Integrating SAP Hybris Cloud for Customer with SAP CRM using SAP Process Integration
# Content

1. Integrating SAP Hybris Cloud for Customer with SAP CRM using SAP Process Integration .......................................................... 5

2. Integrating SAP Hybris Cloud for Customer with SAP CRM using SAP Process Integration .......................................................... 6
   2.1 What’s New in CRM Integration. ................................................................. 7
   2.2 SAP CRM Integration Scenario Overview. .................................................. 8

3. Connect Phase: Check and Prepare SAP CRM System. ........................................... 9
   3.1 CRM Software Components. ...................................................................... 9
   3.2 Important SAP Notes for CRM. ................................................................... 10
   3.3 RFC Destination to PI. ................................................................................. 10
   3.4 RFC Destination to PI (IDoc AAE Adapter). ............................................... 11
   3.5 Create SAP CRM User. ............................................................................. 11

4. Connect Phase: Check and Prepare PI System. ................................................ 13
   4.1 Access PI System. ..................................................................................... 13
   4.2 Create SLD Configuration. ........................................................................ 13
   4.3 CRM PI Software Components. ................................................................. 14
   4.4 RFC Destination to SAP On-Premise. ......................................................... 15
   4.5 RFC Destination to SAP On-Premise (IDOC_AAE adapter). ..................... 15
   4.6 PI Port Configuration. ................................................................................ 16
   4.7 Resource Adapter (InboundRA) Configuration for IDOC_AAE Adapter. .... 16
   4.8 Import TPZ Package in ESR. ..................................................................... 18
   4.9 Import Business System. .......................................................................... 18
   4.10 ALEAUD Check. ...................................................................................... 18

   5.1 Supported Certification Authorities (PI Integration). .................................. 20
   5.2 Check End-to-End Connectivity. ................................................................. 22

6. Configure Phase: Configure Integration in Cloud Solution. .............................. 23
   6.1 Activate SAP CRM Integration in Scoping. .............................................. 23
   6.2 Set Up Communication System. ............................................................... 24
   6.3 Configure Communication Arrangements. ................................................. 26
   6.4 Export the Root Certificate. ...................................................................... 30
   6.5 Determine Short Tenant ID. ...................................................................... 30
   6.6 Perform Code List Mapping. ..................................................................... 30
   6.7 Create CRM ID Mapping. ........................................................................ 31
ID Mapping using the Microsoft Excel Template ........................................... 31
6.8 Maintain Default Communication Language ......................................... 32
6.9 Optional: Handling of Inconsistent Address Data ................................... 33

7 Configure Phase: Configure Integration in SAP CRM .................................. 34
7.1 SAP Customizing Implementation Guide in the CRM System ................... 34
7.2 Area Menu in CRM ............................................................................. 42

8 Configure Phase: Configure Integration in PI System ................................ 43
8.1 Create a Key Storage View and Load the Certificate .............................. 44
8.2 Import the Root Certificate .................................................................. 45
8.3 Create Configuration Scenarios ............................................................ 46
8.4 Configure Interfaces for CRM Integration ............................................ 47
8.5 Maintain Communication Channel for CRM Integration ...................... 48
8.6 Adjust Routing Conditions for CRM Integration .................................. 50
8.7 Maintain Value Mapping between Cloud and CRM PI ......................... 51
8.8 Activate Changes in Change List ......................................................... 51

9 Extend Phase: Extend Cloud Solution for CRM Integration ..................... 53

10 Data Load Phase: Perform CRM Initial Data Load ................................ 54
10.1 Template Reports .............................................................................. 54
10.2 Replication of Job IDs ....................................................................... 54
10.3 Executing Initial Load Reports ............................................................ 55
    Replication of Organization .................................................................. 55
    Replication of Product Category Hierarchy ......................................... 55
    Product Material Replication ............................................................... 55
    Business Partner Replication ............................................................ 56
    Employee Replication ....................................................................... 56
    Business Partner Relationship Replication ........................................ 57
    Business Attribute Assignment Replication ..................................... 58
    Steps to consider for Bulking ............................................................. 58
10.4 Attachment Replication ..................................................................... 59

11 Data Load Phase: Perform CRM Delta Load ........................................ 60

12 Monitor Phase: Monitor Message Flow Across Systems ....................... 61

13 Appendix ......................................................................................... 62
13.1 PI Value Mappings for CRM Integration ............................................ 62
    Mapping COD\|OpptResultReasonCode ↔ CRM\|OpptResultReasonCode. .... 63
    Mapping COD\|PartyRoleCode ↔ CRM\|PartyRoleCode. ................................ 64
    Mapping COD\|ReceiverParty ↔ CRM\|ReceiverPort. ............................... 65
    Mapping COD\|SenderParty ↔ CRM\|SenderPort. ................................. 66

Integrating SAP Hybris Cloud for Customer with SAP CRM using SAP Process Integration
Content PUBLIC 3
Mapping COD||OBJTYPE ↔ CRM||OBJTYPE .......................... 67
Mapping COD||ResultReasonCode ↔ CRM||ResultReasonCode .......................... 68
Mapping COD||OpptLifeCycleStatusCodeInbound ↔ CRM||OpptLifeCycleStatusCodeInbound .......................... 69
Mapping COD||CmpnLifeCycleStatusCode ↔ CRM||CmpnLifeCycleStatusCode .......................... 70
Mapping CRM||ProcessType ↔ CRM||AppType .......................... 70
Mapping COD||INTERNALID ↔ CRM||GROUPING .......................... 72
Mapping COD||ActivityStatusCode ↔ CRM||ActivityStatusCode .......................... 72
Mapping COD||ActivityTypeCode ↔ CRM||ActivityTypeCode .......................... 74
Mapping COD||HIERARCHYID ↔ CRM||SNDPRN .......................... 76
Mapping COD||SRLifeCycleStatusCode ↔ CRM||SRLifeCycleStatusCode .......................... 76
Mapping COD||ResultStatusCode ↔ CRM||Status .......................... 78
Mapping COD||BusinessSystemID ↔ CRM||LogicalSystemID .......................... 79
Mapping COD||SocialMediaChannel ↔ CRM||SocialMediaChannel .......................... 80

13.2 Configure Phase: Integration for Industries .......................... 80
SAP Hybris Cloud for Customer for Utilities: Integration Overview .......................... 81
1 Integrating SAP Hybris Cloud for Customer with SAP CRM using SAP Process Integration
2 Integrating SAP Hybris Cloud for Customer with SAP CRM using SAP Process Integration

This document walks you through the steps of integrating SAP Hybris Cloud for Customer with SAP CRM via process integration.

About this Document

This document describes how to integrate SAP Hybris Cloud for Customer with an existing on-premise SAP CRM system using on-premise SAP Process Integration or SAP Process Orchestration (SAP PO).

The document is intended only as a guide to help you prepare and apply the steps necessary for successful integration. Before you start working through this document, ensure that you have downloaded the most recent version of this document available from SAP Service Marketplace.

This guide covers the configuration information necessary in both dual stack and Java-only PI installations. The sections that are either applicable or not applicable for Java-only installations start with a note indicating the same. The sections marked with the term IDoc AAE Adapter is applicable for Java-only installation, where AAE stands for Advanced Adapter Engine.

Methodology

When you configure your SAP Cloud solution, for integration with SAP CRM, you must observe dependencies that arise among the activities in different systems. We therefore strongly recommend that you perform the activities in this guide in the sequence in which they are documented. Pay special attention to the prerequisites, if mentioned, at the beginning of each section. Activities that you must perform in:

- SAP CRM on-premise system are identified by the prefix CRM
- SAP Hybris Cloud for Customer are identified by the prefix Cloud Solution
- SAP on-premise PI system are identified by the prefix PI

This document is based on SAP NetWeaver PI 7.1

For an overview on what is performed in each of the phases, read the Integration: Basic On-Boarding guide at SAP Service Marketplace.

Target Audience

Typically, several functional and configuration experts are involved in the integration process. The following table outlines the roles and responsibilities during a standard integration. Additional role of an SAP CRM Developer may be required, if additional BADI’s or any custom work becomes necessary.
Table 1:

<table>
<thead>
<tr>
<th>Role</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAP CRM Consultant</td>
<td>Configuration activities in the SAP CRM system</td>
</tr>
<tr>
<td>SAP CRM Middleware Developer</td>
<td>Ensuring BDOCs and destinations are correctly configured.</td>
</tr>
<tr>
<td>SAP Process Integration Consultant</td>
<td>Configuration activities in the SAP Process Integration system.</td>
</tr>
<tr>
<td>Cloud Administrator</td>
<td>Configuration activities in SAP Hybris Cloud for Customer. Will need functional expert participation for code-list mapping.</td>
</tr>
</tbody>
</table>
| System Administrator                | • Establishing a secure network connection between the SAP CRM system and SAP Hybris Cloud for Customer systems  
                                     | • Installing software components from the SAP Service Marketplace       |

Integration Guide Map

This integration guide map is an overview of the steps necessary for an end-to-end integration between SAP ERP and SAP Hybris Cloud for Customer. It acts as a checklist outlining various activities to be performed in each of the systems in a given phase.

2.1 What's New in CRM Integration

Relevant mainly for existing customers. If you are a new integration customer, then skip this chapter.

- Further enhancements in business partner replication (attachments)
- Enhancements in product replication (product group assignment is replicated)
2.2 SAP CRM Integration Scenario Overview

Purpose
Integration of SAP Hybris Cloud for Customer with SAP CRM using SAP Middleware is to exchange both master data and transactional data. Most of the communication is bidirectional, and automated replication that is mediated by the SAP Middleware system is particularly for mapping purposes. You can find detailed information about what master data and transaction data is replicated between the two systems.

For a detailed presentation on the scenarios supported with the SAP CRM and SAP Hybris Cloud for Customer prepackaged integration, see the SAP Hybris Cloud for Customer Integration with SAP On-Premise: ERP, CRM, BW blog on SAP Community Network (SCN).

Summary of Useful Links for Future Reference

<table>
<thead>
<tr>
<th>Useful Information</th>
<th>When to read it</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCN Blog - SAP Hybris Cloud for Customer Integration with SAP ERP and CRM: How-to Guides and E-Learning</td>
<td>Bookmark this blog. It is a compilation of all Cloud for Customer integration collateral - presentations, demos, youtube videos, and how-to guides. It is kept up-to-date.</td>
</tr>
<tr>
<td>SAP Help portal – Integration Help for SAP CRM</td>
<td>One pager that contains all information about SAP CRM integration with SAP Hybris Cloud for Customer.</td>
</tr>
<tr>
<td>How-to guide (HTG) within the Best Practice for SAP Hybris Cloud for Customer integration</td>
<td>The how-to guide gives you instructions similar to those available in this integration guide for select scenarios. Read it if you are new to the integration topic, and want to view illustrations of the configuration activities.</td>
</tr>
</tbody>
</table>
3 Connect Phase: Check and Prepare SAP CRM System

Prerequisites

Your enterprise operates on SAP CRM 7.0 EHP 0 or a higher release. To check the CRM release, go to System Status under SAP System Data, check the component version.

- If you operate on SAP CRM 7.0 EHP 0, the minimum support package level to install the add-on is BBPCRM 700 SP6 (SAPKU70006). The other supported releases are SAP CRM 7.01, SAP CRM 7.02, SAP CRM 7.12, and SAP CRM 7.13. In case you need to upgrade your system, we recommend installing the latest support package for BBPCRM.

- If you operate on SAP CRM 7.0 EHP 1 or higher, no support package upgrade for BBPCRM is required to install the add-on.

Also, if you want to:

- Replicate attachments in opportunities and leads, you will need CRM 7.0 EHP 0, SP7 or higher.
- Exchange social media between SAP Hybris Cloud for Customer and CRM, you need at minimum CRM 7.0 EHP 3 and SAP_BS_FND 747 SP04 installed. Furthermore, to allow end users to access the UI function, enable the business function CRM_SMI.

3.1 CRM Software Components

Purpose

SAP Hybris Cloud for Customer (Cloud) provides an add-on for SAP CRM that mainly contains the following:

- Missing interfaces for the C4C-CRM integration,
- Convenience functionality to simplify the setup of the integration.

The add-on does not modify any core CRM coding, and hence is modification-free.

Each Cloud release comes with a new support package of the CRM add-on that may contain additional functionality to enable new integration scenarios. An upgrade to a newer version of the add-on is only required if you plan to enable one of these new integration scenarios after the Cloud upgrade.

Install the latest available SP in one of the following cases:

- The add-on is not yet installed in your SAP ERP system, or
- If an upgrade is required in order to use new features available in the latest Service Pack.
  
  In other words, if you already have the add-ons installed, and do not need to upgrade, you may skip this chapter.

Procedure

: 
2. Click Software Downloads.
3. Search for CRMPCD01 ‘700.
4. Choose the entry marked for Installation Software Component.
5. If you install the add-on for the first time, click Installation and install the package.
7. Select the required packages and click Download Basket. If you are upgrading from an SP, download the next available SP and above. For example, if you are upgrading from SP2, then download SP3 and above.
8. Select the items you want to download and click Download Manager.
9. Install the add-on in your ERP system, and upgrade to the latest support package.

### 3.2 Important SAP Notes for CRM

You can find a list of all CRM notes that may be relevant in this integration in the SAP Note 2302112. We recommend that you regularly check for SAP Notes under software component CRMPCD01 to receive any subsequent corrections.

### 3.3 RFC Destination to PI

The RFC destination contains technical information that enables the PI system to be located. This destination is required for IDoc communication to occur from the SAP on-premise system to the PI system.

In case of Java-only installation of PI or IDOC_AAE adapter, see RFC Destination to PI (IDOC AAE Adapter) [page 11] only.

You can skip this step if you run the report RCOD_CREATE_CONNECTIVITY_SIMPL. If you will not use the report, then for each PI system, an RFC destination must be configured as client-independent Customizing. You must perform this action in the corresponding Customizing client.

**Recommendation**

We recommend that you use the logical system ID of the PI system as the destination names, as follows: <PI System> CLNT <PI Client> <PI System>CLNT<PI Client>.

To set up a transactional RFC (TRFC) connection,

1. Go to transaction SM59.
2. Create an RFC destination to the PI system with the following details:
   - **RFC Destination**: <PI System> CLNT <PI Client>
   - **Connection Type**: 3 (Connection to ABAP System)
   - **Description**: PI System
3. Enter the technical settings of the PI system.
4. Enter the PI technical user’s login and security information.

**Note**
The PI user you will reference should have the role SAP_XI_APPL_SERV_USER. For more information, see [Creating RFC Destinations in the ABAP Environment of PI System](#).

### 3.4 RFC Destination to PI (IDoc AAE Adapter)

This section applies to Java-only installation of PI or IDOC_AAE adapter.

For an IDOC_AAE adapter, you need to set up a transactional RFC (TRFC) of connection Type T, as described below:

1. In the SAP on-premise system, go to transaction SM59.
2. Select *TCP/IP Connections*, and click *Create*.
3. To create an RFC destination to the PI system enter the following details:
   - **RFC Destination**: IDOC_AAE_<PI System>
   - **Connection Type**: T (TCP/IP Connection)
   - **Description**: PI System
4. In the *Technical Settings* tab, enter the registered server program ID of the PI system.
5. Enter the gateway details where the program ID is registered:
   - **Gateway Host**: <This should be same as the one maintained in PI>
   - **Gateway Service**: <Gateway service>

**Caution**
The Program ID, Gateway Host, and Gateway Service should exactly match the values maintained in the inboundRA resource adapter in NWA of PI system, under *Configuration > Infrastructure > Application Resources* [For more information, see Resource Adapter (InboundRA) Configuration for IDOC_AAE Adapter [page 16].]

6. In the *Unicode* tab, select the *Communication Type with Target System as Unicode*.

### 3.5 Create SAP CRM User

This section is only required if you do not have communications user on SAP CRM or need help creating another user.

**Purpose**
This section describes how to create a user in SAP CRM that can be used by the Cloud solution for authentication against SAP CRM. You can enter this user when you configure outbound communication arrangements in the Cloud solution.
Procedure

1. In the on-premise system, go to transaction SU01.
2. In the User field, enter the name of the user you want to create, for example CODINTEG.
3. Select Create.
4. On the Maintain User screen, enter the data as shown in the table below, and then save your entries.

Table 3: Maintain User Screen Fields

<table>
<thead>
<tr>
<th>Address tab page</th>
<th>Last Name</th>
<th>Add a name, for example CODINTEG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Logon data tab page</td>
<td>User type</td>
<td>C Communications Data or B System</td>
</tr>
<tr>
<td></td>
<td>Password</td>
<td>&lt;password&gt;</td>
</tr>
<tr>
<td>Profiles</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Profiles

- Execute transaction SU22 and determine the authorizations required for business transactions (BP, Material, Opportunity, Lead). Make certain that the technical user has the same authorization objects and values assigned to him or her as that of the dialog user who has access to these business transactions. Additionally, the integration user must be assigned to the authority object SMI_AUTH for create, update and delete operations in social media user profile integration.

**Note**

Instead of using SU22, you can import the security role required for CRM, by applying the SAP note 1956819.
4 Connect Phase: Check and Prepare PI System

Prerequisites

You are using SAP Process Integration 7.11 or a higher release. To check the PI release, go to System Status under SAP System Data, check the component version.

Implement the SAP Note 856597 FAQ: XI 3.0 / PI 7.0/7.1/7.3 SOAP-Adapter.

4.1 Access PI System

In the likely case that your PI system resides in a demilitarized zone (DMZ), ask your IT department how to access the SAP Logon for the PI system. An example is via Windows Terminal Services (WTS).

To access Java Swing client of the PI system,
1. Go to SAP Log On, enter the details for your PI System and logon to it.
2. In the PI system, execute transaction SXMB_IFR. It will open the PI system’s homepage.
3. From here, you can access the PI clients for Enterprise Service Repository, Integration Directory, and System Landscape Directory.

4.2 Create SLD Configuration

Register the on-premise system in the System Landscape Directory (SLD). Systems are typically registered in SLD when they are initially configured.

To check if your system is registered in SLD, follow the below steps:
1. Login to the PI system.
2. Go to the transaction SXMB_IFR. This opens the Integration directory in your web browser.
4. Register your on-premise system in PI, by creating a technical system of type AS ABAP for your on-premise system.
   For more information, see Creating New Web AS ABAP Technical Systems.
5. Under ABAP System Details, in the Business Systems tab, Create the corresponding business system for the technical system. For more information, see Creating and Removing Business Systems
6. Register your Cloud solution in PI, by clicking Home Technical Systems and creating a technical system of type Third Party.
7. Create a corresponding business system for the Cloud solution.
8. Assign **SWCV SAP BYD 2.40** under the product **SAP BUSINESS BYDESIGN 240**:
   2. Select the Cloud for Customer system and click Installed Software.
   3. Select Add New Product, and add the product SAP BUSINESS BYDESIGN 240 and assign the software component version SAP BYD 2.40.
9. Similarly, assign **SWCV SAP BYD 1411** under the product **SAP BUSINESS BYDESIGN 1411**.

### 4.3 CRM PI Software Components

Download the listed components and the support packages from SAP Service Marketplace.

1. Go to SAP Service Marketplace.
2. Choose Browse our Download Catalog > SAP Content > ESR Content (XI Content) and download the following components. Always ensure that you install the latest version and all the available support packages.

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>XI CONTENT SAP BYD &gt; XI CONTENT SAP BYD 2.40</td>
<td>PI content that includes the interface definitions from SAP Hybris Cloud for Customer</td>
</tr>
<tr>
<td>XI CONTENT BBPCRM</td>
<td>PI content that includes the interface definitions for SAP CRM 7.13 contains the social media user profile information on the business partner IDoc</td>
</tr>
</tbody>
</table>
| • XI CONTENT SAP CRM ABAP 7.0  
• XI CONTENT SAP CRM ABAP 7.01  
• XI CONTENT SAP CRM ABAP 7.02  
• SAP BBPCRM XI CONTENT SAP CRM ABAP 7.13 | PI content that includes the interface definitions for the Add-On for SAP CRM |
| XI CONTENT CRMPCD01 > XI CONTENT CRMPCD01 700 | PI content that includes the mappings between the SAP CRM interfaces and the SAP Hybris Cloud for Customer interfaces provided in the Add-On |
| XI CONTENT CRMPCD01 IC > XI CONTENT CRMPCD01 IC 700 | PI content that includes communication channel template metadata |
| XI Content SAP Basis | PI content that includes the social media user profile IDOC |
| • XI CONTENT SAP BASIS 7.0  
• XI CONTENT SAP BASIS 7.11 | |
| XI CONTENT SAP_BS_FOUNDATION > XI CONTENT SAP_BS_FOUNDATION 747 | |
4.4 RFC Destination to SAP On-Premise

The RFC destination contains technical information to connect to an SAP on-premise system. This destination is required for IDoc communication to occur from the PI system to an on-premise system.

In case of Java-only installation of PI or IDOC_AAE adapter, see RFC Destination to SAP On-Premise (IDOC_AAE adapter) RFC Destination to SAP On-Premise (IDOC_AAE adapter) [page 15]

Note
For each on-premise system, you must configure an RFC destination as a client-independent Customizing and in the corresponding Customizing client.

Recommendation
We recommend that you use the logical system ID of the on-premise system as the destination names, as follows: <SAP on-premise system>CLNT<SAP on-premise client>.

To set up a transactional RFC (TRFC) connection, proceed as follows:
1. Go to transaction SM59 in PI.
2. Create an RFC destination to the on-premise system with the following details:
   - RFC Destination: <SAP on-premise system>CLNT<SAP on-premise client>
   - Connection Type: 3 (Connection to ABAP System)
   - Description: SAP <on-premise system name> <version><System>
3. Enter the technical settings of the SAP on-premise system.
4. Enter the on-premise system technical user’s login and security information. For information on creating a user, see Create SAP CRM User [page 11].

4.5 RFC Destination to SAP On-Premise (IDOC_AAE adapter)

The RFC destination contains technical information connecting to SAP on-premise system. This destination is required for IDoc communication to occur from the PI system to the on-premise system.

This section applies for Java-only installation of PI or IDOC_AAE adapter.

Note
For each SAP on-premise system, an RFC destination must be configured as client-independent Customizing. You must perform this action in the corresponding Customizing client.

Procedure
2. Create a new destination to the SAP on-premise system with the following details, under General Data section.
Hosting System: Local Java System <SID of PI system>
Destination Name: XI_IDOC_DEFAULT_DESTINATION_<SID of the on-premise system>
Destination Type: RFC

3. Maintain the technical settings of SAP on-premise system under the Connection and Transport Security section.

4. Maintain the following details under the Logon Data section.
   - Authentication: Enter the on-premise technical user’s login and security information.
   - Repository Connection: Enter “This Destination”, if this destination needs to be used to query the metadata, else select the appropriate RFC destination using the F4 help.

5. IDOC_AAE adapter expects a fall back destination in the name of XI_IDOC_DEFAULT_DESTINATION. If it is not available, create the same and ensure that it points to a system from where IDOC metadata can be loaded.

4.6  PI Port Configuration

This configurtion port will be used to send and receive messages to on-premise system. The port configuration is required when using the IDoc adapter with the PI ABAP stack.

**Note**

This port configuration is not applicable for Java-only installation of PI or IDOC_AAE adapter.

**Procedure**

1. Go to the Transaction IDX1
2. Click Create
3. Enter the Port Name (e.g. SAPCRD) on-premise System Client, Description and the RFC Destination to on-premise System Client system created in the previous step.
4. Save the port.

4.7  Resource Adapter (InboundRA) Configuration for IDOC_AAE Adapter

**Prerequisites**

You want to use IDOC_AAE (Java based IDOC adapter) to communicate with SAP on-premise system for sending and receiving IDocs.

**Note**

This section applies for Java-only installation of PI or IDOC_AAE adapter.

**Procedure**
1. On the PI browser page, navigate to Configuration > Infrastructure > Application Resources in SAP NetWeaver Administrator (NWA).
2. Search for Resource Adapter inboundRA.
3. Make sure the following properties are defined in the Resource Details section:

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>BindingKey</td>
<td>PI_AAE_IDOC</td>
<td>This property should not be changed. It is used to associate the inboundRA resource adapter with the IDOC_AAE adapter.</td>
</tr>
<tr>
<td>Local</td>
<td>true</td>
<td>If the Local property is set to true, the local gateway of the PI system is used with the SCS gateway service.</td>
</tr>
<tr>
<td>GatewayServer</td>
<td></td>
<td>If the Local property is set to false, maintain the Gateway Server Host of another SAP system.</td>
</tr>
<tr>
<td>GatewayService</td>
<td></td>
<td>If the Local property is set to false, maintain the Gateway Server Service of the above mentioned Gateway Server.</td>
</tr>
<tr>
<td>ProgramID</td>
<td>&lt;Unique ID&gt;</td>
<td>The unique program ID used to register the inboundRA resource adapter on the used gateway. The same value should be maintained in the RFC destination on SAP on-premise system as the Program ID</td>
</tr>
<tr>
<td>MaxReaderThreadCount</td>
<td>5</td>
<td>This property specifies the number of connections (registered programs) on the gateway for each server node of the PI system. It should be a positive number.</td>
</tr>
<tr>
<td>DestinationName</td>
<td>XI_IDOC_DEFAULT_DESTINATION</td>
<td>IDOC_AAE adapter expects a fallback destination in the name of XI_IDOC_DEFAULT_DESTINATION. For more information, see step 5 in RFC Destination to SAP On-Premise (IDOC_AAE adapter) [page 15].</td>
</tr>
<tr>
<td>multiRepository</td>
<td></td>
<td>This property should not be changed manually as it is populated by the IDOC_AAE adapter.</td>
</tr>
</tbody>
</table>

⚠️ Caution

The Program ID, Gateway Host and Gateway Service should exactly match the values maintained in the TCP destination maintained in the on-premise system, as explained in RFC Destination to PI (IDOC_AAE adapter only).
4.8 Import TPZ Package in ESR

1. There are software components that need to be imported into ESR. These packages contain all design objects required for PI configuration.
2. Save the TPZ files that are downloaded from the SAP Service Marketplace to your local system (see CRM PI Software Components [page 14]).
3. From the PI homepage, open the Enterprise Service Repository (ESR).
4. From ESR, choose Tools Import Design Objects.
5. Select Import from client, as you are importing the package from your local machine.
6. Browse to the location where the TPZ file is saved on your local system, and upload this to ESR.
7. Repeat the steps from 4 – 6 and import all the software components.
8. The imported software components become visible under Design Objects in ESR.

4.9 Import Business System

1. On the PI browser page, open Integration Builder.
2. In the left-pane switch to Object View.
3. In the left-pane, follow the path Communication Component without Party Business System and from the context menu, select Assign Business System.
4. In the Assign Business System dialog box, click Continue.
5. Select the business systems you want to define as business system components. That is, select your Cloud solution (COD) and your SAP CRM/ERP system (in cases where the system has not already been defined as business system component).
6. Ensure that the checkbox Create Communication Channels for Following Adapters is not selected.
7. Select Finish.

4.10 ALEAUD Check

Note
This section is not applicable in the following cases:
- Java-only installation of PI or IDOC_AAE adapter.
- IDOC_AAE adapter is used for receiving IDoc from on-premise system in a dual stack PI installation.

1. Execute transaction SE38, and then go to report IDX_ALEREQUEST.
2. Ensure that no entry is selected for request of ALEAUD.
5 Connect Phase: Set Up Secure Connection between CRM-PI-Cloud Systems

This chapter covers the requirements for configuring secure connection between SAP Hybris Cloud for Customer and SAP On-Premise. In addition to the information in this chapter, you can refer to the Technical Connectivity for generic connectivity issues.

**Note**
Path to the Technical Connectivity Guide on the SAP Service Marketplace ➤ Products ➤ Installation & Upgrade Guides ➤ Cloud Solution from SAP ➤ SAP Cloud for Travel and Expense ➤ <Select the required version ➤ Display All Documents ➤ Technical Connectivity Guide.

The following diagram illustrates a typical setup for secure communication between the SAP Cloud network and the on-premise network. Communication between the Cloud solution and the SAP CRM system must be secured by transport layer security (TLS) in both directions using the https protocol.

Communication Between SAP CRM and PI
To establish communication between an SAP CRM and PI systems, an RFC (TRFC) connection is configured during the connect phase in the PI and CRM systems.

Communication from PI to Cloud Solution
As a prerequisite for communication from the SAP PI system to the SAP Cloud solution, the SAP PI system must be able to connect to SAP Cloud via https protocol. In order to establish this https connection the Baltimore CyberTrust Root certificate must be installed in the SAP NW PI.

Since we are using SOAP Adapter on SAP PI, these certificates should be imported by an administrator into SAP NetWeaver Administrator (NWA) ➤ Configuration ➤ Certificates and Keys ➤ Folder “Trusted CA’s”.
Procedure

1. Download the certificates:
   1. Go to the logon screen of your Cloud Solution.
   2. Click on the security icon on the web browser View certificates
   3. c. Download the following certificates:
      ○ Cybertrust Sure Server Standard Validation CA
      ○ GTE Cyber Trust Global Root

2. Import the downloaded certificates into the SAP PI JAVA Keystore.
   1. Open up the SAP Administrator (NWA) on SAP PI
   2. Under the Configuration tab, click Certificates and Keys.
   3. Select the view for Trusted CA’s
   4. Import the root certificates, using the entry type X.509

Communication from Cloud Solution to PI

Access to your SAP PI system from the public Internet and from the hosted network, in which your SAP Hybris Cloud for Customer tenant is situated, must be secured by means of an application-level gateway in the corporate network DMZ, as described in the SAP NetWeaver Security Guide, under the section Network and Communication Security.

For more information, see Network and Community Security in the SAP Help Portal.

Path: Help.sap.com SAP NetWeaver SAP NetWeaver Platform SAP NetWeaver 7.3 including Enhancement Package 1 Security Information English Network and Communication Security

The relevant subsections are as follows:

- Using Firewall Systems for Access Control Application-Level Gateways Provided by SAP Web Dispatcher
- Using Multiple Network Zones

Note

In the following sections of this guide, the application-level gateway is referred to as reverse proxy.

The server certificate used by the reverse proxy must be trusted by the Cloud tenant. Therefore, it must be signed by one of the certification authorities listed in the section Supported Certification Authorities (PI Integration) [page 20].

5.1 Supported Certification Authorities (PI Integration)

The following certification authorities are supported for the SAP Hybris Cloud for Customer tenant:

The following certification authorities are supported for the reverse proxy in the SAP Cloud network: (only relevant for client certificates)

- Baltimore CyberTrust Root cer
- EntrustPersonalServerCA.cer
• EntrustServerCA.cer
• EquifaxIntermediate.cer
• EquifaxSecureCA.cer
• Go_Daddy_Class2.cer
• Go_Daddy_Secure_Certification_Authority.cer
• SAPNetCA.cer
• SAPPassportCA.cer
• TC_TrustCenter_Class_1_L1_CA_VII.cer
• TC_TrustCenter_Class_2_CA_II.cer
• TC_TrustCenter_Class_2_L1_CA_XI.cer
• TCTrustcenterClass2.cer
• TelekomOnlinePass.cer
• Thawte_ServerBasic.cer
• Thawte Premium Server CA Root
• Thawte Primary Intermediate CA
• Thawte Secondary Intermediate CA
• VeriSign_Class3_Intermediate.cer
• VeriSignClass3_Secure_server.cer
• VeriSignClass1_G1.cer
• VeriSignClass1_G2.cer
• VeriSignClass1_G3_b64.cer
• VeriSignClass2_G1.cer
• VeriSignClass2_G2.cer
• VeriSignClass2_G3_b64.cer
• VeriSignClass3_G1.cer
• VeriSignClass3_G2.cer
• VeriSignClass3_G3_b64.cer
• VeriSignClass4_G2.cer
• VeriSignClass4_G3_b64.cer
• VeriSignClass3_SecureServer_CA_G2.cer
• Entrust.net Client Certification Authority
• Entrust.net Secure Server Certification Authority
• SAP Passport CA • Server CA
• Deutsche Telekom Root CA 1
• Thawte Server
• VeriSign Class 1 Public Primary Certification Authority - G3
• VeriSign Class 2 Public Primary Certification Authority - G3
• VeriSign Class 3 Public Primary Certification Authority - G3
• VeriSign Class 4 Public Primary Certification Authority - G3
• Go Daddy Secure Certification Authority
• TC TrustCenter SSL CA I • CompuTop GmbH
• Entrust.net Certification Authority (2048)
• Entrust Certification Authority - L1B
• TC TrustCenter Class 1 L1 CA VI
• VeriSign Class 3 Secure Server CA
5.2 Check End-to-End Connectivity

You can now check if a technical connection has been successfully established between your SAP on-premise and SAP Hybris Cloud for Customer systems. A successful connection ensures that the data is flowing between the two systems via the SAP Middleware.

The necessary configuration to use this feature is explained in the graphic below:

- **ERP report**: RCOD_CHECK_E2E_CONNECTIVITY
- **CRM report**: CRMPCD_CHECK_E2E_CONNECTIVITY

In the Cloud system, you can click the **Test Connection** in the **Communication Arrangement** wizard to check if the data is successfully reaching the SAP on-premise system.
6 Configure Phase: Configure Integration in Cloud Solution

6.1 Activate SAP CRM Integration in Scoping

Purpose
You must check the scope of your Cloud solution and ensure that the required integration is active.

Procedure
1. Logon to the Cloud solution as a system administrator.
2. In the Business Configuration work center, choose the Implementation Projects view.
3. Select your implementation project and click Edit Project Scope.
4. In the scoping wizard, choose Next until the Scoping screen appears.
5. Expand the nodes Communication and Information Exchange > Integration with External Applications and Solutions.
6. Select the required scoping options and choose Next.

<table>
<thead>
<tr>
<th>Note</th>
</tr>
</thead>
</table>

Table 6:

<table>
<thead>
<tr>
<th>Select the node</th>
<th>If you want to</th>
</tr>
</thead>
<tbody>
<tr>
<td>Integration with CRM</td>
<td>Ensure SAP CRM integration is active in your Cloud solution</td>
</tr>
<tr>
<td>Integration of Master Data</td>
<td>Enable exchanging master data between your Cloud solution and an external solution such as SAP CRM</td>
</tr>
<tr>
<td>Integration into Sales, Service, and Marketing Processes</td>
<td>Enable exchanging transactional data between your Cloud solution and an external solution such as SAP CRM</td>
</tr>
<tr>
<td><strong>Select the node</strong></td>
<td><strong>If you want to</strong></td>
</tr>
<tr>
<td>---------------------</td>
<td>---------------------</td>
</tr>
</tbody>
</table>

**Recommendation**

SAP recommended you to activate this function while Scoping, in order to allow administrators to monitor the incoming and outgoing web service messages.

For more information, see Help Center ➔ SAP Hybris Cloud for Customer Library ➔ SAP Hybris Cloud for Customer Administration Guide ➔ General Settings ➔ System Administration ➔ Web Service Message Monitoring Quick Guide

The Questions screen displays only the selected scoping options.

7. On the Questions screen, expand Communication and Information Exchange, and review the scoping questions.

8. After you have carefully reviewed and confirmed your entries, click Finish.

**Caution**

Although you have now defined the scoping of the solution, you have not yet deployed it. To do so, confirm the milestone Design Accepted in the activity list of the project.

1. Go to Business Configuration view ➔ Open Activity List ➔
2. Select Confirm Milestone: Design Accepted.
3. Select Design Accepted and click Confirm

## 6.2 Set Up Communication System

### Purpose

A communication system represents an external system for communication. A communication system is also the reference for ID mapping maintained within your Cloud solution. It must be representative of the on-premise client, even if the technical communication occurs using an SAP middleware.

To integrate your Cloud solution and an on-premise system using an SAP middleware, you define the on-premise client as the communication system. Note that all information except the host name is that of the on-premise system.
Before a communication system can be used for data exchange, communication arrangements must be maintained. For additional information, see Configure Communication Arrangements.

**Prerequisites**

You have administrator user rights.

**Procedure**

1. In the Administrator work center choose Communication Systems.
2. Click New.
3. On the New Communication System screen, in the Basic Information section, enter the following information.

<table>
<thead>
<tr>
<th>Field</th>
<th>Entry</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>ID or name of the on-premise system to be connected</td>
<td>Q5E</td>
</tr>
<tr>
<td>SAP Business Suite</td>
<td>Select the checkbox</td>
<td>X</td>
</tr>
<tr>
<td>Internal Comment</td>
<td>A short description of the on-premise system you are connecting</td>
<td>Q5E - ERP Test System</td>
</tr>
<tr>
<td>Host Name</td>
<td>○ If using PI, then enter the reverse proxy of the middleware</td>
<td>PI: &lt;XXX&gt;.SAP.COM HCI:</td>
</tr>
<tr>
<td></td>
<td>○ If using HCI, then enter the SAP HANA Cloud Integration worker node host name provided by SAP Cloud Managed Services</td>
<td>https://&lt;XXXXX&gt;-ifl-map.hcisbt.&lt;XXX&gt;.hana.ondemand.com</td>
</tr>
<tr>
<td>System Access Type</td>
<td>Internet</td>
<td>Internet</td>
</tr>
</tbody>
</table>

4. (Optional): In the Technical Contact section, you can enter data of the contact person for this system.
5. Save your data.
6. In the System Instances section, enter the following data:

<table>
<thead>
<tr>
<th>Field</th>
<th>Entry</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business System Instance ID</td>
<td>Displays the ID or name of your business instance of the SAP on-premise system client</td>
<td>PI: Q5E_004 HCI: Q5ECLNT004</td>
</tr>
<tr>
<td>Business System ID</td>
<td>Business system ID of the SAP on-premise client. If you are using PI, then you can get the business system ID in one of the following ways: ○</td>
<td>PI: Q5E_004 HCI: Q5ECLNT004</td>
</tr>
<tr>
<td></td>
<td>○ Under System Landscape System Landscape Directory Business Systems Search for the ERP system, say Q5E* Go In the Overview tab, you will find Name, which is the business system name</td>
<td></td>
</tr>
<tr>
<td></td>
<td>○ Run this function module in the ERP system: LCR_GET_OWN_BUSINESS_SYSTEM If you are using HCI, then default it to the same value as the IDoc Logical System ID. If you are using HCI, then default it to the same value as the IDoc Logical System ID</td>
<td></td>
</tr>
</tbody>
</table>
### Field

<table>
<thead>
<tr>
<th>Field</th>
<th>Entry</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>IDoc Logical System ID</td>
<td>The IDoc logical system ID of the SAP on-premise client, maintained in ALE. Path.</td>
<td>Q5ECLNT004</td>
</tr>
<tr>
<td></td>
<td>[SAP Customizing Implementation Guide] [SAP NetWeaver Application Server] [IDoc Interface / Application Link] Enabling Basic Settings Logical Systems DefineLogical Systems</td>
<td></td>
</tr>
<tr>
<td>SAP Client</td>
<td>Client of the SAP on-premise system</td>
<td>004</td>
</tr>
<tr>
<td>Preferred Application Protocol</td>
<td>Web Service</td>
<td>5_Web Service</td>
</tr>
</tbody>
</table>

7. Choose [Actions] Set to Active
8. Choose Save and Close.

### 6.3 Configure Communication Arrangements

#### Purpose

You need to configure and activate the communication arrangements to enable the integration between an on-premise system and the Cloud solution. Multiple communication arrangements can be created for on-premise integration through a guided activity. Instead of repeating common information each time you create a communication arrangement, you can enter common information once, and create communication arrangements in bulk.

**Note**

The number of communication scenarios to be defined depends on the scoping you have performed.

You can find a list of all the communication arrangements and the corresponding service interfaces in the INTEGRATION: Integration Flow spreadsheet on the [SAP Service Marketplace](https://service.sap.com).

#### Prerequisites

You know the following:

- Communication system ID as maintained in the Set up Communication System.
- Tenant ID of SAP Hybris Cloud for Customer. For more information, see [Determine Short Tenant ID](#).

#### Procedure

1. To create multiple communication arrangements go to [Administrator] Communication Arrangement for On-Premise Integration common task.
2. In the Select Communication System step, enter business data.
   1. Under Integration Details select the system that you want to Integrate with and the relevant tabs are displayed, depending on Integration Middleware that you want to use.
   2. Under Communication System, enter the System Instance ID of the communication system with which you want to set up communication arrangements.
   3. Select the code list mapping that should be used for this integration, say SAP On Premise Integration.

   **Note**
   If a communication arrangement contains a service interface that supports code list mapping, the Code List Mapping field is displayed. In this field, you can choose the relevant code list mapping group for the communication scenario that you are using. For more information, please refer to the relevant integration guide on SAP Service Marketplace.

   4. Click Next.

3. In the Communication Arrangements step, select the communication scenarios for which you want to create the communication arrangements.
   You can only select those communication scenarios for which a communication arrangement has not yet been created.

4. The Inbound and Outbound Communication Scenario. For example, if a communication arrangement has only an inbound service interface, then the Inbound tab is displayed.

5. For each of the communication scenarios, check the details on the Inbound tab as necessary:

   **Table 9:**
<table>
<thead>
<tr>
<th>Enabled</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>If you do not want to use a service, uncheck the checkbox. If the service is mandatory, the checkbox is disabled.</td>
<td></td>
</tr>
<tr>
<td>Service</td>
<td>Displays the name of the service.</td>
</tr>
<tr>
<td>Application Protocol</td>
<td>Check if the protocol is Web Service.</td>
</tr>
<tr>
<td>Service URL</td>
<td>Displays the URL of the service.</td>
</tr>
</tbody>
</table>

6. To check the information on an inbound service, select the service and click Check Service.

7. For each of the communication scenarios, check the details on the Outbound tab as necessary:

   **Table 10:**
<table>
<thead>
<tr>
<th>Enabled</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>If you do not want to use a service, uncheck the checkbox. If the service is mandatory, the checkbox is disabled.</td>
<td></td>
</tr>
<tr>
<td>Service</td>
<td>Displays the name of the service.</td>
</tr>
<tr>
<td>Port</td>
<td>Enter the reverse proxy port of the on-premise system</td>
</tr>
<tr>
<td>Path</td>
<td>Displays the path to the service interface.</td>
</tr>
<tr>
<td>Service URL</td>
<td>Displays the URL of the service.</td>
</tr>
</tbody>
</table>

8. In the Communication Credentials step, provide the inbound and outbound credentials.
   1. If you use inbound communication, select the Authentication Method in the Inbound Communication Credentials section. In the User ID field, click Edit Credentials.
      Depending on the chosen authentication method, you need to define the credentials of the communication user as described in the following table. The user ID of the communication user is created automatically.
Table 11:

<table>
<thead>
<tr>
<th>Authentication Method</th>
<th>Settings</th>
</tr>
</thead>
</table>
| SSL Client Certificate              | If you use this authentication method, you need to either:  
  ○ 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).  
  ○ If the communication partner cannot provide a certificate, then create a PKCS#12 key pair file, which is password encrypted and contains a public key certificate and a private key, and provide the credentials to your communication partner.  
  **To upload a PKCS#12 file:**  
    ○ Choose **Certificate**.  
    ○ Click and choose the relevant **Upload Certificate**.  
    ○ Click **OK**.  
  **To create a PKCS#12 key pair file:**  
    ○ Choose **Certificate**.  
    ○ Click **Create and Download Key Pair**.  
    ○ Enter a name for the PKCS#12 file and save it.  
    ○ Define a password for the PKCS#12 file and click **OK**. The certificate details will be displayed.  
    ○ Click **OK**. |
| User ID and Password                | If you use this authentication method, you need to define a password as follows:  
  ○ Choose **Change Password**.  
  ○ Enter a password.  
  **Note**  
  You need the user ID and password while configuring the receiver communication channel in SAP Middleware.  
  ○ Click **OK**. |

2. If you use outbound communication, select the **Authentication Method** in the Outbound Communication Credentials section. Select the **Authentication Method**.  
Depending on the chosen authentication method, you need to define the relevant settings as described in the following table.
Table 12:

<table>
<thead>
<tr>
<th>Authentication Method</th>
<th>Authentication</th>
<th>Settings</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSL Client Certificate</td>
<td>SAP System Key Pair (recommended)</td>
<td>If you use this authentication, the relevant certificate must be known to the communication partner. Download the certificate as follows:  ○ In the Certificate field, click Download.  ○ Choose a location to save the certificate, enter a file name, and click Save.  The certificate will be downloaded with the specified name, and in the chosen folder you need to export the certificate.</td>
</tr>
<tr>
<td>Trusted Third-Party Key Pair</td>
<td></td>
<td>If you use this authentication, you need to upload the PKCS#12 key pair file provided by your communication partner. The PKCS#12 file is password encrypted and contains a public key certificate and a private key.  ○ Choose the option Trusted Third-Party Key Pair.  ○ In the Certificate field, click Edit Credentials.  ○ Click Upload Key Pair, and choose the PKCS#12 file you want to upload.  ○ Enter the required password and click OK.</td>
</tr>
<tr>
<td>User ID and Password</td>
<td></td>
<td>If you use this authentication method, you need to enter the user ID and password that is used by the communication partner for the same communication arrangement.  ○ In the User ID field, click Edit Credentials.  ○ Enter the user ID and password.  ○ Click OK.</td>
</tr>
</tbody>
</table>
9. To create and activate your communication arrangements in the system, click Finish.

Result

A success message is shown once the communication arrangement has been created successfully.

For information on how to manually create or edit a communication arrangement, see Communication Arrangements Quick Guide.

In case, the chosen middleware is HCI, to configure the connectivity, follow the steps outlined in the Configure SAP HCI Certificate based Authentication for SAP Hybris Cloud for Customer.

6.4 Export the Root Certificate

SAP Hybris Cloud for Customer client certificate is signed by SAP Passport CA. This CA needs to be imported into the middleware system. You can download the Passport CA certificate here.

6.5 Determine Short Tenant ID

Purpose

The tenant ID is required for several upcoming configuration steps in the SAP middleware system. We recommend that you note it at this point in your configuration.

Procedure

1. In the Administrator work center, choose Communication Arrangements.
2. Select a communication arrangement that you have created in, for example, Business Partner Replication from External System.
3. Under My Communication Data section, note the ID under My System.

6.6 Perform Code List Mapping

For information on how to perform code list mapping, read the quick start guide. You can access it on Service Marketplace INTEGRATION: Quick Start Guides.
6.7 Create CRM ID Mapping

Purpose
This section describes how to create ID mapping for sales organizations, sales offices, sales groups and product categories. For these business objects, ID mapping is created manually. ID mapping for accounts, contacts, and materials is carried out automatically during the initial load of data into the system. However, it can be checked and adapted in this view as well.

You can maintain the entries for ID mapping either directly in the system user interface or in a Microsoft Excel template, that can be downloaded from the user interface. For information on ID mapping using the Microsoft Excel template, see ID Mapping using the Microsoft Excel Template.

Prerequisites
Before you create ID mapping, organizational data and product categories must be maintained in the cloud solution. Moreover, employees must have been migrated so that they can be mapped.

Procedure
1. In the Administrator work center under Common Tasks, choose Edit ID Mapping for Integration.
2. From the Mapping Of dialog box, choose the object for which you want to map the IDs.
3. In the System Instance ID field, use the input help to select the ID of your SAP CRM system.
4. Click Go.
5. In the External ID column, enter the ID of the object in the CRM system.
6. Repeat steps 2 to 5 for all the following objects:
   - Business partner
   - Material
   - Organizations and units
   - Product categories
7. Save your entries.

6.7.1 ID Mapping using the Microsoft Excel Template

The Microsoft Excel® template for ID mapping allows you to maintain IDs easily.

Note
You cannot use the Microsoft Excel Template to change mappings that have been created directly on the user interface. If you want to change mappings using the Microsoft Excel template, you must create them in this template as well.

Prerequisites
You have installed the Add-In for Microsoft Excel, which is available as a download in your system.

Procedure
Download the content to Microsoft Excel
1. From the Mapping Of drop-down box, choose object for which you want to download ID mappings.
2. In the Business Instance ID field, use the input help to select the ID of your SAP on-premise system.
3. Click Go.
4. Click ID Mapping to Microsoft Excel. The data is downloaded to an excel file.
5. Open the file, and accept messages to enable macros.
6. Go to SAP Add-In Logon, and provide the URL to Cloud system, and your user credentials, and click Log On.

**Note**
The Local IDs correspond to the IDs used in the cloud solution and the External IDs correspond to the IDs in the SAP CRM system.

7. You can make the necessary changes and save the excel file.

**Upload the changed Microsoft Excel document to Cloud**
1. In the Cloud system, click ID Mapping from Microsoft Excel to download the excel template.
2. Open the file and accept messages to enable macros.
3. Go to SAP Add-In Logon, and provide the URL to Cloud system, user credentials, and click Log On.
4. Copy the content from the excel file where you have saved your changes.
5. Under SAP Add-In Workbook Save Data to in order to save data in the Cloud.

### 6.8 Maintain Default Communication Language

**Purpose**
Many texts in SAP Hybris Cloud for Customer are language independent, whereas texts are usually language dependent in SAP CRM. You have to enter a default communication language in the Cloud solution. This communication language is used to identify the language dependent text in SAP CRM to be synchronized with the language independent text in the Cloud solution.

**Procedure**
1. In the Business Configuration work center, select the Implementation Projects view.
2. Mark the line that contains your project and click Open Activity List.
4. Show All Activities and find for Communication Language for Data Replication.
5. Select Additional Communication Language and Click button Add to Project.
6. Open Communication Language for Data Replication.
7. Add row and select the language.
8. Save and close the activity.

If you have already entered a language for internal communication in SAP CRM, we recommend that you use the same language as the communication language in the Cloud solution.

For more information, refer to the activity under SAP Customizing Implementation Guide Customer Relationship Management Basic Functions Text Management Define Language for Internal Communications.
6.9 Optional: Handling of Inconsistent Address Data

In addition to the topics we are covering as part of the Integration Guide map, there is an additional topic of handling inconsistent address data. This chapter describes how to turn-off the address checks provided by default. This section is optional.

Purpose

The system checks if address data, such as country, region, and postal code length, is consistent. Inconsistent address data leads to error messages and cannot be saved or activated unless you allow it by specifying it in Fine Tuning.

Procedure

1. In the Business Configuration work center, select the Implementation Projects view.
2. Mark the line that contains your project and click Open Activity List.
4. Show All Activities and find for Address Checks.
5. Select Address Checks and click Add to Project.
6. Open Address Checks
7. Optionally, if you want to allow inconsistent address master data to be saved, select the check box Allow saving of inconsistent address based on your business requirements. Any inconsistent address data in the check results are shown as warnings, and the data will be saved. This setting affects addresses of master data, such as business partners and organizational units, when you maintain the data in the work center views for master data, during migration, and during data replication. Checks of address data for business documents are not affected.
8. Save and close the activity.
7 Configure Phase: Configure Integration in SAP CRM

This chapter covers the configuration required on SAP CRM. This includes business partner customizing and middleware configuration.

7.1 SAP Customizing Implementation Guide in the CRM System

All the customization activities necessary to integrate SAP CRM with SAP Hybris Cloud for Customer are defined in a hierarchical structure in the SAP Implementation Guide structure. The necessary documentation is also made available with the activity. For example, the structure contains the customizing activities for code lists, automatic generation of integration settings, manually maintaining the integration settings, and BADIs.

Purpose

1. In the CRM system, go to the transaction SPRO, and click SAP Reference IMG.
2. Expand Integration with Other mySAP.com Components à Integration with SAP Hybris Cloud for Customer:
3. Run the report to automatically perform the basic configuration activities:
Table 13:

<table>
<thead>
<tr>
<th>IMG Activity</th>
<th>Description</th>
</tr>
</thead>
</table>
| Communication Setup Automatically Generate Integration Settings for Data Exchange | This activity will run the report CRMPCD_CREATE_CONNECTIVITY_SIM, and automatically configures the basic settings for establishing a connection between the systems. For example:  
  ○ Creates RFC destinations to connect from SAP CRM to SAP middleware  
  ○ Creates port definition with the required configuration for outbound and inbound message types  
  ○ Creates partner profiles with the required configuration for outbound and inbound message types  
  ○ Maintains ALE distribution model  
  ○ Creates IDoc site and subscriptions for a site  
  ○ Creates linkage between CRM Middleware and XIF and IDoc  
  ○ Activates a service  
  ○ Maintains endpoints for services  
  ○ Schedules the inbound and outbound jobs for running change pointer reports, processes the collected IDocs, and reprocess the failed IDocs. |

Note
The report only supports creation of entities, and does not update any existing entities.

4. If you want to manually update any entries, expand Communication Setup Manually Adjust Integration Settings for Data Exchange

Table 14:

<table>
<thead>
<tr>
<th>ALE Settings for the HTTP inbound</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Define Logical System</td>
<td>The CRM system must be configured as client independent Customizing. The communication partner is not the middleware but the Cloud solution.</td>
</tr>
<tr>
<td>Define RFC destination</td>
<td>The CRM system must be configured as client independent Customizing. The RFC destination is required for the middleware system.</td>
</tr>
<tr>
<td>Maintain Port Definition</td>
<td>The CRM system must be configured as client independent Customizing.</td>
</tr>
<tr>
<td>Maintain Distribution Model</td>
<td>Create a distribution model to determine the system to which IDocs should be sent.</td>
</tr>
<tr>
<td><strong>ALE Settings for the HTTP inbound</strong></td>
<td></td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>---------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Activate change pointers - General</strong></td>
<td>In standard SAP delivery, the writing of change pointers is turned off. Ensure that the writing of change pointers is turned on.</td>
</tr>
<tr>
<td><strong>Activate change pointers for message types</strong></td>
<td>You must activate change pointers for message types in the SAP CRM system, in order to enable continuous replication of changes to SAP Hybris Cloud for Customer system.</td>
</tr>
<tr>
<td><strong>Register Service for IDoc Inbound</strong></td>
<td>You need to register the IDoc inbound service if IDocs have to be received by CRM via SOAP/HTTPS.</td>
</tr>
<tr>
<td><strong>Maintain IDoc Partner Profile</strong></td>
<td>Create a partner profile of type LS, and maintain the inbound and outbound parameters for inbound and outbound IDoc message types.</td>
</tr>
<tr>
<td><strong>Setup ICF Nodes</strong></td>
<td>You can configure HTTP services and activate them individually, so HTTP requests can be handled in the work process of an SAP System (server and client). You need to activate the service /sap/bc/srt/IDoc (Inbound SOAP for IDoc) before registering it.</td>
</tr>
<tr>
<td><strong>Configuration in SOA Management</strong></td>
<td>In SOA Management, you need to perform configuration: ○ To generate PDF files of sales orders or quotes in an opportunity ○ To maintain end points for services ○ To send attachments from SAP CRM to SAP Hybris Cloud for Customer ○ To send attachments from SAP Hybris Cloud for Customer to SAP CRM</td>
</tr>
<tr>
<td><strong>Create Communication Users</strong></td>
<td>You need to create a user in SAP CRM, which can be used by the Cloud solution for authentication against SAP CRM. You can enter this user when you configure outbound communication arrangements in the Cloud solution.</td>
</tr>
<tr>
<td><strong>Maintain Certificate to User Mapping</strong></td>
<td>The client certificate (public key) of the middleware should be mapped to the communication user in the on-premise system.</td>
</tr>
<tr>
<td><strong>Assign Authorization Profiles and Roles to Communication Users</strong></td>
<td>You need to maintain the assignments of authorization required for business transactions to your communication user.</td>
</tr>
<tr>
<td><strong>XIF Adapter Setup</strong></td>
<td>Ensure that BDoc Services have been generated, and function as expected. It is an activity not restricted to the integration of SAP CRM with SAP Hybris Cloud for Customer. It is an activity carried out during the initial setup of the SAP CRM system.</td>
</tr>
<tr>
<td><strong>XIF Adapter Setup</strong></td>
<td>You need to create a site of type External Interface for IDocs that represents the Cloud solution. You need to add the subscription for your business objects. The subscription ensures that updates are replicated to the Cloud solution.</td>
</tr>
</tbody>
</table>
## ALE Settings for the HTTP inbound

| XIF Adapter Setup | Assign Site and BDoc Type to Interface type | You need to make this assignment, in order to link the CRM middleware BDoc to the XIF IDoc. It must be maintained for each BDoc and IDoc combination. |
| XIF Adapter Setup | Register Middleware Queue | All replication and realignment queues for the data exchange from SAP CRM system are automatically registered when starting the replication. However, the CSA queues have to be manually registered. |

### Table 15:

<table>
<thead>
<tr>
<th>ALE Settings for the HTTP Inbound</th>
<th>&lt;a one liner as to why this activity is necessary&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Partners Create Business Partner Identification Type</td>
<td>To ensure that the account number in the SAP CRM system is the same as in the SAP Hybris Cloud for Customer system.</td>
</tr>
<tr>
<td>Business Partners Number ranges and groupings for business partner Number ranges and groupings for business partner</td>
<td>Assign the number range to the group that matches the grouping in SAP CRM. The (INTERNALID ↔ GROUPING) will need to match the grouping configured in the IMG for the external number assignment.</td>
</tr>
<tr>
<td>Business Partners Number ranges and groupings for business partner Define Groupings and Assign Number Ranges</td>
<td>You need to perform this activity in order to automatically assign the role Contact Person while creating a contact.</td>
</tr>
<tr>
<td>Business Partners Contact Role Assignments to Contacts</td>
<td>You need to implement an SAP Note to receive information about any changes made to sales order’s delivery and invoice status changes in the sales order in Cloud.</td>
</tr>
<tr>
<td>Business Partners Activate International Address Versions</td>
<td>You can maintain more than one version of an address at the same time, so an address can be held in various character sets, such as in English alphabets, Kanji characters and Latin letters. SAP delivers many version keys, and you can activate these version keys or create your own.</td>
</tr>
<tr>
<td>Number Ranges Define Number Ranges for Customer and Contacts</td>
<td></td>
</tr>
</tbody>
</table>

5. Based on the objects you want to replicate between CRM and SAP Hybris Cloud for Customer, perform the necessary configuration activities under Application-Specific Settings:
### ALE Settings for the HTTP inbound

<table>
<thead>
<tr>
<th>Service Processing</th>
<th>Time Sheet Integration</th>
<th>Define Derivation of Activity Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>To define the activity type for a service material, which should be used when transferring confirmation items with a service from the Cloud system to the time sheet in the CRM system.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6. In case you want to enhance the standard delivered content, you can check for available BAdIs and implement them. We recommend that you perform business checks based on the receiver logical system when multiple receivers are available in the system landscape. You can find the available BAdIs for each object under

#### Application-Specific Settings > <business object> > BAdIs

Table 16:

<table>
<thead>
<tr>
<th>BAdI</th>
<th>Description</th>
<th>Classic BAdi Definition Name</th>
<th>Enhancement Spot</th>
</tr>
</thead>
<tbody>
<tr>
<td>IDoc: Inbound Mapping</td>
<td></td>
<td>IDOC_DATA_MAPPER</td>
<td></td>
</tr>
<tr>
<td>IDoc: Adding additional segments</td>
<td></td>
<td>IDOC_DATA_INSERT</td>
<td></td>
</tr>
<tr>
<td>IDoc: Creation check</td>
<td></td>
<td>IDOC_CREATION_CHECK</td>
<td></td>
</tr>
<tr>
<td>Reduce Change Pointers for Message Type</td>
<td>This reduces the scope of change pointers to be written to changes relevant to the distribution.</td>
<td>BDCP_BEFORE_WRITE</td>
<td></td>
</tr>
</tbody>
</table>

- For generic enhancements, under **Communication Setup > BAdIs > <business object>**

Table 17:

<table>
<thead>
<tr>
<th>BAdI</th>
<th>Description</th>
<th>Classic BAdi Definition Name</th>
<th>Enhancement Spot</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Category IDoc: Inbound Mapping</td>
<td>This BAdI when implemented is used to adjust the outbound message data from CRM for product category replication.</td>
<td>CRMPCD_PCH_MAP</td>
<td></td>
</tr>
<tr>
<td>Product Category IDoc: Outbound Filtering</td>
<td>This BAdI when implemented is used to filter unintended product category from being replicated from CRM.</td>
<td>CRMPCD_PCH_VLD</td>
<td></td>
</tr>
<tr>
<td>BAId</td>
<td>Description</td>
<td>Classic Classic BAId Definition Name</td>
<td>Enhancement Spot</td>
</tr>
<tr>
<td>----------------------</td>
<td>------------------------------------------------------------------------------</td>
<td>-------------------------------------------------</td>
<td>------------------</td>
</tr>
<tr>
<td>Product IDoc:</td>
<td>This BAId when implemented is used to adjust the outbound message data from</td>
<td>CRMXIF_PROD_MAT_MAP</td>
<td></td>
</tr>
<tr>
<td>Outbound Mapping</td>
<td>CRM for product replication.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organizational</td>
<td>This BAId is for adjusting the outbound message data from CRM for</td>
<td>CRMPCD_ORG_UNIT_OUTBOUND</td>
<td></td>
</tr>
<tr>
<td>Units IDoc:</td>
<td>Organization replication</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outbound Mapping</td>
<td>This BAId when implemented is used to adjust the outbound</td>
<td>CRMPCD_EMPLOYEE_OUTBOUND</td>
<td></td>
</tr>
<tr>
<td></td>
<td>message data from CRM for employee replication</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employee IDoc:</td>
<td>This BAId when implemented is used to adjust the change pointer registration</td>
<td>HRBAS00INVFTY</td>
<td></td>
</tr>
<tr>
<td>Outbound Mapping</td>
<td>in CRM for employee changes.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employee IDoc:</td>
<td>This BAId when implemented is used to adjust the change pointer registration</td>
<td>HRBAS00INVFTY</td>
<td></td>
</tr>
<tr>
<td>Change Pointer</td>
<td>in CRM for employee changes.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Registration</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business Partner</td>
<td>This BAId when implemented is used to adjust the inbound and</td>
<td>CRMXIF_PARTNER_MAP</td>
<td></td>
</tr>
<tr>
<td>IDoc: Inbound and</td>
<td>outbound message mapping for business partner replication.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outbound Mapping</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business Partner</td>
<td>This BAId when implemented is used to adjust the inbound and</td>
<td>CRMXIF_PARTNER_R_MAP</td>
<td></td>
</tr>
<tr>
<td>Relationship IDoc:</td>
<td>outbound message mapping for business partner relationship replication.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inbound and Outbound</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mapping</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BAAdi</td>
<td>Description</td>
<td>Classic Classic BAAdi Definition Name</td>
<td>Enhancement Spot</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>--------------------------------------</td>
<td>------------------</td>
</tr>
<tr>
<td>Sales Territory IDoc: Change Pointer Registration</td>
<td>This BAAdi when implemented is used to adjust the change pointer registration in CRM for sales territory changes.</td>
<td>CRM_TERRMAN_ATTRIB</td>
<td></td>
</tr>
<tr>
<td>Sales Territory IDoc: Outbound Mapping and Filtering</td>
<td>This BAAdi when implemented is used to adjust the outbound message mapping for business partner replication as well as to filter out non intended sales territory from replicating.</td>
<td>CRMPCD_TERRITORY_OUTBOUND</td>
<td></td>
</tr>
<tr>
<td>Marketing Campaign IDoc: Outbound Mapping</td>
<td>This BAAdi when implemented is used to adjust the outbound message data from CRM for marketing campaign.</td>
<td>CRMPCD_CGPL_MAP</td>
<td></td>
</tr>
<tr>
<td>Marketing Plan IDoc: Outbound Filtering</td>
<td>This BAAdi when implemented is used to filter out non intended marketing plan from being replicated.</td>
<td>CRMPCD_CGPL_VLD</td>
<td></td>
</tr>
<tr>
<td>Marketing Plan IDOC: Outbound Mapping</td>
<td>This BAAdi when implemented is used to adjust the outbound message data from CRM for marketing plan.</td>
<td>CRMPCD_MKTPLAN_MAP</td>
<td></td>
</tr>
<tr>
<td>Business Transaction IDoc: Outbound Mapping</td>
<td>This BAAdi when implemented is used to adjust the outbound message data from CRM for business transaction.</td>
<td>CRMXIF_ORDER_MAP</td>
<td></td>
</tr>
<tr>
<td>BAdI</td>
<td>Description</td>
<td>Classic Classic BAdI Definition Name</td>
<td>Enhancement Spot</td>
</tr>
<tr>
<td>------</td>
<td>-------------</td>
<td>--------------------------------------</td>
<td>------------------</td>
</tr>
<tr>
<td>Pricing Request Service: Inbound and Outbound Mapping</td>
<td>This BAdI when implemented is used to adjust the inbound and outbound message data for pricing request.</td>
<td>CRMPCD_SE_EXT_DOC_DATA</td>
<td></td>
</tr>
<tr>
<td>CRM Document flow in C4C: Output mapping</td>
<td>The BAdI in this enhancement spot when implemented is used to adjust the output data from CRM for document flow.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attachment Service: Register and Send Out</td>
<td></td>
<td>CRM/Documents</td>
<td></td>
</tr>
</tbody>
</table>

**Note**

The BAdI CRMXIF_PARTNER_MAP is not enabled for multiple uses. If CRMPCD_BUPA_MAP is the only implementation for the classic BAdICRMXIF_PARTNER_MAP, then you can simply activate the implementation after the installation of software component CRMPCD01 via transaction SE19. If an implementation already exists for the classic BAdICRMXIF_PARTNER_MAP, then you must merge the logic of implementation CRMPCD_BUPA_MAP into your existing implementation.

SAP has provided default implementation for the following objects:

**Campaign**

It is only possible to have one NOTE in the Cloud solution. So, by default only SAP Standard ‘NOTE’ with language ‘EN’ is replicated from SAP CRM to the Cloud solution.

**Enhancement Spot**: CRMPCD_CGPL_REPLICATION

**BAdI Definition**: CRMPCD_CGPL_NOTES_FILTER

**Default Implementation**: CL_CRMPCD_EX_CGPL_NOTES_FILTER

**Lead**

**BAdI Definition**: CRMXIF_ORDER_MAP

**BAdI Implementation**: CRMPCD_SOD_1O_MAP

**Product Category Hierarchy**

It is only possible to have one product category hierarchy in the Cloud solution. Default implementation replicates only product hierarchy assigned to the “Sales” application.

**Enhancement Spot**: CRMPCD_PCH_REPLICATION
**Default Implementation**: CL_CRMPCD_PCH_FILTER

### 7.2 Area Menu in CRM

An area menu is now available to consolidate all the commonly used transactions for integrating SAP CRM with the SAP Hybris Cloud for Customer solution.

You can access this area menu in the transaction `CRMPCD_INT_MENU`.

The transactions are grouped as follows:

- **Monitor and Process Errors**: Transactions used to monitor IDocs, XML messages, scheduled jobs, and RFC queues, and also the transactions to reprocess IDocs, and analyze application logs.
- **Periodic Processing**: Transactions used to work with change pointers, send and process collected IDocs, and distribute time-dependent data.
- **Initial Loading or Resending Objects from SAP CRM to SAP Hybris Cloud for Customer**: Transactions of all reports that can be used to load and send data from SAP CRM to SAP Hybris Cloud for Customer system.
- **Industry-Specific Functions**: Transactions relevant for various industry solutions.

For information about the reports, and the sequence in which these reports should be run, refer to the CRM Initial Load guide on [SAP Service Marketplace](https://service.sap.com)
8 Configure Phase: Configure Integration in PI System

Purpose
Configure integration between SAP CRM and COD using SAP PI as the middleware. SAP delivers the following four process integration scenarios for the integration of SAP Hybris Cloud for Customer with SAP CRM, using PI in dual stack:

COD_CRM_BusinessDataReplication1

- CRM to COD
  - Print Private
  - Document Flow
  - Opportunity Replication
  - Opportunity Confirmation (Confirmation for COD ➔ CRM Replication)
  - Opportunity Attachment Replication
  - Lead Replication
  - Lead Confirmation (Confirmation for COD ➔ CRM Replication)
  - Campaign Replication
  - Activity Replication (Appointment, Task, Email, Phone Call)
  - Activity Confirmation (Appointment, Task, Email, Phone Call)

- COD to CRM
  - Opportunity Replication
  - Opportunity Confirmation (Confirmation for CRM ➔ COD Replication)
  - Opportunity Attachment Replication
  - Lead Replication Confirmation
  - Lead Status Notification

COD_CRM_BusinessDataReplication2

- CRM to COD
  - CustomerQuote & SalesOrder Notification
  - Customer Quote Request Notification
  - Sales Order Notification
  - Service Request Confirmation/Replication
  - Business Document Attachment
  - Lead Attachment
  - Business Activity Replication
  - Business Activity Confirmation
  - Promotion Replication
  - Service Request Delegation
  - Customer Quote to Sales order
  - Customer Fact sheet
- Request Data from External System for Customer Quote
- Business Activity Replication
- Business Activity Confirmation

- COD to CRM
  - Service Request Delegation

COD_CRM_MasterDataReplication

- CRM to COD
  - Business Partner Replication
  - Business Partner Relationship Replication
  - Material Replication
  - Business Partner Replication Confirmation
  - Product Category Hierarchy Replication
  - Service Product Replication
  - Account Hierarchy Replication
  - Organization Unit Replication
  - Employee Replication
  - Territory Replication
  - Business Attribute Replication
  - Business Attribute Set Replication
  - Marketing Attribute Assignment Replication
  - Individual Object replication

- COD to CRM
  - Business Partner Replication
  - Business Partner Relationship Replication
  - Business Partner Replication Confirmation
  - Social Media Profile
  - COD_CRM_End2EndConnectivityCheck
    - Check Connectivity between COD to CRM
    - Check Connect Scenario names are as listed below:
  - Business Attribute Assignment Replication

Note
- COD_CRM_MasterDataReplication_AAE
- COD_CRM_BusinessDataReplication1_AAE
- COD_CRM_BusinessDataReplication2_AAE

All of the above scenarios are included in the software component CRM COD 01 IC 700, which you can download from SAP Service Marketplace.

Check Connectivity between CRM to COD

8.1 Create a Key Storage View and Load the Certificate

Purpose
In case you exchange a certificate with the Cloud solution, this certificate must be signed by one of the certification authorities listed in the section Supported Certification Authorities (PI Integration) [page 20].

If you generated the certificate, while specifying inbound communication credentials in a communication arrangement, this should be imported into a view in a key storage.

**Prerequisites**

The certificate file is in the Base64 format.

**Note**

Outbound communication from PI is always managed by a PI administration in NetWeaver Administrator.

**Procedure**

1. Logon to NetWeaver Administrator (NWA) of the SAP PI system.
2. In the **Configuration** tab, click **Certificate and Keys**.
3. In the **Key Storage** tab, click **Add View**.
4. Enter a name and description, and click **Create**.
5. Select the view you just created, and click **Import Entry**.
6. In the **Entry Import** dialog, do the following:
   1. Select the entry type as **PKCS#12 Key Pair**.
   2. Select the file that you created as the key pair in SAP Hybris Cloud for Customer.
   3. Enter the corresponding password.
   4. Click **Import**.

8.2 **Import the Root Certificate**

You can import the root certificate that is used to sign the SAP Hybris Cloud for Customer certificate. Depending of the configuration of the PI system and which is the PSE provider, the location on where the root certificate has to be imported change. This is determined by the parameter ssl/pse_provider.

If the parameter ssl/pse_provider is:

- **ABAP**, load the certificate into SSL Server standard for ABAP
- **JAVA or SAP PI AEX (JAVA only)**, load certificate in ICM_SSL_<instanceID>_<port> view for JAVA

**Prerequisites**

You know the path to the root certificate file that was exported. For more information, see Export the Root Certificate [page 30].

**Procedure**

**Load the certificate into SSL Server standard for ABAP**

1. Using SAPGUI, logon to the ABAP stack of the SAP PI system, and open transaction **STRUST**.
2. Open **SSL server standard**, and click **Import** under **Certificate**.
3. Select the location of the root certificate and click **Continue**.
4. Under **Certificate**, click **Add to certificate List** and click **Save**.
Load the certificate in ICM_SSL_<instanceID>_<port> view for JAVA

1. Logon to NetWeaver Administrator (NWA) of the SAP PI system.
2. In the Configuration tab, click Certificate and Keys.
3. Under Key Storage Views, check if the root certificate, say SAPPassportCA, used to sign the SAP Hybris Cloud for Customer x.509 certificate is already imported into the ICM_SSL_<instanceID>_<port> view within the key storage.
4. If the root certificate is not there, it can be imported by clicking Import Entry from the View Entries tab.
5. Select the entry type as X.509 Certificate, and then the location of the saved file and click Import.
6. Set the value for VCLIENT to 1 on the profile parameter icm/server_port_<xx> for the corresponding SSL port used. For example: icm/server_port_5 = PROT-

8.3 Create Configuration Scenarios

Prerequisites
You have imported the software component CRMCOD01 IC 700 into the Enterprise Service Repository (Integration Repository) of your PI system (refer to section Import TPZ Package in ESR [page 18]).

Note
This section describes steps for the dual stack. The main difference in case of JAVA only installation of PI system (AEX or PO) is that the scenario names differ, and are as listed below:

- COD_CRM_MasterDataReplication_AAE
- COD_CRM_BusinessDataReplication1_AAE
- COD_CRM_BusinessDataReplication2_AAE

Procedure
1. On the PI browser page, open Integration Builder.
2. Switch to the Configuration Scenario View
3. From the menu, select Object > New to pop-up a dialog box containing the list of Integration Builder objects.
4. On the left side of the dialog box, select Configuration Scenario, under the section Administration.
5. Enter the Configuration Scenario as <Prefix>_<COD_CRM_MasterDataReplication> and select Type of ES Repository Model as Process Integration Scenarios (Prefix e.g. C4C_CRD800_COD_CRM_MasterdataReplication, whereas C4C is the Cloud Solution and CRD800 is the CRM system)
6. In the ES Repository Model Reference(s), use the input help to select the Process Integration Scenario COD_CRM_MasterDataReplication. Make sure to select the Process Integration Scenarios from the namespace http://sap.com/xi/CRMCOD/Global2/IC and the Software Component CRMCOD01 IC 700
7. The namespace and the Software Component Version will be automatically populated.
8. Click Create and save the Configuration Scenario
9. Repeat the steps 3 – 8 for the following configuration scenarios.
Table 18:

<table>
<thead>
<tr>
<th>Configuration Scenario</th>
<th>Process Integration Scenario</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;Prefix&gt;COD_CRM_BusinessDataReplication</td>
<td>&lt;Prefix&gt;COD_CRM_BusinessDataReplication</td>
</tr>
<tr>
<td>&lt;Prefix&gt;COD_CRM_BusinessDataReplication2</td>
<td>&lt;Prefix&gt;COD_CRM_BusinessDataReplication2</td>
</tr>
</tbody>
</table>

8.4 Configure Interfaces for CRM Integration

**Note**

This section describes configuring interfaces for the dual stack. The main difference in case of JAVA only installation of PI system (AEX or PO) is that the Process Integration Scenario names differ, and are listed below:

- COD_CRM_MasterDataReplication_AAE
- COD_CRM_BusinessDataReplication1_AAE
- COD_CRM_BusinessDataReplication2_AAE

1. On the PI browser page, open **Integration Builder**.
2. Switch to Configuration Scenario View
3. On the left pane double click and open the configuration scenario `<Prefix>_COD_CRM_MasterDataReplication` and switch to the edit mode.
4. On the ES Repository Model tab click on the button **Model Configurator**. The Model Configurator with create all configuration objects that are required to establish the connection between the Cloud solution and SAP CRM.
5. Click on the button **Select Component View** to list all the available component view and then apply the component view **COD_CRM_MasterDataReplication**

**Note**

A component view is a variant of the configuration scenario. You select the component view according to the enhancement package of your SAP CRM release.

6. Select the swim lane **SAP Cloud for Customer <...>**, or select Assign Component
7. In the lower part of the screen, on the Business System Components for A2A tab, use the input help of the Communication Component field to add the Cloud solution you previously defined (Use the business system you defined while Create SLD Configuration [page 13]).
8. Repeat steps 6 and 7 for the **SAP CRM 7.0** swim lane to add SAP CRM system as the Communication Component.
9. Select **Configure Connections**
10. In the lower part of the screen, on the Connections from Component Assignment tab, highlight the Communication Channel field for the Sender Business System Components.
11. Select Create Communication Channel with Template.
12. In the Create Communication Channel dialog box, select Continue to go to the next screen that shows the pre-populated communication channel template. Click Continue to proceed to the next step.
13. The system proposes a name for the Communication Channel and shows the respective Communication Component. To confirm the proposal and create the communication channel click Finish button.

14. A confirmation will be displayed informing the successfully creation of the communication channel, click Close button to proceed further.

15. Highlight the Communication Channel field for the Receiver Business System Components and repeat the steps 11 to 14 to create the receiver communication channel.

16. Repeat the steps 10 to 15 for all other connections. (Select Next Connection . To proceed from one connection to the next until communication channels are created for all the connections.)

**Note**

If a communication channel has already been created and is used a second time, then you can use the input help to select the communication channel (e.g. For SAP CRM system there is only one receiver communication channel is created i.e. CRM_Idoc_Receive and will be reused for all the connections where SAP CRM is the receiver).

17. Select Create Configuration Objects

18. In the Create Configuration Objects dialog box, select the Generation radio button, then de-select the Activate Changes checkbox.

19. Select Start.

20. Close the log dialog box.

21. In the Model Configurator, select Apply.

22. On the configuration scenario screen select Objects tab to view the list of objects that are generated.

23. Save the configuration scenario.

24. Repeat the steps 3 to 22 for the COD_CRM_BusinessDataReplication1 by opening up the configuration scenario <Prefix>_COD_CRM_BusinessDataReplication1.

24. Repeat the steps 3 to 22 for the COD_CRM_BusinessDataReplication2 by opening up the configuration scenario <Prefix>_COD_CRM_BusinessDataReplication2.

### 8.5 Maintain Communication Channel for CRM Integration

**Procedure**

1. On the PI browser page, open Integration Builder.

2. In the left-hand frame switch to Object View

3. In the left-hand frame, follow the path Communication Component without Party > Business System > <Cloud Solution Business System (COD)> > Communication Channel to display the communication channel list.

4. Double click and open the receiver SOAP communication channel (normally receiver communication channel ends with suffix _Receive) one after the other to maintain the Target URL

5. On the Display Communication Channel screen, switch to Edit mode.

6. For SOAP Adapter, the Target URL will be pre-populated, however the hostname and port needs to be adjusted to the hostname and port of your cloud solution. Refer to the Appendix section for the list of communication channels and their respective Target URL.
7. To configure either user or certificate authentication, select one of the following checkboxes:
   ○ Configure User Authentication
   ○ Configure Certificate Authentication. Maintain the following:
     ○ Keystore Entry – Select the keypair that was created while creating the communication arrangement [page 26].
     ○ Keystore View – Select the view that you created in NWA key store Create a Key Storage View and Load the Certificate [page 44].

8. To configure proxy select the checkbox Configure Proxy and enter the proxy host and the port. Select the Configure Proxy User Authentication if required and maintain the user name and password.

9. Save the changes and close the communication channel

10. Repeat the steps 4 – 9 to configure the Target URL for all receiver SOAP communication channel.

11. In the left-hand frame, follow the path Communication Component without Party > Business System > <on-premise system> > Communication Channel to display the communication channel list.

12. If there are any receiver SOAP communication channels, then repeat steps 4 to 9.

13. Double click and open the receiver IDoc communication channel (normally receiver communication channel ends with suffix _Receive e.g. CRM_Idoc_Receive) and switch to the Edit mode.

14. Maintain the RFC Destination created in section RFC Destination to CRM and the Port (refer to PI Port Configuration [page 16]).

15. Save the changes and close the communication channel

Table 19: Example of Receiver SOAP communication channel configuration and Receiver IDoc communication channel

<table>
<thead>
<tr>
<th>User Entry</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>For connecting to Cloud receiver systems</td>
<td>Add the HTTP connection to the reverse proxy that is installed by the Cloud solution provider and the pertaining port in front of the default entry. Do not delete the default entry of this path.</td>
</tr>
<tr>
<td></td>
<td>The URL for the Communication Channel COD_SOAP_BusinessPartnerReplicationIn_Receive should conform to the following format: https://&lt;hostname&gt;:&lt;port&gt;/sap/bc/srt/scs/sap/businesspartnerreplicationin?MessageId</td>
</tr>
</tbody>
</table>

Note
The target end points must be maintained the following format:
For Cloud solution https://<Cloud system host>:<port>/sap/bc/srt/scs/sap/<service>
For an on-premise system https://<on-premise system host>:<port>/sap/bc/srt/scs/sap/<service> ? sap-client=<client>
8.6 Adjust Routing Conditions for CRM Integration

**Note**

As a single IDoc (e.g. CRMXIF_ORDER_SAVE_M.CRMXIF_ORDER_SAVE_U01) is used for multiple interfaces, routing conditions are required to identify the receiver interface corresponding to this sender interface. For CRM COD, routing conditions must be adjusted when the sender interface is CRMXIF_ORDER_SAVE_M.CRMXIF_ORDER_SAVE_U01, CRMXIF_PARTNER_REL_SAVE_M.CRMXIF_PARTNER_REL_SAVE_M02 and CRMXIF_PARTNER_SAVE_M.CRMXIF_PARTNER_SAVE_M03.

The following routing conditions must be added in the Interface Determination object of the configuration scenario CRM_COD_MasterDataReplication.

**Note**

For information about how to add a content-based routing condition in PI, visit [SAP Help Portal](https://help.sap.com).

**Procedure**

1. On the PI browser page, open **Integration Builder**.
2. Switch to **Configuration Scenario View**.
3. On the left pane go to configuration scenario `<Prefix>_CRM_COD_BusinessDataReplication` to list the interface determination for the sender IDOC interface CRMXIF_ORDER_SAVE_M.CRMXIF_ORDER_SAVE_U01.
4. Double click and open the interface determination for CRMXIF_ORDER_SAVE_M.CRMXIF_ORDER_SAVE_U01 and switch to edit mode.
5. Maintain the routing condition using the condition editor. For a selected source and target system, you will find a list of routing conditions and the corresponding operation mapping and receiver interface in the Integration Flows spreadsheet on the [SAP Service Marketplace](https://service.sap.com).
6. Repeat the steps 3 – 5 for the IDocs CRMXIF_PARTNER_REL_SAVE_M.CRMXIF_PARTNER_REL_SAVE_M02 and CRMXIF_PARTNER_SAVE_M.CRMXIF_PARTNER_SAVE_M03 that are configured in the Configuration Scenario `<Prefix>_CRM_COD_MasterDataReplication`.
7. For CRMXIF_PARTNER_SAVE_M.CRMXIF_PARTNER_SAVE_M03 the BusinessPartnerReplicationIn receiver interface needs to be added with the operation mapping CRM_COD_BusinessPartner_Replicate.

Note
The Process Type referred in the routing condition /CRMXIF_ORDER_SAVE_U01/IDOC/E101CRMXIF_BUSTRANS/PROCESS_TYPE should match the transaction types maintained in the SAP CRM System. The Transaction Types are maintained in the transaction SPRO and in the path SAP Customizing Implementation Guide ➤ Customer Relationship Management ➤ Transactions ➤ Basic Settings ➤ Define Transaction Types.

8.7 Maintain Value Mapping between Cloud and CRM PI

The value mappings listed in the table below needs to be created in the Integration Builder of the PI system to enable integration between SAP Hybris Cloud for Customer and SAP CRM using SAP PI.

Procedure
1. On the PI browser page, open Integration Builder.
2. Go to menu path Tools ➤ Value Mapping
3. Enter the Source Agency, Source Schema, Target Agency and Target Schema as per the table given above.
4. Click Display and the Value Mapping maintenance screen appears.
5. Switch to the Edit mode to maintain the Value Mapping. (refer to PI Value Mapping section in the Appendix for more details).
6. For information on the values that needs to be mapped between the systems, see PI Value Mapping.
7. Save the value mapping
8. Repeat the steps 2 – 6 for all the Agency and Schemas given in the table above.

8.8 Activate Changes in Change List

Procedure
1. In the Integration Builder, select Change Lists tab.
2. Select your change list. From the context menu choose Activate.

Note
If you want to test the end-to-end communication of a selected scenario, do the following during the configure phase:

1. Activate the scoping.
2. Create a communication system.
3. Configure the selected communication arrangement.
4. Export the certificate used to sign the SAP Hybris Cloud for Customer x.509 certificate.
5. Import the root certificate used to sign the SAP Hybris Cloud for Customer certificate.
6. Load certificate in ICM_SSL_<instanceID>_<port> view for JAVA.
7. Maintain the communication channel.
8. Adjust the routing conditions.
9. Maintain value mapping.
10. Activate the changes in the change list.
11. Perform code list mapping.
9 Extend Phase: Extend Cloud Solution for CRM Integration

If you want additional fields from your on-premise system to be displayed in the Cloud solution, you can extend pre-packaged content delivered by SAP (iFlows). SAP recommends you to use SAP Key User Tool (KUT) for simple extensions, and the SAP Cloud Studio for complex extensions. Once you have the extended the source and target interfaces, you should map the extended field(s) in the SAP Middleware system. For more information, see:

- INTEGRATION: Extending SAP Hybris Cloud for Customer
- How to Extend SAP Hybris Cloud for Customer - SAP On-Premise Pre-Packaged Integration Content

Business Partner Extensibility

Extension fields created for a business partner address in Cloud, can now be replicated between CRM and Cloud.

Disclaimer

The business partner UI in SAP Hybris Cloud for Customer will be delivered in a 2015 release. Prerequisites to use the feature:

- In the Adapt mode, add extension fields to a business partner address
- Make the fields available to the following service interfaces via the link Further Usages: BusinessPartnerReplicationIn and BusinessPartnerReplicationSelfInitiatedOut
- Make the fields visible and publish your changes
10  Data Load Phase: Perform CRM Initial Data Load

This section describes how to extract data from the SAP CRM system and load it into the Cloud solution. As a prerequisite for the initial load, you must have made the entire configuration settings specified in the previous sections of this document for the SAP CRM, SAP middleware such as SAP Process Integration or HANA Cloud Integration, and Cloud systems.

The initial load guide describes the configuration settings necessary to send master data from the SAP CRM system to the Cloud solution, and to process data in the SAP CRM system that was sent from the Cloud solution. When you send and receive IDocs, SAP CRM and the cloud solution expect different sequences for various objects. In order to send and process IDocs in the right sequence, you need to adhere to the sequence of steps as mentioned in the guide while defining background jobs.

For more information, see INTEGRATION: CRM Initial Load Guide on SAP Service Marketplace.

For information on how you can plan for optimal performance during high volume data loads into your SAP Hybris Cloud for Customer solution from an SAP on-premise system, see Best Practices for Optimal Performance of Data Loads into SAP Hybris Cloud for Customer.

10.1  Template Reports

SAP provides ABAP template reports (listed in the Initial Load guide) that can be used for initial load scenarios.

Copy these template reports and adapt them to meet your business requirements.

1. To access the template reports, execute transaction SE38.
2. Adapt the templates according to modifications made in your SAP CRM system.

<table>
<thead>
<tr>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>If you have not made modifications in your SAP CRM system, you can use the templates as delivered. If you have made modifications in your SAP CRM system, refer to the SAP Help Portal for more information about adapting the templates.</td>
</tr>
</tbody>
</table>

10.2  Replication of Job IDs

Job IDs must be extracted and loaded into the Cloud solution via the Migration Workbench. This is required for loading the employees into the Cloud solution. Ensure that the ID is created in the Cloud solution in the same
format as in SAP CRM. The jobs can be displayed in CRM using the transaction PPOMW. The job IDs can be extracted from table HRP1000 using the object type ‘C’.

10.3 Executing Initial Load Reports

Assuming you have completed the necessary pre-requisites such as code list mapping, job ID load, you can now proceed with executing the initial load reports that are mentioned above. It is recommended to load small numbers of instances first and increase the package size incrementally if the previous run was successful.

10.3.1 Replication of Organization

Replication messages of organization units are processed by the background job “Organization Replication Request Processing Run” in the Cloud solution. If the organization units don’t appear in the Cloud solution after you performed the load, you might check whether the background job for the organization replication already ran or when the next job is scheduled. To do this, choose the Background Jobs view in the Administrator work center and check the run type “Organization Replication Request Processing Run”.

10.3.2 Replication of Product Category Hierarchy

It is possible to have only one product hierarchy modeled in the Cloud solution. For this reason, we recommend to transfer only the hierarchy that is assigned to the Sales application in SAP CRM. You can check which hierarchy is assigned to the Sales application under

SAP Customizing Implementation Guide > Cross-Application Components > SAP Product > Product Category >
Assign Category Hierarchies to Applications

Per default only the hierarchy that is assigned to the application Sales is replicated from SAP CRM to the Cloud solution. This is the fallback implementation for the Business Add-In (BAdI) CRMPCD_PCH_FILTER of enhancement spot CRMPCD_PCH_REPLICATION. If you want to change this behavior, you have to create a BAdI implementation for the mentioned BAdI. For more information, review the section CRM: Customer Enhancements (BAdI Definitions).

10.3.3 Product Material Replication

It is only possible to replicate materials that are assigned to valid product categories, as this is a mandatory requirement in the Cloud solution. Therefore we recommend that you filter out materials that are not assigned to a product category of the hierarchy that is assigned to the Sales application. You can achieve this by implementing method CHANGE_MAPPED_DATA_OUT of the BAdI CRMXIF_PROD_MAT_MAP.
10.3.4 Business Partner Replication

When you load business partners into the Cloud solution, only the following roles are supported in the Cloud solution.

- Account (CRM000)
- Competitor (CRM005)
- Contact Person (BUP001)
- Prospect (BUP002)
- Sales and service partner (CRM011)

All other roles are filtered out. For persons, the system supports data records without a role. For organizations, at least one valid role is mandatory.

Make sure that the business partner roles codes of SAP CRM are mapped to the corresponding business partner roles codes of the Cloud solution using code list mapping in the Cloud solution.

Only the business partner categories Person and Organization are transferred to the Cloud solution. The business partner category Group is ignored during data load. (This is true for both initial download as well as delta replication.)

If time-dependent data (such as different time-dependent addresses) is maintained in SAP CRM, only the data that is currently valid is transferred to the Cloud solution.

If the business partner has multiple addresses in SAP CRM, only the default, ship-to, bill-to and payer addresses are transferred. Make sure that the address usage codes of SAP CRM are mapped to the corresponding address usage codes of the Cloud solution using code list mapping in the Cloud solution.

If a business partner address in SAP CRM contains multiple communication data (such as multiple telephone or fax numbers), only the default communication data is transferred to the Cloud solution.

In the Cloud solution only one industry classification system 0005 is supported. Make sure that your main industry classification system of SAP CRM is mapped to the industry classification system 0005 of the Cloud solution using code list mapping the Cloud solution.

10.3.5 Employee Replication

Employee data must be replicated from SAP CRM to SAP Hybris Cloud for Customer using the dedicated Employee web service.

Note

If you have chosen the employee replication in the Business Adaptation Catalog, the employee role is not supported via the business partner replication service. All other roles are filtered out. For employees, the system supports data records without a role. For organizations, a role is mandatory. Only the business partner categories Person and Organization are transferred to the Cloud solution. The business partner category Group is ignored during data load. (This is true for both initial download as well as data replication.)
You can now assign multiple organizations to an employee in SAP Hybris Cloud for Customer. In SAP CRM, you need to implement the BAdI CRMPCD_EMPLOYEE_OUTBOUND and write a custom logic to determine the primary and secondary organization assignments for an employee. You will see a new field, Role Code, that has been added under Organizational Assignment node that determines primary and secondary organization assignments. You need to upgrade your integration content for SAP CRM Employee Replication to use this feature.

If the configuration in the SAP middleware is done accordingly, the employees will be replicated via a dedicated service. To support this scenario end to end, the employee replication has to be activated in BC Scoping in SAP Hybris Cloud for Customer. Remarks on using the web service:

- The business role is not filled by default; it can be filled by means of a BAdI implementation in the employee IDoc.
- If the user ID is not maintained in the Business Partner, then the user ID of the employee is defaulted to his or her e-mail address.
- The validity period of the employee is set to the validity period of his/her role assignment in SAP CRM.
- The business user can be activated immediately during replication. This is the default behavior.
- The replicated business object is not directly saved in the target business object but the saving needs to be triggered by the business user in the Data Integration work center or an automatic batch job.

If you cannot see the employees in the Cloud solution, you can find out when the job is scheduled to run. To do this, choose the Background Jobs view in the Administrator work center.

Replication messages of employees are processed by a background job (scheduled job). Employees are not visible in the Cloud solution immediately but are available after the next scheduled run of the job.

10.3.6 Business Partner Relationship Replication

Execute report CRMPCD_BUPA_REL_EXTRACT to load all relationships from SAP CRM to SAP Hybris Cloud for Customer in transaction SE38.

When you load business partner relations into the Cloud solution, only the following relationship categories are supported. (This is true for both initial download as well as data replication.)

- Has/Is Contact Person (BUR001)
- Has/Is the Employee Responsible For (BUR011)
- Parent/Child Relationship
- Custom Relationships
10.3.7 Business Attribute Assignment Replication

This step is only relevant if you want to replicate business attribute assignment to business partners from a Cloud system to a CRM system.

1. Ensure successful processing of the inbound IDoc CLFMAS.
2. To assign business partner GUID to the business attribute assignments replicated from Cloud to CRM, execute report CRM_MKTBP_ASSIGN_GUID in transaction SE38, with the following input parameters:
   - **ANZ_AUSP**: Number of rows to be modified during each update. Recommended value is 10,000.
   - **M_COUNT**: A number equal to or greater than the number of entries in table ‘INOB’ in CRM system. Normal value is 200,000.

10.3.8 Steps to consider for Bulking

Accounts/contacts and employees must be loaded separately. If the SAP CRM system is sending employee and account messages separately, the routing condition assigns employee messages to employee mapping and account messages to business partner account mapping. For example, if you send three IDocs in a package for accounts only, then these three IDocs will be bundled according to the business partner routing condition. The business partner mapping will be carried out, which supports bulking.

We recommend that you do not send bulk messages for employees because employee mapping does currently not support bulking. If a bulk message is sent from SAP CRM to SAP middleware, it does not produce expected result. For employees, the mapping must be adjusted.

**Note**

For Bulking scenarios, ensure that each of the objects are grouped separately. Otherwise you could have, for example, leads and opportunities alike collected in the same bulk message.

**Procedure**

Prepare the reports for the initial load.

1. In the SAP CRM system, execute transaction WE20.
2. In the **Outbound Parameters** field, expand the message type for the partner profile and select the object that you created while setting up the Outbound IDoc.
   For more information, see the IMG document in the on-premise system. Path: Integration with SAP Hybris Cloud for Customer > Integration with Other SAP Components > Communication Setup > Manually Adjust Integration Settings for Data Exchange > Maintain Port Definition and > Maintain IDoc Partner Profile
3. In the **Output Mode** section of the screen, select Collect IDocs, then select Details.
4. Enter a suitable package size.

**Note**

The package size must be greater than or equal to the maximum number of relationships available for the accounts in the SAP CRM system. This is due to the technical limitation in the Cloud solution. We recommend that you send all relationships of an account in a single package if possible.
5. Click **Save**.
6. Repeat steps 1 through 5 for each object.
7. Start the initial load and execute the transaction **SE38**.
8. Create a variant according to the number of products that you want to send
9. Enter report RSEOUT00.
10. Select **Start with Variant**, and specify the variant you created.
11. When the initial load is finished, you must change the settings in the partner profile. To do this, repeat steps 1 through 3, and chose the option **Transfer IDoc Immediately** for each object.

### 10.4 Attachment Replication

There is no initial load report available for replicating attachments. It has to be created manually using the following code example as a template.

**Note**

Execute the load of the host object instances before loading the attachments. Packaging can be up to 500-800MB per package. If no receiver is provided, the attachments are sent to the same system as the host object instance.

```sql
INCLUDE crm_object_types_con.

PARAMETERS: p_op_id TYPE crmt_object_id,
             p_tenid TYPE slb_bkey.

DATA: lr_op_attach_send TYPE REF TO cl_crmcd_replicate_attachment,
      ltbo TYPE sibflporb,
      lsbo TYPE sibflporb,
      lt_business_system TYPE sld_t_bkey,
      lv_header_guid TYPE crmt_object_guid.

INSERT p_tenid INTO TABLE lt_business_system.

CALL FUNCTION 'CRM_ORDER_CONVERT_DOCNUMBER'
  EXPORTING
    lv_object_id = p_op_id
    lv_object_type = gc_object_type-opportunity
  IMPORTING
    ev_header_guid = lv_header_guid
  EXCEPTIONS
    OTHERS = 1.

IF sy-subrc EQ 0.
  'ENDIF.

lsbo-catid = 'BO'.
lsbo-instid = lv_header_guid.
lsbo-typeid = gc_object_type-opportunity.
INSERT lsbo INTO TABLE lt_bo.

lr_op_attach_send = cl_crmcd_replicate_attachment->get_instance( ).
lr_op_attach_send->send( it_receivers = lt_business_objects, it_business_objects = lt_bo ).

COMMIT WORK.
```
11 Data Load Phase: Perform CRM Delta Load

This section describes the steps needed for objects, for example, territories, organization units and employees. Reports with delta load option must be scheduled as periodic background jobs (via transaction SM37) in your SAP CRM system. The frequency depends on the business process and the frequency of the changes in that system.

For information about the delta load report, see the report documentation in the system and refer to the CRM Initial Load guide on SAP Service Marketplace.
12 Monitor Phase: Monitor Message Flow Across Systems

Messages are exchanged between the SAP on-premise, SAP Middleware and SAP Hybris Cloud for Customer systems, during data load and go-live phases. These messages need to be monitored for following reasons:

- Identify incorrect data in messages
- Narrow down on the component where the message has failed
- Check connectivity issues between the components

For more information about monitoring the data across these systems, see the Monitoring Guide SAP Service Marketplace.

Integrating SAP Hybris Cloud for Customer with SAP CRM using SAP Process Integration
13 Appendix

13.1 PI Value Mappings for CRM Integration

The screenshots shown in this appendix are the standard mappings from PI.

Note
Some of the code lists named below can be enhanced or modified in SAP Hybris Cloud for Customer during fine-tuning.

Table 20:

| COD||OpptResultReasonCode | CRM||OpptResultReasonCode |
|--------------------------------|--------------------------------|
| The following values are contained in the global data type (GDT) Customer Transaction Document Result Reason Code: |
| Code | Description |
| 001 | Lost to competitor |
| 002 | Lost due to product |
| 003 | Lost due to price |
| 004 | Lost due to service |
| 005 | Won due to product |
| 006 | Won due to price |
| 007 | Won due to service |
| 008 | Accepted Because of High Revenue Potential |
| 009 | Accepted Because of High Chance of Success |
| 010 | Accepted for Strategic Reasons |
| 011 | Rejected Because of Low Revenue Potential |
| 012 | Rejected Because of Low Chance of Success |
| 013 | Rejected Because of Wrong Target Segment |
| 014 | Won Against Competitor |
| 015 | Currently No Interest in Buying |

The SAP CRM values are a concatenation of Code Group and Code. For more information, review the following activity:

SAP Customizing Implementation Guide > Customer Relationship Management > Transactions > Settings for Opportunities > Maintain Status Reason and Status Profile for Opportunities > Define Code Groups and Codes for Catalogs

The values of this mapping are used in the following PI message mappings:
13.1.2 Mapping COD||PartyRoleCode ↔ CRM||PartyRoleCode

Table 22:

| COD||PartyRoleCode | CRM||PartyRoleCode |
|--------------------------------|-----------------|
| The values in the following table represent concatenations of the SAP CRM business object types and party role codes. They are contained in the GDT PartyRoleCode. |

Table 23:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1001</td>
<td>Account</td>
</tr>
<tr>
<td>1005</td>
<td>Ship-To</td>
</tr>
<tr>
<td>2</td>
<td>Seller</td>
</tr>
<tr>
<td>28</td>
<td>Service and Support Team</td>
</tr>
<tr>
<td>40</td>
<td>Processor</td>
</tr>
<tr>
<td>44</td>
<td>Sales Unit</td>
</tr>
<tr>
<td>213</td>
<td>Partner Contact</td>
</tr>
<tr>
<td>29</td>
<td>Sales Partner</td>
</tr>
<tr>
<td>30</td>
<td>Competitor</td>
</tr>
<tr>
<td>31</td>
<td>Account</td>
</tr>
<tr>
<td>39</td>
<td>Employee Responsible</td>
</tr>
<tr>
<td>46</td>
<td>Sales Employee</td>
</tr>
<tr>
<td>73</td>
<td>Marketing Unit</td>
</tr>
<tr>
<td>35</td>
<td>Organizer</td>
</tr>
<tr>
<td>36</td>
<td>Attendee</td>
</tr>
<tr>
<td>41</td>
<td>Activity Contact</td>
</tr>
<tr>
<td>32</td>
<td>Recipient</td>
</tr>
<tr>
<td>33</td>
<td>Sender</td>
</tr>
<tr>
<td>50</td>
<td>Organizational Unit</td>
</tr>
<tr>
<td>40</td>
<td>Processor</td>
</tr>
<tr>
<td>45</td>
<td>Call Participant</td>
</tr>
<tr>
<td>59</td>
<td>Contact</td>
</tr>
</tbody>
</table>

The following values are a concatenation of the SAP CRM business object types and partner functions. You can find the partner functions in the activity under [SAP Customizing Implementation Guide > Customer Relationship Management > Basic Functions > Partner Processing > Define Partner Functions]

In the SAP CRM system, you can execute transaction SWO1 to find the following SAP CRM object types:

Table 24:

<table>
<thead>
<tr>
<th>SAP CRM Object Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS2000223</td>
<td>Service Request</td>
</tr>
<tr>
<td>BUS2010020</td>
<td>Marketing Project Campaign</td>
</tr>
<tr>
<td>BUS2000111</td>
<td>CRM Opportunity</td>
</tr>
<tr>
<td>BUS2000125</td>
<td>CRM Task</td>
</tr>
<tr>
<td>BUS2000108</td>
<td>CRM Lead</td>
</tr>
<tr>
<td>BUS2000115</td>
<td>CRM Sales Transaction</td>
</tr>
<tr>
<td>BUS2000126</td>
<td>CRM Business Activity</td>
</tr>
</tbody>
</table>
The values of this mapping are used in the following PI message mappings:

- COD_CRM_Opportunity_Replicate
- COD_CRM_Service_Request_Delegation
- CRM_COD_Opportunity_Replicate_Bulk
- CRM_COD_Lead_Replicate_Bulk
- CRM_COD_BusinessActivityReplicate_Bulk
- CRM_COD_Business_Activity_Replicate_Bulk
- CRM_COD_Opportunity_Replicate_Bulk

### 13.1.3 Mapping COD||ReceiverParty ↔ CRM||ReceiverPort

Table 25:

| COD||ReceiverParty | CRM||ReceiverPort |
|-----------------|-----------------|
| <SID>CLNT<client_number>, where SID is the system ID of the connecting CRM system. | Example: SAPCRM |

The values of this mapping are used in the following PI message mappings:
13.1.4 Mapping COD||SenderParty ↔ CRM||SenderPort

Table 26:

| COD||SenderParty | CRM||SenderPort |
|----------------|---------------|
| The short tenant ID of the cloud system. For information on how to get this ID, see Determine Short Tenant ID [page 30]. | SAP<SID>, where SID is the system ID of the connecting Cloud system. |

The values of this mapping are used in the following PI message mappings:

- COD_CRM_BusinessPartner_Confirmation
- COD_CRM_BusinessPartner_Replicate
- COD_CRM_BusinessPartnerRelationship_Replicate
- COD_CRM_Lead_Replicate_Confirmation
- COD_CRM_Lead_Status_Notification
- COD_CRM_Opportunity_Confirmation
- COD_CRM_Opportunity_Replicate
- COD_CRM_Service_Request_Delegation
- COD_CRM_BusinessActivityReplicate_Bulk
- CRM_COD_Business_Activity_Replicate_Bulk
13.1.5 Mapping COD||OBJTYPE ↔ CRM||OBJTYPE

Table 27:

| COD||OBJTYPE | CRM||OBJTYPE |
|---------|-----------|-----------|
| The following values are contained in the GDT BusinessTransactionDocumentTypeCode: | In the SAP CRM system, you can execute transaction SWO1 to find the following SAP CRM object types: |
| Table 28: | Table 29: |
| | |
| 30 | Sales Quote | SAP CRM Object Type | Description |
| 72 | Opportunity | BUS2000223 | Service Request |
| 64 | Lead | BUS2010020 | Marketing Project Campaign |
| 542 | Activity Task | BUS2000111 | CRM Opportunity |
| 114 | Sales Order | BUS2000125 | CRM Task |
| 118 | Ticket | BUS2000108 | CRM Lead |
| 12 | Appointment | BUS2000115 | CRM Sales Transaction |
| 39 | E-Mail | BUS2000126 | CRM Business Activity |
| 764 | Campaign |
| 86 | Phone Call |

The values of this mapping are used in the following PI message mappings:

- CRM_COD_Opportunity_Replicate_Bulk
- COD_CRM_Opportunity_Replicate
13.1.6 Mapping COD||ResultReasonCode ↔ CRM||ResultReasonCode

Table 30:

| COD||ResultReasonCode | CRM||ResultReasonCode |
|---------------------------------|---------------------------------|
| The following values are contained in the GDT CustomerTransactionDocumentResultReasonCode: | The SAP CRM codes are a concatenation of code group and code. For more information, review the activity under SAP Customizing Implementation Guide Customer Relationship Management Transactions Settings for Leads Reason for Status: Leads Define Code Group Profiles. |

Table 31:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>001</td>
<td>Lost to competitor</td>
</tr>
<tr>
<td>002</td>
<td>Lost due to product</td>
</tr>
<tr>
<td>003</td>
<td>Lost due to price</td>
</tr>
<tr>
<td>004</td>
<td>Lost due to service</td>
</tr>
<tr>
<td>005</td>
<td>Won due to product</td>
</tr>
<tr>
<td>006</td>
<td>Won due to price</td>
</tr>
<tr>
<td>007</td>
<td>Won due to service</td>
</tr>
<tr>
<td>008</td>
<td>Accepted Because of High Revenue Potential</td>
</tr>
<tr>
<td>009</td>
<td>Accepted Because of High Chance of Success</td>
</tr>
<tr>
<td>010</td>
<td>Accepted for Strategic Reasons</td>
</tr>
<tr>
<td>011</td>
<td>Rejected Because of Low Revenue Potential</td>
</tr>
<tr>
<td>012</td>
<td>Rejected Because of Low Chance of Success</td>
</tr>
<tr>
<td>013</td>
<td>Rejected Because of Wrong Target Segment</td>
</tr>
<tr>
<td>014</td>
<td>Won Against Competitor</td>
</tr>
<tr>
<td>015</td>
<td>Currently No Interest in Buying</td>
</tr>
</tbody>
</table>
The values of this mapping are used in the following PI message mappings:

Table 32:

<table>
<thead>
<tr>
<th>Message Mappings</th>
</tr>
</thead>
<tbody>
<tr>
<td>COD_CRM_Lead_Status_Notification</td>
</tr>
<tr>
<td>CRM_COD_Lead_Replicate_Bulk</td>
</tr>
</tbody>
</table>

### 13.1.7 Mapping COD||OpptLifeCycleStatusCodeInbound ↔ CRM||OpptLifeCycleStatusCodeInbound

Table 33:

| COD||OpptLifeCycleStatusCodeInbound | CRM||OpptLifeCycleStatusCodeInbound |
|----------------------------------|----------------------------------|
| The following values are contained in the GDT OpportunityLifeCycleStatusCode: |
| The values contained in CRM_OpptLifeCycleStatusCodeInbound correspond to the user status of the opportunity in SAP CRM. Check which user status profile is assigned to your opportunity process type. Then check table TJ30. |

Table 34:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Open</td>
</tr>
<tr>
<td>2</td>
<td>In Process</td>
</tr>
<tr>
<td>3</td>
<td>Stopped</td>
</tr>
<tr>
<td>4</td>
<td>Won</td>
</tr>
<tr>
<td>5</td>
<td>Lost</td>
</tr>
</tbody>
</table>

Table 35:

<table>
<thead>
<tr>
<th>Value For CRM_OpptLifeCycleStatusCodeInbound</th>
<th>Value For COD_OpptLifeCycleStatusCodeInbound</th>
<th>Group Name *</th>
</tr>
</thead>
<tbody>
<tr>
<td>E0002</td>
<td>2</td>
<td>OpptLifeCycleStatusCodeInbound</td>
</tr>
<tr>
<td>E0001</td>
<td>1</td>
<td>OpptLifeCycleStatusCodeInbound</td>
</tr>
<tr>
<td>E0008</td>
<td>3</td>
<td>OpptLifeCycleStatusCodeInbound</td>
</tr>
<tr>
<td>E0004</td>
<td>5</td>
<td>OpptLifeCycleStatusCodeInbound</td>
</tr>
<tr>
<td>E0003</td>
<td>4</td>
<td>OpptLifeCycleStatusCodeInbound</td>
</tr>
</tbody>
</table>

The values of this mapping are used in the following PI message mappings:

Table 36:

<table>
<thead>
<tr>
<th>Message Mappings</th>
</tr>
</thead>
<tbody>
<tr>
<td>COD_CRM_Opportunity_Replicate</td>
</tr>
<tr>
<td>CRM_COD_Opportunity_Replicate_Bulk</td>
</tr>
</tbody>
</table>

Table 36:

| COD||CmpnLifeCycleStatusCode | CRM||CmpnLifeCycleStatusCode |
|--------------------------------|--------------------------------|
| The following values are contained in the GDT CampaignLifeCycleStatusCode: |
| Code | Description |
| 1 | Planned |
| 2 | Active |
| 3 | Finished |
| 4 | Cancelled |

The value of this mapping is used in the CRM_COD_Campaign_Replication PI message mapping.

13.1.9 Mapping CRM_ProcessType ↔ CRM_AppType

Table 38:

<table>
<thead>
<tr>
<th>CRM_ProcessType</th>
<th>CRM_AppType</th>
</tr>
</thead>
<tbody>
<tr>
<td>You can find the process type of the activity in table CRMC_PROC_TYPE in SAP CRM. For more information, review the activity under SAP Customizing Implementation Guide &gt; Customer Relationship Management &gt; Transactions &gt; Basic Settings &gt; Define Transaction Types.</td>
<td>You can find the date types of the appointments in table SCAPPTTYPE in SAP CRM. For more information, review the activity under SAP Customizing Implementation Guide &gt; Customer Relationship Management &gt; Basic Functions &gt; Date Management.</td>
</tr>
</tbody>
</table>
The values of this mapping are used in the following PI message mappings:

Table 39:

<table>
<thead>
<tr>
<th>Message Mappings</th>
</tr>
</thead>
<tbody>
<tr>
<td>COD_CRM_AppointmentActivity_Replicate_Bulk</td>
</tr>
<tr>
<td>COD_CRM_EmailActivity_Replicate_Bulk</td>
</tr>
<tr>
<td>COD_CRM_PhoneCallActivity_Replicate_Bulk</td>
</tr>
<tr>
<td>COD_CRM_TaskActivity_Replicate_Bulk</td>
</tr>
<tr>
<td>CRM_COD_AppointmentActivity_Replicate</td>
</tr>
<tr>
<td>CRM_COD_EmailActivity_Replicate_Bulk</td>
</tr>
<tr>
<td>CRM_COD_PhoneCallActivity_Replication_Bulk</td>
</tr>
<tr>
<td>CRM_COD_TaskActivity_Replicate_Bulk</td>
</tr>
</tbody>
</table>

13.1.10 Mapping COD||ActivityLifeCycleStatusCode ↔ CRM||
ActivityLifeCycleStatusScode

Table 40:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Open</td>
</tr>
<tr>
<td>2</td>
<td>In Process</td>
</tr>
<tr>
<td>3</td>
<td>Completed</td>
</tr>
<tr>
<td>4</td>
<td>Cancelled</td>
</tr>
</tbody>
</table>

The value of CRM_ActivityLifeCycleStatusScode corresponds to the user status of the activity in SAP CRM. Check which user status profile is assigned to your activity process type. Then check table TJ30.
The values of this mapping are used in the following PI message mappings:

- COD_CRM_BusinessActivityReplicate_BulkMessage Mappings
- CRM_COD_Business_Activity_Replicate_Bulk

### 13.1.11 Mapping COD||INTERNALID ↔ CRM||GROUPING

With this mapping you control whether an internal or an external number range should be considered when replicating business partners from SAP Hybris Cloud for Customer to SAP CRM.

Table 42:

| COD||INTERNALID | CRM||GROUPING |
|----------------|-----------------|
| The value of the INTERNALID is the logical system of the SAP CRM system. | See data element BU_GROUP in table TB001 in SAP CRM. |

The value of this mapping is used in the COD_CRM_BusinessPartner_Replicate PI message mapping.

### 13.1.12 Mapping COD_ActivityStatusCode ↔ CRM_ActivityStatusCode

Integrating SAP Hybris Cloud for Customer with SAP CRM using SAP Process Integration

Appendix

Table 43:

<table>
<thead>
<tr>
<th>COD_PhoneCallActivityLifeCycleStatusCode</th>
<th>CRM_PhoneCallActivityLifeCycleStatusCode</th>
</tr>
</thead>
<tbody>
<tr>
<td>The following values are contained in the GDT ActivityLifeCycleStatusCode:</td>
<td>The value of CRM_PhoneCallActivityLifeCycleStatusCode corresponds to the user status of the activity in SAP CRM. Check which user status profile is assigned to your activity process type. Then check table TJ30.</td>
</tr>
</tbody>
</table>

Table 44:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Open</td>
</tr>
<tr>
<td>2</td>
<td>In Process</td>
</tr>
<tr>
<td>3</td>
<td>Completed</td>
</tr>
<tr>
<td>4</td>
<td>Cancelled</td>
</tr>
</tbody>
</table>

The values of this mapping are used in the following PI message mappings:

Table 45:

<table>
<thead>
<tr>
<th>Message Mappings</th>
</tr>
</thead>
<tbody>
<tr>
<td>COD_CRM_PhoneCallActivity_Replicate_Bulk</td>
</tr>
<tr>
<td>CRM_COD_PhoneCallActivity_Replication_Bulk</td>
</tr>
</tbody>
</table>

Table 46:

<table>
<thead>
<tr>
<th>COD_TaskActivityStatusCode</th>
<th>CRM_TaskActivityStatusCode</th>
</tr>
</thead>
<tbody>
<tr>
<td>The following values are contained in the GDT ActivityLifeCycleStatusCode:</td>
<td>The value of the GDT CRM_TaskActivityStatusCode corresponds to the user status of the activity in SAP CRM. Check which user status profile is assigned to your activity process type. Then check table TJ30.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Open</td>
</tr>
<tr>
<td>2</td>
<td>In Process</td>
</tr>
<tr>
<td>3</td>
<td>Completed</td>
</tr>
<tr>
<td>4</td>
<td>Cancelled</td>
</tr>
</tbody>
</table>

The values of this mapping are used in the following PI message mappings:

Table 48:

<table>
<thead>
<tr>
<th>Message Mappings</th>
</tr>
</thead>
<tbody>
<tr>
<td>COD_CRM_TaskActivity_Replicate_Bulk</td>
</tr>
<tr>
<td>CRM_COD_TaskActivity_Replicate_Bulk</td>
</tr>
</tbody>
</table>

### 13.1.15 Mapping COD||ActivityTypeCode ↔ CRM||ActivityTypeCode
Table 49:

| COD||ActivityTypeCode | CRM||ActivityTypeCode |
|-----|-------------------|-------------------|
| The values of the COD_ActivityTypeCode are a concatenation of values of the GDT TextCollectionTextTypeCode and the values of the processing type code of the activity, separated by ||. | The values are a concatenation of the SAP CRM text IDs and values of the processing type code of the activity separated by ||. |
| The following values are contained in the GDT TextCollectionTextTypeCode: | The SAP CRM text IDs can be derived as follows: |

1. Obtain the text determination procedure that is assigned to your activity transaction type by performing the activity under **SAP Customizing Implementation Guide** > **Customer Relationship Management** > **Transactions** > **Basic Settings** > **Define Transaction Types**.

2. b) Obtain the text IDs that are used in the text determination procedure by performing the activity under **SAP Customizing Implementation Guide** > **Customer Relationship Management** > **Basic Functions** > **Define Text Determination Procedure**.

Table 50:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>10002</td>
<td>Body Text</td>
</tr>
<tr>
<td>10011</td>
<td>Internal Comment</td>
</tr>
</tbody>
</table>

The values of this mapping are used in the following PI message mappings:

- COD_CRM_BusinessActivityReplicate_Bulk
- CRM_COD_Business_Activity_Replicate_Bulk
13.1.16  Mapping COD||HIERARCHYID ↔ CRM||SNDPRN

Table 51:

| COD||HIERARCHYID | CRM||SNDPRN |
|----------------|---------------|
| The value of HIERARCHYID corresponds to the product hierarchy that is assigned to the application Sales in SAP CRM. For more information, review the activity under SAP Customizing Implementation Guide Cross-Application Components SAP Product Product Category Assign Category Hierarchies to Applications. | The value of SNDPRN corresponds to the logical system of the SAP CRM system. |

The value of this mapping is used in the CRM_COD_Material_Replicate_Bulk PI message mapping.


Table 52:

| COD||SRLifeCycleStatusCode | CRM||SRLifeCycleStatusCode |
|--------------------------------|--------------------------|
| The following values are contained in the GDT ServiceRequestLifeCycleStatusCode: | The value of CRM_SRLifeCycleStatusCode corresponds to the user status of the service request in SAP CRM. Check which user status profile is assigned to your service request process type. Then check table TJ30. |

Table 53:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Open</td>
</tr>
<tr>
<td>2</td>
<td>In Process</td>
</tr>
<tr>
<td>3</td>
<td>Completed</td>
</tr>
<tr>
<td>4</td>
<td>Closed</td>
</tr>
</tbody>
</table>
The values of this mapping are used in the following PI message mappings:

Table 54:

<table>
<thead>
<tr>
<th>Message Mappings</th>
</tr>
</thead>
<tbody>
<tr>
<td>COD_CRM_Service_Request_Delegation</td>
</tr>
<tr>
<td>CRM_COD_Service_Request_Delegation_Confirmation</td>
</tr>
</tbody>
</table>


Table 55:

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>The following values are contained in the GDT LeadLifeCycleStatusCode:</td>
<td></td>
</tr>
</tbody>
</table>

Table 56:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Open</td>
</tr>
<tr>
<td>2</td>
<td>Qualified</td>
</tr>
<tr>
<td>3</td>
<td>Handed Over</td>
</tr>
<tr>
<td>4</td>
<td>Accepted</td>
</tr>
<tr>
<td>5</td>
<td>Declined</td>
</tr>
<tr>
<td>6</td>
<td>Converted</td>
</tr>
</tbody>
</table>

The value of CRM_LeadLifeCycleStatusCode corresponds to the user status of the lead in SAP CRM. Check which user status profile is assigned to your lead process type. Then check table TJ30.
The value of this mapping is used in the COD_CRM_Lead_Status_Notification PI message mapping.

### 13.1.19 Mapping COD||ResultStatusCode ↔ CRM||Status

**Table 57:**

| COD||ResultStatusCode | CRM||Status |
|---|---|---|
| 1 | E0001 | LeadLifeCycleStatusCode |
| 6 | E0003 | LeadLifeCycleStatusCode |
| 5 | E0006 | LeadLifeCycleStatusCode |
| 4 | E0005 | LeadLifeCycleStatusCode |
| 3 | E0002 | LeadLifeCycleStatusCode |

The value of the CRM-Status is the user status of the lead in SAP CRM. Check which user status profile is assigned to your lead process type. Then check table TJ30..

**Table 58:**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Pending</td>
</tr>
<tr>
<td>2</td>
<td>Accepted</td>
</tr>
<tr>
<td>3</td>
<td>Declined</td>
</tr>
<tr>
<td>4</td>
<td>Not Relevant</td>
</tr>
</tbody>
</table>

The value of this mapping is used in the CRM_COD_Lead_Replicate_Bulk PI message mapping.
13.1.20 Mapping COD||BusinessSystemID ↔ CRM||LogicalSystemID

In the work center ADMINISTRATOR go to the work center view “Communication Systems”. Choose the communication system that represents your SAP CRM system. If the “Business System ID” and the “IDoc Logical System ID” are the same for this communication system, the PI value mapping is not required. If the IDs are not the same, then the “Business System ID” is the COD-BusinessSystemID and the “IDoc Logical System ID” is the CRM-LogicalSystemID in the value mapping in PI.

The values of this mapping are used in the following PI message mappings:

- COD_CRM_Activity_Confirmation
- COD_CRM_BusinessPartner_Confirmation
- COD_CRM_BusinessPartner_Replicate
- COD_CRM_BusinessPartnerRelationship_Replicate
- COD_CRM_Lead_Replicate
- COD_CRM_Lead_Replicate_Confirmation
- COD_CRM_Lead_Status_Notification
13.1.21 Mapping COD||SocialMediaChannel ↔ CRM||SocialMediaChannel

Table 59:

| COD||SocialMediaChannel | CRM||SocialMediaChannel |
|----------------------------------|----------------------------------|
| The following values are contained in the GDT SocialMediaChannelCode | See data element SMI_SOCIALMEDIACHANNEL in table SMI_CHNLDEF in CRM. For more information, review the activity under SAP Customizing Implementation Guide of Customer Relationship Management ▶ Master Data ▶ Business Partner ▶ Define Social Media Channels and User Accounts. |

Table 60:

<table>
<thead>
<tr>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>001</td>
<td>Facebook</td>
</tr>
<tr>
<td>002</td>
<td>Twitter</td>
</tr>
<tr>
<td>003</td>
<td>SAP Social Media Analytics</td>
</tr>
</tbody>
</table>

The value of this mapping is used in the:

- COD_CRM_SocialMediaUserProfile_BusinessPartner_Replicate
- COD_CRM_SocialMediaUserProfile_Replicate message mapping.

13.2 Configure Phase: Integration for Industries

This chapter in the integration guide contains integration information specific to industries solutions in SAP Hybris Cloud for Customer. It is recommended that you read through the information in the section relevant for each industry solution before setting-up the landscape.
13.2.1 SAP Hybris Cloud for Customer for Utilities: Integration Overview

This chapter and the following related topics contain information specific to integration of SAP Hybris Cloud for Customer for Utilities with the SAP CRM system.

The following communication scenarios are predelivered for the Utilities solution:

- Service Product Replication (inbound)
- Utility Quotes Replication (outbound)
- Quote PDF (outbound synchronous)
- Business Agreement Replication from External System
- Business Agreement Replication to External System
- IBase replication from External System
- IBase replication to External System
- Individual Objects Replication from External System
- Individual Objects Replication to External System
- Initial and Delta Load Replication

**Note**

The interfaces for replication of Business Partner, Organization Unit and Employee MUST be set up in order to enable Utilities specific integration scenarios for Business Agreement and Utility Quote.

**Note**

This standard CRM report CRMPCD_CREATECONNECTIVITY for creating connectivity objects for interfaces is NOT used for the Utilities solution. Therefore, the connectivity objects for interfaces for Utilities objects must be manually defined.

13.2.1.1 Service Product Replication (Inbound)

The SAP Hybris Cloud for Customer for Utilities solution uses the standard material web service in the cloud system to fetch service products for Utilities. Note the following details regarding web services for product replication (only uni-directional, from CRM to cloud solution) from CRM:

1. **Bdoc type to be configured on CRM:** PRODUCT_SRV

**Note**

For bdoc related configurations, refer to section 12.4: SAP CRM Configuration.

2. **Process Integration Scenario in PI:** COD_CRM_MasterDataReplication.

3. **Sender Interface:** CRMXIF_PRODUCT_SERVICE_SAVE.CRMXIF_PRODUCT_SERVICE_SAVE01 (namespace: urn:sap-com:document:sap:idoc:messages).


7. Integration Scenario to be maintained on C4C Communication Arrangement: Product Replication with Sales Data from External System.


   i Note

   Only a one-way replication is allowed for products (from CRM to cloud system).

### 13.2.1.2 Quotes Replication (Outbound)

The following are details for quotes replication (only outbound, from CRM to cloud solution).

1. Bdoc type to be configured on CRM: BUS_TRANS_MSG.

   i Note

   For bdoc related configurations, refer to section 12.4: SAP CRM: Configuration.

2. Process Integration Scenario in PI: NA.


5. Operation Mapping: COD_CRM_Quote2SalesOrderRequest2k.

6. Integration Scenario to be maintained on C4C Communication Arrangement: Sales Quote with Sales Order Processing in an External System.

7. Code list mappings: NA.

The replication of Utility Quote from C4C to CRM will trigger an outbound confirmation IDoc in SAP CRM. The following configurations must be maintained for this confirmation message:

1. Bdoc type to be configured on CRM: BUS_TRANS_MSG.

   i Note

   For bdoc related configurations, refer to section 12.4: SAP CRM: Configuration.

2. Process Integration Scenario in PI: NA.


7. Integration Scenario to be maintained on C4C Communication Arrangement: Sales Quote with Sales Order Processing in an External System.

8. Code list mappings: NA.

**Note**
The Utility quote scenario uses the IDoc type: CRMXIF_ORDER_SAVE_U04. This interface is specifically for utility customers. Only two Operational mappings are provided: one for replication and another for confirmation. The Integration scenario must be configured.

**Note**
After the creation of an Utility quote, the Replication is triggered on C4C through the action Submit and Create External Followup Document.

### 13.2.1.3 Quote PDF (Outbound Synchronous)

When a user clicks on the external document ID on the “Sales Documents” tab of an utility Quote, a request message is triggered from Cloud For Customer which contains the invoice number. The response from SAP CRM contains the Quote PDF in binary format.

There is no operation mapping required in the Quote PDF interface on SAP PI as the source and target structures are same for request and Response. Therefore a point to point connection can be configured for Quote PDF interface in the Integration Directory of PI system using dummy sender and receiver interfaces. On the SAP CRM system a binding must be created in the transaction SOAMANAGER for the service:

Follow the below steps to do the same:

- Execute transaction SOAMANAGER
- Click on Webservice Configuration
- Search for the Object name: UTILITIES_SALESQUOTEPDFPREVIEW
- Click on Create Service
- Give a Service Name, Binding name and click Next
- Provide the transport and authentication settings and click Next
- Click Next
- Click Finish

Create a SOAP receiver channel in SAP PI to connect to the service exposed with the above binding.

- Integration Scenario to be maintained on C4C Communication Arrangement: Utilities Print Preview of PDF Quotation in CRM.

**Note**
A standard SAP CRM BADI implementation – CRMPCD_SALES_QUOTE is provided to implement account integration. The method CRMPCD_SALES_QUOTE_PDF_GET takes Quotation ID as input and sends quotation pricing and billing details as a Pdf attachment. The call in this BAdI is made at runtime and details are sent back to SAP Hybris Cloud for Customer on the fly.
13.2.1.4 Business Agreement Replication from External System

The following are details for Business Agreement Replication from External System.

1. Bdoc type to be configured on CRM: BUAG_MAIN.

   **Note**
   
   For bdoc related configurations, refer to section 12.4: SAP CRM: Configuration.


7. Integration Scenario to be maintained on C4C Communication Arrangement: Business Agreement Replication from External System.

   **Note**

   The Idoc CRMXIF_IST_BUAG_SAVE.CRMXIF_IST_BUAG_SAVE01 is also triggered with the confirmation variant when a business agreement is replicated from C4C to CRM. To distinguish between the replication IDoc and the confirmation IDoc, a xpath condition must be maintained in the Interface Determination as follows: /CRMXIF_IST_BUAG_SAVE01/IDOC/EDI_DC40/MESCOD ≠ CNF

13.2.1.5 Business Agreement Replication to External System

The following are details for Business Agreement Replication to External System.

1. Bdoc type to be configured on CRM: BUAG_MAIN.

   **Note**

   For bdoc related configurations, refer to section 12.4: SAP CRM: Configuration.


6. SOAP receiver Communication Channel Path: NA

7. Integration Scenario to be maintained on C4C Communication Arrangement: Business Agreement Replication to External System.


When Business Agreement is replicated from C4C to CRM, an outbound confirmation IDoc is triggered in SAP CRM.

The following configurations must be maintained for the same:

1. Bdoc type to be configured on CRM: BUAG_MAIN.

   
   **Note**
   
   For bdoc related configurations, refer to section 12.4: SAP CRM: Configuration.


7. Integration Scenario to be maintained on C4C Communication Arrangement: Business Agreement Replication to External System.


   
   **Note**
   
   In the partner profile for the inbound idoc message type CRMXIF_IST_BUAG_SAVE in SAP CRM, the process code CRMPCD_BUAG_I must be selected. This process code is available in the SP10 of CRMPCD01 SWCV onwards.

   
   **Note**
   
   The Idoc CRMXIF_IST_BUAG_SAVE.CRMXIF_IST_BUAG_SAVE01 is also triggered for the replication of Business Agreement from CRM to C4C. To distinguish between the replication IDoc and the confirmation IDoc, a xpath condition must be maintained in the Interface Determination like this: /CRMIF_IST_BUAG_SAVE01/IDOC/EDI_DC40/IMESCOD = CNF.
13.2.1.6 IBase Replication from External System

The following are details for IBase Replication from External System.

1. Bdoc type to be configured on CRM: CRM_IBASE_MESS.

   **Note**
   
   For bdoc related configurations, refer to section 12.4: SAP CRM: Configuration.

5. Operation Mapping: CRM_COD_InstalledBase_Replication_In.
8. Operation Mapping: CRM_COD_ConnectionObject_Replication_In.
15. SOAP receiver Communication Channel Path: https://host:port/sap/bc/srt/scs/sap/installedbasedatamanagementin1?MessageId
17. Operation Mapping: CRM_COD_UpdateHierarchyInstallPoint_Replication_In.
18. SOAP receiver Communication Channel Path: https://host:port/sap/bc/srt/scs/sap/installpointhierarchyreplicati?MessageId
19. Integration Scenario to be maintained on C4C Communication Arrangement: Utility Objects Replication.
20. Code list mappings: NA.

   **Note**
   
   The outbound IDoc for IBase replication CRMXIF_IBASE_SAVE01 triggers five different services on the C4C system.
13.2.1.7 IBase Replication to External System

The following are details for IBase Replication to External System.

1. Bdoc type to be configured on CRM: CRM_IBASE_MESS

   **Note**
   For bdoc related configurations, refer to section 12.4: **SAP CRM: Configuration**.

6. SOAP receiver Communication Channel Path: NA.
10. SOAP receiver Communication Channel Path: NA.
11. Integration Scenario to be maintained on C4C Communication Arrangement: Utility Objects Replication.
12. Code list mappings: NA.

   **Note**
   In the partner profile for the inbound idoc message type CRMXIF_IBASE_SAVE_M in SAP CRM, the process code CRMPCD_ISU_IBASE must be selected. This process code is available in the SP10 of CRMPCD01 SWCV onwards.

13.2.1.8 Individual Objects Replication from External System

The following are details for Individual Objects Replication from External System.

1. Bdoc type to be configured on CRM: PRODUCT_INDOBJ.

   **Note**
   For bdoc related configurations, refer to section 12.4: **SAP CRM: Configuration**.

7. Integration Scenario to be maintained on C4C Communication Arrangement: Utility Objects Replication.

**Note**
In the partner profile for the outbound idoc message type CRMXIF_PRODUCT_INDOBJ_SAVE in SAP CRM, the output mode "Collect Idocs" must be selected.

### 13.2.1.9 Individual Objects Replication to External System

The following are details for Individual Objects Replication to External System.

1. Bdoc type to be configured on CRM: PRODUCT_INDOBJ.

**Note**
For bdoc related configurations, refer to section 12.4: SAP CRM: Configuration.

6. SOAP receiver Communication Channel Path: NA.
10. SOAP receiver Communication Channel Path: NA.
11. Integration Scenario to be maintained on C4C Communication Arrangement: Utility Objects Replication.
12. Code list mappings: NA.

### 13.2.1.10 Initial and Delta Load Replication

The automatic replication of master data supports the initial replication of master data objects, as well as the delta upload of changed objects.

**Note**
Always trigger the complete initial replication run before scheduling the job for delta run.

SAP provides the following reports for transferring master data from SAP CRM to your SAP Hybris Cloud for Customer for Utilities. Note that the same reports will be also be used for delta replication of master data.
### Table 61: Reports for Data Replication

<table>
<thead>
<tr>
<th>Selection Report</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CRMPCD_PRODUCT_EXTRACT</strong></td>
<td>This standard CRM report for initial data replication has been enhanced to include Utilities service types. The Product type in the report represents the Utilities service types. <strong>SITE : MANDATORY.</strong> The method L_CRMPCD_PRODUCT_INIT_LOAD=&gt;SEND_PRODUCT_BATCH_JOB in this report has been added to this standard report to differentiate the material product or service product to be replicated. Note that the Utilities solution requires the service product (Utilities product type) for product master data.</td>
</tr>
<tr>
<td><strong>Note</strong></td>
<td>This report also calls the background report - CRMPCD_PRODUCT_EXTRACT_WORKER. Note that this report is called in the above initial load report and need not be scheduled separately.</td>
</tr>
<tr>
<td><strong>CRMPCD_BUAG_EXTRACT</strong></td>
<td>Use this report for initial data replication of business agreements. This report also calls the background report – CRMPCD_BUAG_EXTRACT_WORKER. Note that this report is called in the above initial load report and need not be scheduled separately for a job run.</td>
</tr>
<tr>
<td><strong>CRMPCD_IBASE_EXTRACT</strong></td>
<td>This report can be used for initial data replication of IBASE master data. The type – ‘IU’ in the report represents the Utilities technical master data such as the connection object. This report also calls the background report – CRMPCD_IBASE_EXTRACT_WORKER. Note that this report is called in the above initial load report and need not be scheduled separately for a job run.</td>
</tr>
<tr>
<td><strong>Note</strong></td>
<td>Each IBASE object needs separate IDoc trigger for including separate individual products. The IBASE ID as filter ensures that all IBASE objects are retrieved for replication.</td>
</tr>
<tr>
<td><strong>RSEOUT00</strong></td>
<td>This report is to reprocess the IDocs for Individual Objects. In partner profile configuration we are holding the IDoc for individual objects and re-triggering again by scheduling this report.</td>
</tr>
</tbody>
</table>

**Note**  
Scheduling of this report is Mandatory as we are processing PROD_IND_OBJ idocs with the standard flow. Otherwise, data inconsistency will occur.
13.2.11.1 360 Overview and Account Information

To set up the Customer 360 overview, administrators must set up the communication system and communication arrangement so that the SAP on-premise system can communicate with the SAP cloud solution. When communication arrangements are in place, the information from your SAP on-premise system appears in your SAP cloud solution, providing a broader perspective for your users.

13.2.11.1 Tasks

The following are main tasks you have to perform to set up the customer 360 overview.

Procedure

1. Set up the communication system and arrangements in SAP Hybris Cloud for Customer system.
2. Configure the logical port and ERP RFC connection in SAP CRM on-premise system.

13.2.11.2 Scoping

To set up the SAP Hybris Cloud for Customer system, do the following:

- Add the Utilities scoping element to your implementation project.

Note

For more information, see Activate SAP CRM Integration Using Cloud Scoping.

13.2.11.3 Communication System

First set up the communication system for SAP CRM system. For information, see Setup of Communication System for SAP CRM Client.
13.2.11.4 Set Up Communication Arrangements

Context

To retrieve information from SAP CRM for Customer 360 overview for accounts, download the following WSDLs from 'Utilities 360 Info-Account' Communication Scenario:

Procedure

1. To retrieve information from SAP CRM for Customer 360 overview for accounts, download the following WSDLs from 'Utilities 360 Info-Account' Communication Scenario:
   a. Manage Account info
   b. Query Account info
2. Next, create a communication arrangement with communication scenario Analytics Integration. For information, see Configuration of Communication Arrangements.

13.2.11.5 Expose Data Source for ID Mapping

The communication arrangement for the Analytics Subsidiaries Integration communication scenario is a data source which allows the SAP on-premise system to get the ID mapping from SAP Hybris Cloud for Customer.

Context

To expose the data source for ID mapping, do the following:

Procedure

1. Go to Administrator Business Analytics Data Sources and search for Object ID Mapping.
2. Choose the Object ID Mapping data source and expose it.

13.2.11.6 Create Consumer Proxies in SAP Systems

To build the SAP on-premise CRM system, do the following:

- Use the Create Enterprise Service option, in transaction SE80 to create consumer proxies in the SAP CRM system.
Use the downloaded WSDL files of the inbound services for this.

13.2.11.6.1 Create Logical Ports with SOA MANAGER in SAP systems

Procedure

1. Log on to the SAP CRM system and go to transaction SOAMANAGER.
2. Choose Service Administration Web Service Configuration.
3. Copy the technical names of the consumer proxies set up in the previous step and search for consumer proxies. The technical names of the consumer proxies are as follows:
   a. CO_CRMPCDOPERATIONAL_DATA_PROV
   b. CO_CRMPCDMANAGE_ACCOUNT_BUNDLE
   c. CO_CRMPCDQUERY_UTILITIES_AGGRE
4. Select one of the consumer proxies that you created and choose Apply Selection.
5. Choose Configurations Create.
6. Enter the following information, along with any other appropriate information and choose Apply Settings:

<table>
<thead>
<tr>
<th>Field</th>
<th>Select</th>
</tr>
</thead>
<tbody>
<tr>
<td>Configuration Type</td>
<td>WSDL Based Configuration</td>
</tr>
<tr>
<td>WSDL Base</td>
<td>Via File</td>
</tr>
<tr>
<td>File with WSDL Document</td>
<td>Navigate to the appropriate file</td>
</tr>
</tbody>
</table>

7. Configure the consumer security settings for this logical port by doing the following:
   a. Enter the user name and password. The user name and password are the same as the ones specified for the communication arrangement in SAP Hybris Cloud for Customer.
   b. Under Transport Settings, enter the appropriate proxy access information and save your entries.
8. To confirm if the logical port was created and configured correctly, ping the web service. If the ping was successful, then a confirmation message appears.
9. Repeat this task for the remaining consumer proxies. Note, that the same logical port name should be used for all the consumer proxies.

13.2.11.6.2 Configure SAP ERP RFC Connection

The RFC connection to SAP ERP IS-U System should be setup from SAP CRM on-premise system to fetch the financial data such as Invoice and payments.
13.2.1.11.7 Objects Displayed in SAP Hybris Cloud for Customer

Context

The following objects information are fetched from SAP on-premise CRM / ERP systems and displayed on SAP Cloud for Customer:

Procedure

1. Contract Header and Items
2. Service locations
3. Interaction records
4. Financial information (recent payments and invoices)

13.2.1.11.8 Replication Report

The standard report CRMPCD_CUSTOMER360_EXTRACT is built to extract and send above customer 360 information to the SAP Cloud for Customer.

Context

We recommended running the report as a background job, as it might run for a long time depending on the number of customers present in the Cloud for Customer system.

To schedule the report,

Procedure

1. Choose the appropriate logical port configured for the SAP Hybris Cloud for Customersystem.
2. Select the background job check box and enter the size of batch processing to process the background job,
Output

Context

If there are some errors in the report execution, the logs are stored in the system application log. The following object and sub-object have been created to view the Customer 360 logs.

Procedure

- Object: CRMPCD
- Sub-object: FACTSHEET
Important Disclaimers and Legal Information

Coding Samples

Any software coding and/or code lines / strings ("Code") included in this documentation are only examples and are not intended to be used in a productive system environment. The Code is only intended to better explain and visualize the syntax and phrasing rules of certain coding. SAP does not warrant the correctness and completeness of the Code given herein, and SAP shall not be liable for errors or damages caused by the usage of the Code, unless damages were caused by SAP intentionally or by SAP's gross negligence.

Accessibility

The information contained in the SAP documentation represents SAP's current view of accessibility criteria as of the date of publication; it is in no way intended to be a binding guideline on how to ensure accessibility of software products. SAP in particular disclaims any liability in relation to this document. This disclaimer, however, does not apply in cases of willful misconduct or gross negligence of SAP. Furthermore, this document does not result in any direct or indirect contractual obligations of SAP.

Gender-Neutral Language

As far as possible, SAP documentation is gender neutral. Depending on the context, the reader is addressed directly with "you", or a gender-neutral noun (such as "sales person" or "working days") is used. If when referring to members of both sexes, however, the third-person singular cannot be avoided or a gender-neutral noun does not exist, SAP reserves the right to use the masculine form of the noun and pronoun. This is to ensure that the documentation remains comprehensible.

Internet Hyperlinks

The SAP documentation may contain hyperlinks to the Internet. These hyperlinks are intended to serve as a hint about where to find related information. SAP does not warrant the availability and correctness of this related information or the ability of this information to serve a particular purpose. SAP shall not be liable for any damages caused by the use of related information unless damages have been caused by SAP’s gross negligence or willful misconduct. All links are categorized for transparency (see: http://help.sap.com/disclaimer).