How to Configure Integration between SAP ERP and SAP Cloud for Customer using SAP Process Integration
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1 Introduction

Business Scenario

Historically, SAP customers have made large investments in on-premise Sales and Distribution application capabilities. The SAP SD module continues to be viable in the corporate system landscape, but many customers want to enable a fresh and intuitive user experience, increased functionality, and faster delivery of new functionality. The hybrid integration scenario is a great enabler of application delivery via the cloud, because it allows the customer to preserve the investment already made in the on-premise SAP SD module. By the utilization of solution content delivered for SAP Process Integration, a bridge between the on-premise SAP SD module and the SAP Cloud for Customer system is established, thus allowing the customer to take advantage of the strengths of both.

Background Information

This document details the steps required to enable bi-directional communication between an SAP Cloud for Customer and the on-premise SAP Sales and Distribution module, using SAP Process Integration as the on-premise middleware layer.

Prerequisites

SAP ERP

The ERP system must contain the following ABAP components:

1. SAP_BASIS 700 SP18 or higher
2. SAP_APPL 600 SP15 or higher

SAP Process Integration

SAP Process Integration 7.11 or higher is required. It is always recommended to install the latest support package.

SAP Cloud for Customer

Initial setup and configuration was performed in tenant, as per the SAP Cloud for Customer Administrator Guide.
2 Check and Prepare SAP ERP System

2.1 Software Components

Note: Remember to update the SPAM to the latest support pack prior to the installation of the Add-on.

Use transaction SAINT to install SAP Add-on CODERINT 600 and use transaction SPAM to implement the support packages in the ERP system.

1. Copy the installation package and support packages to the EPS/in directory within the “trans” directory.

2. Call transaction SAINT and load the packages from the menu Installation Package → Load Package → From Application Server.

3. Click Back

4. Click on Start to start the deployment of the Add-on.
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Add-On Installation Tool - Version 7.31/06

Add-on/PCS | Release | Level | Description
--- | --- | --- | ---
AIN | 400 | 0002.AIN 400 : Add-On Supplies SAP Cloud for Customer | Add-ons and Preconfigured Systems installed in the system
C-CEE | 110_604 | 0000/ECC Core Country Version | 0007/SAP Portfolio and Project Manager
CPRXRPM | 500_702 | 0007/SAP Portfolio and Project Manager | 0002/SAP Enterprise Extension
EA-APPL | 606 | 0002/SAP Enterprise Extension | 0002/SAP Enterprise Extension
EA-DFPS | 606 | 0002/SAP Enterprise Extension | 0002/SAP Enterprise Extension
EA-FINSERV | 606 | 0002/SAP Enterprise Extension | 0002/SAP Enterprise Extension
EA-GLTRADE | 606 | 0002/SAP Enterprise Extension | 0002/SAP Enterprise Extension
EA-HR | 606 | 0008/SAP Enterprise Extension | 0008/SAP Enterprise Extension
EA-HR_MSS | 1.0 | 0003/EA-HR_MSS Manager Self Service | Status/Remarks

The overview shows you the installed Add-ons and Preconfigurations. Already installed Add-ons are ready to start an installation or an upgrade.

Start
5. Click Continue. It is possible to install the add-on together with all the support packages. Select the target support package, and click Continue.
6. Click Continue
7. Click No

8. Select the method of import and click the import button

2.2 Business Configuration Set

1. Call transaction SCPR20 and enter the BC Set COD_BYD_ERP_INT.

2. Activate the BC Set clicking in the Activate BC Set button or press the F7 key.
3. Create a transport request that can be used for the activation in other systems.

4. Press Enter

2.3 Create SAP ERP User

From transaction SU01, create a service account with one of the following two roles and the type C or B:

- SAP_SD_COD_INTEGRATION
- SAP_SD_COD_INTEGRATION_EXT
3 Check and Prepare PI System

3.1 Software Components

Using Enterprise Service Builder on Process Integration, install the Process Integration content.

1. Download the corresponding software components from the SAP Marketplace from the SAP Software Download Center. The link is shown below.

   http://service.sap.com/swdc

2. Select the option Support Package and Patches → Browse our download Catalog → SAP Cloud Solutions.

3. Select SAP Cloud Solutions.

   Browse Our Download Catalog
   Support Packages & Patches

   SAP Cloud Solutions

4. Click the link SAP Cloud Customer ERP Integr.
4. Click **SAP Cloud Cust ERP Integ 2.0**

   - **SAP CLOUD CUST ERP INTEGR 1.0**  
     SAP Cloud for Customer 1.0, integration with SAP ERP
   - **SAP CLOUD CUST ERP INTEGR 2.0**  
     SAP Cloud for Customer 2.0, integration with SAP ERP

5. Click **Comprised Software Component Versions**

   **SAP CLOUD SOLUTIONS (FORMERLY SAP ON-DEMAND SOLUTIONS)**

   - [SAP Cloud Solutions (formerly SAP On-Demand Solutions)](https://www.sap.com)
     - **SAP CLOUD CUST ERP INTEGR**
     - **SAP CLOUD CUST ERP INTEGR 2.0**

   **SAP CLOUD CUST ERP INTEGR 2.0 (SUPPORT PACKAGES AND PATCHES)**

   - Comprised Software Component Versions
   - Required Components of other Product Versions

   5. Download the latest version of the following components:

   **SAP CLOUD SOLUTIONS**

   - [SAP Cloud Solutions](https://www.sap.com)
     - **SAP CLOUD CUST ERP INTEGR**
     - **SAP CLOUD CUST ERP INTEGR 2.0**

   **SAP CLOUD CUST ERP INTEGR 2.0 (SUPPORT PACKAGES AND PATCHES)**

   - [SAP Cloud Solutions](https://www.sap.com)
     - **SAP CLOUD CUST ERP INTEGR 2.0**
     - **SAP CLOUD CUST ERP INTEGR 2.0**

     - Comprised Software Component Versions
       - COD. ERP. INT. 6.00
       - XI CONTENT RYD. CO.6.8
       - XI CONTENT CO. <em>erp</em>. INT. 6.00
       - XI CONTENT CO. <em>erp</em>. INT. 6.00
       - XI CONTENT SAP. RYD. 2.40

     - Required Components of other Product Versions
7. Unzip and copy the downloaded files to the `<GLOBAL>\repository_server\import` directory of the Process Integration system.

8. Call the Process Integration URL to start the enterprise service builder, for example: https://<host>:<port>/dir/start/index.jsp

9. Open the enterprise service builder by clicking in the proper link.
10. If JAVA JRE is installed, the Java Web Start Application for the ESR will open, you will have to select the usage profile, for example Unrestricted SAP Basis.

11. Once the Enterprise Service Builder is open, click in the menu Tools ▶ Import Design Objects.

12. Select the option of Server from the dialog screen.

13. Select each of the components that need to be imported and click OK.

14. Repeat the previous steps to import the other Process Integration Contents.

15. After all the content was imported you will see it available in the Design Object area.

### 3.2 RFC Destination to SAP On-Premise

1. Call transaction SM59 and create and RFC destination to point to the ERP system of type 3.
2. Click in the Logon & Security tab and enter the user and password required to connect to ERP system, which is the service account that was created in previous steps.

3.3 PI Port Configuration

Call transaction IDX1 and create a new port using the RFC destination that was created in the previous step.
3.4 Create SLD Configuration

3.4.1 Create Business System in SLD for SAP ERP

Note: The Technical system of type AS ABAP for SAP ERP system should be created.

1. Connect to the SLD to create the business systems for the SAP ERP technical system using the URL http://<hostname>:<port>/sld.

2. Click on link for Business Systems, and then in New Business Systems.

3. Select AS ABAP and the click Next.
4. Enter the System, client and URL and click Next.

5. Enter the name of the business system.

6. Click Next.
11. Select Application System for Business System Role and the integration server of the Process Integration that will be used, and click finish.

3.4.2. Create Technical and Business System in SLD for SAP Cloud for Customer

1. Connect to the SLD to create the business systems for the SAP Cloud for Customer technical system using the URL http://<hostname>:<port>/sld.
2. Click in Technical systems and then the New Technical System.

3. Select the option Third-Party, and click Next.

4. Enter the technical System Identification and System Host Name, and click Next.

6. In the Installed Software phase, check the following Installed products and Installed components and:
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- SAP BUSINESS BYDESIGN 1411
- SAP BYD 2.40 part of SAP BUSINESS BYDESIGN FP4.0

1. Choose Finish.

2. Click in the Home button to return to the main page.

3. Click on Business Systems

4. Click New Business Systems
8. Select the Third-Party/Other system type, and click Next.

9. Select the corresponding technical system name, and add the logical system name of the SAP Cloud for Customers systems, and click Next.

10. Enter the name of the business system, and click Next.

1. In the Installed software step, select Products that are installed in the system and choose next.
12. Select the corresponding Integration system of the Process Integration system that will be used, and click Finish.
4 SAP Cloud for Customer Configuration

4.1 Activate SAP ERP Integration in Scoping

In this section, you activate SAP Cloud for Customer with SAP ERP, and specify the scope of the integration between the systems.

1. Connect to the SAP Cloud for Customers system using an Internet browser, and open the Business Configuration tab.

2. Click in All Current Projects.

3. Select the project and click *Edit Project Scope*.

4. Click Next.
5. Click Next, and under Communication and Information Exchange → Integration with External Application and Solutions, select Integration with SAP ERP, Integration of Master Data and Integration into Sales, Service and Marketing Processes.

6. Click Next, and under Communication and Information Exchange → Integration with External Application and Solutions → Integration with SAP ERP, select the following scenarios:
   - Do you want to replicate accounts and contacts from your cloud solution to your SAP ERP solution?
   - Do you want to replicate accounts and contacts from your SAP ERP application to your cloud solution?
   - Do you use your SAP ERP system to calculate prices for opportunity items in your cloud solution?
7. Under Communication and information Exchange ➔ Integration with External Application and Solutions ➔ Integration of Master Data, select the following scenario:
   Do you want to replicate product data from an external application or solution to your cloud solution?

8. Under Communication and information Exchange ➔ Integration with External Application and Solutions ➔ Integration into Sales, Services and Marketing Processes, select the following scenario:

9. Click Next, and then Finish.

### 4.2 Setup Communication System

1. Under the tab Administrator, click in Communication Systems.
2. Click New to create a new communication system.

3. Enter the information about the backend ERP system. It is important to note that all the information requested on the screen below is associated with the ERP system (logical system name, SAP client, and so on). In addition, make sure to check the option of “SAP Business Suite”.
4. Click on Actions ➔ Set to Active

![NEW COMMUNICATION SYSTEM](image)

5. Click on Save and Close.

![NEW COMMUNICATION SYSTEM](image)

### 4.3 Configure Communication Arrangements

**Note:** You can find a list of all the communication arrangements and the corresponding service interfaces in the see Integration Flows spreadsheet.

Refer to the How to Configure x.509 Authentication for SAP PI Systems to Connect to/from SAP Cloud for Customers Guide to set up Basic Authentication and Certificate based Authentication.

#### 4.3.1 Mass Configuration of Communication Arrangements

1. In the Cloud for Customers system select the ADMINISTRATOR workcentre, and then select the task Communication Arrangement For On Premise Systems.

2. In the Select Communication System step enter the following details:
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- SAP backend integration system and integration middleware.
- Communication system and code list mapping.

3. Choose Next.

4. Under Communication Arrangements tab, select the communication scenarios relevant for your scope and Next. Choose Select All in case you want to configure all of the communication scenarios. Note: In case you do not see any of the configuration scenarios, re-check the project scoping to add the necessary scoping elements.

5. To configure inbound communication credentials choose Edit Credentials.
6. In the Certificate tab click on Upload Certificate and choose the Process Integration client certificate.
7. Choose OK.
8. For outbound communication credentials, select Download.

9. Download the Cloud for Customer Client Certificate x.509 (example C4CClient.cer) and choose Save. This file has to be uploaded later to PI system.


11. Under Confirmation, Choose Close.

4.3.2 Configure Communication Arrangements for Outbound Communication

1. Connect to the SAP Cloud for Customer system using an Internet browser, and open the Administrator tab.
2. Click in the communication arrangements link

![Integration](image)

**Integration**

Set up and maintain communication with external systems

- **Communication Systems**
  - **Communication Arrangements**

3. Edit the communication Arrangements with outbound interfaces, adding the correct URL for the Process Integration web server. The following table shows an example of the URL that have to be used where we use the Business System or Business Component. For example:

<table>
<thead>
<tr>
<th>Communication Type</th>
<th>URL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer Replication</td>
<td>/XISOAPAdapter/MessageServlet?channel=:&lt;business_system&gt;:COD_SOAP_BusinessPartnerReplication_Send</td>
</tr>
<tr>
<td>Customer Address Replication</td>
<td>/XISOAPAdapter/MessageServlet?channel=:&lt;business_system&gt;:COD_SOAP_BusinessPartnerAddress_Send</td>
</tr>
<tr>
<td>Customer Contact Replication</td>
<td>/XISOAPAdapter/MessageServlet?channel=:&lt;business_system&gt;:COD_SOAP_BusinessPartnerContact_Send</td>
</tr>
<tr>
<td>Opp with Follow Up</td>
<td>/XISOAPAdapter/MessageServlet?channel=:&lt;business_system&gt;:COD_SOAP_OpportunityWithFollowup_Send</td>
</tr>
<tr>
<td>Sales Doc Print Preview</td>
<td>/XISOAPAdapter/MessageServlet?channel=:&lt;business_system&gt;:COD_SOAP_SalesDocPrintPreview_Send</td>
</tr>
<tr>
<td>Product Pricing</td>
<td>/XISOAPAdapter/MessageServlet?channel=:&lt;business_system&gt;:COD_SOAP_SalesOrderPricing_Send</td>
</tr>
<tr>
<td>Query Sales Quote</td>
<td>/XISOAPAdapter/MessageServlet?channel=:&lt;business_system&gt;:COD_SOAP_QueryCustomerQuote_Send</td>
</tr>
</tbody>
</table>
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| Query Sales Order | /XISOAPAdapter/MessageServlet?channel=:<business_system>:COD_SOAP_QuerySalesOrder_Send |

For example, here is URL:

/XISOAPAdapter/MessageServlet?channel=:VQR_005:COD_SOAP_BusinessPartnerReplication_Send

4. Select one of the communication arrangements, and click Edit.

5. Click in the Technical Data Tab.

INBOUND COMMUNICATION: BASIC SETTINGS

No Inbound Communication

6. Click in Edit Advance Settings button.

TECHNICAL DATA

7. Click in the Outbound Tab.
8. Select each of the outbound services and edit SSL port and Path.

9. Click on Save and Reactivate.

Note. After setting up the SAP Process Integration system, you can check if there is connectivity from the cloud system to the Process Integration system by selecting one of the outbound services and click Check Connection. This will only check connectivity with the SOAP Adapter in Process Integration, and not the actual communication channel. If there is any problem with SSL certificates or authentication, it will show an error here.
10. Click Close and then Yes to activate the changes.

4.4 Perform Code List Mapping

4.4.1 Manually map the Code Lists
1. Connect to the SAP Cloud for Customers system using an Internet browser, and goto Business Configuration Work Center → Implementation Projects.

2. Click in All Current Projects.

3. Select the project, and click on Open Activity List.

5. Choose **Maintain Code List Mapping**

6. In the **Code List Mapping Definition** Section choose the **Local Data Type Name**.

   **CODE LIST MAPPING**

   ![Screen shot of Code List Mapping](image)

   You can maintain mappings for configuration values used in data exchange between your on-demand solution and the external system. Code List Mapping Definition

   - **Add Row**
   - **Remove**
   - **Save and Close**
   - **Save**
   - **Close**
   - **Translate**
   - **Restore Defaults**

   **Mapping Group** | **Local Data Type Name** | **External Data Type** | **External Data Type Description** | **Description**
   --- | --- | --- | --- | ---
   SAP On Premise Integration | AcademicTitleCode | | Academic Title Code | |
   SAP On Premise Integration | AddressUsageCode | | Address Usage Code | |
   SAP On Premise Integration | AddressRepresentationCode | | Address Representation Code | |
   SAP On Premise Integration | BusinessPartnerFunctionTypeCode | | Business Partner Function Type Code | |
   SAP On Premise Integration | BusinessPartnerRoleCode | | Business Partner Role Code | |

   - **Local and Remote Codes Are Equal**: Values are same in the Backend SAP ERP and Cloud for Customer system.
   - **Map Individual Codes**: Values are mapped explicitly in the Code List Mapping Section

   ![Screen shot of Code List Mapping Rule](image)

   - **Add Row**
   - **Remove**
   - **Missing Code Mappings**
   - **Proposals from MWB**

   **Mapping Rule**

   - **Local And Remote Codes Are Equal**
   - **Local And Remote Codes Are Equal**
   - **Map Individual Codes**

8. For each Map Individual Codes rule, review and if necessary, adapt the existing values. Click **Missing Code Mappings** to display local codes that have not yet been mapped to an external code. Maintain the values as maintained in the Backend ERP system.

   ![Screen shot of Code List Mapping](image)

   **Local Code** | **Description** | **External Code** | **Inbound Default** | **Outbound Default**
   --- | --- | --- | --- | ---
   0001 | | 01 | |
   0002 | | 02 | |
   0003 | | 02 | |
   0004 | | 0004 | |
   0005 | | 0005 | |

4.4.2 Automated Configuration of Code List Mapping

1. Log in to the Cloud for Customer system.
2. In the Business Configuration Work Center, Choose DOWNLOAD CODE LIST

3. Click on link Download Code List.

4. Enter the Code List Mapping Group, Language, Delimiter and Select Download.
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5. Enter the name of file you want to download in .zip format. For example codeList.zip.

6. The Code List will be downloaded in the path you have mentioned.

7. Log onto the ERP Backend that the Cloud for Customer is connected to.

8. Enter the transaction SE38 and run the report CODD_CODE_LIST_MAPPING.
9. Choose execute.
10. Alternately you can Execute the program CODD_CODE_LIST_MAPPING using the below options.

<table>
<thead>
<tr>
<th>Transaction code</th>
<th>CODD_CODE_LIST_MAP</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAP ERP IMG menu</td>
<td>Integration With Other mySAP.com Components → Integration With SAP Cloud for Customer → Download ERP Customizing Information for Code Lists</td>
</tr>
</tbody>
</table>

11. Enter the main language and following details:
   - **Merged Customizing directory** is where you want the merged code list mappings filled.
   - **Cloud for Customer Business configuration File** is the codeList.zip file that was downloaded from the Cloud for Customer system.

12. Choose execute.
13. After this the CodeOutput.zip file is saved in the directory mentioned, this zip contains all the code lists for the mentioned languages.
14. Log in to the Cloud for Customer system again.
15. In the Business Configuration: work center choose Upload Code List.

16. Choose Upload Code List:
17. Enter the Code List Mapping Group and select upload.

18. Choose the file that was generated from SAP ERP Backend system. The name of the file is mentioned in the Merged Customizing Directory field of the report.

19. Now the code list mapping in Cloud for Customer is updated.

4.5 Create ID Mapping for Sales Org
1. Under the context menu for the tab ADMINISTRATOR, select the option ID MAPPING FOR INTEGRATION.

2. Click on Edit ID Mapping for Integration.

3. In the "Mapping Of" field, select ERP Sales Organization and in the System Instance ID, select the communication system created in previous steps, and click Go.

4. Enter the external ID of the sales organization that will be mapped from ERP with the sales organization on Cloud for Customers.
5. Click Save

4.6 Create ID MAPPING for Product Category

1. Under the context menu for the tab ADMINISTRATOR, select the option ID MAPPING FOR INTEGRATION.

2. Click on edit ID Mapping for integration.

6. In the “Mapping Of” field, select ERP Product Categories and in the System Instance ID field, select the communication system created in previous steps, and click Go.
7. Enter the external ID of the product category to be mapped from ERP with the product category on Cloud for Customers.

8. Click Save.
5 Configure Integration in SAP ERP

5.1 Assign Authorization Profile to Security Roles

1. Call transaction PFCG
2. Enter the role SAP_SD_COD_INTEGRATION_EXT.

3. Open the role for changes, and select the tab Authorizations \(\rightarrow\)Change Authorization Data.

4. Look for the security object S_SERVICE under Cross-application Authorization Objects, and change the field SRV_NAME.

5. Add the following services:
   ECC_SALESORDER009QR
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9. Save and generate the profile.

5.2 Register Service for IDoc Inbound

1. Open the Transaction SRTIDOC.
2. Select the Register service checkbox and maintain the following values.
3. Choose execute.
5.3 Automatically Generate Integration Settings for Data Exchange

1. To Automatically Generate Connectivity settings for Data Exchange, navigate using one of the following paths.

<table>
<thead>
<tr>
<th>Transaction code</th>
<th>RCOD_CONNECTIVITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAP ERP IMG menu</td>
<td>Integration With Other mySAP.com Components → Integration With SAP Cloud for Customer → Communication Setup → Automatically Generate Integration Settings for Data Exchange</td>
</tr>
</tbody>
</table>

2. In the first screen select the middleware scenario you would like to test and press next.
3. In the second screen select the scenarios you would like to generate the configuration entities for and press next.

4. In the third screen choose the logical system you would like to use in your test case. If you have executed the preparation step then you might take the one which you have recently created and press next.
5. On the fourth screen you have to maintain the information which will be taken over to the destination objects. Depending on your choice of the first screen this screen will be rendered dynamically. Select button “Next”.

6. On the fifth and last screen you can see a summary about your selected information. Select button “Generate” and accept the confirmation dialog box.
7. In the log you can check which entities were created.
5.4 Maintain Requirement Routine

1. Call transaction VOFM and click on menu Requirements → Output Control.

2. At the bottom of the table enter an unused number greater than 600 and assign application V1.

3. Click Save

4. Click on New Entry and click on Source Text.
5. Insert the following code, save, and activate.

```abap
FORM kobed_xxx.
  * We only trigger the confirmation back to 'Cloud for Customer'
  * if the document is complete and if an opportunity document is
  * referenced.
  IF komkbv1-uvall EQ 'C' AND
    cl_cod_oppt_confirmation=>is_relevant( komkbv1 ) = abap_true.
    sy-subrc = 0.
  ELSE.
    sy-subrc = 4.
  ENDIF.
ENDFORM.
```

5.5 Maintain Output Determination procedure

1. In the SAP IMG Follow the Navigation path
Sales and Distribution ➔ Basic Functions ➔ Output Control ➔ Output Determination ➔ Output Determination Using the Condition Technique ➔ Maintain Output Determination for Sales Documents ➔ Maintain Output Determination Procedure.
Alternatively call transaction SM34 to maintain view VVC_T683_XX_V1.

2. Mark the output determination procedure assigned to the order type Inquiry Output. In the Customizing delivered as standard, this is procedure V05000.

3. Choose Control Data within the Dialog Structure view.
4. Choose *New Entries* and assign the output type COD1 with the requirement number defined in the "Maintain Requirement Routine".

5. Save the entry and return to the procedures
6. Repeat the process for other output determination procedures mentioned in the Integration guide.

### 5.6 Maintain Output Record

1. Call transaction VV11 and use the output type COD1.

2. From menu output conditions, select Create with template.
3. Create the following entries:

5.7 **Activate Event Linkage**

1. Call transaction SWETYPV.

2. Open object type BUS2030 and the event CREATED, Choose Details, and check the Linkage Activated checkbox.
5.8 Maintain Endpoint Services

1. In the ERP system, navigate using the following IMG Path, alternatively you can also use SOAMANAGER transaction in the ERP system:.

<table>
<thead>
<tr>
<th>Transaction code</th>
<th>SOAMANAGER</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAP ERP IMG menu</td>
<td>Integration With Other mySAP.com Components → Integration With SAP Cloud for Customer → Communication Setup → Manually Adjust Integration Settings for Data Exchange → Configuration in SOA Management</td>
</tr>
</tbody>
</table>

2. Click on Web Service Configuration.
3. Search for the following Object SalesOrderPricingInformationQueryResponse_In.

4. Click on the Web service name.

5. On the Configurations tab choose Create Service.

6. On the guided activity Service and binding Name enter the Service Name and Binding Name.
7. Choose Next.

9. Choose Next.

11. On the Configurations Tab you can see the created Binding, choose the display icon to view the calculated URL.

12. On the Transport setting tab, you can view the url in the Calculated Access URL field. This url should be maintain as endpoint in the HCI system iflow.

13. Perform the previous steps for the following services:
5.9 Activate Change Pointers for IDOCs

This is a prerequisite for Initial Data Load.

1. Call transaction SALE, IDOC Interface / Application Link Enabling (ALE) → Modeling and Implementing Business Processes → Master Data Replication → Replication of Modified Data

2. Click on Activate Change Pointers – Generally and enable the setting.

3. Click back and open the option Activate Change Pointer for Message Types, and select the active checkbox for the message types:
   - MATMAS_CFS
   - DEBMAS_CFS
   - ADRMAS
   - ADR3MAS
   - COD_CUSTHIERMAS

   For example:
5.10 SAP Customizing Implementation Guide in the ERP system

All the customization activities necessary to integrate SAP ERP with SAP 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.
5.11 Area Menu

An area menu is now available to consolidate all the commonly used transactions for integrating SAP ERP with the SAP Cloud for Customer solution. You can access this area menu in the transaction COD_INT_MENU.

![SAP Easy Access Integrating SAP Cloud for Customer with SAP ERP](image-url)
6 SAP Process Integration Configuration:

6.1 Create a view in the key storage and load certificate into the view

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:
   a. Select the entry type as PKCS#12 Key Pair.
      ![Entry Import dialog](image)
   b. Select the file that you created as the key pair in SAP Cloud for Customer.
   c. Enter the corresponding password.
   d. Click Import.

6.2 Import the root certificate used to sign the SAP Cloud for Customer Certificate

1. Load certificate into SSL Server standard for ABAP
2. Using SAPGUI, logon to the ABAP stack of the SAP PI system, and open transaction STRUST.
3. Open SSL server standard, and click the import button under Certificate.
   ![Certificate dialog](image)
   ![Certificate details](image)
   4. Select the location of the root certificate and click Continue.
5. Under Certificate, click Add to certificate List and click Save.

6.3 Assign Business System using Integration Builder

1. Within the integration builder, click in the menu Tools → Assign Business Systems.

2. Click continue
3. Click Continue

4. Select the business system for SAP ERP and SAP Cloud for Customers.
Note: If the Business system is not visible just Clear the SLD Cache by choosing Environment → Clear SLD Data Cache.

5. Click Finish

6. Click Close.
6.4 Create Configuration Scenarios

1. The following scenarios will be created based on ES repository models. They will be created one at the time. Each scenario has multiple connections that require communication channels to be created as follows:

<table>
<thead>
<tr>
<th>Integration Scenario</th>
<th>Type</th>
<th>Sender System</th>
<th>Receiver System</th>
<th>Sender Business System Components → Communication Channel</th>
<th>Receiver Business System Components → Communication Channel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Account Registration</td>
<td>Asynchronous</td>
<td>COD</td>
<td>ERP</td>
<td>COD_SAP_BusinessPartnerRegistration_Send</td>
<td>ERP_Sap_Receive</td>
</tr>
<tr>
<td>Account Address Update</td>
<td>Asynchronous</td>
<td>COD</td>
<td>ERP</td>
<td>COD_SAP_BusinessPartnerAddress_Update</td>
<td>ERP_Sap_Receive</td>
</tr>
<tr>
<td>Account Contact Update</td>
<td>Asynchronous</td>
<td>COD</td>
<td>ERP</td>
<td>COD_SAP_BusinessPartnerContact_Update</td>
<td>ERP_Sap_Receive</td>
</tr>
<tr>
<td>Product Data Update</td>
<td>Asynchronous</td>
<td>COD</td>
<td>N/A</td>
<td>COD_SAP_BusinessPartnerProductData_Update</td>
<td>COD_SAP_BusinessPartnerProductData_Receive</td>
</tr>
</tbody>
</table>

For COD_ERP_MasterDataSync

2. From within the integration builder click on the menu Tools → Apply Model from ES Repository.

3. Click in the input help button to load the available modes from the ESR repository.
4. Look for the COD_ERP_MasterDataSync, Select it and click Apply.

5. Click Continue

6. Define the name of the scenario, and click Finish.
6.5 Configure Interfaces
6.5.1 Assign the Business Systems to Each Components

1. Assign the business systems to the scenario. Select the COD Template Cloud for customers in the Model Configurator.

2. Assign the business system using the input help button from the Business System Component for A2A tab.
3. From the Choose Communication Component screen, select “Business System” in the communication component section. Then select the business system created for the SAP Cloud for Customer, and click Apply.

4. Assign the business system for the SAP ERP system. First, select the SAP ERP 6.0 upwards Template in the model configurator.

5. Assign the business system using the input help button from the Business System Component for A2A tab.

6. From the Choose Communication Component screen select “Business System” in the communication component section, then select the business system created for the SAP ERP System, and click Apply.
6.5.2 Create the Communication Channels and Assign them to Sender and Receiver Business System Components

1. Configure the connections by clicking in the Configure Connection button in the Model Configurator screen.

2. In the Connections from Component Assignment tab, create the communication channels from the templates for each of the connection within the scenario. Select the communication channel field for the SAP Cloud for Customers, or in this case the Sender Business System Component,

3. Click the Create Communication Channel button and create using the template option.
4. In the Create Communication Channel wizard, click Continue.

5. Click Continue

6. Adjust the name of the communication channel or just accept the standard name, and click Finish.

7. Click Close
8. The communication channel for this integration scenario is created and assigned.

9. Click in the Communication Channel field of the Receiver Business System.

10. Click in the Create Communication Channel button.

11. In the Create Communication Channel wizard, click Continue.
12. Click Continue

13. Verify the name of the communication channel, and click Finish.

14. Click Close
Note. The communication channel ERP_Idoc_Receive can be reused for all the connection from SAP Cloud for Customer to SAP ERP and does not have to be recreated. Select the input help button in the receiver communication channel.

Select the existing communication channel, and click Apply.

15. This connection is configured with the communication channels created. Now click in the Next Connection arrow to configure the Next Connection.

16. Repeat the previous steps for the other connections within the scenario.

6.5.3 Generate Process Integration Configuration Objects

1. When all the communication channels are created and assigned to the connection within the scenario, create the configuration objects by clicking in the configuration objects button.
2. In the Create Configuration Objects screen, select the option Generation. In the Change List, create a new list and click Start.

3. All the objects will be generated and a generation log will be created.

After reviewing, close the generation log screen.
4. Click in Apply.

5. Save the scenario.

6. Repeat the previous steps for each of the scenarios, connections and communication channels.

6.5.4 Configure ERP_IDOC_receive Communication Channel with correct Port and RFC Destination

1. From the COD_ERP_BusinessDataSync scenario → Communication Channel open the communication channel ERP_Idoc_Receive.
2. Click in the change Edit button.

3. Adjust the RFC destination and port.

4. Save changes by clicking the Save button.
6.6 Maintain Communication Channel

1. On each of the scenarios, open all the communication channels where the receiver is the SAP Cloud for Customer.

2. Click the pencil icon to open the communication channel for edit.

3. Finally adjust all the connection parameters settings, according to the requirements.

Based on the communication channel, the target URL must match with the corresponding system’s URL. Example:
Case 1: If the communication channel points to Cloud solution as a receiver, then Cloud for Customer Inbound Communication Arrangements’ URL must match with this target URL.
How to Configure Integration between SAP ERP and SAP Cloud for Customer using SAP Process Integration

Case 2: If the communication channel points to ERP as a receiver, then ERP SOAMANAGER URL must match with this target URL.
5. Click the Save button.

6.7 **Activate Changes in Change List**

1. Click the Change Lists tab on the Integration Builder.
2. Expand the change list and activate all the communication channels. They should be in the Standard Change List. Using the context menu, click Activate.

3. Some of the communication channels are within the other specific change list. Activate those communication channels first, and then the rest of the objects.
4. Click in Activate
5. Click Close

6. Activate the rest of the activation list for each of the scenarios following the steps above.
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7 Appendix

7.1 Define Logical System

1. Open one of the communication arrangements previously created.

2. Select the communication arrangement and click Edit.

3. The logical system name is the "My System" field. Right click in the field and click Copy

4. Call transaction BD54 on SAP ERP.
5. Create the logical system by clicking New Entries.

6. Enter the logical system name and a description.

7. Click Save

7.2 Define Number Intervals

7.2.1 Define Number Intervals for Customer Contacts

1. Call transaction SNUM, and enter the object PARTNER.
2. Click in Number Ranges.

3. Click on Change Intervals.
4. Create the intervals as shown, using a number range that is available in the system.

7.2.2 Define Number Intervals for Customers
1. Call transaction SNUM and enter the object DEBITOR.
2. Click on Number Ranges.

3. Click on Change Intervals

4. Create the intervals as shows as follow, using a number range that is available in the system.

7.3 Report RCOD_CREATE_CONNECTIVITY_MW

The Report RCOD_CREATE_CONNECTIVITY_MW allows you to create connectivity settings in ERP automatically. An updated version of this report is RCOD_CREATE_CONNECTIVITY_SIMPL and is available in add-on CODERINT 600 SP13.

1. Call transaction SE38 and execute program RCOD>Create_CONNECTIVITY_MW.
2. Select the option On-Premise SAP NetWeaver Process Integration.

3. Pick the logical system name that was created previously using the input help.

4. Enter the hostname, system number, user id and password required to connect to your SAP Process Integration system.

5. If required you can change the prefix used for the creation of RFC destination and ALE ports from the Naming Proposals tab.

6. When ready, you can execute the program for the creation of the required configuration.
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7.4 Configuration of Communication Arrangements

1. Under the tab Administrator, click in Communication Arrangements.

2. Create the following communication arrangements:
   - Business Partner Replication from SAP ERP
   - Business Partner Replication to SAP ERP
   - Opportunity with Follow Up Business Transaction Document in External System
   - Opportunity with Print Preview of Sales Document in ERP
   - Opportunity with Sales Order Pricing in ERP
   - Product Replication with Sales Data from External System
   - Sales Document Query in ERP
   - Sales Quote with Sales Order in ERP

3. For example, to create the CA for Product Replication, Click New.
4. Select the communication system and the code list mapping, and click Next.

Communication System

- System Instance ID: Q5ECLNT004
- Communication System: Q5ECLNT004
- Code List Mapping: SAP On Premise Integration

5. Select the protocol “Web Service” and the required authentication method. For example, in the case shown below, User ID and Password are selected.
6. Edit the password of the service account by clicking “Edit Credentials”.

7. In the case of a communication agreement that has outbound communication, configure the outbound communication.

8. Click Next and then Finish.
7.5 Maintain Agent Assignment for Standard Tasks

1. Call transaction PFTS, enter the standard task 38000001 and choose Display.

2. From the menu, choose Additional Data → Agent Assignment → Maintain.
3. Select the entry Edit Customer Inquiry, and click on Attributes.

4. In the Task dialog box select the radio button General Task, and choose Transfer.

5. Repeat the previous steps for the following tasks:
   38000002
   38000003
   38000005

7.6 **Maintain Agent Assignment in Workflow Template**

1. Call transaction SWDD, and enter WS38000001.
2. Double-click on Edit Customer Inquiry.

3. In the control tab, use the dropdown box to select the method to use for agent assignment, either by example by role or organization.

4. Follow the previous steps for the following tasks:
   Create Quotation referencing Inquiry
   Create Order referencing Inquiry
   Display Inquiry for follow-on processing

5. Save and activate the workflow template.

7.7 Jobs for IDoc Inbound and Outbound processing

The tasks under this section are part of the connectivity report RCOD_CREATE_CONNECTIVITY_SIMPL.

7.7.1 Create Variant for Program RBDMIDOC to Create IDoc’s from Change Pointers

   1. In transaction SE38 create variants for program RBDMIDOC for the message types:

```
ADR3MAS
```
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2. From transaction SM36 schedule a job that executes different steps to create the IDOCs for all the message types mentioned in the previous step.

   ![Creating IDoc Type from Change Pointers](image)

   **Step List Overview**

<table>
<thead>
<tr>
<th>No.</th>
<th>Program name/command</th>
<th>Prog. type</th>
<th>Spool list</th>
<th>Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>FBDMIDOC</td>
<td>ABAP</td>
<td></td>
<td>ADRMAS</td>
</tr>
<tr>
<td>2</td>
<td>FBDMIDOC</td>
<td>ABAP</td>
<td></td>
<td>ADR3MAS</td>
</tr>
</tbody>
</table>

   Note: Depending on how often you want to process the outgoing messages from ERP, you can define the frequency of the job. A typical frequency setting is every 5 minutes.

**7.7.2 Send IDOCs from ERP to SAP Cloud for Customer.**

1. In transaction SE38 create a variant for program RSEOUT00 to process the following basic types

   ADR3MAS03
   ADRMAS03
   ORDERS05
   DEBMAS06
   MATMAS05

   For example:
2. In transaction SM36 create a background job with the steps required to execute the program RSEOUT00 for the variants created in the previous step.

![Step List Overview](image)

<table>
<thead>
<tr>
<th>No.</th>
<th>Program name/command</th>
<th>Proc. type</th>
<th>Spool list</th>
<th>Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>RSEOUT00</td>
<td>ABAP</td>
<td></td>
<td>ADR3MAS</td>
</tr>
<tr>
<td>2</td>
<td>RSEOUT00</td>
<td>ABAP</td>
<td></td>
<td>ADR3MAS</td>
</tr>
</tbody>
</table>

7.7.3 Process IDOCs Sent from Cloud for Customer

10. In transaction SE38 create a variant to process the following message types for program RBDAPP01:

- ADR3UPD
- ADRUPD
- DEBMAS
- INQUIRY_CREATE_F
- ROMDATA2

Note, message type ADRUPD and ADR3UPD have to be processed first and separate from DEBMAS.

11. From transaction SM36 schedule a background job that will execute multiple instances of the program RBDAPP01 in multiple steps, see the screenshot below as an example:
Note. Depending on how often you want to process the incoming messages to ERP, you can define the frequency of the job. A typical frequency setting is every 5 minutes.