SAP Service Cloud	SAP Field Service Management
	Address Type
Ship-to	Ship to



SAP Service Cloud	SAP Field Service Management
Bill-to	Bill to
Ship-to and bill-to indicator set to <i>No</i>	<i>Other</i>
Main indicator	Default indicator

All statuses other than *Active* from SAP Service Cloud are set to *Not Active* in SAP Field Service Management.

## 9.2 Contact to Contact

Contact replication is bidirectional: from SAP Service Cloud to SAP Field Service Management and also in the opposite direction.

### Prerequisites

- Business partner for which the contact is created is successfully replicated from SAP Service Cloud to SAP Field Service Management.
- Scoping question is enabled for integration.
- Communication arrangement is set up correctly.
- Code list mapping for SAP Service Cloud contact title and FSM contact title is maintained. For more information see: [Additional Configurations for SAP Service Cloud \[page 37\]](#)
- Maintain the value mapping for FormOfAddressCode

For more information on scoping and configuration, see the related links following this section.

### Field Mapping

The field mapping for Contacts is as follows:

SAP Service Cloud (Customer)	SAP Field Service Management (Business Partner)
ID	External ID
First Name/ Last Name	First Name/ Last Name
Additional Name	Additional Name
Status = Active	Active
Account	Contact Link
Main Contact (from account)	Default Contact

SAP Service Cloud (Customer)	SAP Field Service Management (Business Partner)
Phone	Office phone
Mobile	Mobile phone
E-mail	Email
Fax	Fax
Gender	Gender
Job Title	Position

## Supported Scenarios for SAP Service Cloud Contact to SAP Field Service Management Contact

- The contact is created in SAP Service Cloud and replicated to SAP Field Service Management after the account replication.
- Update general data listed in the mapping table from SAP Service Cloud to SAP Field Service Management.
- Changing SAP Service Cloud contact *Main* flag updates the **Default contact** switch in SAP Field Service Management.
- Changing SAP Service Cloud contact Account updates the Contact link in SAP Field Service Management.
- Deleting a contact in SAP Field Service Management removes the relationship between the contact and the account in SAP Service Cloud.
- In SAP Service Cloud, one contact can be linked with multiple accounts and can also be marked as the *Main* contact for these accounts. In SAP Field Service Management, a contact linked to multiple accounts in SAP Service Cloud, is duplicated for each account with the corresponding business partner relationship information.

## Supported Scenarios for SAP Field Service Management Contact to SAP Service Cloud Contact

- Contact created in SAP Field Service Management for an account (replicated from SAP Service Cloud) which doesn't have any existing contacts.
- Contact created for an account (replicated from SAP Service Cloud) which has existing contacts.
- Update of **default** flag and contact link for contacts that are either replicated from SAP Service Cloud or created from SAP Field Service Management.
- Update Gender, First Name, Last Name, and Birthday from SAP Field Service Management contact to SAP Service Cloud contact.

## Trigger Conditions

Contact replication message is triggered whenever a contact is created/existing contact is updated in FSM.

## Related Information

[Configure SAP Service Cloud \[page 7\]](#)

As an administrator, configure SAP Service Cloud so that it can send notifications to the iFlows of SAP Cloud Platform Integration.

## 9.3 Product to Item

Products in SAP Service Cloud are replicated to Items in SAP Field Service Management.

The field mapping for Product is as follows:

SAP Service Cloud (Product)	SAP Field Service Management (Item)
Product ID	External ID
Name	Name
Base UoM	UoM
Status = Active	Active
Notes	Notes (Remarks)

All statuses other than *Active* from SAP Service Cloud are set to *Not Active* in SAP Field Service Management.

### Note

Product Category in SAP Service Cloud can be manually mapped to Item group in SAP Field Service Management. In SAP Field Service Management, the item groups (as product category in SAP Service Cloud) can be maintained manually. The category information is also replicated for the replicated products.

## 9.4 Registered Product to Equipment

Registered Products from SAP Service Cloud are replicated as Equipment in SAP Field Service Management.

The registered product hierarchy information is also replicated. Before replicating the registered products, make sure that the customer, contact, and product data is replicated. The mapping is as follows:

SAP Service Cloud (Registered Product)	SAP Field Service Management (Equipment)
ID	External ID
Description	Name
Serial ID	Serial No.
Product	Item

SAP Service Cloud (Registered Product)	SAP Field Service Management (Equipment)
Status	Status (Active Indicator)
Belongs to Installation Point ID	Parent
Product Location	Location
Customer (Contact)	Business Partner (Contact)
Customer Information	Notes (Remarks)

## 9.5 Functional Location to Equipment

Since SAP Field Service Management does not have a functional location object, you can replicate the SAP Cloud for Customer installation point (functional location of registered product) to the SAP Field Service Management equipment. The replication is unidirectional.

### Supported Scenarios for SAP Cloud for Customer Functional Location Replication to SAP Field Service Management Equipment

- The SAP Cloud for Customer installation point (functional location of registered product) is replicated to SAP Field Service Management equipment. The replicated equipment does not have a serial id or reference item. Further references to **functional location of a service call** means an equipment instance without serial id or reference item.
- Replication of a hierarchy of functional locations is supported.
- Creation of equipment (which has a serial id and reference item) under these functional locations is supported.
- Attachments added to a functional location in SAP Cloud for Customer are replicated to the corresponding object in SAP Field Service Management.

#### ⚠ Restriction

- Initial upload of functional locations from SAP Cloud for Customer to SAP Field Service Management is currently not available.
- The replicated functional location does not have a Serial No, or Item name (referenced product).
- Functional location type object **cannot** be created directly in the SAP Field Service Management UI (under [► Master Data ► Equipment ►](#)) as the serial ID and item reference is mandatory. It's not possible to add functional locations to service calls directly in the SAP Field Service Management UI (under [► Planning and Dispatching ► Service calls ►](#)) if the status of the functional location is **inactive** in SAP Field Service Management.
- Inactive functional locations are also replicated, and it's impossible to activate functional locations in SAP Field Service Management.
- If you want to replicate a registered product with a parent functional location, but you don't want to replicate functional location master data, then the **Functional location replication enabled** flag for both

**Replicate Registered Product to Field Service Management** iflows must be set to **false**. With this setting, the replicated registered product does not have a parent in SAP Field Service Management.

## Configuration in SAP Cloud for Customer

In the **Communication Arrangement**, edit the communication scenario **Ticket Integration with SAP Field Service Management**, and maintain the path required for functional location service configuration. The details are as follows:

Service	Path
Replicate Functional Locations to SAP Field Service Management	/cxf/C4C/FSM/FunctionalLocation

For replicating attachments of functional locations, the existing service for attachments of registered products can now be used for attachments of functional locations as well.

Service	Path
Replicate Registered Product/Functional Location Attachments to SAP Field Service Management	/cxf/C4C/FSM/Attachment

## Configuration in CPI

You must configure the iflow **Replicate Functional Location to SAP Field Service Management**.

If you want to use functional location replication along with its usage in registered product (as a parent) and ticket (as a product), then adjust the following settings:

- In the iflow **Replicate Registered Product to SAP Field Service Management** set parameter **Functional location replication enabled** to **true**.
- In the iflow **Replicate Service Ticket to SAP Field Service Management** set parameter **Functional location replication enabled** to **true**.

## 9.6 Registered Product Attachment to Equipment Attachment

Attachments are replicated from SAP Service Cloud for registered products that are already successfully replicated to SAP Field Service Management.

## Prerequisites

- Registered product is successfully replicated to SAP Field Service Management equipment.
- Scoping question is enabled for integration.
- Communication arrangement is set up correctly.

For more information on scoping and configuration, see the related links following this section.

## Supported Scenarios

- Replication is only from SAP Service Cloud to SAP Field Service Management.
- If a registered product attachment that is already replicated is then deleted in SAP Service Cloud, the attachment is also deleted in SAP Field Service Management.
- Adding or deleting attachments in SAP Field Service Management creates inconsistency in attachments between SAP Field Service Management and SAP Service Cloud.
- MIME type mapping between **Registered Product** attachments and **Equipment** attachments is handled in CPI.
- Initial upload of registered product attachments is **not** supported.

## Trigger Conditions

Registered product attachment outbound messages are triggered when:

- A new attachment or attachments are added to the registered product. Only the content of the non-replicated attachments is sent in order to improve the performance.
- Existing attachments are deleted from the registered product.

Registered product attachment outbound messages are **not** triggered when:

- A new registered product is created without attachments, or an existing registered product without attachments is updated.
- An existing registered product with attachments is updated without any changes to the attachments.
- An attachment is updated for other installation point types, like functional locations.

## Related Information

[Configure SAP Service Cloud \[page 7\]](#)

As an administrator, configure SAP Service Cloud so that it can send notifications to the iFlows of SAP Cloud Platform Integration.

## 9.7 Employee to People

Employees from SAP Service Cloud are replicated as People in SAP Field Service Management.

The mapping is as follows:

SAP Service Cloud (Employee)	SAP Field Service Management (People)
Business Partner ID	External ID
First Name/Last Name	First Name/Last Name
Employee ID	User name
Phone	Office Phone
Mobile	Mobile Phone
E-mail	Email
Address	Address type - work

For a replicated employee, the *Plannable resource* indicator is set to false. You have to set this field manually from the SAP Field Service Management People UI screen so that the required employees can appear in the planning board.

### Note

For each replicated employee, a user is created in SAP Field Service Management. You must do the configuration and set up for users in SAP Field Service Management before they can be used in the system. If Single Sign-on (SSO) is configured, you must do the configuration and set up for users in the Identity Provider (IdP) also.

## 9.8 Employee Org to People Region

SAP Cloud for Customer Employee Org assignments are replicated unidirectionally to SAP Field Service Management People Region assignment.

Region in SAP Field Service Management is part of the planning scenarios that are used to prefilter the dispatching board and planning list. Replicating service technician team to activity region can narrow down the responsibility of a single planner. Employee org assignment can help assign a technician to an activity by region association.

An employee in SAP Cloud for Customer can be assigned to multiple teams. Similarly, a person in SAP Field Service Management can be assigned to multiple regions. The solution maps service teams (SAP Cloud for Customer organizations) to regions using value mappings in CPI. Use this feature to replicate a SAP Cloud for Customer employee's organization assignments to the corresponding FSM person's region assignment.

## Prerequisites

- You created regions in SAP Field Service Management using the available data APIs.
- Set up a value mapping between SAP Cloud for Customer **service team** and SAP Field Service Management **region** in CPI as described in this topic.

## Supported Scenarios for SAP Cloud for Customer Employee org Assignments to SAP Field Service Management Person Region Assignment Replication

- Org assignments where the organizations of type **Service** are replicated.
- Replicate org assignments of previously replicated employees with an initial load of employee master data.  
Use the option: [▶ Administrator](#) [▶ Extract data to external systems](#) [▶ Replicate Employee to SAP Field Service Management](#) [▶](#).

## Limitation

SAP Field Service Management people to region association doesn't have a validity period. Dates are sent from the outbound service, but the replication doesn't consider:

- Validity dates for the org function
- Validity dates for the org assignment of the employee

## Configuration in SAP Cloud for Customer

No additional configuration required.

## Configuration in CPI

In the value mapping for SAP Cloud for Customer and SAP Field Service Management integration the entry is structured as follows:

Agency	Identifier	Agency	Identifier
C4C	Service_Technician_Team	FSM	Region

- First check the ID of the org unit, then maintain value mappings for this entry as required.
- Check the default values for the cases where a single entry is mapped to multiple entries.



## 9.9 Skills to Skills

Replicate skills master data from SAP Service Cloud to SAP Field Service Management.

You can replicate skills from SAP Service Cloud to SAP Field Service Management. You can also extract and replicate skills to SAP Field Service Management as part of the initial load. Navigate to: ► [Administrator](#) ► [Extract Data to External System](#) ► [Replicate Skill](#) ►.

Skills master data replicates from SAP Service Cloud to SAP Field Service Management, but not in the opposite direction.

### ⚠ Restriction

- Skill groups **can't** be replicated as SAP Field Service Management currently does **not** support this feature.
- Only the English language description of the skill in SAP Service Cloud is replicated to SAP Field Service Management.

### 9.9.1 Ticket Skills

Replicates skills between tickets in SAP Service Cloud and service calls in SAP Field Service Management.

#### From SAP Service Cloud to SAP Field Service Management

The solution replicates skills added to a **ticket** in SAP Service Cloud to the corresponding SAP Field Service Management **service call** - along with the **mandatory** flag.

Skills added manually to a ticket service item (item with processing code having **SAP Field Service Management relevance=activity**) are replicated to the corresponding SAP Field Service Management activity along with the **mandatory** flag. If you add skills to a service call or activity directly in SAP Field Service Management, then any further updates to the corresponding ticket or item in SAP Service Cloud don't affect the directly added skills. The directly added skills are retained without change.

### 📄 Note

In SAP Service Cloud, skills in **tickets** can be derived from products, registered products, installed base, and customer. In SAP Field Service Management, skills in **service calls** can be derived from equipment and business partner. To avoid duplication, the solution replicates only manually added skills (source = manual) associated with a **ticket** in SAP Service Cloud to the corresponding **service call** in SAP Field Service Management and replicates skills in a **service item** in SAP Service Cloud to the corresponding **activity** in SAP Field Service Management. Therefore, any updates to the derived skills in a ticket (for example, changing the mandatory flag) aren't replicated to SAP Field Service Management.

### ⚠ Restriction

- The solution duplicates skills derived from the ticket item in the header in SAP Service Cloud to SAP Field Service Management.

- The solution duplicates skills associated with the **registered products** and **customer** to SAP Field Service Management. Ticket skills associated with installed base and products aren't duplicated to SAP Field Service Management.
- If you delete skills associated with tickets in SAP Service Cloud, the solution does **not** delete the corresponding skill assignments in the service call in SAP Field Service Management.
- Deleted skill in the C4C ticket due to change of product/installed base does not reflect in the corresponding FSM service call.

## From SAP Field Service Management to SAP Service Cloud

### Replicate Service Call Skills Assignment to C4C Ticket

In SAP Field Service Management service calls, skills are determined from business partner and equipment. Skills can also be manually added to service call. The skills added manually to service calls are replicated to SAP Service Cloud ticket skills when the service call is replicated to SAP Service Cloud.

Skills added manually to an SAP Service Cloud ticket are also replicated back to FSM service call along with the **mandatory** indicator.

#### ⓘ Note

The automatically determined skills in Service call aren't replicated to an SAP Service Cloud ticket. They're added to the SAP Service Cloud ticket per SAP Service Cloud determination logic.

Skills manually added to SAP Field Service Management business partner/equipment, aren't replicated to the SAP Service Cloud ticket.

When the manually added skills are deleted from SAP Field Service Management service call, they aren't deleted from SAP Service Cloud service ticket.

### Replicate Activity Skills Assignment to SAP Service Cloud Ticket

The skills assigned to SAP Field Service Management activity are replicated to SAP Service Cloud service item when the SAP Field Service Management activity is released.

Manually added skills to released activity are replicated to service item skills.

#### ⓘ Note

The skills at ticket header are copied to service item skills only during the first-time activity replication.

## 9.9.2 Account Skills

The solution replicates skills added to a **customer** in SAP Service Cloud to the corresponding SAP Field Service Management **business partner** - along with the **mandatory** flag.

If you delete any skill associated with a customer, it's removed from the corresponding SAP Field Service Management business partner as well. The solution replicates updates to the **mandatory** flag of any skill

associated with a customer to the corresponding SAP Field Service Management business partner. If you add any skills to business partners directly in SAP Field Service Management, then any updates to the corresponding customer in SAP Service Cloud don't affect these directly added skills. Directly added skills are retained without change.

### 9.9.3 Employee Skills

The solution replicates skills added to an **employee** in SAP Service Cloud to the corresponding SAP Field Service Management **person** - along with the validity dates.

If you delete any skill associated with an **employee**, the solution removes that skill from the corresponding SAP Field Service Management **person** as well. If you add any skills to the **person** directly in SAP Field Service Management, then any further updates to the corresponding **employee** in SAP Service Cloud don't affect these directly added skills. The directly added skills are retained without changes.

### 9.9.4 Product Skills

The solution replicates skills added to a **product** in SAP Service Cloud to the corresponding SAP Field Service Management **item** - along with the **mandatory** flag.

If you delete any skill associated with a **product**, the solution removes that skill from the corresponding SAP Field Service Management **item** as well. The solution replicates updates to the **mandatory** flag of any skill associated with a **product** to the corresponding SAP Field Service Management **item**. If you add any skills to the **item** directly in SAP Field Service Management, then any further updates to the corresponding **product** in SAP Service Cloud don't affect these directly added skills. The directly added skills are retained without changes.

### 9.9.5 Registered Product Skills

The solution replicates skills added to a **registered product** in SAP Service Cloud to the corresponding SAP Field Service Management **equipment** - along with the **mandatory** flag.

If you delete any skill associated with a **registered product**, the solution removes that skill from the corresponding SAP Field Service Management **equipment** as well. If you add any skills to the **item** directly in SAP Field Service Management, then any further updates to the corresponding **registered product** in SAP Service Cloud don't affect these directly added skills. The directly added skills are retained without changes.

#### 📌 Note

In SAP Service Cloud, the solution can derive skills associated with registered products from **products**. In SAP Field Service Management, the solution can derive skills associated with equipment from **items**. To avoid duplication, only manually added skills (source = manual) associated with a **registered product** in SAP Service Cloud are replicated to the corresponding **equipment** in SAP Field Service Management. Therefore, any updates to the derived skills (for example, changing the mandatory flag) in a registered product in SAP Service Cloud don't replicate to SAP Field Service Management.

## 9.10 Product Category Hierarchy to Item Groups

The solution replicates **product category hierarchy** from SAP Service Cloud to **item group** in SAP Field Service Management.

You can also extract and replicate product category hierarchy to SAP Field Service Management as part of the initial load. Navigate to: ► [Administrator](#) ► [Extract Data to External System](#) ► [Replicate Product Category Hierarchy](#) ►

### Enable Product Category Hierarchy Replication

As an administrator, enable the feature in the solution.

Go to ► [Business Configuration](#) ► [Implementation Projects](#) ► [Your Project](#) ► [Edit Project Scope](#) ► [Questions](#) ► [Communication and Information Exchange](#) ► [Integration with External Applications and Solutions](#) ► and then select [Integration of Master Data](#). From [Questions for Products](#), select [Do you want to replicate product categories from your cloud solution to an external application?](#)

### Create Communication Arrangement for Product Category Integration

For creating the communication arrangement of product category replication to external system, refer to: [Configure SAP Service Cloud \[page 7\]](#)

## 9.11 Replicate Stock

Replicate stock information of materials in SAP S/4HANA On-Premise or SAP ERP to SAP Field Service Management.

The combination of plant, storage location, and service technician form a warehouse object in SAP Field Service management. The owner of the warehouse is the employee corresponding to the service technician in SAP S/4HANA On-Premise or SAP ERP. The unrestricted stock information of materials in SAP S/4HANA On-Premise or SAP ERP is created as ItemWarehouseLevel object in SAP Field Service management.

Report "RCOD\_STOCK\_EXTRACT" is executed in SAP S/4HANA On-Premise or SAP ERP is used to trigger Stock Replication from SAP ERP to SAP FSM.

Prerequisites:

- Replicate the SAP Cloud for Customer **product** corresponding to SAP S/4HANA On-Premise or SAP ERP **material** to SAP Field Service management before stock replication.
- Replicate the SAP Cloud for Customer **employee** corresponding to the SAP S/4HANA On-Premise or SAP ERP **service technician** to SAP Field Service Management before stock replication.

- For existing customers, trigger an initial load for Products and Employees from SAP Cloud for Customer to SAP Field Service Management for the ERP IDs to be mapped to “Code” field of Item and UnifiedPerson Objects respectively.
- The SAP Cloud for Customer Add-in for SAP S/4HANA On-Premise or SAP ERP must be in scope. The SAP S/4HANA On-Premise version depends on the desired scope.

Field mapping for Stock:

SAP S/4HANA On-Premise or SAP ERP (Stock Overview)	SAP Field Service Management (Warehouse)
Plant, Storage Location (combination)	Warehouse Name
Service Org., Service Technician Team, Service Employee (combination)	Warehouse External ID
Service Employee	Warehouse Owner

SAP S/4HANA On-Premise or SAP ERP (Stock Overview)	SAP Field Service Management (Item Stock)
	Item Warehouse External ID (combines FSM Warehouse ID and SAP S/4HANA On-Premise or SAP ERP Material ID)
Plant, Storage Location (combination)	Warehouse Name
Unrestricted Stock	InStock


For connecting SAP S/4HANA On-Premise or SAP ERP to CPI for stock replication, refer to:

## Related Information

[Configure SAP S/4HANA On-Premise or SAP ERP to replicate stock \[page 33\]](#)

Configure SAP S/4HANA On-Premise or SAP ERP to replicate Stock to SAP Field Service Management.

## 9.12 Run an Initial Load

As an administrator, you can run initial load of the master data entities (Go to [Administrator](#) > [Extract Data to External System](#) ).

The available options are as follows:

- Replicate Business Partner in four sets with the following combinations:
  - Category = Organization
  - Category = Person and Business Partner Role = BUP002
  - Category = Person and Business Partner Role = CRM000
  - Category = Person and Business Partner Role = BUP001
- Replicate Business Partner Relationship with the following filter criteria:
  - Business Partner Relationship Category = BUR001

- Replicate Product - You can identify the products to be replicated based on these parameters:
  - Product Category ID
  - Product ID
  - Status
- Replicate Registered Product - You can identify the registered products to be replicated based on these parameters:
  - Registered Product Category
  - Product ID
  - Serial ID
  - Status
  - Reference Date
  - Valid from Date
- Replicate Employee - You can identify the employees to be replicated based on these parameters:
  - Business Partner ID
  - Department ID

# 10 Configure Automatic Replication of Tickets

As an administrator, you can configure the automatic replication of tickets from SAP Service Cloud to SAP Field Service Management. This enables tickets to be replicated as soon as they are created and saved.

Navigate to [Business Configuration](#) > [Implementation Projects](#) > [Your Project](#) > [Edit Project Scope](#) > [Questions](#). Expand [Communication and Information Exchange](#) > [Integration with External Applications and Solutions](#), and then select [Integration with SAP Field Service Management](#). In the [Questions for Integration with SAP Field Service Management](#) section, select [Do you want tickets to be automatically replicated to SAP FSM?](#)

# 11 Integrate Tickets

Learn more about the integration of tickets and ticket items between SAP Service Cloud and SAP Field Service Management.

## 11.1 Tickets and Service Calls

SAP Service Cloud service ticket to SAP Field Service Management service call replication is bidirectional.

Tickets can be replicated either manually (using the [Release to FSM](#) action) or automatically. For more information about the automatic replication of tickets, see [Configure Automatic Replication of Tickets \[page 55\]](#) and [Create Workflow Rules to Replicate Tickets \[page 39\]](#).

Any update made to the mapped and relevant fields in tickets also get replicated in SAP Field Service Management.

Similarly, service calls created in SAP Field Service Management, either in the browser or the mobile app, are replicated to SAP Service Cloud tickets. Updates to these service calls are also replicated.

After the [Release to FSM](#) action is triggered, the [Released to FSM](#) and [Requires Work](#) fields in the [Additional Information](#) section of a ticket are set to [Yes](#).

Field mapping:

SAP Service Cloud (Tickets)	SAP Field Service Management (Service Calls)
Ticket ID	Service call External ID
Subject	Subject
Source	Origin
Description	Notes
Customer ID	Customer
Contact ID	Contact Person
Ticket Type	Type
Service Category	Problem Type
Assigned To	Responsible
Priority	Priority
Work Description	Resolution
Status (user status)	Status



SAP Service Cloud (Tickets)	SAP Field Service Management (Service Calls)
Service Location <ul style="list-style-type: none"> <li>House Number</li> <li>Street</li> <li>City</li> <li>Postal Code</li> <li>Country</li> </ul>	Address <ul style="list-style-type: none"> <li>Street No.</li> <li>Street</li> <li>City</li> <li>Zip Code</li> <li>Country</li> </ul>
Ticket Timeline <ul style="list-style-type: none"> <li>Requested Start</li> <li>Requested End</li> <li>Completion Due</li> </ul>	<ul style="list-style-type: none"> <li>Start</li> <li>End</li> <li>Due</li> </ul>
Product	Item
Registered Product ID	Equipment External ID

### Points to Note

- In SAP Service Cloud, different status profiles can be defined per ticket type. However, in SAP Field Service Management, there's only one status profile. For the integration to work, all SAP Service Cloud ticket types that are being replicated to SAP Field Service Management must have the same status profile.
- The service ticket source field in SAP Service Cloud can't be changed after it's set the first time. However, in SAP Field Service Management, the field can be updated. Any changes to the origin in a service call aren't replicated to SAP Service Cloud.
- In the integrated setup (or if the integration with SAP Field Service Management is scoped in), the [Release for Scheduling](#) action and the [Appointment](#) button on the [Ticket](#) screen aren't available for use after the ticket is replicated to SAP Field Service Management.

### Limitations

- For a ticket to service call replication, the requested start date should be earlier than the completion due date in SAP Service Cloud.
- For service call to ticket replication, the service call location isn't replicated to the ticket service location.
- Rich text and inline images in ticket description aren't supported for replication to SAP Field Service Management.

## 11.2 Ticket Functional Location and Service Call Equipment

SAP Cloud for Customer Ticket Functional Location and SAP Field Service Management Service Call Equipment replication is bidirectional. If a service technician goes on site to service a functional location instead of an

individual registered product, the functional location information on the service call provides the required information.

## Supported Scenarios for SAP Cloud for Customer Ticket Functional Location Replication to SAP Field Service Management Equipment

- The functional location set as **main** product in the SAP Cloud for Customer ticket, is replicated as equipment in the corresponding service call.
- If the functional location is added in SAP Field Service Management service call that is replicated to SAP Cloud for Customer, the functional location is set as **main** product in SAP Cloud for Customer ticket.
- The installation points added to the service ticket product list, can be linked to the service item. The solution replicates the functional location specified for the ticket service Item (► [Items](#) ► [General Data](#) ► [Installation Point](#) ►) to the equipment of the corresponding activity of the service call.

### ⚠ Restriction

- You can add an inactive functional location to an SAP Cloud for Customer ticket, and the solution replicates that inactive location to the SAP Field Service Management service call. You **cannot** add inactive functional locations to service calls directly in SAP Field Service Management.
- For service call with functional location replicated to SAP Cloud for Customer ticket, or SAP Cloud for Customer ticket with main functional location replicated to SAP Field Service Management service call, changing the functional location (Equipment section) in SAP Field Service Management service call to another functional location or registered product, updates the main product in SAP Cloud for Customer ticket.
- If you don't want to replicate the functional location added as the main product in ticket, then set the **Functional location replication enabled** flag for the **Replicate Service Ticket to SAP Field Service Management** iflow to **false**.

## Configuration in SAP Cloud for Customer

In the **Communication Arrangement**, edit the communication scenario **Ticket Integration with SAP Field Service Management**, and maintain the path required for functional location service configuration. The details are as follows:

Service	Path
Replicate Functional Locations to SAP Field Service Management	/cxf/C4C/FSM/FunctionalLocation

For replicating attachments of functional locations, the existing service for attachments of registered products can now be used for attachments of functional locations as well.

Service	Path
Replicate Registered Product/Functional Location Attachments to SAP Field Service Management	/cxf/C4C/FSM/Attachment

## Configuration in CPI

You must configure the iflow **Replicate Functional Location to SAP Field Service Management**.

If you want to use functional location replication along with its usage in registered product (as a parent) and ticket (as a product), then adjust the following settings:

- In the iflow **Replicate Registered Product to SAP Field Service Management** set parameter **Functional location replication enabled** to **true**.
- In the iflow **Replicate Service Ticket to SAP Field Service Management** set parameter **Functional location replication enabled** to **true**.

## 11.3 Ticket Attachment to Service Call Attachment

Attachments are replicated from SAP Service Cloud for tickets that are already successfully replicated to SAP Field Service Management.

### Prerequisites

- Ticket is successfully replicated to SAP Field Service Management service call.
- Scoping question is enabled for integration.
- Communication arrangement is set up correctly.

For more information on scoping and configuration, see the related links following this section.

### Supported Scenarios

- Ticket attachments are replicated to the corresponding service call when the ticket is released to SAP Field Service Management.
- If a ticket attachment that is already replicated is then deleted in SAP Service Cloud, the attachment is also deleted in SAP Field Service Management.
- MIME type mapping between **Ticket** attachments and **Service Call** attachments is handled in CPI.
- Initial upload of ticket attachments is **not** supported.

## Trigger Conditions

Ticket attachment outbound messages are triggered when:

- A new ticket with attachments is created in SAP Service Cloud and released to SAP Field Service Management.
- A new attachment or attachments are added to the ticket. Only the content of the non-replicated attachments is sent in order to improve the performance.
- Existing attachments are deleted from a ticket that is already released to SAP Field Service Management.

Ticket attachment outbound messages are **not** triggered when:

- A new ticket is created **without** attachments and the ticket is released to SAP Field Service Management, or an existing ticket (released to SAP Field Service Management) without attachments is updated.
- An existing ticket with attachments (released to SAP Field Service Management) is updated without any changes to the attachments.
- An existing ticket's attachment (replicated to FSM and belonging to an activity) is deleted and the activity is already closed.

## Related Information

[Configure SAP Service Cloud \[page 7\]](#)

As an administrator, configure SAP Service Cloud so that it can send notifications to the iFlows of SAP Cloud Platform Integration.

## 11.4 Ticket Service Technician Team to Activity Region

The solution replicates the SAP Cloud for Customer service technician **team** unidirectionally to the SAP Field Service Management activity **region**.

Region in SAP Field Service Management is part of the planning scenarios used to prefilter the dispatching board and planning list. Replicating ticket service technician team to activity region can help further narrow down the responsibility of a single planner. Replicating the employee org assignment can help assign technicians to activity by region association.

## Prerequisites

- Regions created in SAP Field Service Management using the available data APIs.
- Value mapping between SAP Cloud for Customer **service team** and SAP Field Service Management **region** is maintained in CPI as described in the following sections.


## Supported Scenarios for SAP Cloud for Customer Ticket Service Technician Team to SAP Field Service Management Person Region Assignment Replication

- A scoping question is available in SAP Cloud for Customer for you to select if you want to replicate the technician team (or the service and support team present in a ticket) to the corresponding service call. If you set this question as in scope, the solution replicates the **service and support team** of a SAP Cloud for Customer ticket to the corresponding service call's activity region (depending on the mapping maintained in CPI value map). If this question is not in scope, then the solution replicates the **service technician team** of a SAP Cloud for Customer ticket to the corresponding service call's activity region (again, depending on the mapping maintained in CPI value map).
- If there are multiple activities in a service call replicated from SAP Cloud for Customer and the region in these activities changes, any further change to the technician team in the SAP Cloud for Customer ticket overwrites the changed region values in SAP Field Service Management. If there's no change to the technician team in the SAP Cloud for Customer ticket, then the changed region values are retained in SAP Field Service Management.

### Note

By default, the solution replicates the ticket **service technician team** to the SAP Field Service Management activity **region**. If the following scoping question is set to in scope, then for previously replicated activity regions, the service and support team is replicated to the region, **only** if the service and support team is added or updated in the ticket, or an initial upload of the ticket is retriggered.

## Configuration in SAP Cloud for Customer

Set the question in the following path to **In Scope** if you want to replicate the service and support team present in a ticket to SAP Field Service Management. Path: [Communication and Information Exchange](#) > [Integration with external applications and solutions](#) > [Integration with SAP Field Service Management](#) > ["Replicate ticket Service and Support Team to activity region?"](#) 

## Configuration in CPI

In the value mapping for SAP Cloud for Customer and SAP Field Service Management integration the entry is structured as follows:

Agency	Identifier	Agency	Identifier
C4C	Service_Technician_Team	FSM	Region

- First check the ID of the org unit, then maintain value mappings for this entry as required.
- Check the default values for the cases where a single entry is mapped to multiple entries.

## 11.5 Ticket Category to Service Call Problem Type

The solution replicates the SAP Cloud for Customer ticket **service category** bidirectionally to the SAP Field Service Management service call **problem type**.

### Supported Scenarios

- The outbound service replicating tickets from SAP Cloud for Customer to SAP Field Service Management and inbound service replicating service calls from SAP Field Service Management to SAP Cloud for Customer support the following categories for service tickets:
  - Incident category
  - Cause category
  - Resolution category
  - Object category
- For the outbound service, the catalog ID and the version ID are also enabled.
- The replication is only from the Service Category field (Category Type=Process) to Problem Type, not from other service category type like Incident category or Cause category. If you want to map other category types to problem type, you must extend the iflow.
- The previous ID mapping of service category and problem type can still be used if the value mapping between service category and problem type isn't enabled.

#### Note

This enhancement resolves the following issues with the existing mapping between SAP Cloud for Customer service category and SAP Field Service Management problem type:

- The existing mapping doesn't support complex scenarios of multiple active catalogs
  - The existing mapping doesn't support semantically different categories with the same category IDs present in different versions of a catalog or different catalogs altogether.
  - When multiple versions of a catalog exist, the ID-mapping screen has a known issue of data maintenance, when the version changes.
- Instead of maintaining the mapping in the ID-mapping screen, you maintain a CPI value map (description follows).
  - A new externalized parameter **Use service category value mapping** has been introduced in the iflows **Replicate Service Ticket to SAP Field Service Management** and **Replicate Service Call to SAP Service Cloud** with a default value of **false**.
  - If set to **false**, the existing ID mapping of service category to problem type, which is available in SAP Cloud for Customer, is used for the mapping between SAP Cloud for Customer service category and SAP Field Service Management problem type.
  - If set to **true**, the new value maps you define are used for the mapping between SAP Cloud for Customer service category and SAP Field Service Management problem type.
  - The entries must be maintained in the following format: <CatalogID>#<VersionID>#<CategoryID>. If entries are maintained in any other format, then the value mapping doesn't work.

- The same value map is used for both the outbound and inbound scenarios. If there are multiple categories corresponding to a problem type or multiple problem types corresponding to a service category, then the default values in the value-mapping configuration are used.
- If a new version of a catalog is created, you have to either update the **Category** field **version** value with the new version ID or create a new value map following the guidelines. If you fail to perform either of these updates, then the mapping doesn't work.
- The predelivered value mapping is only for mapping SAP Cloud for Customer service category to SAP Field Service Management problem type. If you want to use some other categories instead of the service category, then you have to create your own value maps.

## Configuration in SAP Cloud for Customer

No specific configuration is required in SAP Cloud for Customer. You can use the existing ID mapping between service category and problem type if you use a single catalog with single version categories that don't change. For any other use case, the ID mapping can't be used and configuration has to be done in CPI as follows.

## Configuration in CPI

- For these two iflows: **Replicate Service Call to SAP Service Cloud**, and **Replicate Service Ticket to Field Service Management**, set externalized parameter **Use Service Category value mapping** to **true**.
- In the value mapping for SAP Cloud for Customer and SAP Field Service Management integration the entry is structured as follows:

Agency	Identifier	Agency	Identifier
C4C	Catalog#Version#CategoryID	FSM	Problem_Type

1. Maintain value mappings for this mapping entry as required. Delete the predelivered value mapping and maintain the mapping by following the exact format of: <CatalogID>#<VersionID>#<CategoryID>
2. Check the default values for the cases where a single entry is mapped to multiple entries.
3. Deploy the value mapping.

## 11.6 Service Call Attachment and Activity Attachment to Ticket Attachment

Service call attachments and activity attachments are replicated from SAP Field Service Management for service calls and activities that are already successfully replicated to SAP Service Cloud tickets.

### Prerequisites

- Service call or activity is successfully replicated to SAP Service Cloud ticket.
- Scoping question is enabled for integration.
- Communication arrangement is set up correctly.

For more information on scoping and configuration, see the related links following this section.

### Supported Scenarios

- Service call and activity attachments are replicated to the corresponding ticket in SAP Service Cloud.
- If a ticket attachment that is already replicated is then deleted in SAP Field Service Management, the attachment is also deleted in SAP Service Cloud.
- MIME type mapping between **Ticket** attachments and **Service Call** attachments is handled in CPI.
- Initial upload of ticket attachments is **not** supported.

### Trigger Conditions

Attachment outbound messages are triggered when:

- An attachment is added to a service call which is already replicated to SAP Service Cloud.
- An existing service call attachment is deleted.
- An activity with attachments is released.
- An attachment is added to a released activity.
- An activity with summary report (PDF) is synced from the mobile app.

Attachment outbound messages are **not** triggered when:

- Attachments are added to an activity which is not released.

### Related Information

[Configure SAP Service Cloud \[page 7\]](#)



As an administrator, configure SAP Service Cloud so that it can send notifications to the iFlows of SAP Cloud Platform Integration.

## 11.7 Ticket Items and Reserved Materials

The ticket part item added in SAP Service Cloud is replicated as reserved material in SAP Field Service Management.

### Note

Only the items with the item processing type marked for *FSM Relevance* in configuration are replicated from SAP Service Cloud to SAP Field Service Management.

The mapping of the fields are as follows:

SAP Service Cloud (Ticket Item)	SAP Field Service Management (Reserved Material)
Product ID	Item External ID
Name	Item
Planned Quantity	Quantity
Technician (at item level)	Warehouse (linked to the owner, that is the technician)

### Note

Status mapping for ticket part item and service call reserved material is not relevant.

### 11.7.1 Link SAP Field Service Management Consumption or Return to Part Items for Advance Shipment Process

Link consumed reserved material or returned reserved material from SAP Field Service Management mobile to planned advance shipment part item in SAP Cloud for Customer ticket.

Your technician can use the reserved materials for the advance shipment part. The consumption is sent to SAP Cloud for Customer as sub item of the planned part with:

- The system processing type for the determined item processing code being Part Consumption from Customer Consignment Stock.
- Work progress being Finished
- Actual quantity is updated

When technicians take to own, stock the reserved material corresponding the advance shipment part, the return is sent to SAP Cloud for Customer as sub item of the advance shipment part with work progress being not relevant.

- The system processing type for the determined item processing code being Part Return from Customer Consignment Stock.

- Work progress being Not Relevant
- Planned quantity is updated with returned quantity

### 📘 Note

- The consumption/return of advance shipment items are created in SAP Cloud for Customer irrespective of whether the consignments fill up process has been executed in ERP or not. If it hasn't been done, then subsequent release of these items to ERP result in error.
- The linkage isn't established by default. You have to set the feature in scope via scoping along with the additional configurations.
- By default the planned advance shipment quantity is replicated to SAP Field Service Management as reserved quantity of the reserved material. You can enable the system to replicate the Total ATP Confirmed quantity instead of planned quantity to SAP Field Service Management via the scoping questions.
- The shipped quantity in SAP Field Service Management for the reserved material isn't considered in the integration.
- There's no approval process of T&M journals in SAP Field Service Management for the creation of advance shipment return items.
- For consumption from reserved materials, the reserved material section in the SAP Field Service Management mobile app is strictly used.
- The linkage can't be established in the following cases:
  - There are multiple advance shipment part items with the same product.
  - The material confirmation is done from the Material section in SAP Field Service Management mobile app.

## Scope & Configure

1. Set the feature in scope

Your administrator can enable this feature by following the steps:

1. Navigate to [Business Configuration](#) > [Implementation Process](#).
2. Select [Your Project](#) > [Edit Project Scope](#) > [Scope](#) > [Questions](#) > [Integration with External Application](#) > [Integration with SAP Field Service Management](#).
3. set the following question in scope: *Do you want to link consumption and/or return as sub items to part items?*

### 📘 Note

Consumption refers to both item planning and advance shipment, while return refers to advance shipment only.

2. To enable the system to replicate the Total ATP Confirmed quantity to SAP Field Service Management, set the following question in scope: *Do you want to replicate ATP confirmed quantity instead of planned quantity for advance shipment items to FSM?*
3. Set the SAP Field Service Management Relevance for Item Processing Code  
To enable the feature, follow the steps:
  1. Navigate to [Business Configuration](#).

2. Open the Fine-Tune activity and search for [Tickets for Customer Support](#) [Maintain Item Processing Codes](#)
3. For the processing code with System Processing Type being Part Advance Shipment to Customer Consignment Stock, set the *FSM Relevance as Reserved Material*
4. Maintain Item Processing Determination for the advance shipment-related items
  1. Go to [Business Configuration](#) [Open the Fine-Tune activity](#).
  2. Search for [Tickets for Customer Support](#) [Maintain Item Processing Determination](#).
5. Define rules to determine the item processing type and product for the consumed and returned item from customer consignment stock
 

To enable this feature, navigate to [Administrator](#) [Service and Social](#) [Field Service Management](#) and click *Define Rules for Product and Item Processing Type*.

  1. Set the *Link Item Relevance* column as visible. It's used to link the consumption or return from SAP Field Service Management mobile to the parent part item.
  2. For a ticket item of consumption from customer consignment stock, set link item relevance to *Advance Shipment* and SAP Field Service Management relevance to *Material*, configure the product and item processing code accordingly. The system processing type for the selected item processing code is Part Consumption from Customer Consignment Stock.
  3. For a ticket item of return from customer consignment stock, set Link Item Relevance to "Advance Shipment" and SAP Field Service Management Relevance to "Stock Transfer", configure the product and item processing code accordingly. The system processing type for the selected item processing code is Part Return from Customer Consignment Stock.

## 11.7.2 Link SAP Field Service Management Consumption to Part Items for Part Consumption from Van Stock Scenario

Link consumed reserved material from SAP Field Service Management mobile to planned part item to be consumed from technician van stock.

Your technician can use the reserved material corresponding the item planning part. The consumption is sent to SAP Cloud for Customer as sub item of the planned part.

- The system processing type of the determined processing code is "consumption from van stock".
- The consumed quantity is updated in the actual quantity.
- The work progress is finished.

Unplanned material consumption continues to be a sub item of the ticket service item.

The planned quantity of item with Item Planning processing code is sent to SAP Field Service Management as reserved quantity of reserved material.

You can create follow up sales documents in SAP ERP or SAP S/4HANA On-Premise with the reference established to SAP Cloud for Customer.

### Note

- The approved material confirmations are created in SAP Cloud for Customer no matter the parent item planning part item is released to SAP ERP or not. If not, release of these confirmed items to SAP ERP results in error.

- When a service item is assigned to a technician and released, this update is sent back to the related SAP Cloud for Customer service item. It also updates the technician in the item planning part items in the SAP Cloud for Customer ticket under the following conditions:
  - There's exactly one service item (FSM Relevance = Activity) in the ticket.
  - There are multiple service items (FSM Relevance = Activity) in the ticket except one whose status is *Ready* and others are *Cancelled*.
- For consumption from reserved materials, the reserved material section is strictly used.
- If the consumption is from the Material section, then a sub item to the service item is created in SAP Cloud for Customer with system processing code being "consumption from technician stock".
- There's no return (Stock Transfer) process for part to be consumed from technician van stock. Hence, you must not use "take to own stock" option in the FSM mobile app for this scenario.
- The linkage isn't established by default. You have to set the feature in scope via scoping along with additional configurations.
- The linkage between consumption and planned part can't be established in the following cases:
  - Multiple Item Planning part items with the same product.
  - The material confirmation is done from the Material section in SAP Field Service Management mobile app

## Scope & Configure

1. Set the feature in scope  
Follow the steps to enable the system to link SAP Field Service Management consumption of reserved material corresponding to Item Planning to part item:
  1. Navigate to [Business Configuration](#) > [Implementation Projects](#)
  2. Select the project and click on [Edit Project Scope](#) > [Scoping Questions](#) > [Integration with External Application](#) > [Integration with SAP Field Service Management](#)
  3. Then set the following question in scope: *Do you want to link consumption and/or return as sub items to part items?*

### Note

Consumption refers to both item planning and advance shipment, while return refers to advance shipment only.

- Navigate to [Business Configuration](#) > [Implementation Projects](#)
2. Set the SAP Field Service Management Relevance for Item Processing Code.  
To enable the feature, follow the steps:
    1. Navigate to [Business Configuration](#).
    2. Go to *Fine-Tune activity* and search for [Tickets for Customer Support](#) > [Maintain Item Processing Codes](#) > [For the processing code with System Processing Type being Item Planning](#)
    3. Set the SAP Field Service Management Relevance as *Reserved Material*.
  3. Maintain Item Processing Determination for the Item Planning related items  
To enable it,
    1. Go to [Business Configuration](#) and search for [Tickets for Customer Support](#) > [Maintain Item Processing Determination](#).

4. Define rules to determine the item processing type and product for the planned consumption from technician van stock.

To enable it, go to ► [Administrator](#) ► [Service and Social](#) ► [Under Field Service Management](#) ► then click [Define Rules for Product and Item Processing Type](#).

1. Set the "Link Item Relevance" column as visible, it's hidden by default. It's used to link the consumption from SAP Field Service Management mobile to the parent part item.
2. For a ticket item of planned consumption from technician stock, set Link Item Relevance to "Item Planning" and SAP Field Service Management Relevance to Material, configure the product and item processing code accordingly. The system processing type for the selected item processing code is Part Consumption from Technician Stock.

#### Note

There's no stock transfer for an item planning scenario, so an entry corresponding to it (Link Item Relevance = "Item Planning" and FSM Relevance = "Stock Transfer") isn't valid and must not be created.

## 11.8 Ticket Items and Activities

A ticket service item in SAP Service Cloud is replicated as activity in SAP Field Service Management.

#### Note

Only the items with the item processing type marked for [FSM Relevance](#) in configuration are replicated from SAP Service Cloud to SAP Field Service Management.

### Field Mapping

SAP Service Cloud (Ticket Item)	SAP Field Service Management (Activity)
Description	Subject
Planned Quantity	Original estimate
Work Progress	Activity status
Requested Start	Earliest start date
Actual Start	Planned start date
Planned Start	Planned start date
Planned End	Planned end date
Requested End	Due date
Actual End	Planned end date
Registered Product ID	Equipment external ID

SAP Service Cloud (Ticket Item)	SAP Field Service Management (Activity)
FSM Activity Code	Activity Code

The status mapping is as follows:

SAP Service Cloud Work Progress	SAP Field Service Management Activity Status
Open	Draft
Ready	Open
In Scheduling	N/A
Started	N/A
Finished	Closed

An activity added in SAP Field Service Management is not immediately replicated to SAP Service Cloud as a ticket item. The activity is replicated to SAP Service Cloud only after it's released. Activity created in SAP Field Service Management is in draft, then the activity or any update in the activity is not replicated. If the activity is created from SAP Cloud for Customer, is in draft, then the update from SAP Field Service Management will be replicated to SAP Cloud for Customer.

## Points to Note

- In SAP Service Cloud, when an item is added in the ticket, a service reference object determination is done; that is, the registered product at the item level is determined from the main registered product at the header level. This determination from header to item is skipped for this integration scenario, when an activity from SAP Field Service Management is replicated to SAP Service Cloud. This means:
  - If the activity in SAP Field Service Management doesn't have equipment, the registered product (service reference object) field for the corresponding item in SAP Service Cloud is blank.
  - If the activity in SAP Field Service Management has an equipment and it's different from the one at the service call, the activity equipment is added in SAP Service Cloud ticket header (as a service reference object).
- When an activity is replicated from SAP Field Service Management to SAP Service Cloud, the activity status isn't replicated to item status (work progress). The initial work progress for the ticket service item is set based on the existing configurations in SAP Service Cloud.
- When an activity is assigned to a technician and released, the planned start and planned end dates in the activity are replicated to planned start and planned end dates in the corresponding service item. If an activity is unassigned or canceled in SAP Field Service Management, the planned dates of the corresponding canceled service item are retained.
- Canceling a released activity sets the status of the corresponding SAP Service Cloud service item to "Not Relevant". Canceling an unreleased activity doesn't create any corresponding SAP Service Cloud service item.
- Unassigning a released activity sets the status of the corresponding SAP Service Cloud service item to "Not Relevant". Unassigning an unreleased activity doesn't create any corresponding SAP Service Cloud item.
- Closing an activity replicates its **planned start** and **planned end** dates to **actual start** and **actual end** date of the corresponding SAP Service Cloud service item. Only from SAP Field Service Management to SAP Service Cloud.

- When the work progress of the ticket service item is set to *Finished* (based on the activity closed status), the *Actual Quantity* and the *Actual End* of the service item aren't replicated from SAP Field Service Management. Note that the *Actual Quantity* is set to the same value as *Planned Quantity* and *Actual End* is set to the date and time when the work progress is set to *Finished*.
- The Planned Quantity of an SAP Service Cloud service item is mapped to the SAP Field Service Management Original estimate of the activity. As the SAP Field Service Management Original estimate is always shown in hours, the planned quantity for an SAP Service Cloud service item is always displayed hours as well.
- The FSM Activity code is only available for service item and expense item.

## Limitations

- The delete operation isn't supported. That is, if a ticket item is deleted, the corresponding entity in SAP Field Service Management isn't deleted.

## Ticket Item Internal Notes to Activity Notes (for the Technician)

- Service item internal notes for a ticket are replicated to the field **Notes (for the technician)** in the corresponding activity.
- Replication of the notes field is bidirectional.
- Deleting notes is **not** supported in the direction SAP Field Service Management to SAP Service Cloud.

## 11.9 T&M Journal and Ticket Items

After the T&M Journal is approved in SAP Field Service Management, the following updates happen in SAP Service Cloud:

- Confirmed material is replicated as an item in the *Ticket*.
- Mileage is replicated as an item in the *Ticket*.
- These items are added with reference to the service item (the activity for which the T&M journal is maintained) – the parent is maintained.
- Actuals are maintained for these items, *Work Progress* is set to *Finished* for these items and also for the existing service item.
- The product and item processing type to create the ticket items are determined based on the defined rules.

### ⓘ Note

Replicate the following from SAP Field Service Management to SAP Service Cloud:

- Time and material journals are replicated to SAP Service Cloud whenever they're approved, irrespective of the status of the service item (activity) under which they're created.
- All T&M confirmations must be linked to an activity in SAP Field Service Management.

- Additional time and material journals added to already closed activities in SAP Field Service Management are replicated to SAP Service Cloud when approved.
- Time and material journals assigned to different technicians update the technicians accordingly in the corresponding SAP Service Cloud actual items when the items are replicated.

### Limitation

This integration may not support usage of crowd service in SAP Field Service Management along with an end to end flow. For example, if partner technicians are created in SAP Field Service Management and don't exist in SAP Cloud for Customer, and if these technicians book effort, an error occurs when this effort is replicated to SAP Cloud for Customer.

## 11.10 T&M Journal: Time Effort, Time Entries and Time Items

When the *Time Effort* is approved in SAP Field Service Management, it is replicated as *Approved Time Entry* in SAP Cloud for Customer

- If a *Time Effort* created in SAP Field Service Management spans across two days (with total duration less than 24 hours), it is then split into two time entries in SAP Cloud for Customer. If there is a break, it is either accommodated into one of the two split time entries or adjusted into both.
- Replication of *Time Effort* to SAP Service Cloud *Time Entry* creates the time entries in *Approved* status.
- The *Time Zone* in the effort is directly replicated to *Time Entry*.

### Note

The *Time Zone* of the *Time Effort* is determined from the region set in the mobile device. If there is no value mapping between SAP Field Service Management and SAP Cloud for Customer time zones for the determined *Time Zone*, the system calculates the *Time Effort* based on UTC. You can maintain the missing time zone in value mapping in CPI, and the SAP Cloud for Customer time entry will be created in the same time zone as entered in the SAP Field Service Management time effort."

In SAP Field Service Management Workforce Management UI it is possible to create *Time Effort* where the start and end times are in different time zones. Creating such an entry is not possible from the mobile app. In such cases the time entries in SAP Cloud for Customer is persistent in the SAP Field Service Management start time's *Time Zone*.

In order to release the time effort to SAP ERP or SAP S/4HANA On-Premise for internal costing or billing, create a time item from the approved time entries.

You can either manually create the time item or set the system to automatically create the time item.

### Create Time Item Automatically from Time Entry

Time Entry created from approved SAP Field Service Management time effort can now automatically generate time item.

This feature saves you the effort of manual creation of time items from the time entries created from SAP Field Service Management time efforts.



## Note

- The *Actual Quantity*, *Actual Start* or *Actual End* of the service item is calculated based on automatically created time items under the service item irrespective of the work progress of the service item.
- If the feature is enabled, then the SAP Field Service Management activity isn't cancelled after its approved time effort is sent to SAP Cloud for Customer. If done, the incoming message of activity cancellation fails in SAP Cloud for Customer.
- For manually created time item, the time entry's time zone isn't considered. It affects the update of the actual start and actual end of the service item under which the time items are created.
- Only time entry is created, and manual creation of the time item is still needed if time product isn't determined. If the service item is finished, then these manually created actual quantities, actual start or, actual end date and time items don't update.
- If *Start Date* and *End Date* in *Time Effort* cross two days, system splits and create two *Time Entries* and two time items.
- This feature is applicable only in the SAP Cloud for Customer and SAP Field Service Management Integration context, not for standalone SAP Cloud for Customer.

## Scope and Configure

To enable this feature follow the steps:

1. Set the automatic time item creation feature in scope.
  - Go to [Business Configuration](#) > [Implementation Projects](#).
  - Select your project and click on [Edit Project Scope](#) > [Scoping](#) > [Questions](#) > [Communication and Information Exchange](#) > [Integration with External Application and Solutions](#) > [Integration with SAP Field Service Management](#).
  - Select the question: *Do you want to create Time Item from Time Entry?*
2. Enable rule-based product determination for time item.
  - Go to [Business Configuration](#) > [Implementation Projects](#).
  - Select your project and click on [Edit Project Scope](#) > [Scoping](#) > [Questions](#) > [General Business Data](#) > [Employees and Service Agents](#) > [Employees](#).
  - Select the question: *Do you want to enable rule-based product determination for a Ticket from Time Recording?*
3. Maintain rules for time item product determination.
  - Go to [Administrator](#) > [Service and Social](#) > [Define Rules for Time Item Product](#).
4. Configure code list mapping for time types.
  - Go to [Business Configuration](#) > [Code List Mapping](#).
5. Update integration flow.

Update integration flow **Replicate Service Call from SAP Field Service Management** to the latest version.

## 11.11 T & M Journal: Expense, Ticket Items

When approved in SAP Field Service Management, the SAP Field Service Management expense is replicated to SAP Cloud for Customer as ticket expense item. Here are the details:

- The expense item is automatically created under a service item with:
  - Item product determined per configuration.
  - Actual quantity as 1, UoM takes the default UoM of the determined product.
  - Amount with currency assigned to the determined price condition in the *Pricing* tab of the item details, the UoM is derived from the expense product.
  - Work process set to *Finished*.
  - The indicator *Manually Added/Changed* is set, manual change of this indicator is not possible.
- You can click *Request External Pricing* for the expense item.
- The SAP Field Service Management external expense amount with currency along with the *Remarks* are replicated. *Remarks* are replicated to *Internal Note* of the service item in the *Pricing* tab.
- *Expenses* created under an activity is only supported.
- *Expense* is successfully replicated under a service item which is created from SAP Field Service Management and replicated to SAP Cloud for Customer before the *Expense* is approved in SAP Field Service Management.
- *Expense* is successfully replicated under a service item which is created from SAP Field Service Management and replicated to SAP Cloud for Customer along with the approved expense item.
- *Expense* is successfully replicated when the service call, activity, and expense items are replicated from SAP Field Service Management together.

### Note

- The *Expense* is only replicated when approved.
  - If the *External Amount* is not maintained, an *Expense Item* is created in SAP Cloud for Customer along with the pricing record. However, the amount is blank.
  - *Expense* items from SAP Field Service Management are created under the corresponding service item. So the item processing codes should be correctly configured for both the expense and the parent service item.
  - The expense product as well as the parent service product shall be replicated from SAP Cloud for Customer.
  - The price condition used shall be configured in ► *External Pricing* ► *External Condition Types* ►.
  - You need to map the expense type with the right condition type, and correctly configure the condition type in S/4 or ERP:
    - For T&M type of expense like accommodation, the mapped condition type shall set Manual entries to be Manual entry has priority.
    - For fixed price expense like daily allowance, it shall not be mapped to the same condition type for T&M expense which takes manual entry with priority.
- Suggest set Manual entries with Automatic entry has priority for the mapped condition type.

### Limitations

- Attachments added to expenses are replicated as Ticket attachments.
- Configuration of rules for item product and processing type must not have an entry for expense where input product and output product are different.

- Replication of expenses without expense type is not supported.

## Configuration in SAP Cloud for Customer

1. Create an *Expense Type* to map with the SAP Field Service Management *Expense Type*.  
Go to ► [Business Configuration](#) ► [Additional configurations for Integration with SAP Field Service Management](#) ► [Add or remove the Expense Type](#) ►.

### Note

At least one *Expense Type* is required.

2. Maintain the code list mapping between SAP Field Service Management *Expense Type* and SAP Cloud for Customer *Expense Type*.  
Go to ► [Business Configuration](#) ► [Code List Mapping for Integration with External Applications and Solutions](#) ► [Mapping Group by Tickets Integration](#) ► and then maintain the mapping for *Expense Type*.  
For the Code List Mapping Rule, use Map Individual Codes. If you maintain the same code in both the systems, the **Local and Remote Codes are Equal** rule also works.
3. Configure the *Expense Type* to determine the *Condition Type* and expense item product when creating expense item for a ticket.  
Go to ► [Administrator](#) ► [Service and Social](#) ► [Field Service Management](#) ► [Configure Expense Types](#) ►.
4. Define rules to determine the item processing type and product for the expense item  
Go to ► [Administrator](#) ► [Service and Social](#) ► [Field Service Management](#) ► [Define Rules for Product and Item Processing Type](#) ►.

### Note

- Suggest to set both the input *Item Product ID* as well as the output *Product ID* as \*, so that the output *Product ID* (expense product on ticket) is determined per the *Expense Type* configuration in step 3.
- When the input *Item Product ID* is set to a specific product, the output *Product ID* should be set the same with the input *Item Product ID*.

## Troubleshooting For Possible Failed Replication

- Missing *Expense Type* in SAP Field Service Management  
When the approved expense is created from the desktop, and does not have an expense type, the expense item cannot be created successfully in SAP Cloud for Customer ticket. In Web Service Message Monitoring, the system displays an error text: **Expense Type cannot be blank**. In order to fix the issue follow these steps:
  1. Check the payload for all the involved expenses.
  2. Go to SAP Field Service Management Time and Material Journal and from the approved expense list replicate all the expenses contained in the payload.
  3. Maintain the right expense type, and approve them again in SAP Field Service Management to replicate it successfully.

- Missing *Expense Type* for SAP Field Service Management *Expense Type*  
When the *Code List Mapping* in the approved expense is not mapped with a SAP Cloud for Customer *Expense Type*, in *Web Service Message Monitoring*, the system displays an error text: **Codelist Mapping missing for Expense Type XYZ**. In order to fix the issue go to ► *Business Configuration* ► *Code List Mapping for Integration with External Applications and Solutions* ► *Tickets Integration* ► and then maintain the mapping for *Expense Type* and restart the message.
- Missing *Expense Type* Configuration  
When the *Expense Type* in the approved expense is mapped with a SAP Cloud for Customer expense type, but there is no configuration for the price condition and the expense product, the expense item in ticket cannot be created successfully. In *Web Service Message Monitoring*, the system displays an error text: **Configuration missing for Expense Type XYZ**. In order to fix the issue, go to ► *Administrator* ► *Service and Social* ► SAP Field Service Management ► ► *Configure Expense Types* ► and restart the message.

## 11.12 Summary PDF to Ticket Attachment

The summary PDF of all activities in a service call is replicated from SAP Field Service Management to a ticket attachment in SAP Service Cloud.

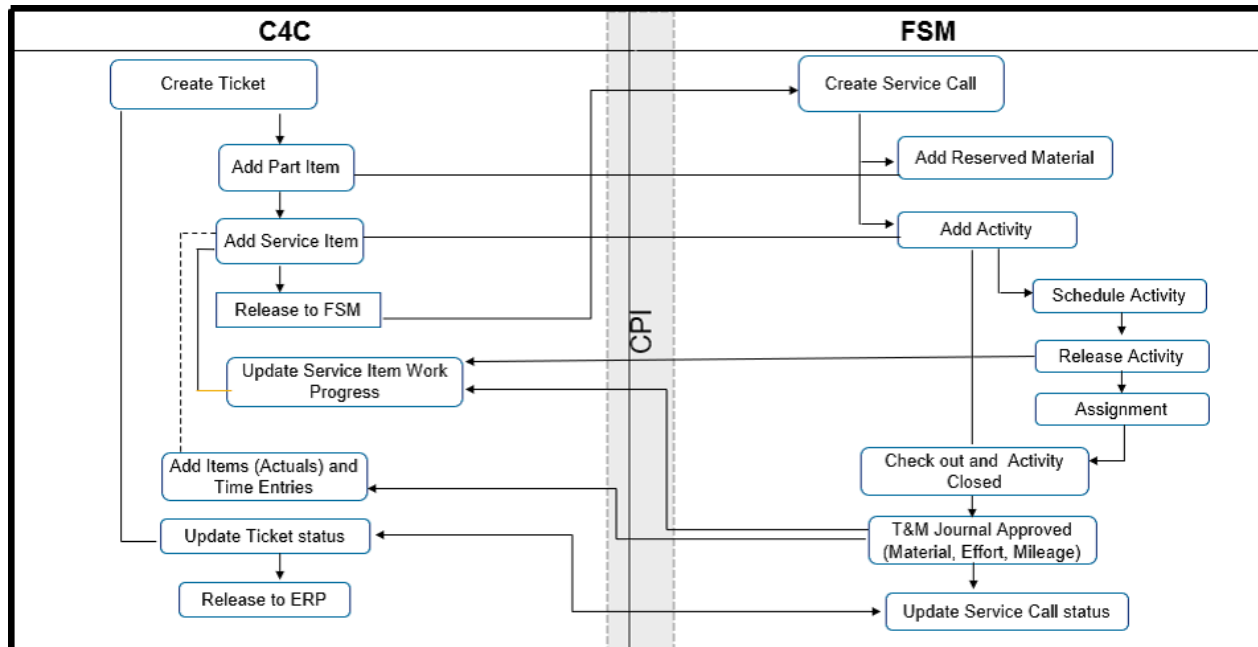
When the activity is checked out in FSM mobile, a service checkout document is generated and this summary PDF of the activity is replicated from SAP Field Service Management to SAP Service Cloud as a ticket attachment.

### 📌 Note

The service technician has to select *Sync* on mobile app for the summary PDF to be successfully replicated to SAP Service Cloud.

## 11.13 The Process Flow - An Example

The following image displays an example flow of the replication of a ticket to a service call:



As the image depicts, a ticket is created in SAP Service Cloud (manually or via a communication channel). The user adds a part item and a service item in the ticket, and selects the *Release to FSM* action. The ticket is replicated to SAP Field Service Management as a service call. A reserved material is created for the part item and an activity is created for the service item. The activity is scheduled and released. A technician gets the assignment. The service item work progress is updated in SAP Service Cloud. After performing the task, the technician checks out, updates the T&M Journal, and the activity is closed. The T&M Journal is approved. The work progress of the service item is set to *Finished* in SAP Service Cloud. The T&M Journal, with the details of the effort, time, and material, is replicated to SAP Service Cloud. The corresponding items and entities are added with actuals and the work progress is set to *Finished*. The status of the service call and ticket are updated and in SAP Service Cloud, it is released to ERP.

## 11.14 Run an Initial Load

As an administrator, you can run an initial load of existing tickets.

Before you run the initial load of tickets, set the FSM relevance in bulk for all the ticket items that are created after the item processing type configuration is done. Navigate to **Administrator** > **Service and Social** > **Field Service Management** > **Set Ticket Item as FSM relevant** . Provide the criteria to select the tickets for which the items need to be replicated to SAP Field Service Management.

To run an initial load of the existing tickets, go to **Administrator** > **Extract Data to External System** . For the *Replicate Ticket to SAP Field Service Management* option, the parameters are as follows:

- Creation Date
- Status
- Ticket Type

When you run an initial load of tickets, *Released to FSM* is set for all the instances, if they are not set already.

## 11.15 Smartforms Replication

Replication of checklist templates and checklist instances from SAP Field Service Management to SAP Cloud for Customer are supported.

### Smartforms Replication

1. Newly created checklist template is replicated when released. Existing checklist templates in released status can be sent to SAP Cloud for Customer via initial load in SAP Field Service Management.
2. Existing templates are also replicated when deactivated from SAP Field Service Management.
3. For already replicated templates, When the template is deactivated or deleted in SAP Field Service Management, the status is set as Inactive in C4C.
4. FSM Smartform (Checklist) instance is replicated to Cloud for Customer when finished and synced back from mobile device. Replication of a checklist instance will be successful only if the corresponding template along with the used version has been successfully replicated to SAP Cloud for Customer.
5. Replication of the following elements are supported, both for template and instance data:
  1. Chapter
  2. Text Input
  3. Label
  4. Table
  5. Drop Down
  6. Date and Time Input
  7. Number Input
  8. Calculation
  9. Checkbox
  10. Series
  11. Object picker
6. If a template has elements other than the above list, then such elements will not be replicated to SAP Cloud for Customer. Data based on the unsupported elements in the checklist instance is also not replicated.
7. Translations for the above elements are supported.

### Analytics

You can create report based on the pre-delivered data source: Checklist Template and Instance.

## Point to Note

1. The checklist template and checklist instance cannot be seen from the user interface.
2. Selected list of checklist elements are replicated.
3. It's not possible to view the template data in the data source for which instances have not been created yet.  
You can view the data only after instances corresponding to the template have been replicated from SAP Field Service Management.

## Configurations in SAP Cloud for Customer

### Set Smartforms Replication in Scope

Go to [Business Configuration](#) > [Scoping](#) > [Questions](#) > [Integration with External Application and Solutions](#) > [Integration with SAP Field Service Management](#) > [Set the following questions in scope: Do you want to replication Smartforms from SAP FSM?](#) >

### Maintain Communication Arrangement

Go to [Administrator](#) > [General Settings](#) > [Integration](#) > [Communication Arrangement](#) > edit the communication scenario: Smartforms Integration with SAP Field Service Management, on the Technical Data tab, select Outbound:

1. for Replicate Checklist Instance Confirmation to SAP Field Service Management, enter /cxf/C4C/FSM/InstanceConf as Path.
2. for Replicate Checklist Template Confirmation to SAP Field Service Management, enter /cxf/C4C/FSM/TemplateConf as Path.

## Configurations in CPI

Make sure the following four Integration Flows are deployed in your CPI tenant and correctly configured:

1. Replicate Checklist Template from SAP Field Service Management.
2. Replicate Checklist Instance from SAP Field Service Management.
3. Confirm Checklist Template Replication to SAP Field Service Management.
4. Confirm Checklist Instance Replication to SAP Field Service Management.

For the detailed configuration of the iflow parameters, check [Configure SAP Cloud Platform Integration](#).

## Configurations in SAP Field Service Management

The iflow end points for replicating checklist templates and checklist instances need to be configured in SAP Field Service Management connector.

Navigate to SAP Field Service Management Connector > [FSM Connector](#) > [Extended Configuration](#) > Set Checklist Enabled flag to true and maintain the CPI iflow endpoint in ChecklistTemplate and ChecklistInstance URL.

## Technical Details for Custom Implementation

Data captured in the checklist can be used for custom development to create follow up processes such as create follow up ticket, opportunity, and update equipment measurement readings etc.

The Checklist Instance and Checklist Template business objects are now PSM released.

### Note

It allows read access only.

### Picker

Picker is supported for the following objects in SAP Field Service Management:

1. Business Partner
  2. Equipment
  3. Item
  4. Contact
  5. Address
  6. Person
1. If any instance of the above objects as object picker is added in a checklist instance, then the external id of these instances (the corresponding SAP Cloud for Customer object id ) will be persisted in SAP Cloud for Customer. If external id is missing in SAP Field Service Management ,then the SAP Field Service Management cloud id along with statement [C4C\_ID\_NOT\_EXIST] will be persisted in SAP Cloud for Customer.
  2. For contacts, the external id in SAP Field Service Management is persisted as "<C4C Contact id>~ID-JOIN~<C4C Account id>". The same will be available in C4C when a contact object picker checklist instance is replicated from SAP Field Service Management to SAP Cloud for Customer.
  3. Addresses are created in SAP Field Service Management (while replicating from SAP Cloud for Customer) with external id in the following manner:
    1. Business partner: external id of the address will be the address UUID linked to the business partner.
    2. Equipment: external id of the address will be a Registered product ID
    3. Service call: external id of the address will be a Service Ticket ID.
    4. On selection of Address object picker above mentioned IDs will be picked from SAP Field Service Management and persisted as the Value of the filled Template instance.



# 12 Integration at the User Interface Level

Learn more about the configuration and use of the UI-level integration for SAP Service Cloud and SAP Field Service Management.

## 12.1 Configure Integration at the User Interface Level

As an administrator, you can configure the UI-level integration for SAP Service Cloud and SAP Field Service Management.

### Prerequisites

- Single Sign-on (SSO) with Security Assertion Markup Language (SAML) must be enabled in the SAP Service Cloud and SAP Field Service Management systems.
- The SAP Service Cloud and SAP Field Service Management tenants are added in the Identity Provider (IdP) and users are created in IdP. With this, the user does not need to log on again, while navigating from SAP Service Cloud to SAP Field Service Management.

To configure the integration, follow these steps:

1. In SAP Service Cloud, navigate to ► [Administrator](#) ► [Service and Social](#) ► [Field Service Management](#) ►, and click [Configure FSM Integration](#).
2. On the [Field Service Management](#) page, enter the details as described in the following table:

Field	Description
FSM URL Prefix	For production environment, maintain <b>https://auth.coresuite.com</b>
FSM URL	Maintain the system URL of FSM in the <b>https://&lt;cluster&gt;.coresystems.net</b> format: For example, <b>https://de.coresystems.net</b>
FSM Account	Enter the FSM account.
FSM Client ID	Enter the FSM Client ID to be integrated with the SAP Service Cloud system.
FSM Client Secret	Enter the client secret for the corresponding FSM client.

3. Click [Save and Close](#).

## 12.2 Create a Custom Card for FSM Dispatching Board

As an administrator, you can create a custom card for the SAP Field Service Management dispatching board.

To create a custom card, follow these steps:

1. In SAP Service Cloud, go to the [Home](#) page and click the edit icon.
2. In the [Homepage Personalization and Adaptation](#) window, click [Adapt](#).
3. In the [Select User Role](#) window, select the user role. If you want to apply changes to all the roles, select [DEFAULT](#).
4. Click [Go](#).
5. In the [Add Cards](#) window, select [Create Custom Card](#).
6. In the [Create Custom Card](#) window, enter the details as described in the following table:

Field	Description
Type	Select <a href="#">URL</a> .
Title	Enter a title for the card. For example, <b>FSM Dispatching Board</b> .
URL	<p>Enter the FSM Dispatching Board URL in the following format:</p> <pre>&lt;FSM-URL-Prefix&gt;/api/oauth2/v1/sso_redirect?accountName=&lt;account-here&gt;&amp;clientInfo=&lt;client-creds&gt;&amp;extraParams=-https://&lt;cluster&gt;.coresystems.net/shell/%23/planning-dispatching</pre> <ul style="list-style-type: none"><li>• For <b>&lt;FSM-URL-Prefix&gt;</b>:<ul style="list-style-type: none"><li>• Maintain <a href="https://auth.coresuite.com">https://auth.coresuite.com</a> for production environment</li><li>• Maintain <a href="https://qt.dev.coresuite.com">https://qt.dev.coresuite.com</a> for quality environment</li></ul></li><li>• For <b>&lt;client-creds&gt;</b>, maintain the FSM client credential, which is the Base64 encoding of Client ID:Client Secret</li></ul>
Icon	Select an icon.

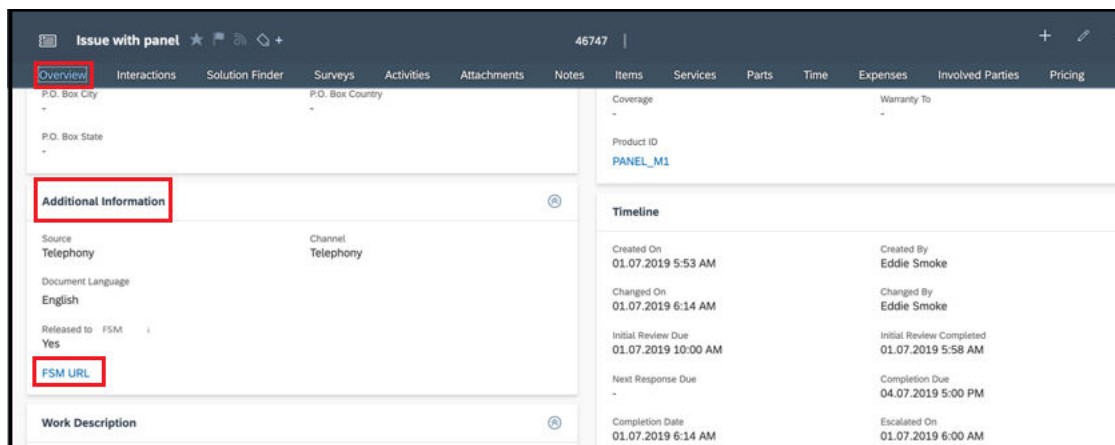
7. Click [Save](#).
8. In the [Publish Changes](#) window, select [Update only the cards you've changed](#), and click [Publish](#).
9. Click [Leave Adaptation Mode](#). The custom card is created.

## 12.3 Use the UI-Level Integration

Configure the UI-level integration settings.

### FSM URL in the Additional Information Section Tab

After the ticket is replicated to SAP Field Service Management system, the *FSM URL* link is activated in the *Additional Information* section tab of a ticket in SAP Service Cloud.



When you click the *FSM URL* link, the corresponding SAP Field Service Management service call is launched in a new window.

### FSM Dispatching Board from Home Custom Card

After the custom card is created, you can launch the SAP Field Service Management dispatching board from the SAP Service Cloud home page.

## 12.4 Display Service Call in Ticket Document Flow

Add the service call Company ID to the ticket document flow and use the link to navigate back to SAP Field Service Management from SAP Service Cloud.

### Prerequisites

- Single Sign-on (SSO) with Security Assertion Markup Language (SAML) must be enabled in both SAP Service Cloud and SAP Field Service Management.
- The SAP Service Cloud and SAP Field Service Management tenants are added in the Identity Provider (IdP) and users are created in IdP. Once done, the user doesn't need to log on again, while navigating from SAP Service Cloud to SAP Field Service Management.
- Scoping questions for SAP Service Cloud SAP Field Service Management replication must be scoped
- Configurations for UI level integration are done

### Feature Description

When an SAP Service Cloud ticket is replicated successfully to SAP Field Service Management or a SAP Field Service Management service call is replicated successfully to SAP Service Cloud including successful outbound confirmation, the SAP Field Service Management service call is displayed in the SAP Service Cloud ticket document flow.

The corresponding SAP Field Service Management Company ID from which the instance has been replicated is shown in the block header. The agent can directly see from the document flow whether a service call has been created successfully, also the agent can navigate to the service call from here by clicking the Company ID.

#### Note

If service call is shown in the ticket document flow, but you can't navigate back to SAP Field Service Management service call, then the outbound confirmation may have failed. Check whether there's an external ID for SAP Field Service Management service call to verify the outbound confirmation. If the external ID is there, then it means that the confirmation is successful, if not then it means that the confirmation has failed.

#### Restriction

The document flow only supports one company per account replication from SAP Field Service Management.  
The title of the block for Service Call can only be shown as Ticket.

# 13 Troubleshooting

This section details the steps and process that you can follow to troubleshoot issues that you might face during integrating SAP Service Cloud with SAP Field Service Management (FSM)

## 13.1 System Unavailability during Integration

For the integration scenarios when the C4C solution is not available, the incoming messages to that solution fails. You can pass the messages again once the solution is back online. To re-trigger the messages, follow the steps below:

1. In the FSM application, go to [Settings and Configuration](#).
2. Click [Administration](#) and login with your admin credentials.
3. Select your company from under [Companies](#).
4. Click [FSM Integrations](#) -> [FSM Connector Errors](#).
5. Check the error message of the failed instance and click [Retry](#).

# 14 More Information



- For more information about SAP Field Service Management, see <https://docs.coresystems.net/help-index.html> or <https://www.sap.com/products/field-service-management.html>.
- For more information about FSM Connector, see <https://docs.coresystems.net/platform-integration/fsm-connector.html>.
- For more information about configuring SAP Service Cloud for SSO, see <https://help.sap.com/viewer/abfba1342cfb4832ab722fa041f6c4b7/1908/en-US/f1e6f23267b542ce9a906823c70dc583.html>.
- For information about integrating SAP IAS SAML 2.0 with SAP Field Service Management, see <https://docs.coresystems.net/sap-saml-integration.html>.

# Important Disclaimers and Legal Information

## Hyperlinks

Some links are classified by an icon and/or a mouseover text. These links provide additional information.

About the icons:

- Links with the icon : You are entering a Web site that is not hosted by SAP. By using such links, you agree (unless expressly stated otherwise in your agreements with SAP) to this:
  - The content of the linked-to site is not SAP documentation. You may not infer any product claims against SAP based on this information.
  - SAP does not agree or disagree with the content on the linked-to site, nor does SAP warrant the availability and correctness. SAP shall not be liable for any damages caused by the use of such content unless damages have been caused by SAP's gross negligence or willful misconduct.
- Links with the icon : You are leaving the documentation for that particular SAP product or service and are entering an SAP-hosted Web site. By using such links, you agree that (unless expressly stated otherwise in your agreements with SAP) you may not infer any product claims against SAP based on this information.

## Videos Hosted on External Platforms

Some videos may point to third-party video hosting platforms. SAP cannot guarantee the future availability of videos stored on these platforms. Furthermore, any advertisements or other content hosted on these platforms (for example, suggested videos or by navigating to other videos hosted on the same site), are not within the control or responsibility of SAP.

## Beta and Other Experimental Features

Experimental features are not part of the officially delivered scope that SAP guarantees for future releases. This means that experimental features may be changed by SAP at any time for any reason without notice. Experimental features are not for productive use. You may not demonstrate, test, examine, evaluate or otherwise use the experimental features in a live operating environment or with data that has not been sufficiently backed up.

The purpose of experimental features is to get feedback early on, allowing customers and partners to influence the future product accordingly. By providing your feedback (e.g. in the SAP Community), you accept that intellectual property rights of the contributions or derivative works shall remain the exclusive property of SAP.

## Example Code

Any software coding and/or code snippets are examples. They are not for productive use. The example code is only intended to better explain and visualize the syntax and phrasing rules. SAP does not warrant the correctness and completeness of the example code. SAP shall not be liable for errors or damages caused by the use of example code unless damages have been caused by SAP's gross negligence or willful misconduct.

## Bias-Free Language

SAP supports a culture of diversity and inclusion. Whenever possible, we use unbiased language in our documentation to refer to people of all cultures, ethnicities, genders, and abilities.

© 2024 SAP SE or an SAP affiliate company. All rights reserved.

No part of this publication may be reproduced or transmitted in any form or for any purpose without the express permission of SAP SE or an SAP affiliate company. The information contained herein may be changed without prior notice.

Some software products marketed by SAP SE and its distributors contain proprietary software components of other software vendors. National product specifications may vary.

These materials are provided by SAP SE or an SAP affiliate company for informational purposes only, without representation or warranty of any kind, and SAP or its affiliated companies shall not be liable for errors or omissions with respect to the materials. The only warranties for SAP or SAP affiliate company products and services are those that are set forth in the express warranty statements accompanying such products and services, if any. Nothing herein should be construed as constituting an additional warranty.

SAP and other SAP products and services mentioned herein as well as their respective logos are trademarks or registered trademarks of SAP SE (or an SAP affiliate company) in Germany and other countries. All other product and service names mentioned are the trademarks of their respective companies.

Please see <https://www.sap.com/about/legal/trademark.html> for additional trademark information and notices.