

SAP CRM 2007

Detailed View



SAP CRM 2007

Web Service Tool

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What we will cover

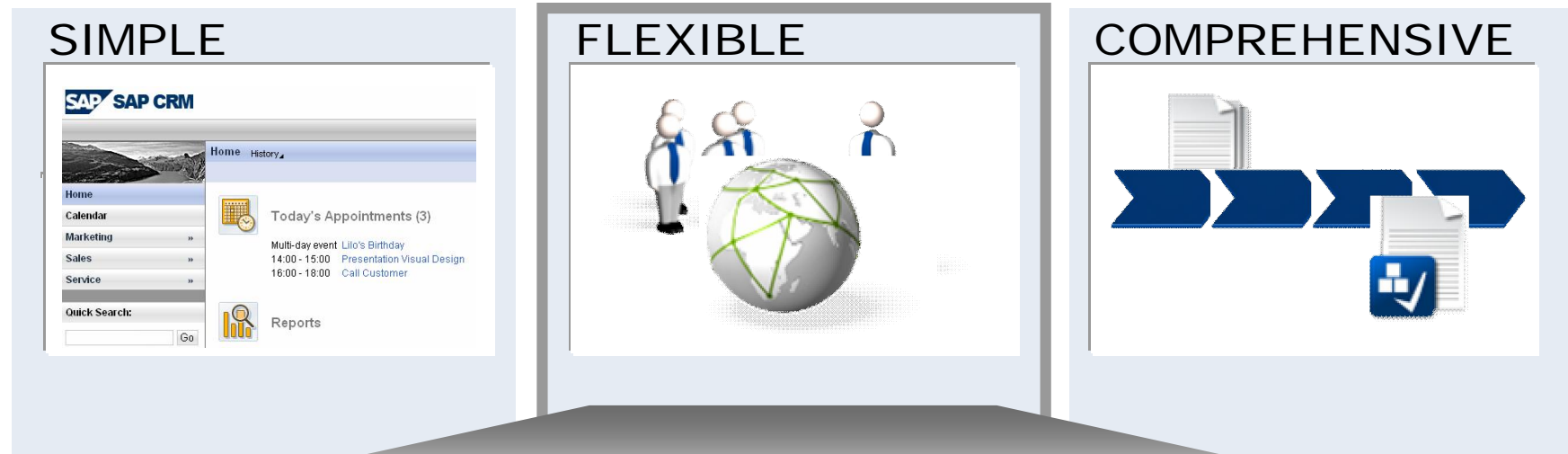


1. Web Service Tool
2. Defining a Web Service
3. Consuming a Web Service
4. Wrap-up

Delivering on SAP's Enterprise SOA and SAP CRM's Roadmap: SAP CRM 2007



SAP Delivers CRM Without Compromise



Delivering on SAP's Enterprise SOA Roadmap

- **SAP CRM 2007 provides enterprise services**

Delivering on SAP CRM's promise to deliver flexible CRM solution

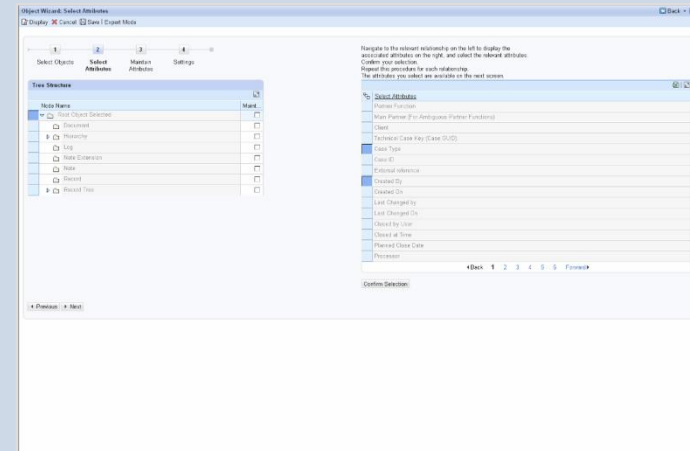
- **SAP CRM 2007 provides Web Service Tool enhancements**



Flexibility

Innovation

Speed



- **Model-Driven Workbench**
- **Quick Service Definition and Provision**
- **Flexible Service Management**
- **Service Cuts as You Need Them**

Web Service Tool: Technical Overview



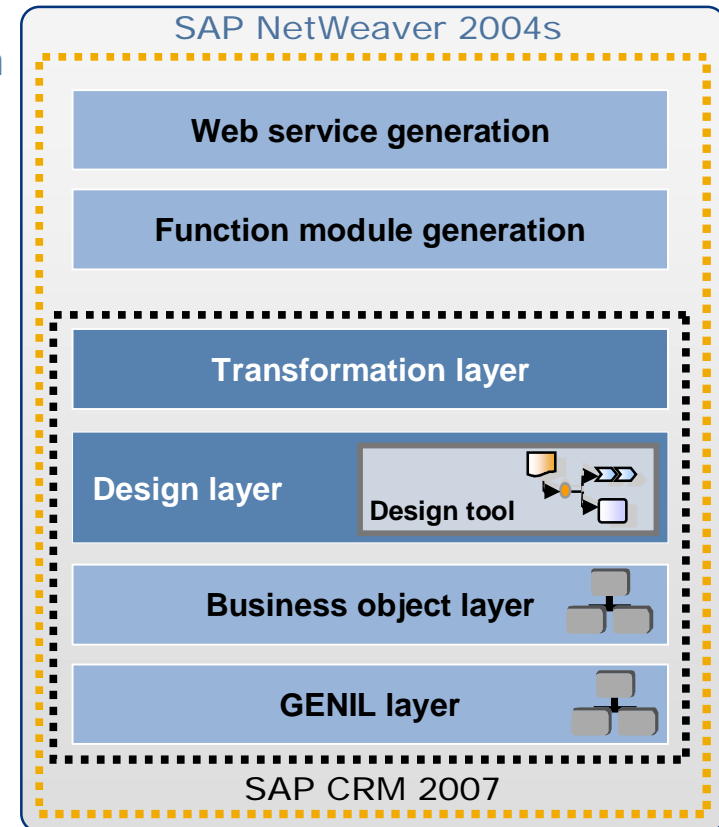
Wizard-based service object definition with Web Service Tool based on CRM's BOL



Function module creation for each service operation



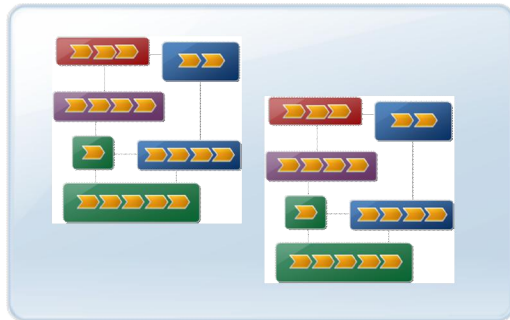
Web service creation with SAP NetWeaver's service environment



Web Service Tool: General Overview

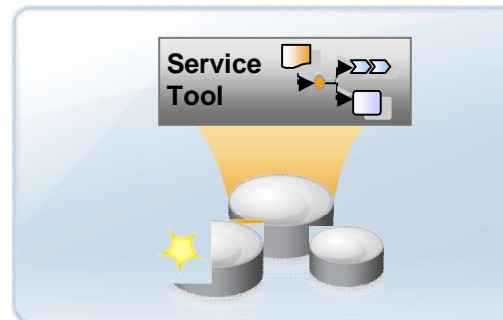


Model-driven service definition



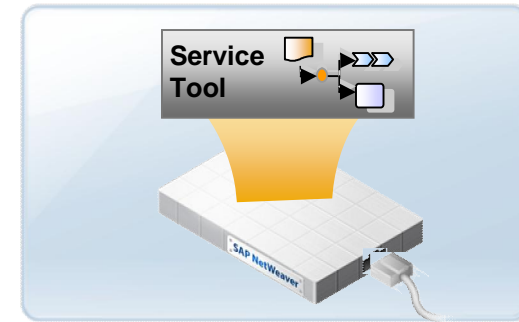
- User-friendly definition process
- Only four steps to define a service
- Technical complexity is hidden
- Allows rapid service deployment
- Usage of compound services

Based on CRM Business Object Layer (BOL)

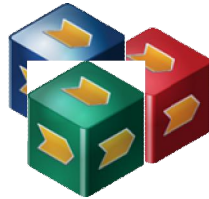


- Coding-free service modeling
- Customer BOL objects can be leveraged
- Reuse of given service definitions
- Main objects will be enabled

Embedded into SAP NetWeaver

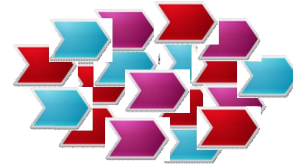


- Service objects are transformed into function modules
- Web services are built on top
- SAP NetWeaver Web Service infrastructure is leveraged



Supported Methods

- **Basic queries**
- **Read operations**
- **Create operations**
- **Change operations**



Service Characteristics

- **Stateless services**
- **Synchronous services**
- **Limited to one given BOL object**
- **Services follow the World Wide Web Consortium (W3C) standards (e.g., XML and SOAP)**



Tool Characteristics

- **Wizard-based**
- **Based on CRM's BOL**
- **Security settings**
- **Default values**
- **Access to Web Service Definition Language (WSDL) file**
- **Test environment**



SAP and Partners

First xApp built with CRM Web Services Tool by Accenture Consulting

- Fully service-based
- Uses Adobe Forms
- Flexible adjustable
- Short time-to-market

| Item | Material | Description | Quantity | Unit | Plant |
|------|----------|-------------|----------|------|-------|
| 0001 | 10000000 | 10000000 | 1 | EA | 1000 |
| 0002 | 10000000 | 10000000 | 1 | EA | 1000 |



“The Web Services Tool improves and advances the creation of Web services significantly. It accelerates the development of CRM projects because it:

- Requires less knowledge
- Is easy to use and understand
- Is transparent

The Web Services Tool works logically and intuitively through the process of creating Web services based on the CRM Business Object Layer.”

Arno Huhn, Accenture

What we will cover



1. Web Service Tool
2. Defining a Web Service
3. Consuming a Web Service
4. Wrap-up

Individual Service Definition has Never Been Easier



Model-driven definition of Web services without any extra coding



Select the objects that are the basis for the Web service



Select all needed attributes for the Web service



Maintain the selected attributes and assign default values



Generate the modeled Web service



Web service and WSDL can be tested and then be ready for consumption

Web Service Creation in SAP CRM



- ✓ Create Web Services in four simple steps
- ✓ Create Web Services for almost any transaction in SAP CRM
ex: Quotation, Order, Lead, Opportunity, Service Request etc..
- ✓ Creation does not require any coding

The screenshots illustrate the four-step process:

- Step 1: Select Objects** - The user enters the object name 'Z_SALES_CONTRACT_KRA' and description 'Sales Contract'. The component set is '<not required>'.
- Step 2: Select Attributes** - The user navigates through a tree structure to select attributes for the relationship.
- Step 3: Maintain Attributes** - The user maintains the selected attributes, including setting reference names and service default values.
- Step 4: Settings** - The user sets general object settings (e.g., 'Used As: Service Object') and service object settings (e.g., 'Read: checked', 'Security Profile: SOAP 1.1 profile for stateless HTTP com').

At the bottom of the final screenshot, there are buttons for 'Previous', 'WSDL', and 'Test Page'.

Start Screen: Object Overview List



Web Service Tool
Expert Mode

You have the following options:

- Use the search and filter functions to find the relevant objects
- Go to the object details by clicking the link
- Copy or delete an object
- Start the wizard to create a new object
- Switch to expert mode to display technical names

Search Criteria

Object Name: Status:

Object Description: Root Object:

Used As: Import Generation Status:

Overview of Objects Available

| Object Name | Used As | Object Description | Status | Query |
|---------------------|----------------|---|-----------|-------|
| TEST_EXAMPLE_COMP | Service Object | Example for compound service | Activated | |
| TEST_YOG | Service Object | | Activated | |
| UNIT_TEST_BP1 | Service Object | Service for Unittest: Business Partner Test 1 | Activated | |
| XSABTESTSERVICE | Service Object | | Draft | |
| XWS_ACCOUNT_CREA... | Service Object | Account Create and Change | Activated | |
| XWS_BP_ACTIVITIES | Service Object | BP along with its Activities | Activated | |
| XWS_CAMPAIN | Service Object | campaign | Activated | |
| XWS_CASE | Service Object | Case | Activated | |

- Search for a service object
- Use filter criteria
- Go to object details
- Create, copy, or delete an object
- Filter error information after you have transported an object*

- From each screen you can switch to Expert Mode to view technical information of the objects
- Basic information about the current screen, your options, and the proposed steps is displayed on each screen

Wizard Screen 1: Select Objects



Web Service Tool: Select Objects

Edit Cancel Save Expert Mode

1 2 3 4

Select Objects Select Attributes Maintain Attributes Settings

Enter the basic data for the object you want to create, such as the object name, its use, and the operations required. Select the relevant business object and root object. Select the relevant query objects in the table.

Select Objects

| | | | |
|--------------------|--------------------|------------------|---|
| Object Name | Z_ADOBE_ACCOUNT | Component Set | Business Partner + Pricing Conditions |
| Object Description | Adobe Account Test | Included Objects | Content Management,CNDMNT,Business Partner, |
| Used As | Service Object | | |
| Business Object | Business Partner | | |
| Root Object | Account | | |

Read Create Change

Queries

New

Selected Query Object(s)

No result found

Next

- Specify a name and select the needed usage type for the object
- Choose needed service operation
- Select the business and main object (root object) for the service
- Select the required query object for the service
- Select a component set to create services that contain more than one business object *

- The wizard offers easy navigation with the Next and Previous buttons or with a direct click on the wizard steps (numbers)

Wizard Screen 2: Select Attributes



Web Service Tool: Select Attributes

1 Select Objects 2 **Select Attributes** 3 Maintain Attributes 4 Settings

Navigate to the relevant relationship on the left to display the associated attributes on the right, and select the relevant attributes. Confirm your selection. Repeat this procedure for each relationship. The attributes you select are available on the next screen.

| Node Name | R... | Cr... | C... | M... | Relationship N... |
|----------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------|
| Account | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | BuilHeader |
| Account Classifications | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | BuilAccountC... |
| Activities | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | BuilActivityRel |
| Addresses | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | BuilAddressRel |
| Business Appointment Rules | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | BuilAppointm... |
| Account Hierarchies | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | BuilAssignme... |
| Bank Data | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | BuilBankAcc... |
| Business Hours | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | BuilBusiness... |
| Buying Center | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | BuilBuyingCe... |
| Competitor Activities | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | BuilCompActi... |
| Competitor Opportunities | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | BuilCompOpp... |
| Products | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | BuilCompetit... |

| Select Attributes | BOL Technical Name | M... |
|--|--------------------|-------------------------------------|
| Business partner category | BP_CATEGORY | <input checked="" type="checkbox"/> |
| Business Partner ID | BP_NUMBER | <input checked="" type="checkbox"/> |
| First Name of Business Partner (Person) | FIRSTNAME | <input type="checkbox"/> |
| Last Name of Business Partner (Person) | LASTNAME | <input type="checkbox"/> |
| Name at birth of business partner | BIRTHNAME | <input type="checkbox"/> |
| Middle name or second forename of a person | MIDDLENAME | <input type="checkbox"/> |
| Other Last Name of a Person | SECONDNAME | <input type="checkbox"/> |
| Academic Title: Key | TITLE_ACA1 | <input type="checkbox"/> |
| Second academic title (key) | TITLE_ACA2 | <input type="checkbox"/> |
| Name supplement, e.g. noble title (key) | TITLE_SPPL | <input type="checkbox"/> |
| Name Prefix (Key) | PREFIX1 | <input type="checkbox"/> |
| 2nd name prefix (key) | PREFIX2 | <input type="checkbox"/> |
| Nickname of Business Partner (Person) | NICKNAME | <input type="checkbox"/> |

- Choose the respective relation on the left side of the split screen
- Select the needed attributes on the right side
- You can select one, all, or several attributes per relation
- After finalizing a relation, click Confirm Selection; then choose the next relation
- Choose expert mode to get helpfull information on the required fields for your service *

- Experienced users can display technical BOL names for further information

Wizard Screen 3: Maintain Attributes



Web Service Tool: Maintain Attributes

1 Select Objects 2 Select Attributes 3 **Maintain Attributes** 4 Settings

Make the following entries for each selected attribute:
Reference name is the name that is used for the attribute in the WSDL
An excluded field indicates that the field is read-only
A standard field indicates that this is a normal field

General Operation Attributes

| Relationship Name | Attribute | Standard | Excluded | Ref. Name | Service Default Value | Technical Name |
|-------------------|---------------------------|-------------------------------------|--------------------------|-----------|-----------------------|----------------|
| Account | Business Partner ID | <input checked="" type="checkbox"/> | <input type="checkbox"/> | BP_NUMBER | | BP_NUMBER |
| Account | First Name of Business... | <input checked="" type="checkbox"/> | <input type="checkbox"/> | FIRSTNAME | | FIRSTNAME |
| Account | Last Name of Business... | <input checked="" type="checkbox"/> | <input type="checkbox"/> | LASTNAME | | LASTNAME |

Query Operation Attributes

Allow All Query Attributes | Exclude All Query Attributes

| Query | Attribute | Standard | Excluded | Ref. Name | Service Default Value | Technical Name |
|-----------------|-----------|----------|----------|-----------|-----------------------|----------------|
| No result found | | | | | | |

Previous Next

- Replace the attribute name with reference name for the WSDL
- Maintain or exclude the attribute of the query objects
- Predefine default values for attributes as proposals for the service consumer or as pre-defined values that can not be changed by the consumer anymore
- Export the structure of your service object to MS Excel for further documentation *

- Maintain your service object to adapt it to your specific needs

Wizard Screen 4: Final Object Settings



Web Service Tool: Object Settings

Edit Cancel Save Normal Mode Check Activate Productive Not Productive

1 2 3 4

Select Objects Select Attributes Maintain Attributes Settings

The general object settings and status are displayed. Make additional object settings specifically for each type of object. Start the consistency check, activate the object, and set it to "Productive".

| General Object Settings | | Service Object Settings | |
|-------------------------|-----------------------|---------------------------|--|
| Object Name | Z_ADOBE_ACCOUNT | Query | <input type="checkbox"/> |
| Object Description | Adobe Account Test | Read | <input checked="" type="checkbox"/> |
| Used As | Service Object | Create | <input type="checkbox"/> |
| Business Object | Business Partner [BP] | Change | <input type="checkbox"/> |
| Root Object | Account [BuilHeader] | Security Profile | SOAP 1.1 profile for stateless HTTP communi |
| Created By | HUSER 06.08.2007 | Expert Information | |
| Changed By | HUSER 08.08.2007 | Component Set | BP_APPL_COND |
| | | Included Objects | Content Management[CM],CNDMNT [CNDMNT],Business Partner[BP], |
| | | Status | Productive |
| | | Import Generation Error | <input type="checkbox"/> |
| | | Released in Client(s) | 005;340;506 |
| | | Function Group Name | /CRMOST/Z_ADOBE_ACCOUNT_FC |
| | | Technical WS Name | Z_ADOBE_ACCOUNT |
| | | Activated By | HUSER 07.08.2007 |
| | | Set to Productive By | HUSER 08.08.2007 |
| | | Set to Not Productive By | HUSER 08.08.2007 |

Previous WSDL Test Page

- Security settings can be assigned to the service object
- For service objects, only the service-specific settings have to be given
- Perform a consistency check for the defined objects
- Activate a service object to create the respective Web service interface
- Set an object to "Productive" to indicate that it is in active use and to freeze its definition
- Information about the availability in the respective clients is displayed *

- Start the service test environment and expose the WSDL file

Wizard Screen 4: Testing and WSDL Exposure



The screenshot displays the SAP NetWeaver test environment. On the left, the 'Object Wizard: Object Settings' window is open, showing the 'Settings' step. The 'General Object Settings' section includes: Object Name: CASE_WEB_SERVICE, Used As: Service Object, Object Description: Case Service, Created By: BERNOTT, and Changed By: BERNOTT. The 'UI Object Settings' section includes: Callback Class and BOR Object Name. Below the wizard are buttons for 'Previous', 'WSDL', and 'TestPage'.

In the center, a browser window displays the WSDL file for the 'CASE_WEB_SERVICE'. The WSDL content is as follows:

```
<?xml version="1.0" encoding="utf-8" ?>
<wsdl:definitions targetNamespace="urn:sap-com:document:sap:soap:functions:mc-style"
xmlns:soap="http://schemas.xmlsoap.org/wsdl/http/" xmlns:n0="urn:sap-com:document:sap:rfc:functions" xmlns:soap1="http://schemas.xmlsoap.org/wsdl/soap/"
xmlns:tns="urn:sap-com:document:sap:soap:functions:mc-style"
xmlns:wSDL="http://schemas.xmlsoap.org/wsdl/" xmlns:xsd="http://www.w3.org/2001/XMLSchema">
  <wsdl:types>
    <xsd:schema xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:tns="urn:sap-com:document:sap:rfc:functions" targetNamespace="urn:sap-com:document:sap:rfc:functions"
elementFormDefault="unqualified" attributeFormDefault="qualified">
      <xsd:simpleType name="byte16">
        <xsd:restriction base="xsd:base64Binary">
          <xsd:maxLength value="16" />
        </xsd:restriction>
      </xsd:simpleType>
      <xsd:simpleType name="char1">
        <xsd:restriction base="xsd:string">
          <xsd:maxLength value="1" />
        </xsd:restriction>
      </xsd:simpleType>
    </xsd:schema>
  </wsdl:types>
  <wsdl:binding name="CASE_WEB_SERVICE" type="tns:CASE_WEB_SERVICE" />
  <wsdl:port name="CASE_WEB_SERVICE" binding="CASE_WEB_SERVICE" address="http://jucpnc.wdf.sap.corp:50035/sap/bc/infocsp/CASE_WEB_SERVICE?sap-client=000&wsdl=1.1" />
  <wsdl:service name="CASE_WEB_SERVICE" portType="tns:CASE_WEB_SERVICE" binding="CASE_WEB_SERVICE" />
</wsdl:definitions>
```

On the right, a 'Web Services Navigator - Microsoft Internet Explorer' window is open, displaying the 'CASE_WEB_SERVICE' overview page. The page includes a 'Need Help?' link, an 'Overview' section with a description of the web service, and a 'Features' section with a table of design-time features.

| Design-time features for Port Type: CASE_WEB_SERVICE | | |
|--|---------------------|-------|
| Feature | Property | |
| | Name | Value |
| http://www.sap.com/webas/630/soap/features/authentication/ | AuthenticationLevel | Basic |

- Launch the SAP NetWeaver test environment and expose the WSDL file
- Test your service right after creation
- Extract the WSDL file for direct consumption

Compound Services

With CRM2007 it is possible to build services (read and change) that contain more than one business object. Thus, you can now get the business partner address details within a service call against a sales order.

Display of mandatory fields

With CRM2007 the web service tool displays all mandatory fields for the service objects in the wizards screen two

Excel export

With CRM2007 you can export the structure of your service object into an Excel sheet, including your personal settings regarding default values and reference fields

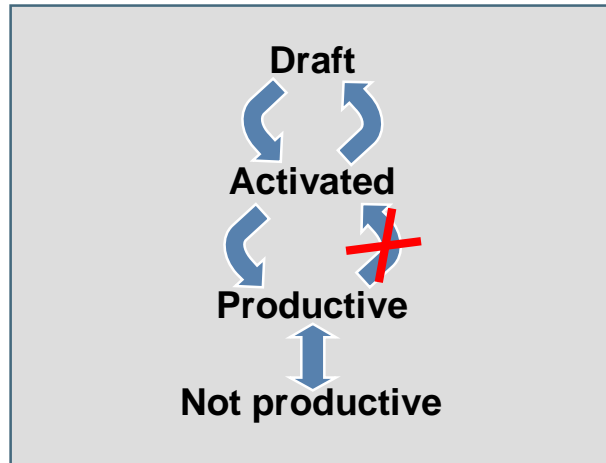
Attributes for better usability

With CRM2007 the web service tool provides further technical details for the user, such as the client information where the service is released

Status and Lifecycle Management of a Service Object



Service object states



Service objects can have four different states. Depending on the status of the object, you can edit or change object. To test or consume a service, you must activate it. Further changes to the object are permitted as long as it has not been set to productive.

Status: Draft

- Initial and edit status
- All kinds of changes are permitted
- Objects are saved and can be enhanced later on

Status: Active

- Web service created and available for testing and WSDL export
- Object changes are permitted by setting the status back to draft (edit mode)
- Web services and WSDL are overwritten automatically during next activation

Status: Productive

- Status indicates active use of service interface
- Object cannot be changed, but it can be copied

Status: Not productive

- Status indicates that service is not used
- Object can be set back to productive, deleted, copied

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Customers and partners can easily build composite applications on top of predefined CRM enterprise services or their individual generated Web services

- The services can be consumed from any system that follows the service-orientation approach and allows the consumption of Web services such as Microsoft Word or Adobe Interactive Forms
- As an example, the following slides illustrate the basic steps that are needed to create an interactive form that consumes CRM services

Build your composites ...

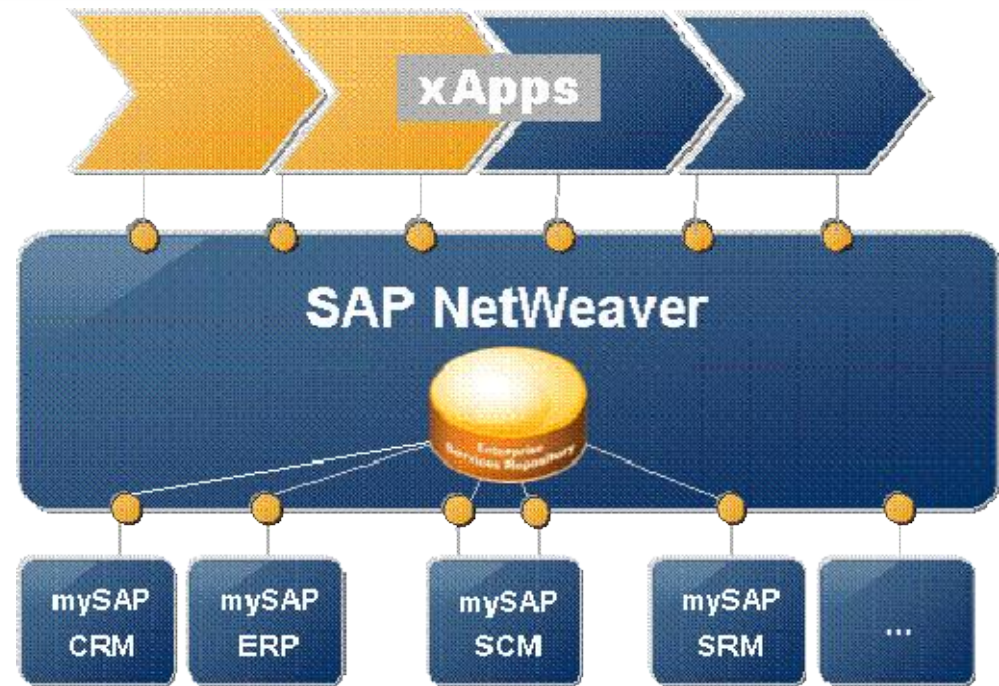


... based on your individual Web services

Examples for Service Consumption



- Adobe Interactive Forms
- Microsoft Excel & Word
- User Interfaces
- Mobile Devices
- Widgets
- Integration Scenarios
-



Use Case for Leveraging Services



SAP CRM Consuming
Service Interfaces
Word Integration
(Standard Integration)



MS-Word Integration based on SAP CRM Services – Design Time



✓ Design, save and re-use your template at the click of a button

✓ Drag drop object attributes into static text for dynamic compilation of documents

✓ Connectivity is done based on CRM services

The screenshot displays the 'Document Template Designer - Detail: Edit' interface. The 'Template Details' section includes the following information:

- File Type: Microsoft Word
- Name: Z_SALES_CONTRACT
- Description: Z_SALES_CONTRACT
- Object Type: BUS2000121
- Web Service: Z_SALES_CONTRACT_KRA
- Language: EN
- Start tool for design: Z_SALES_CONTRACT - Microsoft Word

The main editor shows a document template with a header containing a blue arrow logo with 'XYZ' and the text 'XYZ Corporation, Plot no.123, ABC Road, No Where City -1'. The body text includes dynamic fields like [SalesOrgShort], [RefPartnerNo], [ObjectId], and [ProcessType]. Below the text is a table with the following structure:

| Product ID | Product Unit of Measure | Product Quantity |
|---------------|-------------------------|------------------|
| [OrderedProd] | [ProcessQtyUnit] | [NumberInt] |

The 'XML Structure' pane on the right shows the document's XML elements, including a tree view for 'Output' with sub-elements like 'ZSalesContractKra', 'Administrativeheaderof', 'Organizationaldatao', 'SalesOrgShort', 'Partiesinvolvedofhea', 'Allsoldtoparties', 'RefPartnerNo', 'ObjectId', 'ProcessType', 'Administrativeheaderof', 'Itemsofheader', 'Firstlevelitems', 'item', 'OrderedPr', 'Productde', 'Process', and 'NumberInt'. A 'Choose an element to apply to your current selection' dropdown is also visible.

MS-Word Integration based on SAP CRM Services – Run Time



- ✓ Launch the template compiled with the object attributes at the click of a button
- ✓ Enjoy the automatic re-sizing of the tabular data
- ✓ Edit the system compiled document to fit your needs
- ✓ Save the changed copy as an attachment

Quantity/Value Cont.: 5001617, ADCOM Computer

Save | Cancel | New | Create Follow-Up | Trigger Output | More+

Enter Employee Responsible ID 5001617 Credit Status No Items With Credit Block 2 Messages

Z_SALES_CONTRACT - Microsoft Word

File Edit View Insert Format Tools Table Window Help

Times New Roman 12 B I U

XYZ

XYZ Corporation,
Plot no.123,
ABC Road,
NoWhere City-123456

This contact made and entered into by andbetweenPC4U US, hereinafter referred to as the

Quantity/Value Cont.: 5001617, ADCOM Computer

Save | Cancel | New | Create Follow-Up | Trigger Output | More+

Enter Employee Responsible ID 5001617 Credit Status No Items With Credit Block 3 Messages

Sold-To Party ADCOM Computer
Sold-To Party Address 4 Perkins Way / Seattle WA 98155
Contact
External Reference Contract 2006
Valid From 02.11.2005
Valid To 31.12.2006
Total Target Value 10,000,000.00 USD
Campaign/Trade Promotion

Cancellation Date

Release Statistics

| | | |
|-------------------------|------------------|------------|
| Cumulated Release Value | 1,999,000.00 USD | |
| Target Value Percentage | | 20.0 % |
| Release Orders | | 2 |
| Average Value | 999,500.00 USD | |
| Last Release Order Date | | 29.06.2006 |

Shipping and Payment

Payment Terms 14 days 2%, 30 net
Incoterms FH

Items New | Edit List | Release All Items Back to Top

| Actions | Item No. | Product ID | Product Category | Partner/Prod... | Description | Target Value | Curre... | Release Value | Curre... | Status |
|---------|----------|------------|------------------|-----------------|--------------|-------------------|----------|------------------|----------|---------|
| | 10 | HT-1010 | | | Notebook ... | 10,000,000.00 USD | | 1,999,000.00 USD | | Rele... |
| | 20 | CP-5600 | | | Cell Phon... | 0.00 USD | | | | Rele... |

Authorized Partners Back to Top

Attachments Attachment URL With Template | Advanced Back to Top

| Actions | Name | Type | Created By | Created On |
|------------|------------------|----------------|------------|------------------|
| Properties | Z_SALES_CONTRACT | Microsoft Word | AVADHANULA | 17.09.2007 23:13 |

Page 1

Use Case for Leveraging Services



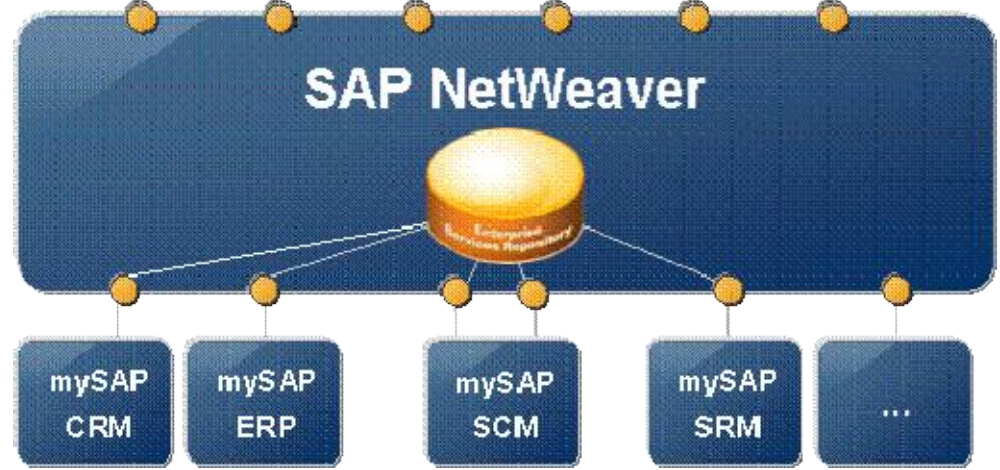
SAP CRM
Adobe Integration
(Example)



Adobe Forms Leveraging Services



| Product ID | Description | Planned Quantity | Confirmed Quantity | Unit | Item Category |
|------------|-------------|------------------|--------------------|------|---------------|
| | | | | | |



- ### Adobe Forms
- Export CRM data to Adobe Forms
 - Enable offline scenarios
 - Replace manual steps by leveraging services

Example: Service Request Processing with External Service Provider*



People and roles



Customer



Interaction center agent



Service resource planner



External service provider

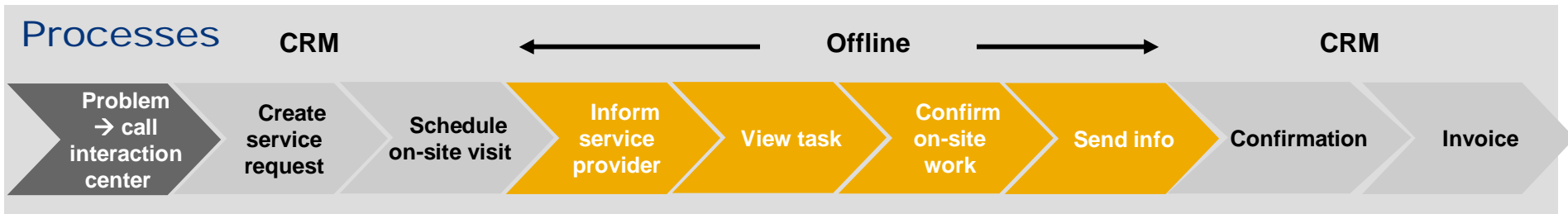


Service manager (optional)



Billing clerk (optional)

Processes



Today's business problem

- After assigning external service providers to service requests, the data transfer process must be triggered manually
- Service request data cannot be transferred appropriately
- Confirmation data must be written on paper and then entered manually into the CRM system
- Complete process is time consuming and error-prone

Solution: Adobe leveraging services

- Replaces inefficient and error-prone process
- Enables very short time-to-value
- Enables easy adjustments
- Exchanges all relevant information in electronic form to speed up the process and avoid errors

* Remark: Presented Adobe is not part of regular CRM shipments

Adobe Interactive Form: Service Requests with External Service Provider



Service Order

Order Description _____ Order Number 8000000192

Dates

Requested Start Date Requested Start Time

Requested End Date Requested End Time

Buyer Party

Name

Address

City, State

Country

Reference Object

| | |
|----------------|----------------------|
| Installed Base | <input type="text"/> |
| Component | <input type="text"/> |
| Product | <input type="text"/> |
| Object | <input type="text"/> |

Notes

Services and Spare Parts

| Product ID | Description | Planned Quantity | Confirmed Quantity | Unit | Item Category |
|------------|-------------|------------------|--------------------|------|---------------|
| | | | | | |

Service Confirmation

Confirmation Description Confirmation created with No:

Execution Note:

Dates

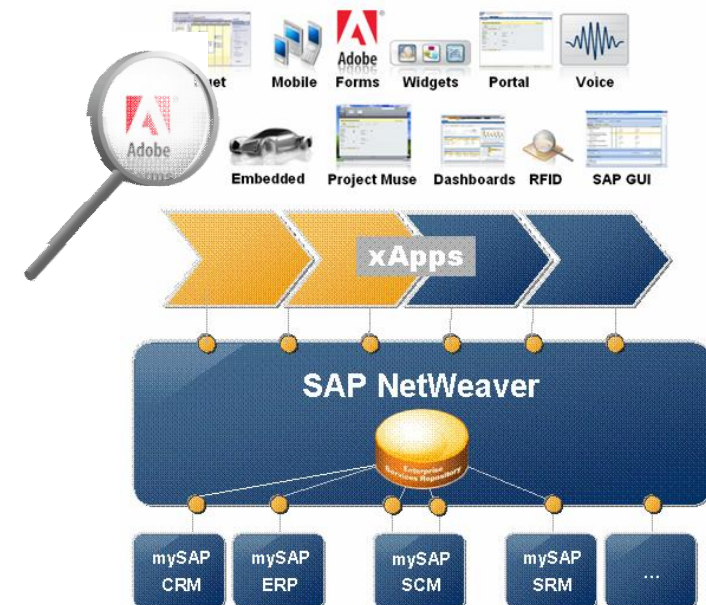
Start of Work

End of Work

Confirmation Notes

Describe your actions during repair here!

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* Remark: Presented Adobe is not part of regular CRM shipments

Example: Consuming CRM Web Services with Adobe Form Designer



Adobe Lifecycle Designer



Step 1: Testing the Web Service



Web Service Tool: Object Settings [Back]

Edit Cancel Save Normal Mode Check Activate Productive Not Productive

1 Select Objects 2 Select Attributes 3 Maintain Attributes 4 **Settings**

The general object settings and status are displayed. Make additional object settings specifically for each type of object. Start the consistency check, activate the object, and set it to "Productive".

| General Object Settings | | Service Object Settings | |
|-------------------------|-----------------------|---------------------------|--|
| Object Name | Z_ADOBE_ACCOUNT | Query | <input type="checkbox"/> |
| Object Description | Adobe Account Test | Read | <input checked="" type="checkbox"/> |
| Used As | Service Object | Create | <input type="checkbox"/> |
| Business Object | Business Partner [BP] | Change | <input type="checkbox"/> |
| Root Object | Account [BuilHeader] | Security Profile | SOAP 1.1 profile for stateless HTTP communi |
| Created By | HUSER 06.08.2007 | Expert Information | |
| Changed By | HUSER 08.08.2007 | Component Set | BP_APPL_COND |
| | | Included Objects | Content Management[CM],CNDMNT [CNDMNT],Business Partner[BP], |
| | | Status | Productive |
| | | Import Generation Error | <input type="checkbox"/> |
| | | Released in Client(s) | 005,340;506 |
| | | Function Group Name | /CRMOST/Z_ADOBE_ACCOUNT_FC |
| | | Technical WS Name | Z_ADOBE_ACCOUNT |
| | | Activated By | HUSER 07.08.2007 |
| | | Set to Productive By | HUSER 08.08.2007 |
| | | Set to Not Productive By | HUSER 08.08.2007 |

- CRM services can be easily tested with the wsadmin transaction or directly from the Web Service Tool

* Enterprise services are also maintained in ESR and Enterprise SOA exploration workplace (SDN)

Step 1: Testing the Web Service (cont.)



Web Service Tool: Object Settings

1 Select Objects 2 Select Attribute 3 Maintain 4 Settings

The general object settings and status are displayed. Make additional object settings specifically for each type of object. Start the consistency check, activate the object, and set it to...

General Object Settings

- Object Name
- Object Description
- Used As
- Business Object
- Root Object
- Created By
- Changed By

BusinessPartnerBasicDataByBusinessPartnerQueryResponse_In

- parameters (*test.types.BusinessPartnerBasicDataByBusinessPartnerQueryMessage*)
- MessageHeader (*test.types.BusinessDocumentMessageHeader*)
- BusinessPartnerDataSelectionByBusinessPartner (*test.types.BusinessPartnerDataSelectionByBusinessPartner*)
 - ID (*test.types.PartyID*)
 - schemeAgencySchemeID (*String*)
 - schemeAgencySchemeAgencyID (*String*)
 - schemeAgencyID (*String*)
 - schemeID (*String*)
 - (*String*)
 - AddressID (*String*) 221 SKIP

Timeout (seconds): 60

Send

Need Help?

Test Operation

The shown tree represents the operation parameters and their structures.

The checkbox "NULL" means the current parameter/field will be sent as NULL if selected.

Use the plus icon in order to add more elements to an array and the minus to remove an element from the array.

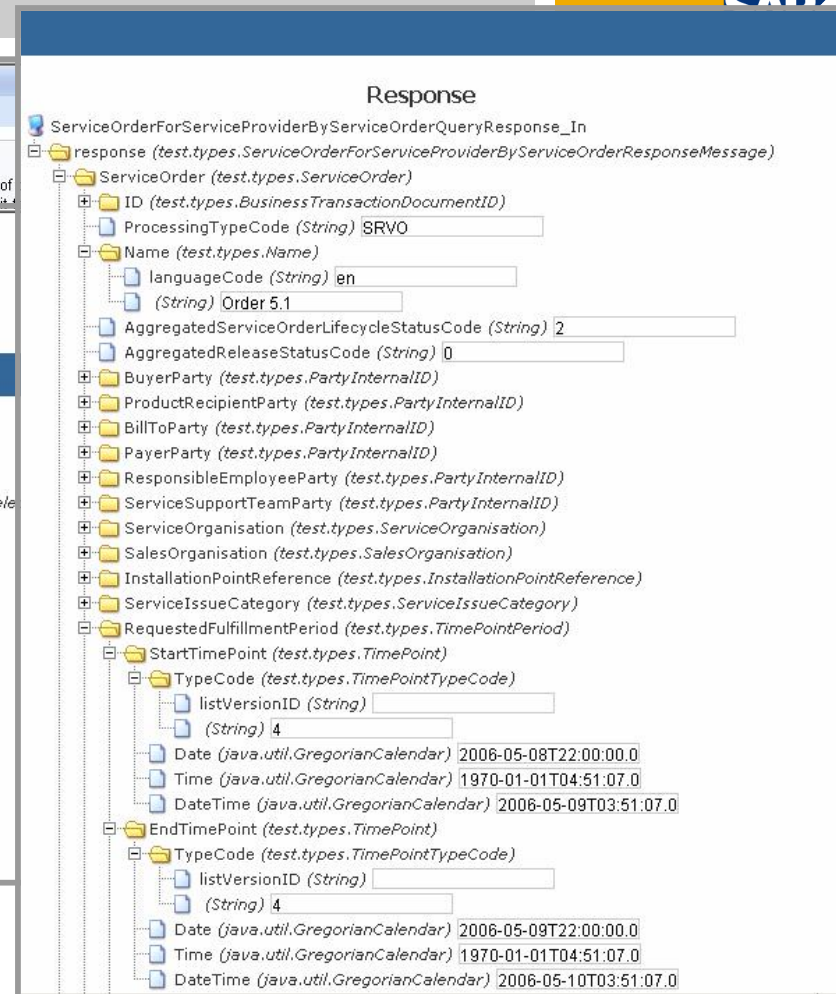
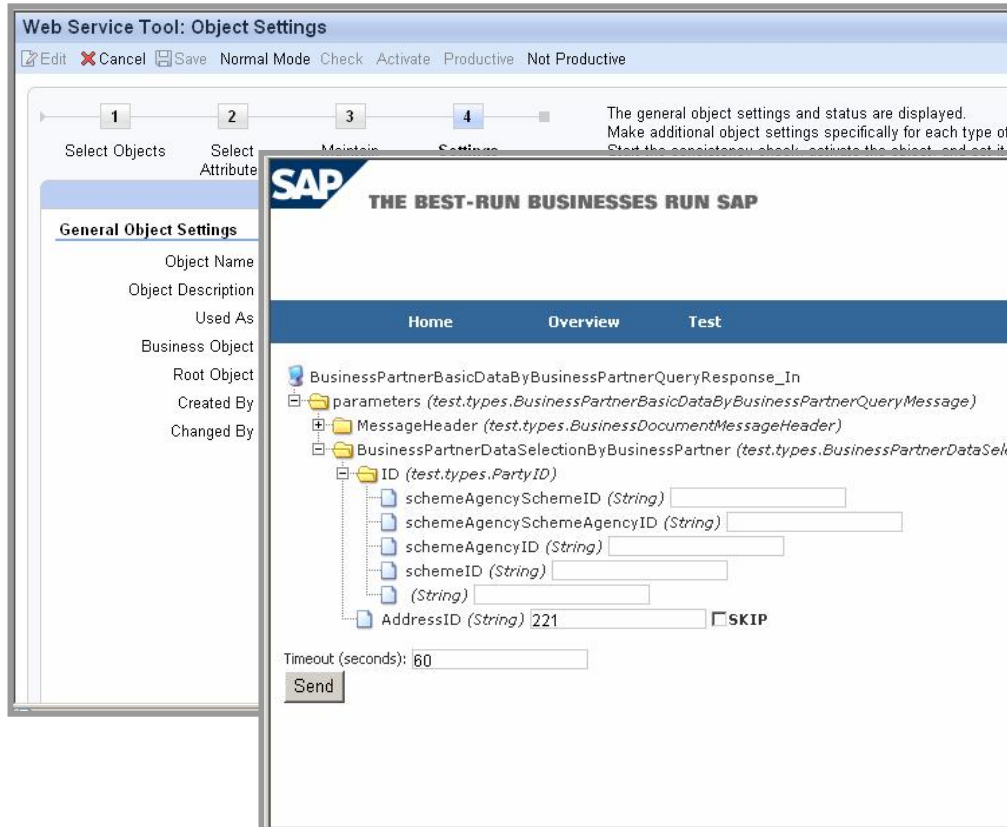
When finished with the filling of the operation, press the Send button and the request will be sent to the real endpoint.

Web Services @ SAP

- CRM services can be easily tested with the wsadmin transaction or directly from the Web Service Tool

* Enterprise services are also maintained in ESR and Enterprise SOA exploration workplace (SDN)

Step 1: Testing the Web Service (cont.)



- CRM services can be easily tested with the wsadmin transaction or directly from the Web Service Tool

* Enterprise services are also maintained in ESR and Enterprise SOA exploration workplace (SDN)

Step 2: Generating the WSDL File

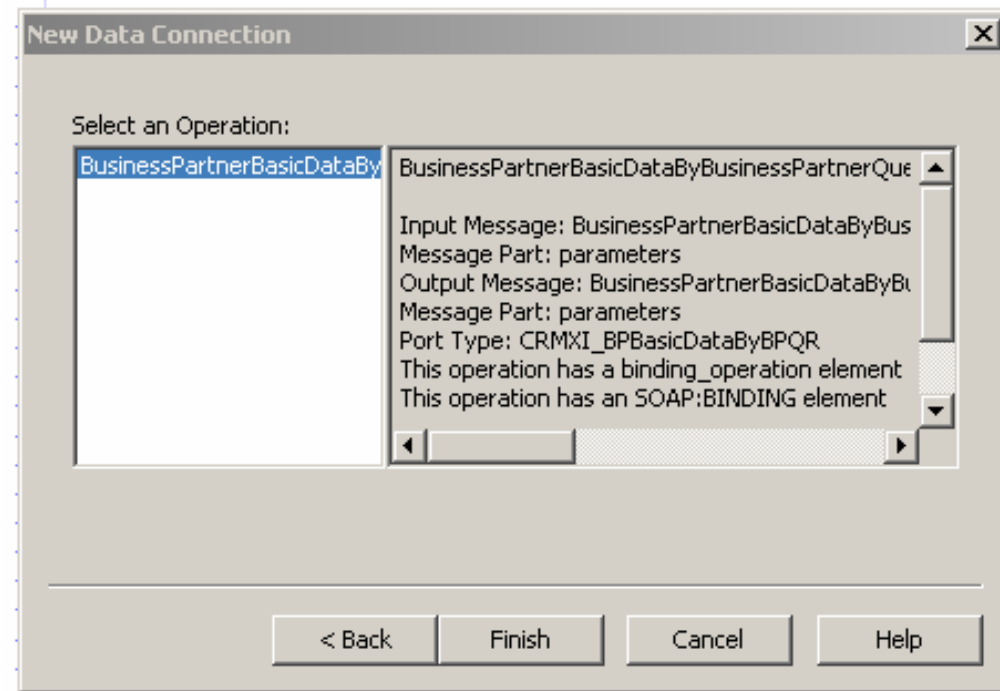
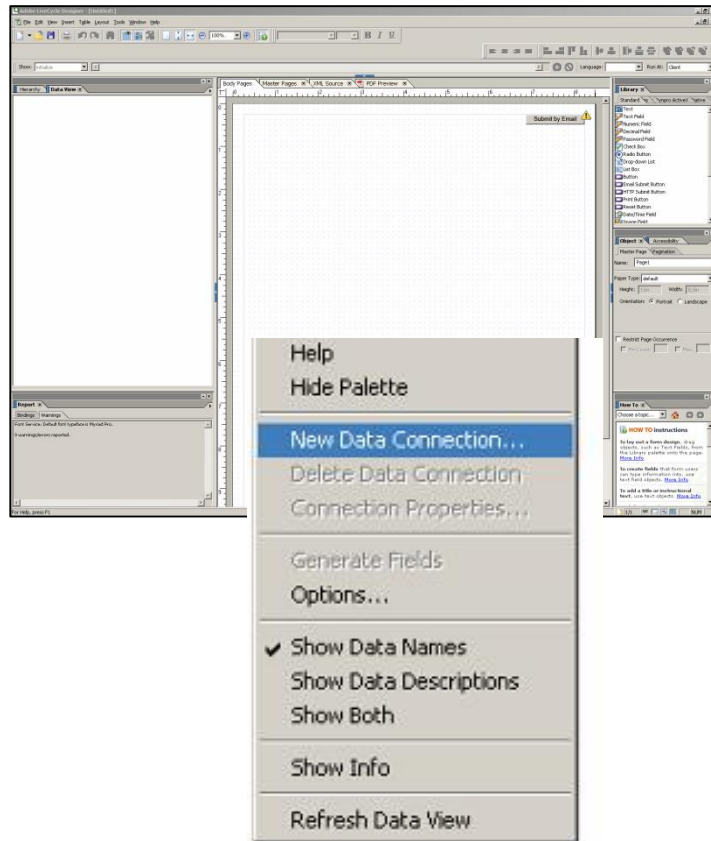


```
<?xml version="1.0" encoding="utf-8" ?>
- <wsdl:definitions targetNamespace="http://sap.com/xi/CRM/Global" xmlns:http="http://schemas.xmlsoap.org/wsdl/http/"
  xmlns:soap="http://schemas.xmlsoap.org/wsdl/soap/" xmlns:tns="http://sap.com/xi/CRM/Global"
  xmlns:wSDL="http://schemas.xmlsoap.org/wsdl/" xmlns:xsd="http://www.w3.org/2001/XMLSchema">
- <wsdl:types>
- <xsd:schema targetNamespace="http://sap.com/xi/CRM/Global" xmlns="http://sap.com/xi/CRM/Global"
  xmlns:xsd="http://www.w3.org/2001/XMLSchema">
  <xsd:element name="BusinessPartnerBasicDataByBusinessPartnerQuery"
    type="BusinessPartnerBasicDataByBusinessPartnerQueryMessage" />
  <xsd:element name="BusinessPartnerBasicDataByBusinessPartnerResponse"
    type="BusinessPartnerBasicDataByBusinessPartnerResponseMessage" />
- <xsd:element name="StandardMessageFault">
- <xsd:complexType>
  - <xsd:sequence>
    <xsd:element name="standard" type="ExchangeFaultData" />
    </xsd:sequence>
  </xsd:complexType>
</xsd:element>
- <xsd:complexType name="AcademicTitleCode">
- <xsd:simpleContent>
  - <xsd:extension base="AcademicTitleCodeContent">
    <xsd:attribute name="listID" type="xsd:token" />
    <xsd:attribute name="listVersionID" type="xsd:token" />
    <xsd:attribute name="listAgencyID" type="xsd:token" />
    <xsd:attribute name="listAgencySchemeID" type="xsd:token" />
    <xsd:attribute name="listAgencySchemeAgencyID" type="AgencyIdentificationCode" />
  </xsd:extension>
```

- The WSDL of a service can be easily generated and stored

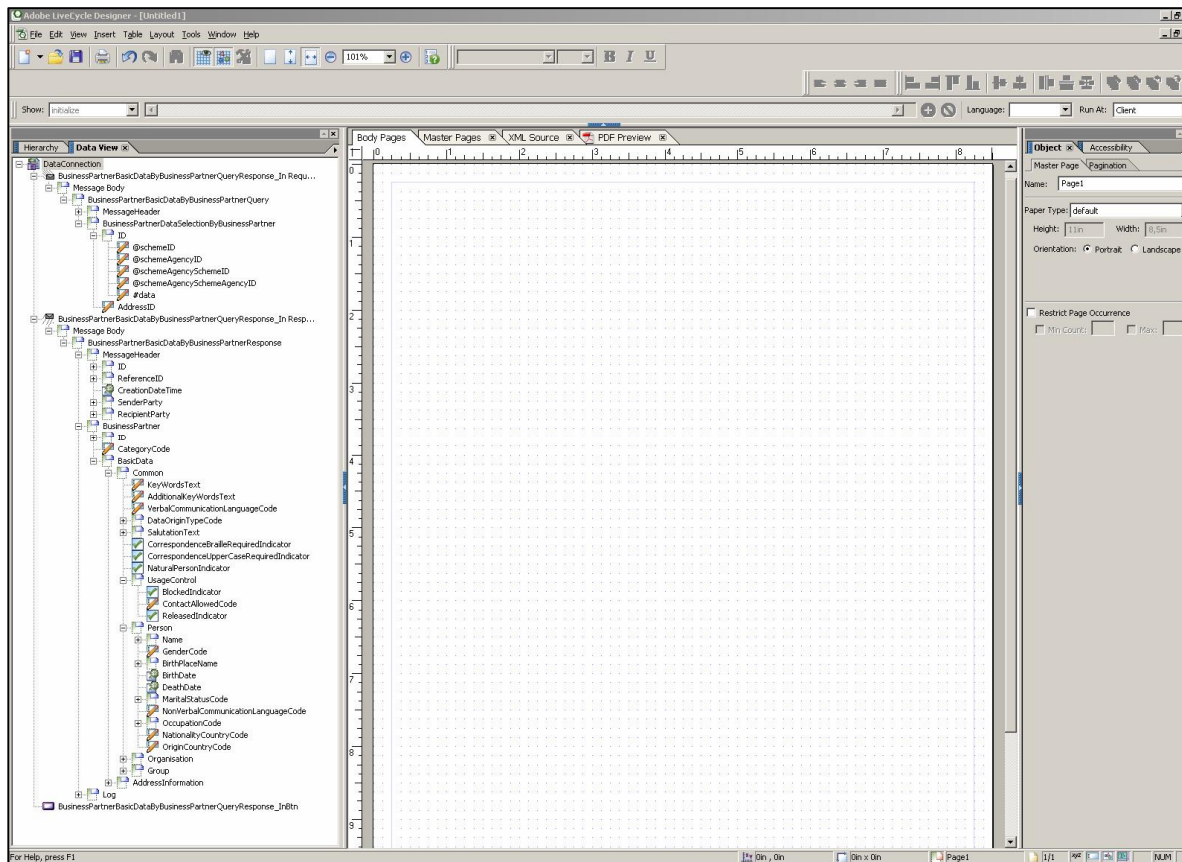
Step 3: Consuming the Web Service

Example: Form Designer



- The WSDL can be easily imported into the Adobe Interactive Forms Designer

Step 3: Consuming the Web Service Example: Form Designer (cont.)



- The service request and response messages are displayed in the data view of the designer
- Now the form can be built by dragging and dropping the attribute fields

Step 3: Consuming the Web Service Example: Form Designer (cont.)



The screenshot displays the Adobe LiveCycle Designer interface for a form titled "Service Order". The left pane shows the Hierarchy/Data View with a tree structure of data connections and fields. The main design area features a grid with various form elements, including text boxes, tables, and a signature block. The PDF Preview pane on the right shows the rendered form.

Service Order Form Fields:

- Order Description: [Text Box]
- Service Order: 100010003
- Data:**
 - Requested Start Date: [Text Box]
 - Requested Start Time: [Text Box]
 - Requested End Date: [Text Box]
 - Requested End Time: [Text Box]
 - Assignment Start Date: [Text Box]
 - Assignment Start Time: [Text Box]
 - Assignment End Date: [Text Box]
 - Assignment End Time: [Text Box]
- Reference Object:**
 - Initial Date: [Text Box]
 - Component: [Text Box]
 - Product: [Text Box]
 - Object: [Text Box]
- Order Party:**
 - Name: [Text Box]
 - Address: [Text Box]
 - City, State: [Text Box]
 - Country: [Text Box]
 - Phone: [Text Box]
 - Email: [Text Box]
- Contact Person:**
 - Name: [Text Box]
 - Address: [Text Box]
 - City, State: [Text Box]
 - Country: [Text Box]
 - Phone: [Text Box]
 - Email: [Text Box]
- Notes:** [Text Area]
- Services Table:**

| Service ID | Description | Planned Quantity | Confirmed Quantity | Unit |
|------------|----------------|------------------|--------------------|------|
| REPAIR | Repair Service | 2 | | Hour |
- Service Parts Table:**

| Part No | Description | Planned Quantity | Confirmed Quantity | Unit |
|------------|----------------------|------------------|--------------------|-------|
| 10001-36N | Clear Mechanism Unit | 1 | | Place |
| 10002-63M | Ball Bearing | 1 | | Place |
| 10001-38-M | Casting Seal | 1 | | Place |
- Other Expenses Table:**

| Expense No | Description | Quantity | Unit | Total Amount | Currency |
|------------|-------------|----------|-------|--------------|----------|
| | | | Place | | USD |
- Execution:**
 - Executed by: [Text Box]
 - Date: [Text Box]
 - Location: [Text Box]
 - Customer Name: [Text Box]
 - Signature: [Text Box]
- Confirmation Notes:** [Text Area]
- Signature Block:** [Text Box] Note: [Text Box] Service Order: [Text Box] Business Partner: [Text Box] Send Confirmation: [Text Box]

- After building the basic structure of the form, graphical elements can be added and field attributes can be set

Result: Adobe Form Consuming CRM Services



- After rendering the XML document, the PDF is ready for use

Adobe Reader - [service_xAPP.pdf]

File Edit View Document Tools Window Help

Save a Copy Search Select 54% Help

You cannot save data typed into this form.
Please print your completed form if you would like a copy for your records.

Service Order

Order Description: Gear Unit Repair Order Number: 800000666

| Dates | | Reference Object | |
|-----------------------|----------|------------------|--------------------------|
| Requested Start Date | 25.11.20 | Installed Base | 426 Assembly line |
| Requested End Date | 28.11.20 | Component | 433 RobotX-123 C124 |
| Assignment Start Date | 25.11.20 | Product | NE_42XE GearUnit NE 42Xe |
| Assignment End Date | 25.11.20 | Object | |

| Buyer Party | | Contact Person | | Notes |
|-------------|--------------------|----------------|-------------------------|---|
| Name | Kativ Technologies | Name | Jim Johnson | Robot has sometimes jerky movements. Gear unit makes curious noise. |
| Address | 7862 E Bucknell PL | Address | 7862 E Bucknell PL | |
| City, State | 80231 Denver, CO | City, State | 80231 Denver, CO | |
| Country | United States | Country | United States | |
| | | Phone | 312-458-999 | |
| | | Email | JimJohnson@kativkat.com | |

| Service ID | Description | Planned Quantity | Confirmed Quantity | Unit |
|------------|----------------|------------------|--------------------|------|
| REPA/R | Repair Service | 2 | 0 | Hour |

| Part No | Description | Planned Quantity | Confirmed Quantity | Unit |
|------------|---------------------|------------------|--------------------|-------|
| 10301-36N | Gear Mechanism Unit | 1 | 0 | Piece |
| 10032-43M | Ball Bearing | 1 | 0 | Piece |
| 10001-38-M | Casing Seal | 1 | 0 | Piece |

| Expense No | Description | Quantity | Unit | Total Amount | Currency |
|------------|-------------|----------|-------|--------------|----------|
| | | 0 | Piece | 0 | USD |

Executed by: Service 24 Inc. / PRATTVILLE AL


Date: Location: Confirmation Notes:

Customer Name: Signature: Send Confirmation

1 of 1

Adobe Form Consuming CRM Services





Service Order

Order Description _____ Order Number 800000192

Dates
Requested Start Date Requested Start Time
Requested End Date Requested End Time

Reference Object

| | | |
|----------------|----------------------|----------------------|
| Installed Base | <input type="text"/> | <input type="text"/> |
| Component | <input type="text"/> | <input type="text"/> |
| Product | <input type="text"/> | <input type="text"/> |
| Object | <input type="text"/> | <input type="text"/> |

Buyer Party
Name
Address
City, State
Country

Notes

Services and Spare Parts

| Product ID | Description | Planned Quantity | Confirmed Quantity | Unit | Item Category |
|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |

Service Confirmation

Confirmation Description Confirmation created with No:

Execution Note:

Dates
Start of Work
End of Work

Confirmation Notes

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What we will cover



1. Web Service Tool
2. Defining a Web Service
3. Consuming a Web Service
4. Wrap-up

7 Key Points to Take Home



- Build your individual service in a few minutes
- Change or copy given services “on the fly”
- Define services exactly as you need them
- Use comfortable wizard for service definition
- Manage default values for service attributes
- Reach ROI much faster for your Service-Oriented Architecture (SOA) projects
- Leverage SAP NetWeaver’s Web service infrastructure

Interested ?



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March 2007
Volume 3 | Number 2

SAP CRM 2006s Create Web Services Quickly with the New Web Service Tool

>> **Insights**

7 **Email Threading Gives IC Agents Quick Access to Customers' Email History**

11 **Pricing Made Easy Using New Transactional and Business Partner Fields**

17 **Implement an ITIL Employee Service Desk with IC WebClient**

by Markus Kupke, Development Manager, and Thilo Berndt, Solution Manager, SAP CRM

In alignment with SAP's roadmap for an enterprise service-oriented architecture, SAP CRM 2006s provides enterprise services for key business objects that you can use out of the box. In addition, you and your partners can now model your own Web services without additional programming. The new Web services tool allows you to quickly create new services tailored to the specific needs of your organization or to extend your SAP CRM system. Learn about the Web services tool and find out how to use the creation wizard introduced with it.

>> Key Concept

Web services are open interfaces that allow you to link loosely coupled systems with a technology that does not bind them to any particular programming language or platform. Web services represent an industry-wide standard. You define them with a Web Service Definition Language (WSDL) file, which communicates interface information between Web service producers and consumers.

Web services offer you flexibility to extend an application's capabilities to support specific business processes without extensive coding or complex integration. For instance, you can use Web services to allow your customers to access your product and price information from their procurement systems and to create sales orders in your SAP CRM system by linking the procurement software to your order management application.

Web services can also help you work offline by uploading data from your SAP CRM system to an Adobe interactive form that you can modify offline and synchronize later. This way, you can pass leads from your SAP CRM system to your channel partners via email. You also could send service tickets to service technicians in the field. In both examples, the recipients receive all of the information they need — they can respond and add new data by just filling out the form.

>> continue on page 3

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August/September 2007 • www.CRMExpertOnline.com

SAP CRM 2006s SAP CRM Web Services Tool: A Technical Look

by Markus Kupke, Development Manager, and Thilo Berndt, Solution Manager, SAP CRM

Gain some tips for using Web services in this technical look at the Web services tool offered in SAP CRM 2006s. By reviewing the structure of the Web services tool, you can also get a look at the new WebClient UI offered in SAP CRM 2006s and SAP CRM 2007.

>> Key Concept

Formerly applicable only to Interaction Center, the WebClient User Interface (UI) becomes the unique UI for SAP CRM 2006s and SAP CRM 2007. Primarily designed for the business user, the WebClient UI features a roles-based interface. This UI allows users of the on-demand and on-premise versions of SAP CRM to view similar screens. The UI also serves as the basis for the Web service tool.

We introduced SAP's new Web services tool in our March 2007 article, and now we'll take a more detailed look at it to provide you with some valuable tips for your projects. The technical information also gives you a good introduction to the SAP CRM architecture featured in SAP CRM 2006s and SAP CRM 2007.

With the new release, SAP has not changed the general architecture of the SAP CRM server or the business process customization. Instead, the changes focus on the UI layers, although the technology is still based on Business Server Pages (BSP). We address the changes as they occur in SAP CRM 2006s, but the information in this article also applies to SAP CRM 2007.

We'll follow the example from our March article of developing a Web service with two operations to create and read a business partner account. In this scenario, we distributed service tickets to our field technicians and external service providers using Adobe Interactive Forms. We created a Web service to fill the form and play the changed data back to SAP CRM. The Web service also allows us to upload the ticket data to the Interactive Form and send it to our field technicians via email. When the technicians return the form via email, the system uses another Web service to update the data.

This time we'll first take a look at SAP CRM's basic architecture, focusing on the most important layers. Then we'll describe the underlying technical steps. By knowing the technical background of the Web services, you'll be able to define what you want in the Web service, which lets IT build it to meet your needs.

SAP CRM Architecture and the BOL

Figure 1 depicts the complete design with respect to the CRM WebClient UI. The basic SAP CRM architecture is comprised

>> Note

Before you read this article, you should review our March 2007 article "SAP CRM 2006s: Create Web Services Quickly with the New Web Service Tool" in which we described the business benefits of the Web service tool and how to use the wizard to create a Web service. This article describes the technical background of what happens in each step of the wizard.

Figure 1. CRM WebClient architecture layers — UI (Source: SAP)

For graphics on electronic screens, call 1-703-751-8799

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- For further details on the Web Services Tool, please have a look at the CRMEXpert
- March Edition for a general overview on functions and features
 - August/ September Edition to get technical background information



- SAP Developer Network on Enterprise SOA:
www.sdn.sap.com/irj/sdn/developerareas/esa
- SAP Developer Network on Web Services
www.sdn.sap.com/irj/sdn/developerareas/esa/webservices
- SAP Developer Network on Enterprise Services
Community
www.sdn.sap.com/irj/sdn/developerareas/esa/esc
- World Wide Web Consortium on Services
www.w3.org

Further information – SAP CRM



- SAP CRM - Roll-Out Map
<https://portal.wdf.sap.corp/go/crm-rollout-map>
- SAP CRM - Ramp-Up Knowledge Transfer (RKT)
<http://service.sap.com/rkt-crm>
- SAP CRM – Demo Portal
<http://crmportal.wdf.sap.corp:1080>
- SAP CRM – WiKi
<https://wiki.wdf.sap.corp/display/SAPCRMHub/Home>
- SAP CRM - Help Portal
<http://help.sap.com/crm>
- SAP Public Web
<http://www.sap.com/crm>

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