Oracle® Cloud Adapter

User Guide for Oracle Cloud Adapter for Salesforce.com SOA Bundle Patch 12.1.3.0.1

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Content

Content	iii
Preface	vii
Audience	vii
Documentation Accessibility	
Post-Installation Guide	vii
Related Documents	vii
Conventions	viii
Part I Introduction to Oracle Cloud Adapter for Salesforce.com	1
1.1 Architecture	1
1.1.1 Architecture of Oracle Cloud Adapter for Salesforce.com	2
1.2 Lifecycle	3
Part II Oracle Cloud Adapter for Salesforce.com	1
1 Oracle Cloud Adapter for Salesforce.com	1-1
1.1 Overview	1-1
1.1.1 Functional Overview	1-1
1.1.2 Design Overview	1-2
1.2 Supported Versions and Platforms	1-3
1.2.1 Salesforce.com	1-3
1.2.1.1 Supported Versions	1-3
1.2.1.2 Supported WSDLs	1-4
1.2.1.3 Supported API	1-4
1.2.1.4 Support for Outbound	1-5
1.2.2 Oracle SOA Versions	1-5
2 Getting Started	2-1
2.1 Oracle Cloud Adapter for Salesforce.com Connection Parameters	2-1
2.1.1 User Name	2-1
2.1.2 Password	2-1
2.1.3 CSF Key	2-2
2.1.4 Downloaded Enterprise WSDL	2-2
2.2 IP Address Registration and Restrictions	2-2
2.3 Salesforce.com Permissions	2-5
2.4 Importing Salesforce.com Certificate into Client/Server	2-6
2.4.1 Generating Salesforce.com Certificate	2-6
2.4.2 Importing Salesforce.com Certificate	2-10
2.4.2.1. Importing Salesforce.com Certificate using Keytool	2-10
2.4.2.2. Importing Salesforce.com Certificate using Keystore Service (KSS)	2-12
2.5 Enabling Oracle Cloud Adapter for Salesforce.com in Design-Time and Run-Time	
2.5.1 What is Design-time and Run-time?	2-14

	2.5.2	2 Import the WSDL File into your Development Platform	2-16
3	3 Oracle Cloud Adapter for Salesforce.com - Supported Features		
	3.1	SOAP API	3-1
	3.2	Supported SOAP API Operations	3-1
	3.2.1	1 CORE Operations	3-2
	3.2	2.1.1 convertLead	3-2
	3.2	2.1.2 getDeleted	3-3
	3.2	2.1.3 getUpdated	3-4
	3.	2.1.4 merge	3-5
	3.	2.1.5 undelete	3-5
	3.	2.1.6 upsert	3-6
	3.2.2	2 CRUD Operations	3-7
	3.3	2.2.1 create	3-8
	3.3	2.2.2 retrieve	3-8
	3.2	2.2.3 update	3-9
	3.2	2.2.4 delete	3-10
	3.2.3	3 MISC Operations	3-10
	3.2	2.3.1 getUserInfo	3-11
	3.1	2.3.2 process	3-12
	3.2.4	4 SOSL and SOQL Operations	3-14
	3.2	2.5 query	3-15
	3.1	2.6 queryAll	3-15
	3.2	2.7 search	3-16
	3.2	2.8 queryMore	3-16
	3.3	Salesforce.com SOAP Headers	3-18
	3.3.1	1 Request Headers	3-18
	3.	3.1.1 AllOrNoneHeader	3-18
	3.	3.1.2 AllowFieldTruncationHeader	3-19
	3.	3.1.3 AssignmentRuleHeader	3-19
	3.3	3.1.4 EmailHeader	3-20
	3.3	3.1.5 DebuggingHeader	3-20
	3.	3.1.6 MruHeader	3-21
	3.3	3.1.7 PackageVersionHeader	3-21
	3.3	3.1.8 QueryOptions	3-21
	3.3.2	2 Response Headers	3-22
	3.3	3.2.1 DebuggingInfo	3-22
	3.	3.2.2 LimitInfoHeader	3-22
	3.4	Session Management	3-22
	3.4.1	1 Design Phase	3-22
	3.4.2	2 Execution Phase	3-23
	3.5	Handling Polymorphic Behavior of Salesforce.com Schema	3-24
	3.6	Security Management	3-25
	3.7	Test Functionality	3-25
	3.7.1	1 Design-Time Test Functionality	3-26
	3.8	Fault Handling	3-26
	3.9	Salesforce.com Limit and Restriction Handling	3-27
	3.10	Support for Bind Parameters	3-29
4	Desian-	Time: Using Oracle Cloud Adapter for Salesforce.com Configuration Wizard	4-1
,	4.1	Oracle Cloud Adapter for Salesforce.com Plug-in	
	4.2	Oracle Cloud Adapter for Salesforce.com Walkthrough	

4.2.1	Welcome Page	4-2
4.2.2	Salesforce Cloud Server Connection Page	4-3
4.2.2	2.1 Enterprise WSDL Location	4-3
4.2.2	2.2 Authentication Key	4-4
4.2.2	2.3 Test Connection Functionality	4-5
4.2.3	Salesforce.com Cloud Operation Configuration Page	4-5
4.2.3	3.1 Operation Category	4-6
4.2.3	3.2 SFDC Operation	4-6
4.2.3	3.3 API Version	4-6
4.2.3	3.4 WSDL Operation	4-6
4.2.3	3.5 Business Objects	4-6
4.2.3	3.6 SOQL and SOSL Page	4-7
4.2.4	Header and Properties Page	4-9
4.2.5	Finish Page	
4.3 D	esign-time Artifact Generation	
4.3.1	JCA File	
4.3.2	Integration WSDL	4-11
5 Integratio	n with Different Service Components (BPEL/Mediator) in Oracle SOA Suite	
	verview	
	onfiguring the CSF Key on Enterprise Manager Console	
	esigning a Composite for Service Integration	
5.3.1	Define Composite for BPEL and Mediator	
5.4 C	onfigure Oracle Cloud Adapter for Salesforce.com	
5.5 lr	ntegration with BPEL	5-16
5.6 D	eploy the Composite	5-24
5.7 T	est the Composite	5-25
5.7.1	Test the Outbound Process	5-25
6 Configurir	ng Outbound Processing Using Oracle Service Bus	6-1
	verview of Application Adapter Integration with Oracle Service Bus	
	reating Outbound Processes Using Oracle Service Bus	
6.2.1	Creating OSB Projects Using OSB Console	
6.2.2	Creating OSB Projects Using JDeveloper	
-	esting OSB project from Service Bus Console	
	ng the Outbound Processing Using BPM	
	verview	
	onfiguring the CSF Key on Enterprise Manager Console	
	esigning a Composite for Service Integration	
7.3.1	Define Composite for BPM	
	onfigure Oracle Cloud Adapter for Salesforce.com	
	ntegration with BPM	
	eploy the Composite	
	est the Composite	
7.7.1	Test the Outbound Process	
8 Configurin	ng the Oracle Cloud Adapter for Salesforce.com on Oracle WebLogic Server	8-1
8.1 0	racle Cloud Adapter for Salesforce.com Run-Time Properties	8-1
8.1.1	Generic Properties	8-1
8.1.2	Properties available in the response	8-2
8.1.3	Retry Properties	8-4
8.1.3	3.1 Providing the Property Values in the Composite	8-5
8.1.3	3.2 Providing the Property Values at Enterprise Manager Console	8-6

8.1.4	Precedence of Salesforce.com Property Values	8-6
9 Troubles	shooting and Error Messages	
9.1	Troubleshooting and Error Messages	
9.1.1		
9.1.2	Oracle SFDC Cloud Adapter Run-time	9-2
9.2	API Fault	9-3
9.3	Status Code	9-3
9.4	Known Issues	9-3
10 Migrat	ion Support	
10.1	Complete Backward Compatibility	
10.2	Migrating 11g Application and Projects to 12c	
10.3	Points to Remember	
11 Oracle	Cloud Adapter for Salesforce.com Use Cases	11-1
11.1.	BPEL Use Cases	
11.1.		
11.1.		
11.1.		
11.2.	BPM Use Cases	
11.2.	1. Define Composite for BPM	11-73
11.2.	2. Configure Oracle Cloud Adapter for Salesforce.com	11-80
11.2.	3. Integration with BPM	11-88
11.2.	4. Deploy the Composite	11-117
11.2.	5. Test the Composite	11-118
11	.2.5.1 Test the Outbound Process	11-119
A Appendix .		
	Generating the Enterprise WSDL	
A.2	CSF Key in Enterprise Manager	4
Glossary		1
Terms and A	cronyms	1
Index		1

- Audience
- Documentation Accessibility
- Related Documents
- Conventions

Audience

Oracle Fusion Middleware User Guide for Oracle Cloud Adapter for Salesforce.com is intended for those who wish to use the Adapter for integrating Applications with Salesforce.com.

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http://www.oracle.com/pls/topic/lookup?ctx=acc&id=info or visit
http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs if you are hearing
impaired.

Post-Installation Guide

Oracle Cloud Adapter for Salesforce.com Post-installation Guide: http://docs.oracle.com/middleware/1213/cloudadapterrightnow/OCAIG/toc.htm

Related Documents

For more information, see the following documents in the Oracle Fusion Middleware 12c Release (12.1.3.0.0) documentation set:

- Oracle Fusion Middleware Programming Resource Adapters for Oracle WebLogic Server
- Oracle Fusion Middleware User's Guide for Technology Adapters
- Oracle Fusion Middleware Developer's Guide for Oracle SOA Suite
- Oracle Fusion Middleware Administrator's Guide for Oracle SOA Suite and Oracle Business Process Management Suite
- Oracle Fusion Middleware Administrator's Guide for Oracle Service Bus

Conventions

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
italic	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
monospace	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

The following text conventions are used in this document:

Part I

Introduction to Oracle Cloud Adapter for Salesforce.com

This chapter provides an introduction to the Oracle Cloud Adapter for Salesforce.com.

With an exponential increase in adoption of Cloud Based Applications across Enterprises, there is also an increased need for simplified, reliable and secure connectivity between these applications with other Cloud and On-Premise Applications. Most Cloud Applications in the market today have their own distinct data model and unique mechanisms for enabling connectivity, authentication, authorization and session management, etc. This disparity adds complexity in the development and maintenance of integrations, and an increased time-to-market as the number of Applications in the Enterprise integration mix grows. Oracle Fusion Middleware has significantly simplified integrations with these Cloud Applications by providing a standard platform for integration that not only enables connectivity, but also lays a strong foundation to address aspects of audits, compliance, security and governance.

The Oracle Cloud Adapters, a key component of the Oracle SOA Suite, builds on the above platform to enable Standards based Connectivity to Cloud based Applications from On-Premise, Legacy and other Cloud Applications, while significantly simplifying the overall life-cycle and user experience. It shields the integration modeler from hand-coding and configuring dedicated logic for handling connectivity, security, and session management etc. individually for each Cloud Application being integrated with. It also safeguards the user from the need for in-depth expertise on the complex functional and technical knowledge of the applications. Thus, with these Adapters addressing all the requisites for managing integration with the applications, the Developers can focus on building the business logic for the integration and business processes.

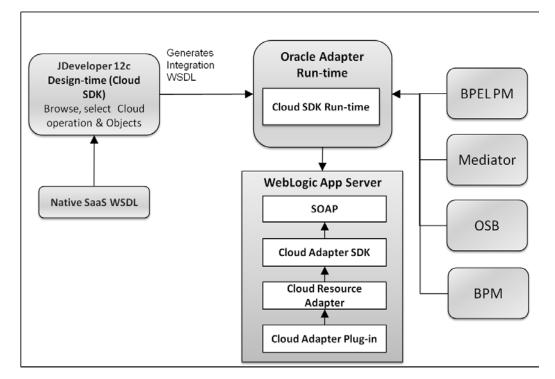
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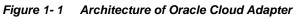
- Section 1.1, "Architecture"
- Section 1.2, "Lifecycle"

1.1 Architecture

Oracle Cloud Adapter framework and SDK are the new offerings provided by Oracle in Oracle SOA Suite. Figure 1-1 depicts the architecture of Oracle Cloud Framework. The Oracle Cloud Framework has two main components:

Design-time: Oracle Cloud Adapters are configured at design-time via the Adapter Configuration Wizard in JDeveloper. The Wizard leverages the underlying Cloud SDK to facilitate browsing of cloud application metadata and generation of project artifacts to be used at runtime. **Run-time:** It includes Oracle run-time cloud SDK which helps in creation of cloud application (e.g. Salesforce.com) adapter run-time plug-in. Oracle WebLogic server is having Cloud Framework running, supported by Oracle Cloud Run-time SDK, which is a backbone of all cloud adapters. Cloud Framework uses one common JNDI name which is being referred by all cloud adapters.





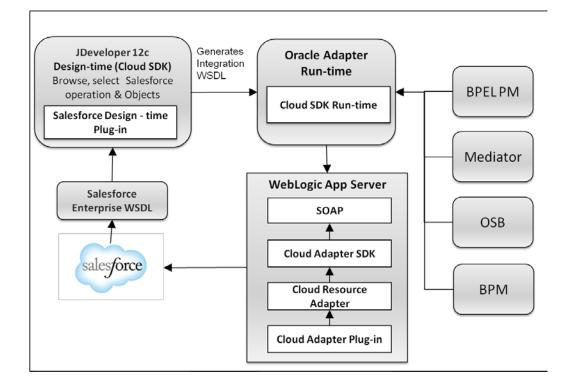
1.1.1 Architecture of Oracle Cloud Adapter for Salesforce.com

The Oracle Cloud Adapter for Salesforce.com was built using the Oracle Cloud Adapter Framework.

Design-time: The Salesforce.com Adapter is configured using the Adapter Configuration Wizard within JDeveloper. User can drag and drop the adapter from the component palette to the External References swim lane to start configuring the adapter. The Wizard enables the user to graphically browse and select Business Objects and Operations of interest for integration.

Run-time: The Runtime component of the Salesforce adapter implements the Cloud Runtime SDK to interact with Salesforce.com Enterprise WSDL SOAP APIs.

Figure 1-2 shows the Architecture of Oracle Cloud Adapter for Salesforce.com.

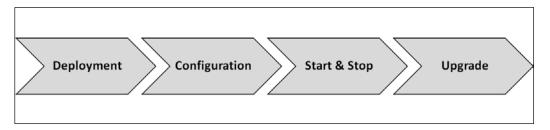




1.2 Lifecycle

In general, the lifecycle of an Oracle Cloud Adapter for Salesforce.com instance includes the following four stages, as shown in Figure 1-3.

Figure 1-3 lifecycle of Oracle Cloud Adapter for Salesforce.com



Deployment: Oracle Cloud Adapter for Salesforce.com gets installed and deployed as per the instructions provided in the section, "Deploy the Composite".

Configuration: Oracle Cloud Adapter for Salesforce.com installation and deployment happens with a default configuration provided by Oracle. If you want to change design-time configuration files, refer to the section, "Deploy the Composite".

Start and Stop of Adapter: Since Oracle Cloud Adapters architecture is different from JCA Adapters, the deployment section of WebLogic console does not show cloud adapters. The Cloud Adapter instances are stopped when the WebLogic server is shut down and similarly the instances are started when WebLogic server is booted.

Upgrade: Oracle will release the latest version of Oracle Cloud Adapter for Salesforce.com either in the form of OPatch or bundled with new versions of the Oracle SOA Suite. Oracle Cloud Adapter for Salesforce.com can be upgraded without impacting current functionalities. Future upgrades of Oracle Cloud Adapter for Salesforce.com will also have backward compatibility, so that the existing composites do not become obsolete in the upgraded environment.

Part II

Oracle Cloud Adapter for Salesforce.com

This part provides an overview of the Oracle Cloud Adapter for Salesforce.com. It contains the following chapters:

- Oracle Cloud Adapter for Salesforce.com
- Getting Started
- Oracle Cloud Adapter for Salesforce.com Supported Features
- Design-Time: Using Oracle Cloud Adapter for Salesforce.com Configuration Wizard
- Integration with Different Service Components (BPEL/Mediator) in Oracle SOA Suite
- Configuring Outbound Processing Using Oracle Service Bus
- Configuring the Oracle Cloud Adapter for Salesforce.com on Oracle WebLogic Server
- Troubleshooting and Error Messages
- Migration Support
- Oracle Cloud Adapter for Salesforce.com Use Cases

1

Oracle Cloud Adapter for Salesforce.com

The Oracle Cloud Adapter for Salesforce.com enables integration to Salesforce CRM using Oracle SOA Suite and BPM.

This chapter contains the following topics:

- Section 1.1, "Overview"
- Section 1.2, "Supported Versions and Platforms"

1.1 Overview

Oracle Cloud Adapter for Salesforce.com is a key component within Oracle Fusion Middleware that enables Integration of On-Premise and SaaS applications with Enterprise, Unlimited or Developer Editions of Salesforce.com

1.1.1 Functional Overview

The Oracle Cloud Adapter for Salesforce.com allows seamless connection of different systems to Salesforce.com. It uses the Oracle SOA Suite to communicate with Salesforce.com, leveraging the SOAP API of Salesforce and supports all the major operations of SOAP API for standard as well as custom objects. The Salesforce.com WSDLs are polymorphic, for instance, the element sObject can refer to a plethora of objects, say account, contact, lead, etc. The support for this polymorphic behavior is limited in other options available in the market to integrate with Salesforce.com. The Oracle Cloud Adapter for Salesforce.com WSDLs through a simplified user interface. It enables you to define the operation you wish to perform in your API call and the object you wish to modify with this call. The integration WSDL that is generated is not polymorphic and contains the selected operation and object. The Oracle Cloud Adapter for Salesforce.com also provides a market-leading session management capability.

The adapter is compatible with the last six versions of Salesforce.com as described in section Salesforce.com "Supported Versions".

The Oracle Cloud Adapter for Salesforce.com is based on the Cloud Adapter Framework. The Cloud Framework relies on an underlying JCA framework which uses a common JNDI for all cloud adapters in Oracle SOA Suite 12c. The operations to be performed (CREATE, UPDATE, DELETE, etc.) are modeled using the design-time wizard. (For more information, refer to the section "

Design-Time: Using Oracle Cloud Adapter for Salesforce.com Configuration Wizard"). The inputs and outputs of the Oracle Cloud Adapter for Salesforce.com are XML; this allows the Oracle Cloud Adapter for Salesforce.com to be plugged into Oracle Fusion Middleware and enable the use of other SOA tools for XML transformations and assignments.

To connect to Salesforce.com, there are certain prerequisites:

- Enterprise WSDL. For more information, refer to the section "A.1 Generating the Enterprise WSDL"
- Valid Salesforce.com credentials. For more information, refer to the section "Oracle Cloud Adapter for Salesforce.com Connection Parameters".

 Client certificates. For more information, refer to the section "Importing Salesforce.com Certificate into Client/Server".

The Oracle Cloud Adapter for Salesforce.com can be used at present, in an SOA/OSB/BPM process as described in section "Designing a Composite for Service Integration".

1.1.2 Design Overview

This section gives an overview about the design of Oracle Cloud Adapter for Salesforce.com. Figure 1-1 shows how the Oracle Cloud Adapter for Salesforce.com interacts with the various design-time and deployment artifacts.

Weblogic Application Server Cloud Adapter Runtime Framework SOAP/HTTP salesforce Salesforce Adapter JCA JCA Binding Component Fabric SOA/OSB SOAP/HTTP Runtime JDeveloper SOA Deployment Studio Composite.xml **Cloud Adapter** Configuration Wizard SOA Artifacts Design time WSDL salesforce.jca

Figure 1-1 How the Oracle Cloud Adapter for Salesforce.com Works

Description of Figure 1-1 How the Oracle Cloud Adapter for Salesforce.com works.

- The Oracle Cloud Adapter for Salesforce.com is an adapter which has been built using the Oracle cloud SDK. For more information on deployment, refer to the section, "Deploy the Composite".
- The Oracle Cloud Adapter for Salesforce.com can have multiple adapter instances; an adapter instance is basically a configured Oracle Cloud Adapter for Salesforce.com, which can connect with Salesforce.com and invoke the Salesforce Cloud operation which has been selected by the user during the configuration. Each adapter instance has its own artifacts i.e. Integration WSDL and JCA file.

- Because each adapter instance points to a single Salesforce operation, there is a one-toone correspondence from adapter instances to Salesforce.com cloud operation. To see the list of supported operation, refer to the section "Supported SOAP API Operations".
- The adapter instances are part of the SOA composites. Each time the adapter wizard is run, it creates one instance of the Cloud Adapter. A Cloud Adapter instance consists of a jca file, a WSDL, and a reference element added to the composite.xml.

For more information, refer to the section "Oracle Cloud Adapter for Salesforce.com Walkthrough".

The artifacts generated in the above steps are used by the Oracle Cloud Adapter for Salesforce.com which is part of the Cloud Adapter Run-time framework for processing the request and response from Salesforce.com.

Table 1-1 shows the Adapter Configuration Wizard Generated SOA Composite Adapter Artifacts.

File	Description
<servicename>.wsdl</servicename>	The Oracle Cloud Adapter for Salesforce.com generates this non-
	polymorphic integration WSDL for seamless integration to
	Salesforce.com. An abstract WSDL that defines, the name of
	operations and objects selected along with the request and
	response structures. Unlike the Enterprise WSDL available from
	Salesforce.com, it is not polymorphic and is therefore much more
	integration-friendly.
<servicename>_sale</servicename>	The JCA file contains the internal implementation details used by
sforce.jca	the adapter during run-time. It contains the different interaction
	and connection properties used by the adapter. The operations
	describe the action that needs to be taken against the end point,
	such as Create, Update, etc. The contents of the file are
	determined by choices made during the Adapter Configuration.

Table 1-1 Adapter Configuration Wizard Generated SOA Composite Adapter Artifacts

1.2 Supported Versions and Platforms

This section provides an overview of the different versions and platforms of Salesforce.com as well as of different operating systems supported by the Oracle Cloud Adapter for Salesforce.com.

1.2.1 Salesforce.com

1.2.1.1 Supported Versions

The Oracle Cloud Adapter for Salesforce.com supports the previous six versions of Salesforce.com starting from the current version. The list of supported Salesforce.com Editions is given below:

- v28
- v29
- v30
- v31
- v32
- v33

1.2.1.2 Supported WSDLs

A Web Service Description Language (WSDL) file is required to access the Salesforce.com Web Service. It defines the available web service. It is used by the development platform to generate the API required to access Salesforce.com web service. The WSDL can be generated directly from Salesforce.com UI if one has access to the download page, or it can be requested from the organization's Salesforce administrator. Web Service Description Language (WSDL) contains all the relevant information required to invoke a web service. It is extensible and allows the description of endpoints and their messages irrespective of the network protocols and message formats. Oracle Cloud Adapter for Salesforce.com supports integration with Salesforce.com via the Enterprise WSDL.

Generate the most-recent WSDL for the organization by clicking on Setup>Develop>API. For steps on how to generate the Enterprise WSDL for your Salesforce.com organization, see section "A.1 Generating the Enterprise WSDL".

Enterprise WSDL – Most enterprise users use this API to develop client applications for their organization. It is a strongly typed representation of the organization's data. It contains the information about data types, schema, and fields of the development environment. This allows for a tight integration between the Salesforce.com Web service and the WSDL. The Enterprise WSDL is object dependent, i.e. if custom objects or custom fields are created in the organization's Salesforce configuration, it changes. The Enterprise WSDL also contains the versions of the installed packages in the organization. This adds an extra step in WSDL generation where the user has to select the versions of managed packages.

When generating the enterprise WSDL, keep in mind the following scenarios:

- Addition of custom objects.
- Modification of custom objects.
- Addition of custom fields.
- Modification of custom fields.
- Changes/updates to installed packages.

For all the above-mentioned scenarios, the WSDL file needs to be regenerated to permit access to these changes. Also, for any change in the installed packages, the WSDL needs to be regenerated with the specific package version. The new WSDL will have the objects and fields of only the packages selected during generation.

1.2.1.3 Supported API SOAP API

To meet the needs of the complex business processes that an organization may need to orchestrate, Salesforce.com provides a number of ways for advanced administrators and developers to implement different functionalities. SOAP API is one such way.

SOAP API can be used to fetch and manipulate different records of standard as well as custom objects in Salesforce.com through operations like create, update, delete, query, etc. It supports all languages that support Web Services.

The organization must use Enterprise Edition, Unlimited Edition, or Developer Edition to be able to use SOAP API. An existing Salesforce.com customer can upgrade to either Enterprise or Unlimited Edition by contacting their account representative.

1.2.1.4 Support for Outbound

The Oracle SOA Suite Oracle Cloud Adapter for Salesforce.com does not support Salesforce making outbound synchronous calls to SOA Suite, that scenario must be implemented using the standard Web Service Binding in SOA Suite. It will be supported in the adapter in a future release. Automatic triggering of SOA Composite based services upon occurrence of SFDC events can be done by registering SOA Composite services end points manually within SFDC.

1.2.2 Oracle SOA Versions

Oracle Cloud Adapter for Salesforce.com is available in the following Oracle SOA Suite versions:

- 11g (11.1.1.7.0), alternatively referred as Oracle SOA Suite 11g PS6. Kindly refer the document <u>User Guide for Oracle Cloud Adapter for Salesforce.com</u> for more details.
- 12c (12.1.3.0.0): This document is intended for 12c version of SOA Suite.

This section provides a quick-start guide to enable the use of Oracle Cloud Adapter for Salesforce.com. This chapter explains the basic steps the user must follow to ensure that the Oracle SOA Suite 12c is properly configured for the Oracle Cloud Adapter for Salesforce.com. You must follow these steps to successfully connect with Salesforce.com and then proceed with implementing your integration. This chapter contains the following topics:

- Section 2.1, "Oracle Cloud Adapter for Salesforce.com Connection Parameters"
- Section 2.2, "IP Address Registration and Restrictions"
- Section 2.3, "Salesforce.com Permissions"
- Section 2.4, "Importing Salesforce.com Certificate into Client/Server"
- Section 2.5, "Enabling Oracle Cloud Adapter for Salesforce.com in Design-Time and Run-Time"
- Section 2.6, "Import the WSDL File into Your Development Platform"

2.1 Oracle Cloud Adapter for Salesforce.com Connection Parameters

The Oracle Cloud Adapter for Salesforce.com requires the user's Salesforce.com login credentials to successfully integrate with Salesforce.com.

The required connection parameters are:

- Username (in the form of an e-mail address).
- Password + Security token.
- CSF (Credential Store Framework) key.

Let us first begin with the description of connection parameter for Salesforce.com.

2.1.1 User Name

Salesforce.com provides every user in an organization a unique username. This username is in the form of an e-mail address. It could either be the same as the registered e-mail address of the user or some other username but always in an e-mail format.

For Example, if you have the registered e-mail id as *john.doe@oracle.com*, your username for Salesforce.com can be *john.doe@oracle.com* or you can choose another username in the form of an e-mail address like *john.doe@salesforce.com*

2.1.2 Password

The design of Salesforce.com APIs is such that the security token generated at the time of password reset is required to be appended at the end of the password. For example, if the

security token automatically generated by Salesforce.com is SSSSSSSSSSS and the password is "password", then the user is required to enter "passwordSSSSSSSSSSS" to log in.

The security token can be obtained by changing the password or resetting the security token through the Salesforce.com UI. The security token is sent by mail to the e-mail address of the user registered with Salesforce.com for that particular organization. This token is valid until the user resets the security token for his/her account or changes the password.

Note: In case the user generates a new security token, then all the existing composites using the old security token in their passwords will need to be updated.

2.1.3 CSF Key

The Adapter uses the Credential Store Framework to retrieve the username and password required for Salesforce.com authentication. This key identifies a user's Salesforce.com login credentials during design-time and has to be configured as exactly the same in Enterprise Manager on WebLogic Server under the CSF Map name "oracle.wsm.security" (Case sensitive).

For steps on how to configure CSF key in WebLogic Server, refer to the section "A.2 CSF Key in Enterprise Manager"

2.1.4 Downloaded Enterprise WSDL

A copy of the Enterprise WSDL of your Salesforce.com organization is needed for successful connection of the Oracle Cloud Adapter for Salesforce.com to Salesforce.com. To view steps on how to generate the enterprise WSDL, refer to the section "A.1 Generating the Enterprise WSDL".

2.2 IP Address Registration and Restrictions

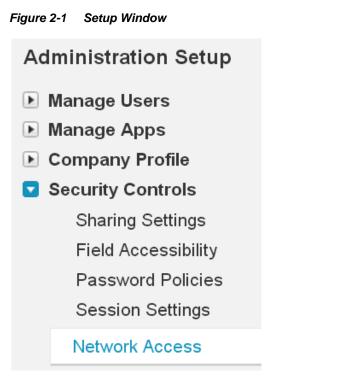
When a user tries to access Salesforce.com via a new IP address or machine, Salesforce.com requires a verification code to be entered for the user. This code is mailed to the user's registered e-mail address. To circumvent this login challenge, a list of IP address ranges can be set for all users from which they can always log in without facing such issues.

Restricting Login IP Ranges for the Organization

A list of IP addresses can be specified in Salesforce.com to protect the organization's data and from these addresses, the users can always log in without receiving a login challenge:

To register the list of IP addresses, follow the steps given below:

- 1. Log in to the salesforce.com using a valid user name and password.
- 2. Click on User Menu for user name, and then click on Setup.
- **3.** Under Administration Setup, Expend Security Controls and click on Network Access, as shown in Figure 2-1.



4. Network Access page is displayed, as shown in Figure 2-2.

Figure 2-2	Network Access Page
i iguio z z	Methon Addedd I uge

Network Access				
The list below contains IP address ranges from sources that your organ Users logging in to salesforce.com with a browser from trusted networks to access salesforce.com without having to activate their computers.				
Trusted IP Ranges	New			
	New End IP Address			

5. Click New, the Trusted IP Range Edit page is displayed, as shown in Figure 2-3.

Network Access Trusted IP Range Edit	Help for this Page 🕜				
Enter the range of valid IP addresses from which user logins are trusted. Users logging in from trusted IP addresses are not asked to activate their computers and may use their user password instead of a security token to log in to the API or a desktop client such as Connect for Outlook, Connect Offline, Connect for Office, Connect for Lotus Notes, or the Data Loader.					
Please specify IP range	= Required Information				
Start IP Address End IP Address					
Save					

6. Enter a valid IP address in the **Start IP Address** field and a higher IP address in the **End IP Address** field.

The range of allowed IP addresses from which users can log in is defined by the start and end addresses. To allow logins from only one address, the administrator can enter that particular address. For example, to allow logins from only 125.12.3.0, enter 125.12.3.0 as both the start and end addresses. The start and end IP addresses in an IPv4 range must include no more than 33,554,432 addresses (2^{25} , a /7 CIDR block). Here are some examples of valid ranges:

- 0.0.0.0 to 1.255.255.255
- 132.0.0.0 to 132.255.255.255
- 132.0.0.0 to 133.255.255.255

7. Click Save.

When users log in to Salesforce.com via the API, Salesforce.com confirms that the login is authorized as follows:

- 1. Salesforce.com checks whether the user's profile has login hour restrictions. If login hour restrictions are specified for the user's profile, any login outside the specified hours is denied.
- 2. Salesforce.com then checks whether the user's profile has IP address restrictions. If IP address restrictions are defined for the user's profile, any login from an undesignated IP address is denied, and any login from a specified IP address is allowed.
- **3.** If profile-based IP address restrictions are not set, Salesforce.com checks whether the user is logging in from an IP address they have not used to access Salesforce.com before:

- If the user's login is from an IP address in your organization's trusted IP address list, the login is allowed.
- If the user's login is not from a trusted IP address the login is blocked.

Whenever a login is blocked or returns an API login fault, Salesforce.com must verify the user's identity.

For access via the API or a client, the user must add their security token to the end of their password in order to log in.

2.3 Salesforce.com Permissions

The Cloud Adapter for Salesforce.com is based on the SOAP API of Salesforce.com. For the users to successfully make calls for different operations (create, update, deleted, query, etc.) they must have the requisite permissions for performing these operations on specific objects. This section provides an overview of the permissions the user must have to make the following calls:

- Create: You must have permission to create the particular object that is selected during design time. For example, if you are trying to create an account, you must have the permission to create new accounts.
- Retrieve: If you are trying to fetch the records of a certain object, you must have at least the read permission for that object. If you are trying to fetch a record of the Campaign object, you must have the permission to access Campaign object in Salesforce.com.
- Update: You must have permission to update the particular object that is selected during the design-time. For example, if you are trying to update an account, you must have the permission to change the account records.
- Delete: You must have the permission to delete the records of the object selected during the run-time. For example, if you have selected Lead object during design time, you must have the permission to delete Leads.
- **Upsert:** A user trying to use the upsert operation must have both create and update privileges for the said object to successfully make the upsert call.
- **ConvertLead:** A user trying to convert a lead to account and/or opportunity must have read and write permissions for the aforementioned objects.
- Merge: The merge operation works only on Account, Lead, and Contact objects.
 You must have full access to these objects.
- Query: This operation can be used to fetch records for several objects. To be able to successfully fetch these records you must have the permission to access these objects and their fields.
- Search: This operation is used to search records in the Salesforce.com organization and only the objects to which the user performing the operation has access to can be fetched. For instance, if you do not have access to Pricebooks, the records from Pricebook that match the search string will not be fetched.

2.4 Importing Salesforce.com Certificate into Client/Server

This section provides an overview of how to generate and import the Salesforce.com certificate for your organization into your client/server. The Oracle Cloud Adapter for Salesforce.com uses the certificate generated by Salesforce.com to establish a two-way SSL authentication. This enhances the security as the target of SOAP calls made by the Oracle Cloud Adapter for Salesforce.com receives the certificate and can use it to authenticate the request against its keystore.

2.4.1 Generating Salesforce.com Certificate

The Salesforce.com Client certificate has to be downloaded from the Salesforce.com application user interface. This certificate has to be imported into the server for successful handshaking with Salesforce.com. The Oracle Cloud Adapter for Salesforce.com uses two-way SSL when interacting with Salesforce.com and hence requires this certificate. On the WebLogic server, these certificates are required to be imported.

To download the certificate, use the following procedure:

- 1. Log in to the salesforce.com using a valid user name and password.
- 2. Click on User menu for user name, and select Setup.
- **3.** Under **App Setup**, Expand **Develop** and click on **API** to display the **WSDL download** page, as shown in Figure 2-4.

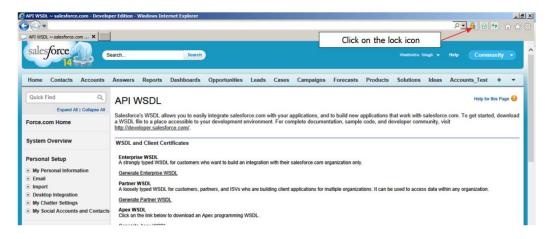


Figure 2-4 API WSDL Download Page

4. Click on the **lock** icon as indicated in the above Figure 2-4. A small window will pop up. Click on the **view certificates**, as shown in Figure 2-5.

Note: Here, internet explorer (version 10) is used for demonstration. Experience may differ if you will be using other browser or other version of internet explorer. But idea here is to click on security lock to fetch the certificate information.

Figure 2-5 View Certificates



5. After clicking on the view certificates another window pops up providing the details of the certificate. Open the **Certification Path** tab and select VeriSign as shown in the screenshot below. The **View Certificate** button would be enabled, click the same to view certificate details.



Certificate	J
General Details Certification Path	
VeriSign VeriSign VeriSign Class 3 Secure Server CA - G3	
	i
<u>V</u> iew Certificate	,
Certificate <u>s</u> tatus:	
This certificate is OK.	,
Learn more about <u>certification paths</u>	
ОК	

6. A new page opens above the existing page, open the **Details** tab and click on **Copy to File** button, as shown in Figure 2-7.

Figure2-7 Details Tab

Certifica	ate	x i
Gene	ral Details Certification Path	
	Certificate	
	General Details Certification Path	
	Show: <all></all>	
	Field	Value
	Version Serial number Signature algorithm	V3 18 da d1 9e 26 7d e8 bb 4a 21 sha1RSA
	Signature hash algorithm Signature Issuer Valid from	sha1 VeriSign Class 3 Public Primary 08 November 2006 05:30:00
	Valid to	17 July 2036 05:29:59 VeriSion Class 3 Public Primary
c F		
		3
Le		
		dit Properties Copy to File
• •	Learn more about <u>certificate details</u>	е
▶ C		ОК
~		Circle on the link pelow to download a r01

7. Now, Certificate Export wizard opens. Click on next button and select **Base-64** encoded X.509 (.CER) option, as shown Figure 2-8.

Figure2-8 Certificate Export Wizard

Certificate Export Wizard	×
Export File Format Certificates can be exported in a variety of file formats.	
Select the format you want to use:	
O DER encoded binary X.509 (.CER)	
Base-64 encoded X.509 (.CER)	
Cryptographic Message Syntax Standard - PKCS #7 Certificates (.P7B)	
\square Include all certificates in the certification path if possible	
C Personal Information Exchange - PKC5 #12 (,PFX)	
\square Include all certificates in the certification path if possible	
Delete the private key if the export is successful	
Export all extended properties	
C Microsoft Serialized Certificate Store (,SST)	
Learn more about <u>certificate file formats</u>	
< <u>B</u> ack <u>N</u> ext > Cancel	

- 8. Click Next and browse to the location where you want to save the certificate. Provide an appropriate name to the certificate file and save it.
- **9.** Double-click and open the Saved certificate, it should be similar to the screenshot provided below.

Figure 2-9 Certificate Information

Certificate		x
General Details Cer	tification Path	
Certificat	e Information	
Ensures the Proves you Protects e-r Ensures sof	is intended for the following purpose(s): e identity of a remote computer r identity to a remote computer mail messages ftware came from software publisher ftware from alteration after publication policies	
Issued to:	VeriSign Class 3 Public Primary Certification Authority - G5	
Issued by:	VeriSign Class 3 Public Primary Certification Authority - G5	
Valid from	08- 11- 2006 to 17- 07- 2036	
Learn more about cer	Install Certificate Issuer Stateme	ent
	0	к

10. Import the downloaded certificate into your application server, and configure your application server to request the client certificate. The application server then checks that the certificate used in the SSL/TLS handshake matches the one you downloaded.

2.4.2 Importing Salesforce.com Certificate

This section explains two methods by which a user can import the Salesforce.com Certificate. These two methods include importing certificate using Keytool and alternatively, using Keystore Service (KSS).

2.4.2.1. Importing Salesforce.com Certificate using Keytool

- 1. Provide a suitable location on your system to save the certificate authority. You would now add this certificate to Keystore.
- 2. Make sure that KSS for demo is disabled.
- 3. To disable KSS, go to the WebLogic console (http://url:port/console/).
- 4. Click on Domain \rightarrow Security \rightarrow Advanced page and unselect "Use KSS for Demo".

- 5. Click Save.
- 6. To know the WebLogic server's trust Keystore location: On the home page, proceed to **Servers** under **Environment** subsection.
- 7. Select the Admin server out of the list of servers displayed.
- 8. Proceed to the **Keystores** tab, as shown in Figure 2-10.

Figure 2-10 Configuration Keystores Tab

Settings for Adn	ninServer					
Configuration	Protocols	Logging	Debug	Monitoring	Control	Deployment
General Clust	er Service	s Keyst	ores 53	5L Federati	on Services	Deployme
Click the <i>Lock &</i>	& <i>Edit</i> button	in the Char	nge Center	to modify the	settings or	this page.
Save						

- **9.** Under **Keystores** tab, select the **Demo Trust Keystore** path. This is the path where our keystore resides.
- **10.** It would be of the form {Middleware_Home}/wlserver/server/lib. Next, you need to import this certificate from the authority into WebLogic server's trust store.
- **11.** If you are using a window based system, use a command prompt to navigate to the path mentioned in the above step.
- **12.** At this path, run the following keytool command:

```
keytool -import -trustcacerts -alias SalesForceCA -file
<Filename with location> -keystore DemoTrust.jks -
storepass DemoTrustKeyStorePassPhrase
```

For e.g., assuming downloaded certificate is kept at the location as mentioned in the step 8 and name of the certificate is *Salesforce.cer* then keytool command would look like:

keytool -import -trustcacerts -alias SalesForceCA -file **Salesforce.cer** -keystore DemoTrust.jks -storepass DemoTrustKeyStorePassPhrase

- **13.** A message **Certificate was added to keystore** is displayed, which confirms the successful import of the certificate. If you get a 'Certificate already exists in the Keystore message', enter 'Y'(yes) and proceed to import the certificate.
- **14.** You can verify the same by enlisting all the certificates using the following command:

keytool -list -keystore DemoTrust.jks -storepass DemoTrustKeyStorePassPhrase

15. The newly imported certificate appears as part of existing certificates in the keystore, as shown Figure 2-11.

Figure2-11 Run Command Screen

[oracle@JCADEV2 lib]\$ keytool -list -keystore DemoTrust.jks Enter keystore password:
Keystore type: JKS Keystore provider: SUN
Your keystore contains 7 entries
sales+orceca, Mar 13, 2014, trustedCertEntry, Certificate fingerprint (SHA1): B1:8D:9D:19:56:69:BA:0F:78:29:51:75:66:C2:5F:42:2A:27:71:04
salesforceca1, Mar 13, 2014, trustedCertEntry, Certificate fingerprint (SHA1): 5D:EB:8F:33:9E:26:4C:19:F6:68:6F:5F:8F:32:B5:4A:4C:46:B4:76
certgenca, Mar 23, 2002, trustedCertEntry, Certificate fingerprint (SHA1): E2:CB:88:9D:C5:09:F9:0A:AA:0D:3C:F6:75:7B:5F:1D:2B:A1:F7:F0
wlsdemocanew2, Jan 25, 2003, trustedCertEntry, Certificate fingerprint (SHA1): 4E:FB:1D:2F:58:EA:D4:0C:FC:2A:86:91:2D:43:4F:C1:79:D0:A6:4E
wlsdemocanew1, Jan 25, 2003, trustedCertEntry, Certificate fingerprint (SHA1): 84:13:A2:63:D6:74:75:3B:25:15:6F:62:8C:18:79:87:62:5B:9A:0C
wlscertgencab, Jan 25, 2003, trustedCertEntry, Certificate fingerprint (SHA1): F8:5D:49:A4:12:54:78:C7:BA:42:A7:14:3E:06:F5:1E:A0:D4:C6:59
wlscertgenca, Dec 2, 2012, trustedCertEntry, Certificate fingerprin <u>t</u> (SHA1): CA:61:71:5B:64:6B:02:63:C6:FB:83:B1:71:F0:99:D3:54:6A:F7:C8

16. Restart the server to bring the modifications made in the previous steps into effect.

2.4.2.2. Importing Salesforce.com Certificate using Keystore Service (KSS)

Prerequisite (s)

To import Salesforce.com certificate using KSS, make sure that KSS is enabled. To enable the KSS, follow the steps below:

- Provide a suitable location on your system to save the certificate authority. You would now add this certificate to Keystore.
- Make sure that KSS for demo is enabled.
- To enable KSS, go to the WebLogic console (http://url:port/console/).
- Click on Domain → Security → Advanced page and select 'Use KSS for Demo' checkbox.
- Click Save.

Steps to Import Salesforce.com Certificate using KSS:

- 1. Download the certificate which has entire chain. For more information, please refer the section, 'Generation Salesforce.com Certificate'.
- 2. Log in to Fusion Middleware Control (EM).
- **3.** From the navigation pane, locate the domain i.e., SOA Domain.
- 4. Navigate to Security → Keystore. The Keystore page appears, as shown in Figure 2-12.

D 🛅 SOA	Active Reti	re	Set As De	fault	Shut Do
WebLogic Domain	Dashboard	Cor	mposite Definition	Flow Ins	tances
A Home			ts		
 o Monitoring s Diagnostics Metada Control 		+ + + + + + + + + + + + + + + + + + + +	1		
🖻 🛅 User Me 🛛 Logs					
Deployments SOA Deployment JDBC Data Sources Messaging Cross Component W Web Services Other Services Environment	iring		d References Users and Gro Credentials Security Provis Application Po	der Configu licies	ration
Administration		+	Application Ro	les	
Refresh WebLogic D	omain		Keystore		
Routing Topology			System Policie	s	
Security		+	Audit Policy		
System MBean Brows					
Target Information					

Figure 2-12 Keystore Page

- 5. Expand the drop-down list in which the Keystore resides and Select the row corresponding to the Keystore. For this case, System \rightarrow Trust
- **6.** We will use Truststore to place the certificate to call the external SSL partner link.
- 7. Click Manage.

Figure 2-13 Keystore Page

View 🔻 👍 C	reate Stripe	🕂 Create Keystore	💥 Delete	6d Manage	🗟 Change Password	d Detach	
Name		Protection					
opss			n/a				
🔺 🚞 system			n/a				
🔒 trust			Policy				
🗎 casto	re		Policy				
🔒 demo	identity		Password				
D BPM_CR	YPTO_STRIP	E	n/a				

- **8.** If the Keystore is password-protected, you are prompted for a password. Enter the Keystore password and click OK.
- 9. The Manage Certificates page appears. Click Import.
- **10.** The Import Certificate dialog appears.
- **11.** Select the certificate type, either Certificate or Trusted Certificate, from the drop-down. For this case, use 'Trusted Certificate'.
- 12. Provide an alias, for example, 'testTrust'.

- **13.** Specify the certificate source. If using the Paste option, copy and paste the certificate directly into the text box. If using the Select a file option, click Browse to select the file from the operating system.
- **14.** Click OK. The imported certificate or trusted certificate appears in the list of certificates.
- 15. Click OK.

Figure 2-14 Imported Certificates

	ate or trusted certificate, select its row in the table and select signed certificate; and export or import a CA-signed certificate		Trusted Certificate 💌	Enter a unique alias.	
ew 🔻 👍 Gen	erate Keypair	Allas	alids_vame		
Alias	Subject Name	Certificate Source	Paste Certificate or Certificate Chair	1	
entrustglobal	CN=Entrust.net Secure Server Certification Authority,OU=(c)				
olddemoca	CN=CertGenCAB,OU=FOR TESTING ONLY,O=MyOrganization				
entrustmain	CN=Entrust.net Secure Server Certification Authority,OU=(c)				
democa	CN=CertGenCA,OU=FOR TESTING ONLY,O=MyOrganization,				
verisignclass2	OU=Class 2 Public Primary Certification Authority,O=VeriSign				
verisignclass3	OU=Class 3 Public Primary Certification Authority,O=VeriSign				
gtecybertrust	CN=GTE CyberTrust Global Root,OU=GTE CyberTrust Solution				
verisignclass1	OU=Class 1 Public Primary Certification Authority,O=VeriSign				
entrustpremium	CN=Entrust.net Certification Authority (2048),OU=(c) 1999 E				
sfdc	CN=VeriSign Class 3 Public Primary Certification Authority - G5				
			Select a file that contains the Certific	cate or Certificate Chain	

- **16.** Bounce the managed server.
- **17.** Repeat the Steps 2 5 and verify the appearance of imported certificate in the list.

Note: If problem persist, make sure that you have removed the DemoTrust.jks. This can be done by modifying the setDomainEnv.sh script i.e., removing the following: *Djavax.net.ssl.trustStore=\${WL HOME}/server/lib/DemoTrust.jks*

2.5 Enabling Oracle Cloud Adapter for Salesforce.com in Design-Time and Run-Time

This section provides an overview that enables you to access the Oracle Cloud Adapter for Salesforce.com in both Design-Time and Run-Time.

The Oracle Cloud Adapter for Salesforce.com comes pre-installed with Oracle SOA Suite 12c unlike 11g PS6 where it has to be enabled using an OPatch for JDeveloper and WebLogic Server.

2.5.1 What is Design-time and Run-time?

The Cloud Adapter for Salesforce.com has two components:

1. **Design-Time** – This is the Adapter Configuration Wizard that allows an easy generation of artifacts that are needed to invoke and consume Web services. It consists of six simple configuration windows that create the artifacts needed to communicate with Salesforce.com.

Below flowchart diagram (Figure 2-15) explains the complete design-time lifecycle.

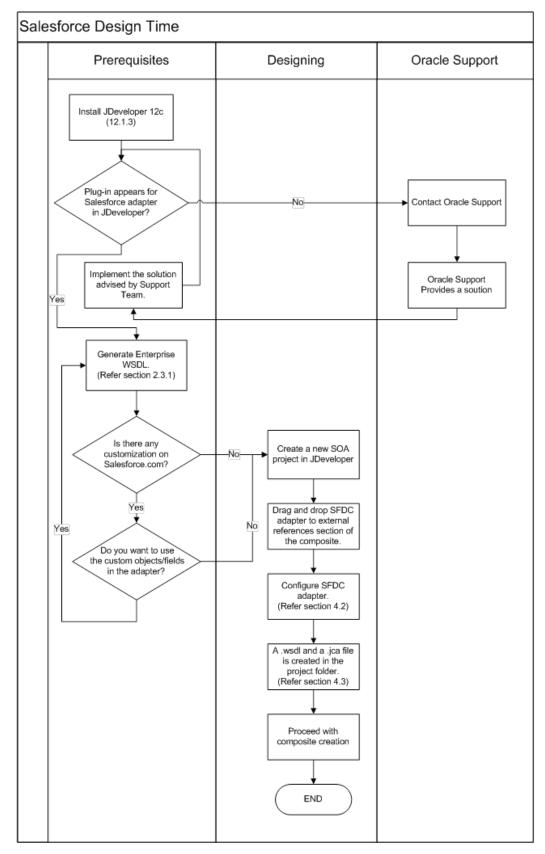


Figure 2-15 Design-Time Lifecycle

2. **Run-Time** – The run-time part of the adapter is utilized for delivering the information generated during the design-time to the service end point. This is where the actual invocation of Salesforce.com Web Service happens.

Below flowchart diagram (Figure 2-16) explains the complete run-time lifecycle.

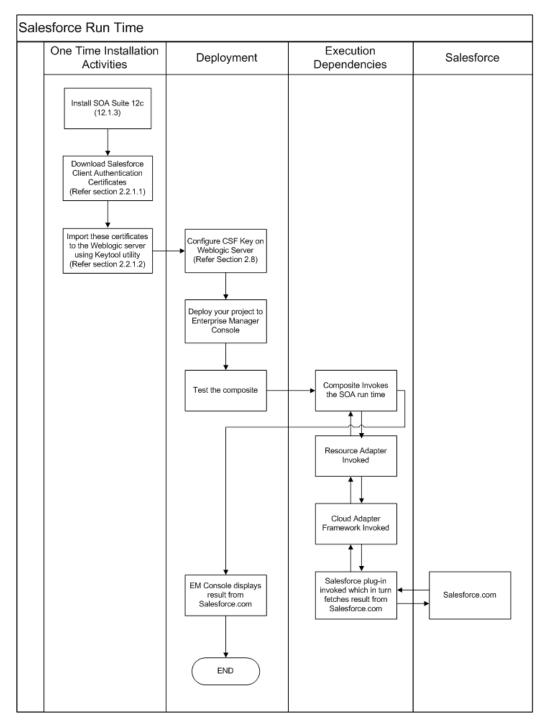


Figure 2-16 Run-Time Lifecycle

2.5.2 Import the WSDL File into your Development Platform

Once you have the WSDL file, it has to be imported into the development platform so that the development environment can generate the necessary objects for use in building client Web service applications in that environment. This section provides instructions for importing the WSDL into Oracle SOA Suite JDeveloper:

- 1. Open JDeveloper.
- 2. Drag and drop the Salesforce Adapter component from the Service Adapters pane to the External References pane, as shown in Figure 2–17.

OR

Right-click on the **External References** pane in JDeveloper and click on the **Salesforce Adapter**.

6	Components × Resources
Project1	Q+(
External References	SOA
	Applications E-Business JDE World Suite
	Custom/Third Party
•	Cloud
*	•

Figure 2-17 Salesforce Adapter Component

3. The **Salesforce Cloud Adapter Configuration Wizard- Welcome** page dialog is displayed, as shown in Figure 2-18.

Figure 2-18 Salesforce Cloud Adapter Configuration Wizard

Welcome to the Cloud Conne	ection Configuration Wizard - Step 1 of 5	×
Welcome to the Cloud Co	Connection Configuration Wizard	* ->
Basic Info Connection Operations Headers Summary	This wizard helps you create a service using the Oracle Salesforce Cloud connection. You will be asked to specify configuration parameters and define an operation for the service. "What do you want to call your connection? SalesforceReference What does this connection do? Describe the connection's purpose and detail	
Help	<back next=""> Enish</back>	Cancel

- **4.** The **Name** box is already populated. It picks up these values from the cache. You can re-enter **Reference Name** if you want to use a different Reference Name.
- 5. Click Next to continue.
- 6. The Salesforce Cloud Server Connection page is displayed, as shown in Figure 2-19.

Welcome to the Cloud Connect	tion Configuration Wizard - Step 2 of 5	x
Salesforce Server Connect	tion	
Basic Info Connection Operations Headers Summary	A Salesforce Cloud Server connection is required to access the operations and business objects available.	
Help	< <u>Back</u> <u>Next</u> Enish Cancel	

Figure 2-19 Salesforce Cloud Server Connection Page

7. On the **Salesforce Cloud Server Connection** page, click the **Find existing WSDLs** icon, which is located to the right of the **Enterprise WSDL Location** field, as shown in Figure 2–20.

Figure 2-20 Salesforce Cloud Server Connection Page

Welcome to the Cloud Connect	ction Configuration Wizard - Step 2 of 5
Salesforce Server Connect	
Basic Info Connection Operations Headers Summary	A Salesforce Cloud Server connection is required to access the operations and business objects available.
Help	< <u>B</u> ack <u>N</u> ext > Enish Cancel

 The WSDL Chooser dialog is displayed, browse and select the downloaded Enterprise WSDL either from the file system or resource palette (MDS) and click OK. Figure 2–21 shows the file system option.

Application Server	File System	Project Libraries	SOA-MDS	UDDI	WSIL		
Location:	BPELProc	ess1.wsdl	plication 12c\Proje	ct12c\SOA\WSDL	5	- 0 0 🕏	1
Work	salesforce	nce.wsdl eEnterprise.wsdl eReference.wsdl eReference_2.wsd	di				
Project		_					
Application	File Name: Sa	lesForceEnterpris	e.wsdl				
Home		eb Service Definit work/Application 1		A/WSDLs/SalesFo	rceEnterprise.wsd	1	
Help						ОК	Cancel

Figure 2-21 WSDL Chooser

3-1

Oracle Cloud Adapter for Salesforce.com -Supported Features

The chapter offers a comprehensive guide to various Salesforce.com features supported by Oracle Cloud Adapter for Salesforce.com.

It contains the following topics:

- Section 3.1, "SOAP API"
- Section 3.2, "Supported SOAP API Operations"
- Section 3.3, "Salesforce.com SOAP Headers"
- Section 3.4, "Session Management"
- Section 3.5, "Handling Polymorphic Behavior of Salesforce.com Schema"
- Section 3.6, "Test Functionality"
- Section 3.7, "Fault Handling"
- Section 3.8, "Salesforce.com Limit and Restriction Handling"

3.1 SOAP API

Nature of SOAP API calls are mentioned below:

- Request and Response: The adapter submits a request to Salesforce.com, and Salesforce.com processes the request and returns a response which the adapter handles.
- Synchronous: Every call to Salesforce.com SOAP API is synchronous, i.e. after invoking the adapter, calling process waits until it receives a response from the service. It does not support asynchronous calls.
- Automatic Commit v/s Rollback: Every operation that writes to a Salesforce.com object like create, upsert etc. is by default committed. Moreover, operations that write multiple objects in a single operation call treat every record as a separate transaction.

3.2 Supported SOAP API Operations

Following category of operations are supported by the Oracle Cloud Adapter for Salesforce.com, as shown in Table 3-1.

Table 3-1	Supported (Operations
-----------	-------------	------------

Supported Category Supported Operations	
CORE	convertLead, getDeleted, getUpdated,
	merge, undelete, upsert
CRUD	create, retrieve, update, delete
MISC	getUserInfo, process
SOSL / SOQL	query,queryAll, search, queryMore

3.2.1 CORE Operations

This category contains all the core operations that are supported by Salesforce.com. The operation calls, falling under this category are:

- convertLead
- getDeleted
- getUpdated
- merge
- undelete
- upsert

Figure 3-1 shows the list of operation calls, falling under CORE category.

Figure 3-1 SFDC Operation Calls

Basic Info <u>Connection</u> Operations	. Select the target operation and business objects in t	he Orade Salesforce	application	1.	
U Summary	② Select an Operation Type:	CORE	ertLead 🔻		
	"Select Business Objects (Salesforce API 33.0): Available: Q*	getDe	eleted odated	Selected:	20
		upser	t > >>	Lead	
			8		
	(2) *WSDL Operation:	convertLead]	

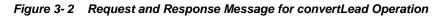
3.2.1.1 convertLead

- This operation converts a Salesforce.com Lead into an Account, Contact, and optionally into an Opportunity.
- The permissions required for convertLead operation are 'Convert Leads' and 'Edit' on Lead, in addition to 'Create' and 'Edit' on Account, Contact and Opportunity objects.
- In a simple and straightforward manner, a qualified lead on Salesforce.com is converted into a new or updated account, contact, and opportunity.
- An organization can have its own set of guidelines for determining when a lead is qualified, or it can follow the Salesforce.com default.

Supported Headers

- AllowFieldTruncationHeader
- DebuggingHeader
- EmailHeader
- LimitInfoHeader
- PackageVersionHeader

Figure 3-2 shows a sample request and response message for convertLead operation on Salesforce.com.





3.2.1.2 getDeleted

- This call fetches the list of individual records that have been deleted in a particular time span.
- The specified endDate must sequentially follow the specified startDate.
- Only those records are returned on which user has access permissions.
- Only data modified in the last 30 days can be fetched, this is a Salesforce.com limitation.

Supported Headers

LimitInfoHeader

Figure 3-3 shows a sample request and response message for getDeleted operation on Salesforce.com.

Figure 3-3 Request and Response Message for getDeleted Operation

xml version="1.0" encoding="UTF-8"? <	messages>
<invoke1_getdeleted_inputvariable></invoke1_getdeleted_inputvariable>	
	g/2001/XMLSchema-instance" name="parameters">
	<pre>s.oracle.com/pcbpel/adapter/salesforce/Automation12c/getDeleted/getDeletedAc 8:04:16+05:30</pre>
	04:16.184+05:30
	04.10.104+03.30(/ ths.enubate/
<invoke1 getdeleted="" outputvariable=""></invoke1>	
	g/2001/XMLSchema-instance" name="parameters">
	tns="http://xmlns.oracle.com/pcbpel/adapter/salesforce/Automation12c/getDele
<tns:getdeletedresult></tns:getdeletedresult>	
	rn:enterprise.soap.sforce.com">
	08T10:00:45.000Z
<id>001900000shNkAAA</id>	U
	rn:enterprise.soap.sforce.com">
	08T10:00:45.000Z
<id>001900000shXjhAA</id>	E 1d
	<pre>rn:enterprise.soap.sforce.com"> 08T10:00:45.000Z</pre>
<id>001900000shXjiAA</id>	
	EC/102
	rn:enterprise.soap.sforce.com">
	08T10:00:45.000Z
<id>001900000shNYiAA</id>	
<deletedrecords xmlns="u</th><th>rn:enterprise.soap.sforce.com"></deletedrecords>	
	08T10:00:45.000Z
<id>001900000shNsqAA</id>	E
	rn:enterprise.soap.sforce.com">
	08T10:00:45.000Z
<id>001900000shNxfAA</id>	E 1a
	rn:enterprise.soap.sforce.com">
	rn:enterprise.soap.siorce.com"> 08T10:00:45.000Z
<id><10000000t77xNAP</id>	
	801 TU2
	rn:enterprise.soap.sforce.com">

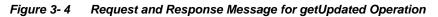
3.2.1.3 getUpdated

- This call fetches the list of individual records that have been updated (added or modified) in a particular time span.
- The specified endDate must sequentially follow the specified startDate.
- Only data modified in the last 30 days can be fetched, this is a Salesforce.com limitation.

Supported Headers

LimitInfoHeader

Figure 3-4 shows a sample request and response message for getUpdated operation on Salesforce.com.



Invoke1_getUpdated <part xmlns:x<br=""><getupdate <tns:st <tns:en< th=""><th><pre>si="http://www.w3.org/2001/XMLSchema-instance" name="parameters"> d xmlns="http://www.w3.org/2001/XMLSchema-instance" name="parameters"> d xmlns="http://wmlns.oracle.com/pcbpel/adapter/salesforce/Automation12c/getUpdated/getUpdatedDemo" xml artDate>2014-03-08117:57:14.104+05:30 Date>2014-04-08T17:57:14.104+05:30</pre></th></tns:en<></tns:st </getupdate </part>	<pre>si="http://www.w3.org/2001/XMLSchema-instance" name="parameters"> d xmlns="http://www.w3.org/2001/XMLSchema-instance" name="parameters"> d xmlns="http://wmlns.oracle.com/pcbpel/adapter/salesforce/Automation12c/getUpdated/getUpdatedDemo" xml artDate>2014-03-08117:57:14.104+05:30 Date>2014-04-08T17:57:14.104+05:30</pre>
<td>ed></td>	ed>
	ated InputVariable>
Invoke1_getUpdated	_uutputvariable> gi="http://www.w3.org/2001/XMLSchema-instance" name="parameters">
	atedResponse xmlnsitns="http://xmlns.oracle.com/pcbpel/adapter/salesforce/Automation12c/getUpdated/get
	tDodatedResult>
	xmln="urn:enterprise.soab.sforce.com">0019000000s2Xs1AAE
	<pre>xmlns="urn:enterprise.soap.sforce.com">00190000002XsnAAE</pre>
	xmlns="urn:enterprise.soap.sforce.com">001900000shK4nAAE
	xmlns="urn:enterprise.soap.sforce.com">0019000000sh8jyAAA /ids
<ids< td=""><td>xmlns="urn:enterprise.soap.sforce.com">001900000shK52AAE</td></ids<>	xmlns="urn:enterprise.soap.sforce.com">001900000shK52AAE
	xmlns="urn:enterprise.soap.sforce.com">001900000tBdH0AAK
	xmlns="urn:enterprise.soap.sforce.com">001900000tBdJQAA0
	<pre>xmlns="urn:enterprise.soap.sforce.com">001900000tBdJzAAK</pre>
	estDateCovered xmlns="urn:enterprise.soap.sforce.com">2014-04-08T11:14:00.000Z
	etUpdatedResult>
	pdatedResponse>
<pre>/messages></pre>	ated_OutputVariable>
/messages>	

3.2.1.4 merge

- Merge operation is used to merge child record of an object into the master record.
- A maximum of three records can be merged into one call.
- A single merge call consists only of one business object. Merge doesn't work for multiple business objects in one call.
- Lead, Contact and Account are the only supported object types.
- The masterRecord field specifies the master record into which the child records are merged.

Supported Headers

- AllowFieldTruncationHeader
- AssignmentRuleHeader
- DebuggingHeader
- EmailHeader
- LimitInfoHeader
- MruHeader
- PackageVersionHeader

Figure 3-5 shows a sample request and response message for merge operation on Salesforce.com.





3.2.1.5 undelete

- Undelete is used to recover already deleted records from Recycle Bin.
- Objects with undeletable property set as true, will be available for undelete.
- In an attempt to undelete an entity which is removed from the recycle bin as well, you will encounter the 'UNDELETE_FAILED' error, stating that 'An object could not be undeleted because it does not exist or has not been deleted.'

Supported Headers

- AllOrNoneHeader
- AllowFieldTruncationHeader
- DebuggingHeader

- LimitInfoHeader
- PackageVersionHeader

Figure 3-6 shows a sample request and response message for undelete operation on Salesforce.com.



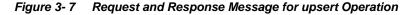
3.2.1.6 upsert

- Upsert is a combination of create and update operations.
- If a record already exists, this operation updates it, otherwise it creates a new record with the corresponding details.
- To avoid redundant records, it is better to use upsert operation instead of create operation.
- Contrary to insert and update operation, where you can process multiple objects in a single call, upsert operation lets you process only a single business object per call.

Supported Headers

- AllOrNoneHeader
- AllowFieldTruncationHeader
- AssignmentRuleHeader
- DebuggingHeader
- EmailHeader
- LimitInfoHeader
- MruHeader
- PackageVersionHeader

Figure 3-7 shows a sample request and response message for upsert operation on Salesforce.com.





3.2.2 CRUD Operations

CRUD is an acronym for Create Retrieve Update and Delete. This category contains operations associated with manipulating the objects on Salesforce.com. The following operations fall under this category:

- create
- retrieve
- update
- delete

Figure 3-8 shows the operations falling under CRUD category.

Figure 3-8 List of Operation under CRUD Category

Welcome to the Cloud Connect	tion Configuration Wizard - Step 3 of 5	X
Configure the Operation to	o Perform in the Oracle Salesforce Application	*
Basic Info Connection Operations Headers	Select the target operation and business objects in the Oracle Salesforce application.	
Summary	3 Select an Operation Type: CRUD	
	Select Business Objects (Salesforce API 33.0): Available: Q Selected:	& V
	Account Account_Test_c Account_od_c AccountContactRole ActonLinkGroupTemplate ActonLinkGroupTemplate Acdores_yod_c Announcement	
	"WSDL Operation: create	
Help	Seak Next > Enich	Cancel

3.2.2.1 create

- Create operation is used to add individual records to the organization's data.
- It can process records belonging to multiple business objects in a single call to Salesforce.com.
- It is similar to the Insert operation in SQL.

Supported Headers

- AllOrNoneHeader
- AllowFieldTruncationHeader
- AssignmentRuleHeader
- DebuggingHeader
- EmailHeader
- LimitInfoHeader
- MruHeader
- PackageVersionHeader

Figure 3-9 shows a sample request and response for create operation on Salesforce.com.

Figure 3-9 Request and Response for CreateOperation



3.2.2.2 retrieve

- Fetches specific information for a sObject based on the ID of the object.
- The fields of the object, required to be fetched, are the inputs of the element 'fieldList' of the request message. As shown in Figure 3-10, "Origin" and "Status" are sent as fieldList in the request message.
- Retrieve call doesn't fetch deleted records.

Supported Headers

- LimitInfoHeader
- **MruHeader**
- PackageVersionHeader
- QueryOptionsHeader

Figure 3-10 shows a sample request and response message for retrieve operation on Salesforce.com.

Figure 3-10 Request and Response Message for retrieve Operation



3.2.2.3 update

- Update operation is used to update existing objects on Salesforce.com.
- This option can update multiple sObjects in one call.
- Only those objects are available under this operation whose updatable property is set to true.

Supported Headers

- AllOrNoneHeader
- AllowFieldTrunactionHeader
- AssignmentRuleHeader
- DebuggingHeader
- EmailHeader
- LimitInfoHeader
- MruHeader
- PackageVersionHeader

Figure 3-11 shows a sample request and response message for update operation on Salesforce.com.

Figure 3-11 Request and Response Message for update Operation

xml version="1.0" encoding="UTF-8"? <messages></messages>	
<invoke inputvariable="" update="" updateaccount=""></invoke>	
<pre><pre> <pre> <pre> <pre> <pre></pre></pre></pre></pre></pre></pre>	("S
<update 2001="" adapter="" http:="" name="parameters</td><td></td></tr><tr><td><tns:updateResponse xmlns:tns=" pcbpel="" sal<="" td="" www.w3.org="" xmlns="http://xmlns.oracle.com/pcbpel/adapter/salesforce/Automati</td><td></td></tr><tr><td><pre><</td><td>.onizzo, apadoezeno, apadoen</td></tr><tr><td><pre><mail:labol1900000tBeKH</pre>/ens:Id></pre></td><td></td></tr><tr><td><pre><pre></pre></pre></pre></td><td></td></tr><tr><td></task.acount></td><td></td></tr><tr><td></td><td></td></tr><tr><td></update></td><td></td></tr><tr><td></part></td><td></td></tr><tr><td></Invoke_Updateaccount_update_InputVariable></td><td></td></tr><tr><td><Invoke_Updateaccount_update_OutputVariable></td><td>-</td></tr><tr><td><part xmlns:xsi=" xmlns.oracle.com="" xmlschema-instance"=""><td>.esforce/Automation12c/up</td></update>	.esforce/Automation12c/up
<tns:saveresult></tns:saveresult>	
<pre><id xmlns="urn:enterprise.soap.sforce.com">0019000000tBeKHAA0</id></pre>	
<pre><success xmlns="urn:enterprise.soap.sforce.com">true</success></pre>	

3.2.2.4 delete

- Delete operation is used to delete one or more records on Salesforce.com.
- Operates on more than one sObject at one time.
- Similar to DELETE statement in SQL.
- Only those objects are available under this operation whose deletable property is set to true.

Supported Headers

- AllOrNoneHeader
- AllowFieldTruncationHeader
- DebuggingHeader
- EmailHeader
- LimitInfoHeader
- PackageVersionHeader

Figure 3-12 shows a sample request and response message for delete operation on Salesforce.com.





3.2.3 MISC Operations

This category contains all the miscellaneous operations supported by Salesforce.com. Following are the operations falling under this category:

- getUserInfo
- process

Figure 3-13 shows all the operations falling under this category.

Welcome to the Cloud Conr	nection Configuration Wizard - Step 3 of 5	×
Configure the Operation	n to Perform in the Oracle Salesforce Application	
Basic Info Connection Operations Headers	Select the target operation and business objects in the Orade Salesforce application.	
Summary	③ Select an Operation Type: Image: Select an Operation Type: getUserInfo getUserSon getUserInfo process Business Objects: No objects available @ *WSDL Operation: getUserInfo getUserInfo	
Help	0	< Back Next > Finish Cancel

Figure 3-13 Options Available for MISC Category

3.2.3.1 getUserInfo

- The call fetches information of the user associated with the current session.
- Information returned from this call includes currency, profile, email and other user information.
- To obtain additional information about the user, you can also use the retrieve operation on User object providing the required fields in the fieldList element.
- Standard information pertinent to the current user is returned.

Supported Headers

LimitInfoHeader

Figure 3-14 shows a sample request and response message for getUserInfo operation on Salesforce.com.

Figure 3-14 Request and Response Message for getUserInfo Operation

xml versio</th <th>n="1.0" encoding="UTF-8"?><messages></messages></th>	n="1.0" encoding="UTF-8"?> <messages></messages>
	UserInfo InputVariable>
	xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" name="parameters">
< <u>a</u>	tUserInfo xmlns="http://xmlns.oracle.com/pcbpel/adapter/salesforce/Application7/getuserinfo/salesforceReference"/>
<td></td>	
	UserInfo OutputVariable>
	xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" name="parameters">
	1:getUserInfoResponse xmlns:ns1="http://xmlns.oracle.com/pcbpel/adapter/salesforce/Application7/getuserinfo/salesforceRef
	<ns1:getuserinforesult></ns1:getuserinforesult>
	<accessibilitymode xmlns="urn:enterprise.soap.sforce.com">false</accessibilitymode>
	<currencvsvmbol xmlns="urn:enterprise.soap.sforce.com" xsi:nil="true"></currencvsvmbol>
	<pre><orgattachmentfilesizelimit xmlns="urn:enterprise.soap.sforce.com">5242880</orgattachmentfilesizelimit></pre>
	<orgdefaultcurrencvisocode xmlns="urn;enterprise,soap,sforce.com" xsi;nil="true"></orgdefaultcurrencvisocode>
	<orgdisallowhtmlattachments xmlns="urn:enterprise.soap.sforce.com">false</orgdisallowhtmlattachments>
	<orghaspersonaccounts xmlns="urn:enterprise.soap.sforce.com">false</orghaspersonaccounts>
	<pre><organizationid xmlns="urn:enterprise.soap.sforce.com">00D9000000hIOnEAM</organizationid></pre>
	<organizationmulticurrency xmlns="urn:enterprise.soap.sforce.com">true</organizationmulticurrency>
	<pre><organizationname xmlns="urn:enterprise.soap.sforce.com">1</organizationname></pre>
	<profileid xmlns="urn:enterprise.soap.sforce.com">00e9000001274tAAA</profileid>
	<roleid xmlns="urn:enterprise.soap.sforce.com" xsi:nil="true"></roleid>
	<pre><sessionsecondsvalid xmlns="urn:enterprise.soap.sforce.com">43200</sessionsecondsvalid></pre>
	<userdefaultcurrencyisocode xmlns="urn:enterprise.soap.sforce.com">JPY</userdefaultcurrencyisocode>
	<useremail xmlns="urn:enterprise.soap.sforce.com">>>++++++++++++++++++++++++++++++++++</useremail>
	<userfullname xmlns="urn:enterprise.soap.sforce.com">{!++++++++++++++++++++++++++++++++++++</userfullname>
	<userid xmlns="urn:enterprise.soap.sforce.com">00590000015SkBAAU</userid>
	<userlanguage xmlns="urn:enterprise.soap.sforce.com">en_US</userlanguage>
	<userlocale xmlns="urn:enterprise.soap.sforce.com">en_IN</userlocale>
	<username xmlns="urn:enterprise.soap.sforce.com">++++++++++++++++++++++++++++++++++++</username>
	<usertimezone xmlns="urn:enterprise.soap.sforce.com">++++ +++++</usertimezone>
	<usertype xmlns="urn:enterprise.soap.sforce.com">Standard</usertype>
	<useruiskin xmlns="urn:enterprise.soap.sforce.com">Theme3</useruiskin>
	s1:getUserInfoResponse>
<td></td>	
	_getUserInfo_OutputVariable>

3.2.3.2 process

- It submits an array of approval process instances for approval, or processes an array of approval process instances to be approved, rejected, or removed.
- Process operation either submits an approval process or processes an already submitted process.

Supported Headers

- AllowFieldTruncationHeader
- DebuggingHeader
- LimitInfoHeader
- PackageVersionHeader

Process operation is divided into two parts:

- Process Submit Request
- ProcessWorkItemRequest

Two radio buttons appear once you select **process** as the operation, as shown in Figure 3-15.

Welcome to the Cloud Cont	nection Configuration Wizard - Step 3 of 5	×
Configure the Operatio	on to Perform in the Oracle Salesforce Application	5
Basic Info Connection Operations Headers	Select the target operation and business objects in the Oracle Salesforce application.	
Summary	Select an Operation Type: MISC Process	
	Available, gelecteu.	≈ ≫
	AcceptedEventRelation Account Account_Test_c Account_vod_c AccountContactRole	
	Account/sector Account/story Account/story Account/share	
	*WSDL Operation: process	
	Process mode: O ProcessSubmitRequest ProcessWorkitemRequest	
Help	< <u>Back</u> <u>N</u> ext>Enish Car	ncel

Figure 3-15 Radio Button under process Operation

ProcessSubmitRequest: This option is used to submit an object for approval. The response of this operation generates a **WorkItemId** and the actor (user) to whom this object is submitted for approval. The WorkItemId is a unique identifier of the object submitted for approval.

Figure 3-16 shows a sample request and response message for ProcessSubmitRequest operation on Salesforce.com.

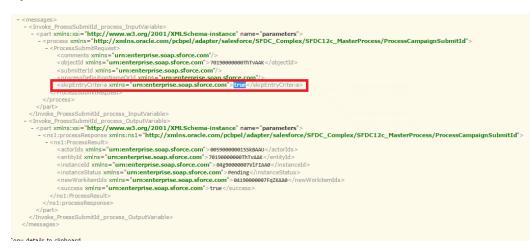


Figure 3-16 Request and Response Message for ProcessSubmitRequest Operation

ProcessWorkItemRequest: This option is used to process an object already submitted for approval. The actor can approve or reject a process. To perform the approval actions on the object already submitted for approval, the WorkItemId generated in ProcessSubmitRequest response is needed.

Figure 3-17 shows a sample request and response message for ProcessWorkItemRequest operation on Salesforce.com.

Figure 3-17 Request and Response Message for ProcessWorkItemRequest Operation

<pre>- <messges> - <messges> -</messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></messges></pre>
messages

3.2.4 SOSL and SOQL Operations

SOSL and SOQL allow you to search your organization's Salesforce.com data for specific information. Following are the operations falling under this category:

- query
- queryAll
- search
- queryMore(supported internally)

Figure 3-18 shows the list of operations falling under SOSL/SOQL category.

Figure 3-18 Option Available under SOSL/SOQL Category

Welcome to the Cloud Connecti	on Configuration Wizard - Step 3 of 5	×
Configure the Operation to	Perform in the Oracle Salesforce Application	=>
Basic Info Connection Operations Headers	Select the target operation and business objects in the Orade Salesforce application.	4
J Summary	Select an Operation Type: SOSL/SOQL Query query	
	*Query Statement: guery All	
Help	<back next=""> Einish C</back>	ancel

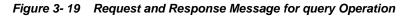
3.2.5 query

- The query operation executes a query against a particular criteria and returns data that matches that particular criteria.
- Uses the SOQL (Structured Object Query Language).
- The query returns only those records that have not been deleted from your Salesforce.com account.
- Oracle Cloud Adapter for Salesforce.com provides functionality for using bind parameters in query operation. Using this functionality, you can dynamically provide an input to your query. For more information, refer to the section "Support for Bind Parameters"

Supported Headers

- LimitInfoHeader
- MruHeader
- PackageVersionHeader
- QueryOptionsHeader

Figure 3-19 shows a sample request and response message for query operation on Salesforce.com.





3.2.6 queryAll

- queryAll has a wider scope than query operation, in another word the syntax is same as query (SOQL) but it also fetches the deleted records present in the recycle bin.
- Oracle Cloud Adapter for Salesforce.com provides functionality for using bind parameters in queryAll operation. Using this functionality, you can dynamically provide an input to your queryAll. For more information, refer to the section "Support for Bind Parameters"
- The main difference between query and queryAll is that queryAll returns the records, even if they have been deleted and are present in the recycle bin, while query only returns the records that are currently a part of Salesforce.com organization's active data.

Supported Headers

- LimitInfoHeader
- QueryOptionsHeader

Figure 3-20 shows a sample request and response message for queryAll operation on Salesforce.com.



Figure 3-20 Request and Response Message for gueryAll Operation

3.2.7 search

- Based on a search string, the search operation fetches records from Salesforce.com.
- Uses the SOSL (Structured Object Search Language) to fetch records from Salesforce.com.
- Oracle Cloud Adapter for Salesforce.com provides a provision for using bind parameters in search. Using this functionality, you can dynamically provide a search string as an input to your search operation.

Supported Headers

- LimitInfoHeader
- PackageVersionHeader

Figure 3-21 shows a sample request and response message for search operation on Salesforce.com.

Figure 3-21 Request and Response Message for search Operation



3.2.8 queryMore

- queryMore operation retrieves a next set of records against a specified query string.
- To use queryMore operation, you are required to provide queryLocator value that has been returned as a result of query or queryAll operation, and you can use that queryLocator value to use queryMore call.

- queryMore operation is supported internally so it is not visible in the operations page in Oracle Cloud Adapter for Salesforce.com configuration wizard.
- Since it internally uses the query and queryAll, the request and response structure for queryMore could be of either of them, depending upon which operation's queryLocator is called.

Supported Headers

The headers supported for query and queryAll operations hold to for queryMore operation.

Figure 3-22 shows how you can set the value of 'queryLocator' at the design-time.

Figure 3-22 Set Value of 'queryLocator' at Design-Time

ssertions	Skip Conditio	on Header	s Sources	Tar	gets
General	Corre	lations	Properti	es	Annotations
Properties:					
Name		Value		Туре	
jca.msmq.me	ssage.Id				
jca.msmq.me					
jca.msmq.me	ssage.Pri				
jca.msmq.me	ssage.Se				
jca.msmq.me	ssage.Ti				
jca.salesforce	a.AllOrNo				
jca.salesforce		varQueryLoc	://	input	
jca.salesforce	e.respons				
jca.salesforce					
jca.salesforce	e.respons				
jca.socket.ho	st				

Figure 3-23 shows how the value of 'queryLocator' is passed at the run-time.

Figure 3-23 Set Value of 'queryLocator' at Run-Time

🐗 Invoke2

```
[2014/01/01 01:38:17]
Started invocation of operation "query" on partner "query".
[2014/01/01 01:38:17]
Sending property "jca.salesforce.queryLocator", value is "01g9000000ZQW8bAAH-200".
[2014/01/01 01:38:18]
Invoked 2-way operation "query" on partner "query".
DView xml document
```

3.3 Salesforce.com SOAP Headers

The section (Table 3-2) explains what all headers are maintained by every supported operation of Oracle Cloud Adapter for Salesforce.com. Salesforce.com puts into effect what SOAP headers are available for each operation. Moreover, this functionality is enforced by the adapter UI, that is, the headers available for a particular operation on the Headers and Properties page is in accordance to the recommended headers for that operation. For more information on Salesforce.com headers, follow the link

(http://www.salesforce.com/us/developer/docs/api/Content/soap_headers.htm).

Operation Type	Operation Name	All or None Header	Allow Field Truncation Header	Assignment Rule Header	Debugging Header	Email Header	Limit Info Header	Mru Header	Package Version Header	Query Options Header
Core	convertLead		Y		Y		Y		Y	
Operations	getDeleted						Y			
	getUpdated						Y			
	merge		Y	Y	Y	Y	Y	Y	Y	
	undelete	Y	Y		Y		Y		Y	
	upsert	Y	Y	Y	Y	Y	Y	Y	Y	
CRUD	create	Y	Y	Y	Y	Y	Y	Y	Y	
Operations	retrieve						Y	Y	Y	Y
	update	Y	Y	Y	Y	Y	Y	Y	Y	
	delete	Y	Y		Y	Y	Y		Y	
MISC	getUserInfo						Y			
Operations	process		Y		Y		Y		Y	
SOSL and	query						Y	Y	Y	Y
SOQL	queryAll						Y			Y
Operations	queryMore						Y			Y
	search						Y		Y	

Table 3-2 Salesforce.com SOAP Headers

3.3.1 Request Headers

Headers that come under this category are the one that are being sent along with the request call made to Salesforce.com. Following is the explanation of each header that comes under this category:

3.3.1.1 AllOrNoneHeader

This header allows transactional behavior for Salesforce.com operations. This means if you set this header to "true" then the call to Salesforce.com will get committed only if it gets completed without any error, otherwise it will rollback. The default behavior is to commit partial records without any error.

This header was added in API version 20.0

Supported Operations:

Create(), update(), upsert(), delete(), undelete()

Fields :

Element Name	Туре	Description	
allOrNone	Boolean	True : If one record in a payload fails, all records are rolled back, i.e. none of them are committed on Salesforce.com. A record is committed only when all records in a payload are successfully written.	
		False : Indicates if any record in a payload fails, only those records are rolled back, all other records are committed to Salesforce.com	

3.3.1.2 AllowFieldTruncationHeader

This header enables the truncation behavior for the following fields, which are of string data type.

- anyType: anyType can be anyone from rest of the list.
- email
- picklist
- encryptedstring
- textarea
- mulitpicklist
- phone
- string

This header was added in API version 15.0.

Supported Operations:

Create(), update(), upsert(), undelete(), process(), merge(), convertLead()

Fields:

Element Name	Туре	Description
allowFieldTrunc ation	Boolean	True : If a user attempts to enter a value of 25 characters in a field of 20 characters, first 20 records are inserted into the field and, the transaction is a success.
		False : If a user attempts to enter a value of 25 characters in a field of 20 characters, an error is thrown and the transaction does not commit.

3.3.1.3 AssignmentRuleHeader

The AssignmentRuleHeader specifies the assignment rule to use when creating or updating an Account, Case, or Lead. The assignment rule can be active or inactive in your Salesforce.com organization. The ID can be retrieved by querying the AssignmentRule object. If the ID is specified, then you do not need to specify useDefaultRule. The MALFORMED_ID exception is returned, if the value is not a correct ID and the call fails.

This element is ignored for accounts, because all territory assignment rules are applied.

A MALFORMED_ID exception is returned, if the value is not a correct ID and the call fails.

Supported Operations:

Create(), update(), merge(), upsert()

Fields:

Element Name	Туре	Description
assignmentRuleId	ID	The ID of the assignment rule which you want to use. The Id is not validated by Oracle Cloud
		Adapter for Salesforce.com, whether it exists or
		not in Salesforce.com. The validation takes place
		during the run-time.
useDefaultRule	Boolean	True : The default (active) assignment rule is used.
		False : The default (active) assignment rule is not applied.

3.3.1.4 EmailHeader

This header enables you to specify whether a notification email should be sent or not.

Supported Operations: Create(), update(),delete(), upsert(), merge()

Fields:		
Element Name	Туре	Description
triggerAutoResponseEmail	Boolean	True: It triggers auto-response rules for leads and cases.
		False: Auto-response rules for leads and cases are not triggered.
triggerOtherEmail	Boolean	True: The email is triggered outside the organization.False: The email is not triggered outside the organization.
triggerUserEmail	boolean	True : The email is triggered and sent to users in the organization. This email is triggered by a number of events like adding comments to a case or updating a task.
		False : The email is not triggered and sent to users in the organization.

3.3.1.5 DebuggingHeader

Logging level for debugging purposes, following are different levels that can be mentioned in this header:

Supported Operations:

create(), upsert(), undelete(), merge(), convertLead(), update(), delete(), process()
Fields:

Element Name	Туре	Description
debugLevel	Logtype	The following list orders
		the log levels from least
		(NONE) to most verbose
		(DETAIL):
		NONE
		DEBUGONLY
		DB
		PROFILING
		CALLOUT
		DETAIL

3.3.1.6 **MruHeader**

Recent Items section in Salesforce.com shows most recently used items. In API version 7.0 or later, the list would not get updated by itself. The MruHeader must be used in order to update that list. Note that using this header may impact performance negatively.

Supported Operations:

Create(), update(), merge(), upsert(), query(), retrieve()

Fields:

r icius.		
Element Name	Туре	Description
updateMru	Boolean	True : The list of most recently used item is updated on Salesforce.com.
		False: The list of most recently used item is not updated on Salesforce.com.

3.3.1.7 **PackageVersionHeader**

A Package version is basically the identification of components in a package. Package version has a specific format majorNumber.minorNumber.patchNumber. For example, 3.4.5,(where" 3" refers to majorNumber, "4" refers to minorNumber and "5" refers to patchNumber)

This header is used to specify package version for any installed package.

Supported Operations:

create(), retrieve(), update(), delete(), undelete(), merge(), upsert(), process(), query(), search(), convertLead()

Fields:

Element Name	Туре	Description
majorNumber	Int	Major version number of a package version.
minorNumber	Int	Minor version number of a package version.
Namespace	String	Namespace of the managed package.

3.3.1.8 QueryOptions

This header is used to specify batch size for queries. Default value for batch size is 500. Minimum value for this is 200 and maximum value is 2000.

Supported Operations:

retrieve(), queryMore(), query(), queryAll()

Fleids:		
Element Name	Туре	Description
batchSize	Int	The batch size of the number of records returned in a query call.
		The minimum size is 200. If you enter a value less than 200, for
		example, 40 and your actual query has a size of 1200, it would
		not throw any error, but would return 200 records.
		The maximum size is 2000. The configuration wizard doesn't let
		you enter a value more than 2000.

Falda

3.3.2 Response Headers

Headers that come under this category are ones that are being received along with the response message that is being sent by Salesforce.com. Following is the explanation of each header that comes under this category:

3.3.2.1 DebuggingInfo

This response header will be returned only if debugLevel request header has been sent along request payload to Salesforce.com.

Element Name	Туре	Description
debugLog		The log information returned from the adapter invocation. This header is part of the SOAP response
		once debugLevel is sent as a part of the SOAP request

3.3.2.2 LimitInfoHeader

This header provides the information about the limitations of API calls on per-day basis for organization. This response header is introduced in API version 29.0

ricius.		
Element Name	Туре	Description
current	string	The number of calls that have already been used in the organization.
Limit	String	Organization's limit for specified limit type.
Туре	String	Limit information type specified in the header API REQUESTS—contains limit information about API calls for the organization.

Fields:

3.4 Session Management

Oracle Cloud Adapter for Salesforce.com provides session management capabilities to maintain transactions related to a particular Salesforce.com user. Attempts have been made to reduce the number of calls to Salesforce.com either for a login call or for any subsequent calls to fetch metadata. With this reduction in the number of calls, the adapter responds faster and the limitations that Salesforce.com imposes on the number of calls are also taken care of.

Configuration for session support is provided in two phases.

- Design Phase
- Execution Phase

3.4.1 Design Phase

Login: While creating an adapter service, a single login call is fired to Salesforce.com during the complete Salesforce Cloud Adapter Configuration Wizard cycle. Once the user provides an Enterprise WSDL and the CSF key in the connection page, only one login call is made to Salesforce.com till the completion of adapter configuration. The next login does not happen unless a CSF key for another user is selected or a different Enterprise WSDL is selected. Even the 'Run Query Test Tool' follows the same session that was initialized during the connection configuration page.

3.4.2 Execution Phase

During the execution phase, Cloud Runtime frame work receives the request message from SOA/OSB/BPM runtime.

Oracle Cloud Runtime framework takes care of the session management as it internally maintains a Session Cache (in the form of Map) which stores the session details. A session is uniquely defined for the user and version of the enterprise WSDL.

If a session is not found in Session Cache then framework establishes the session with Salesforce.com and then adds the session information in Session Cache. If we have different composites which are using the same credentials and the version of the enterprise WSDL then all threads would be provided the same session details. This helps in avoiding the additional login call to Salesforce as we already have the session details available in the cache. Figure 3-24 shows Execution Phase.

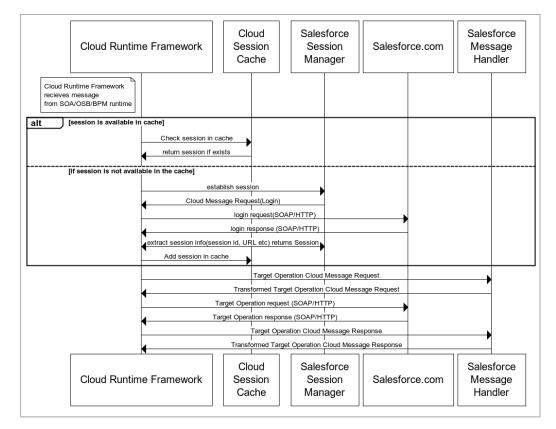


Figure 3-24 Execution Phase

- A single login call made by the Oracle Cloud Adapter for Salesforce.com maintains the session across composites deployed in the server for a particular user and for a fixed version of Enterprise WSDL.
- During run-time as well, the fetch metadata calls are minimal.

You are no longer required to create a complex process, where you first need to invoke a login operation on Salesforce.com whose output payload provides two important details which must be supplied during each subsequent operation. These are:

- ServerURL: This is the URL that needs to be called for all subsequent operations (query, update etc.) for this user using the dynamic partner link concept.
- Session ID: This ID needs to be sent as part of header information for all operations post login.

Session management is now completely handled by the Oracle Cloud Adapter for Salesforce.com making the task of Salesforce.com operation invocation flawless and effortless.

3.5 Handling Polymorphic Behavior of Salesforce.com Schema

Due to the polymorphic nature of the Salesforce.com XML schema, it was cumbersome to write multiple objects in a single operation call to Salesforce.com using a Web service adapter. For instance, creation of a lead, account and a contact consisted of four steps, as mentioned below:

- You had to create an invoke activity for login operation.
- You had to create account.
- You had to create contact.
- You had to create lead.

All of this is done separately, however; with the introduction of Oracle Cloud Adapter for Salesforce.com to Oracle SOA Suite, integration to Salesforce.com has become a lot easier. Now the above mentioned four-step process has been reduced to a single step.

Figure 3-25 shows how only a single sObject was manipulated during the design-time.

Figure 3-25 Transformation Create Account



On the other hand, the polymorphic behavior of Salesforce.com schema is handled by Oracle Cloud Adapter for Salesforce.com and multiple sObjects can be written with a lot more ease, as shown in Figure 3-26.

Note that this behavior is possible only for operations where multiple insertion/writes are allowed by the Salesforce.com Enterprise API.

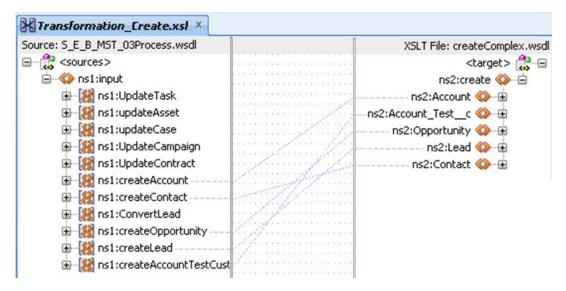


Figure 3-26 Transformation Create Account

3.6 Security Management

If the Salesforce.com API is invoked without using the Oracle Cloud Adapter for Salesforce.com, the credentials for login to Salesforce.com are sent with payload during login operation invocation. Instead, SFDC adapter uses CSF key to externalize the credentials from the SOA composites. Moreover, existing OWSM policies cannot be used to pass user credentials with the payload. Oracle Cloud Adapter for Salesforce.com provides security in the following ways:

- The Credential Store Framework translates the key into credentials and sends it over the network. We are relying upon SSL to have this encrypted to eliminate any possibility of eavesdropping.
- While creating the CSF key either in the configuration wizard or in the Enterprise Manager Console, the password characters are not exposed, thereby enforcing additional security.

For information on how to configure CSF key, refer to the section "A.2 CSF Key in Enterprise Manager".

3.7 Test Functionality

The test functionality is a distinctive feature of the Oracle Cloud adapter for Salesforce.com that is available in two forms – one in the form of testing the connection parameters, while the other is to validate and execute the SOQL/SOSL query. The section below talks more about these two features.

3.7.1 Design-Time Test Functionality

Design-time test functionalities include the following test functionalities:

1. Test Salesforce.com Cloud Connection: There is a Test button on Connection Configuration page of Salesforce Cloud Adapter Configuration Wizard.

By clicking on Test Connection button you will see below message:

- Success! For successful connection
- Error! For any exception during login
- 2. Query Test Tool: This tool helps to run and test query. By clicking on Test button on Operation Configuration page of Salesforce Cloud Adapter Configuration Wizard, a test dialogue box appears with a Query Statement text box and Results box showing result of query executed. A provision is provided to add bind parameters to the query. A box corresponding to each bind parameter appears, wherein you can provide a value to the parameter and then test the query.

For more information, refer to the section "

Design-Time: Using Oracle Cloud Adapter for Salesforce.com Configuration Wizard".

3.8 Fault Handling

Errors from Salesforce.com are returned in the following ways:

- Salesforce Faults: Error scenarios where the composite execution cannot proceed further and a binding exception is raised in the BPEL process.
- Salesforce Exceptions: Error scenarios where composite execution proceeds even if there are issues with committing some records. The records for which the transaction does not succeed returns a success status as 'false', while the records for which transaction commits to return a success status as 'true'.
- Salesforce Host Unreachable: Error scenarios in which the Salesforce.com host is not reachable, a remote exception is raised in business process.

The remote and binding faults are handled at the BPEL level using either fault policies or placing fault handlers in the process, i.e. using catch and catchAll blocks.

For exceptions returned from Salesforce.com, the error message is returned as part of the payload. Figure 3-27 shows the payload structure containing exception details.

Figure 3-27 Payload Structure Containing Exception Details

For Salesforce.com standard faults and exception details, refer to the section "Troubleshooting and Error Messages".

3.9 Salesforce.com Limit and Restriction Handling

Operation specific Object Selection: The list of objects available for a particular operation is dynamic and is updated separately for every operation. For instance, if you select **merge** operation under "Operation Category" **CORE**, only Account, Contact, and Lead objects are available in the list of "Available" under Business objects, as shown in Figure 3-28.

Figure 3-28 Available Business Options in CORE Operation Category

Welcome to the Cloud	Connection Configuration Wizard - Step 3 of 5			×
Configure the Oper	ation to Perform in the Oracle Salesfo	rce Application	010101010	
Basic Info Connection Operations	Select the target operation and business objects in	the Oracle Salesforce application.		
U Summary	Select an Operation Type: "Select Business Objects (Salesforce API 33.0): Available: Account Contact Select Business Objects (Salesforce API 33.0): WSDL Operation:	CORE	Selected:	& ⊗
Help	*		< Back Next >	Einish Cancel

This section is further divided into the following subsections:

- Multiple Object Selection
- Single Object Selection
- Header Restrictions

Multiple Object Selection

For certain operations, there is a provision to manipulate more than one business object in a single call to Salesforce.com. An important example of this feature is the "**create**" operation, where you can select more than one object in one configuration wizard cycle, as shown in Figure 3-29.

Welcome to the Cloud	ud Connection Configuration Wizard - Step 3 of 5	
Configure the Ope	eration to Perform in the Oracle Salesforce Application	
Basic Info Connection Operations	Select the target operation and business objects in the Oracle Salesforce application.	
Summary	Select an Operation Type: CRUD Create * Select Business Objects (Salesforce API 33.0):	
	Available: Account Account, Testc Account, ContactRole ActionLinkGroupTemplate ActionLinkGroupTemplate ActionLinkGroupTemplate Additess, vodc Announcement ApexClass ApexComponent @ "WSDL Operation: Greate	
Help	< Back	Next > Enich Cancel

Figure 3-29 Create Operation in Cloud Operation Configuration Wizard

Table 3-33 shows an insight into the maximum number of objects you can select for a specific operation.

#	Operation Name	Max Objects
1	Create	10
2	retrieve	1
3	update	10
4	delete	Unbounded
5	upsert	1
6	undelete	Unbounded
7	convertLead	1
8	process	1
9	merge	1
10	getDeleted	1
11	getUpdated	1
12	getUserInfo	0

Table 3- 33 Maximum Number of Objects

Header Restrictions

The Oracle Cloud Adapter for Salesforce.com saves the user from making any wrong selections at design-time, which may lead to erroneous conditions at run-time. For example, the maximum value for batch size in "Query" options header is 2000. The configuration wizard does not allow you to enter a value greater than 2000. If you enter a value which is greater than 2000, an error message is displayed, as shown in Figure 3-30.

Figure 3- 30	Invalid header w	value Message
--------------	------------------	---------------

Welcome to the Cloud Connection	n Configuration Wizard - Step 4 of 5	<u>x</u>
Salesforce Operation Heade	r Configuration	
Basic Info Connection Operations Headers Summary	Select Operations Headers Configure the Header Properties for the Selected Operation: The following header properties are available with the operation query Invalid value for header : updateMru: Ease Invalid value for header : queryOptions. It should not exceed 2000. CK majorNumber: nminorNumber: namespace: QueryOptions V batchSize: 2001	
Help		< Back Next > Einish Cancel

3.10 Support for Bind Parameters

The operations falling under the SOSL/SOQL category gives you the privilege to provide inputs to your query/search statement dynamically. This is made possible using the concept of bind parameters.

Consider the following query:

- 1. Select id, Name from Account where id = '0019000000sgbCW'
- 2. The Oracle Cloud Adapter for Salesforce.com gives you an option to give inputs to your query in the form of bind parameters, as shown in Figure 3-31.

Figure 3- 31 Give Inputs to your Query in the Form of Bind Parameters

Welcome to the Cloud	ud Connection Configuration Wizard - Step 3 of 5
Configure the Ope	eration to Perform in the Oracle Salesforce Application
Basic Info Connection Operations Headers	Select the target operation and business objects in the Orade Salesforce application.
U Summary	Select an Operation Type: SOSL/SOQL query
	*Query Statement:
	Select id, name FROM account where id= &vid
	"WSDL Operation: query
	Binding Parameters: vid:
Help	< <u>₿ack</u> <u>Next</u> > Enish Cancel

- 3. Here, the ampersand '&' symbol prefix to vid indicates that it is a bind parameter.
- 4. Click on the **Run Query Test tool** to see how it works for bind parameters, as shown in Figure 3-32.

Figure 3- 32 Run Query Test

Welcome to the Cloud Connect	tion Configuration Wizard - Step 3 of 5				X
Configure the Operation t	to Perform in the Oracle Salesforce Application		0101010101010		*
Basic Info Connection Operations Headers Summary	Select the target operation and business objects in the Oracle Salesforce application.				*
	Select an Operation Type: SOSL/SOQL Query				
	"Query Statement:				
	Select id, name from Account ③ *WSOL Operation: query				
	③ Binding Parameters: No Parameters				
	Test My Query No Result				
Help		< <u>B</u> ack	<u>N</u> ext >	Einish	Cancel

5. As shown in Figure 3-33, the **Run Query Test tool** prompts you to provide a value for the bind parameter, 'vid' in this case.

Figure 3-33 Provide a Value for the Bind Parameter

Welcome to the Cloud Connection	on Configuration Wizard - Step 3 of 5	
Configure the Operation to	Perform in the Oracle Salesforce Application	
Basic Info Connection Operations Headers	Select the target operation and business objects in the Oracle Salesforce application.	
Summary	Select an Operation Type:	
	*Query Statement:	
	Select id, name from Account where id= &vid	
	③ *WSDL Operation: query]
	Image Binding Parameters: Vid:	
	Test My Query No Result	
Help	1 · · · · · · · · · · · · · · · · · · ·	< Back Next > Enish Cancel

On providing an appropriate value to the bind parameter and clicking the 'Execute Query' button, you can view the result set for that particular query, as shown in Figure 3-34.

Figure 3- 34 Result of the Query

Welcome to the Cloud Connection	on Configuration Wizard - Step 3 of 5	
Configure the Operation to	Perform in the Oracle Salesforce Application	
Banc Info Connection Operations Handers Summery	Select the target operation and business objects in the Oracle Salesforce application. ③ Select an Operation Type: \$058,5000. • *Query Statement: Select ki, name from Account where name + "Bname" ③ *WSD& Operation: query	
	Binding Parameters: name: vedafione Test My Quary creall smither = Uncenterprise.scap.sforce.com* smins:scal="http://www.wil.org/20 cdone-brue*/journet- cdone-bru	
Help		< Back Next > Enish Cancel

7. The WSDL generated for this particular adapter contains the bind parameter as part of input schema, as shown in Figure 3-35.

Figure 3-35 Input Schema

<pre><xs:schema <="" elementformdefault="qualified" pre="" xmlns="http://xml.oracle.com/types/salesforceReference_2"></xs:schema></pre>	
<pre>xmlns:xs="http://www.w3.org/2001/XMLSchema" targetNamespace="http://xml.oracle.com/types/salesforceReference</pre>	2"
<pre>xmlns:ns3="http://xml.oracle.com/types/salesforceReference_2"></pre>	
<rpre><xs:complextype name="QueryParameters"></xs:complextype></rpre>	
<xs:all></xs:all>	
<xs:element maxoccurs="1" minoccurs="1" name="vid" type="xs:string"></xs:element>	

4

Design-Time: Using Oracle Cloud Adapter for Salesforce.com Configuration Wizard

This chapter defines how you can configure Oracle Cloud Adapter for Salesforce.com by walking through a complete Adapter Configuration Wizard scenario. Moreover, you will also get to know what artifacts are being generated after completing the Oracle Cloud Adapter for Salesforce.com Wizard.

It contains the following topics:

- Section 4.1, "Oracle Cloud Adapter for Salesforce.com Plug-in"
- Section 4.2, "Oracle Cloud Adapter for Salesforce.com Walkthrough"
- Section 4.3, "Design-time Artifact Generation"

4.1 Oracle Cloud Adapter for Salesforce.com Plug-in

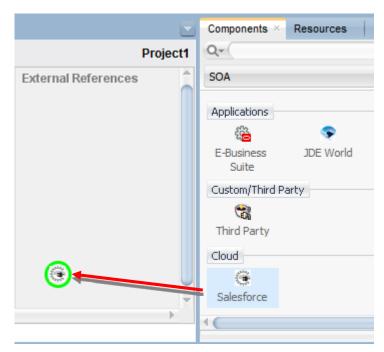
Oracle Cloud Adapter for Salesforce comes preinstalled with Oracle SOA Suite 12c (12.1.3) and is available under the Cloud subsection of Component Palette in JDeveloper.

4.2 Oracle Cloud Adapter for Salesforce.com Walkthrough

This section describes the Adapter Configuration Wizard and how you can define an Oracle Cloud Adapter for Salesforce.com by using the Adapter Configuration Wizard. Contrary to 11g wherein all adapters were part of the 'Service Adapters' subsection, 12c distinguishes adapters based on their usage. Salesforce adapter is visible under the 'Cloud' subsection, a section dedicated to cloud based adapters.

- 1. In the Component Palette, select SOA.
- 2. Under the Cloud subsection you should be able to find an icon for Oracle Cloud Adapter for Salesforce.com
- **3.** Drag and drop **Salesforce** Adapter to the **External References** swim-lane in the composite.xml page, as shown in Figure 4-1.

Figure 4-1 Salesforce Adapter



The Salesforce Cloud Adapter Configuration Wizard dialog is displayed.

4.2.1 Welcome Page

The first page of Salesforce Cloud Adapter Configuration Wizard is – Welcome page, as shown in Figure 4-2.

Service Adapters enable your Oracle BPEL process or Oracle Mediator Component to interact with database tables, database queues, file systems, FTP servers, Java Message Services (JMS), IBM WebSphere MQ, Oracle applications, or Cloud applications.

Click Next to continue or Cancel to exit the wizard.

Figure 4-2 Welcome Page

Welcome to the Cloud Co	nnection Configuration Wizard - Step 1 of 5		×
Welcome to the Cloud	Connection Configuration Wizard		*
Basic Info Connection Operations Headers Summary	This wizard helps you create a service using the Oracle Salesforce Cloud connection. You will be asked to specify configuration parameters and define an operation for the service. "What do you want to call your connection? SalesforceReference What does this connection do? Describe the connection's purpose and detail		
Help	" < <u>B</u> ack	Next > Einish	Cancel

4.2.2 Salesforce Cloud Server Connection Page

The next page of the adapter configuration wizard is – **Salesforce Cloud Server Connection**, as shown in Figure 4-3.

This page enables you to either select an existing connection or create a new connection definition by providing an Authentication Key.

Figure 4-3 Salesforce Cloud Server Connection Page

Welcome to the Cloud Conne	ection Configuration Wizard - Step 2 of 5	×
Salesforce Server Conne	ection exponentia of the sector of the secto	>
Basic Info Connection Operations Headers Summary	A Salesforce Cloud Server connection is required to access the operations and business objects available. Where can I find the Objects you need? • "Enterprise WSDL Location: @ Pick the key to get in the door Security Policy: • CUSTOM • *Authentication Key: • • • • • • • • • • • • •	
Help	<back next=""> Enish Can</back>	el

The Salesforce Cloud Server Connection page is arranged in the following sections:

- Enterprise WSDL Location
- Security Policy
- Authentication Key
- Test Connection

4.2.2.1 Enterprise WSDL Location

In the text box corresponding to WSDL location, provide the location of your Enterprise WSDL. Using the **Find existing WSDLs** button, browse for the Enterprise WSDL. Make sure you copy the file to your local project folder and use the same while configuring the adapter. Alternatively, you can provide the MDS location of the WSDL in this text box. For more information refer to the section "A.1 Generating the Enterprise WSDL" for WSDL generation. This field is mandatory.

Find existing WSDLs: Click **Find existing WSDLs** button to find/select the existing WSDLs, as shown in Figure 4-4.

Figure 4-4 WSDL Location	Option
--------------------------	--------

		-	-
*Enterprise WSDL Location:		1	

4.2.2.2 Authentication Key

Authentication key enables you to specify and store the Authentication credentials in the Credential Store Framework. This field is mandatory. Select the Authentication key, this key is required to retrieve the Salesforce.com login credentials during run-time. It must match the CSF key configured on the WebLogic server. To see the steps to configure the CSF key on WebLogic server, see the section "CSF Key in Enterprise Manager".

Add a new credential: To create a new key, click on plus (+) button, as shown in Figure 4-5.

Figure 4-5 Create Authentication Key



Once you click on the + icon, the **Add Credential** pop-up window appears, as shown in Figure 4-6.

Add Credential / CSF Key Creation

Add Credential page is used to create a new password credential by supplying user name, password and key alias, as shown in Figure 4-6. The new credential will be added to the *oracle.wsm.security* credential map.

On this page the following information is required:

- User ID: Enter the Salesforce.com user ID (typically an email address).
- **Password:** Enter the Salesforce.com password + security token.
- CSF Key: A user defined (CSF) key which is associated with the specified username and password. Enter the CSF Key of your choice. Credential store framework requires a key which stores the username and password and prevents the user from rewriting the same at run-time. The CSF Key created in configuration wizard should match the CSF key created on Enterprise Manager Console. For more information on how to create a CSF Key on Enterprise Manager Console, refer to the section "CSF Key in Enterprise Manager".



👌 Create CSF Key	X
*CSF Key Name:	
*Username:	
*Password:	
*Re-Enter Password:	
Help	OK Cancel

All these parameters are needed for logging into the Salesforce.com.

Note: The CSF key view/edit functionality is currently not supported. It will be provided in a subsequent release.

4.2.2.3 Test Connection Functionality

You can use **Test** button to test the connection after creating or selecting the CSF Key. By clicking on **Test** button, you will see the message as shown in Figure 4-7.

- Success! For successful connection.
- Error! For any exception during login.

Figure 4-7 Test Connection Option

Test
Connection was established successfully.

Click Next to continue or Cancel to exit the wizard.

4.2.3 Salesforce.com Cloud Operation Configuration Page

The next page of Salesforce Cloud Adapter Configuration Wizard is – **Cloud Operation Configuration**, as shown in Figure 4-8.

Figure 4-8 Cloud Operation Configuration page

	ection Configuration Wizard - Step 3 of 5 to Perform in the Oracle Salesforce	Application		entennue	*
Basic Info	Select the target operation and business o	bjects in the Oracle Salesforce application.			
Summary	3 Select an Operation Type:	CRUD			
	Select Business Objects (Salesforce AP Available: Account AccountContactRole Account_Test_c	(33.0): Q	Selected:		& V
	Account_vodc ActionLinkGroupTemplate ActionLinkTemplate AdditionalNumber Address_vodc Announcement				
	(2) *WSDL Operation:	create			
Help				< Back Next >	Enish Cancel

The Cloud Operation Configuration page enables you to select operation and objects(s).

The operation page enables you to select from the different kinds of operation categories, and operations. Based on the operation selected, the list of objects will be displayed in the available object list text area. You can select one or multiple objects for a specified operation. You need to follow a logical sequence in selecting objects during design-time because the

request structure that the adapter creates depends upon the order of selected objects. For example, if you want to create a lead, opportunity and an account in this order, these objects have to be selected accordingly; with lead on top, followed by opportunity and then account.

The Cloud Operation Configuration page is arranged in the following sections:

- Select an Operation Type
- SFDC Operation
- API Version
- WSDL Operation
- Business Objects

4.2.3.1 Operation Category

This drop-down list groups a set of related Salesforce.com operations which the user can choose amongst. For more information, refer to the section "Supported SOAP API Operations".

4.2.3.2 SFDC Operation

This includes a number of operations, based on Operation Category selected.

SFDC Operation calls represent specific operations that the Oracle Cloud Adapter for Salesforce.com can invoke at run-time to perform tasks, for example:

- Query data in your organization.
- Add, update, and delete data.

For more information, refer to the section "Supported SOAP API Operations".

4.2.3.3 API Version

The API Version indicates which Salesforce.com WSDL (Web service) version you are using to get all the metadata information for Salesforce.com objects. This API version is read from the endpoint URL in service definition section at the bottom of the Salesforce.com WSDL.

4.2.3.4 WSDL Operation

The WSDL operation is a text field where you can define custom operation name for selected operation. This custom name will then be used in the integrated WSDL, generated after finishing the configuration wizard. If you have not provided any WSDL operation name, the selected operation name, which is the default value of this field, is used.

4.2.3.5 Business Objects

Available Objects

This area shows all the available Salesforce.com standard and custom objects that can be selected for the particular operation.

Selected Objects

This section shows all the Salesforce.com objects selected by you. The selected operation (create, update, delete, etc.) can be performed only on these objects by your adapter instance.

Filter Field

Filter field is used to search for a Salesforce.com object from the list of available objects. When you click on the **filter** drop-down, following options are available.

- All: Combination of both standard as well as custom objects
- Custom: Objects created or customized by the user
- Standard: Objects provided by Salesforce in standard environment

4.2.3.6 SOQL and SOSL Page

If you select SOSL/SOQL operation category, a query editor will open. Type the SOQL or SOSL statement depending on the operation selected, as shown in Figure 4-9.

SOSL/SOQL enables you to search your organization's Salesforce.com data for specific information.

Query Statement

Query statement is used to query data from Salesforce.com. Query statement text box consists of SOQL statements according to Salesforce.com. Refer to the section "SOSL and SOQL Operations" to understand how the operation works. For detailed information on SOQL/SOSL, follow this link

(http://www.salesforce.com/us/developer/docs/soql_sosl/)

Figure 4-9 Query Statement in SOQL and SOSL Option

Welcome to the Cloud	ud Connection Configuration Wizard - Step 3 of 5	×
Configure the Ope	eration to Perform in the Oracle Salesforce Application	1
Basic Info <u>Connection</u> Operations	Select the target operation and business objects in the Orade Salesforce application.	
U Headers Summary	Select an Operation Type: SOSL/SOQL query	
	*Query Statement: Select id, name FROM account where id= &vid	
	"WSDL Operation: query Binding Parameters:	U
	vid:	
Help	< Back Next > Enish	Cancel

Run Query Test Tool

This tool helps you to test and verify the query. By clicking on **Test** icon, a test dialogue box appears.

The Query Test dialogue contains the following area:

Query Statement text box and **Results** box showing result of query executed. Result box can show results up to a maximum of 200 records. If the query has one or more bind parameters in it, then one or more input boxes will appear to provide values for these, as shown in Figure 4-10.

Execute Query: Execute Query button is used to execute the query.

Figure 4- 10 Query Test

👌 Welcome to the Cloud Connect	tion Configuration Wizard - Step 3 of 5		X
Configure the Operation t	to Perform in the Oracle Salesforce Application	otorgrotororgrom/d/d/d/c/	*
Basic Info Connection Operations Headers	Select the target operation and business objects in the Orade Salesforce application.		
Summary	Select an Operation Type: SOSL/SOQL euery		
	*Query Statement:		
	Select id, name from Account where id= 8x/d		
	(3) *WSDL Operation: query		
	Binding Parameters: Vid:		
	Test My Query No Result		Ţ
Help	< Back	Next > Einish	Cancel

Refresh Bind Parameters: Refresh Bind Parameters button is used to refresh Bind Parameters box, if there is any change in the number of bind parameters in the query statement. The screenshot below illustrates the usage of 'Bind Parameters'

Figure 4-11 Query Test

O Welcome to the Cloud Conn	nection Configuration Wizard - Step 3 of 5	
Configure the Operation	n to Perform in the Oracle Salesforce Application	
Basic Info Connection Operations	Select the target operation and business objects in the Oracle Salesforce application.	î
ů Summery	"Query Statement: Select &, name from Account where name = '&name' @ "WSOL Operation: @ Binding Parameters: name: vodafone Text My Query	
Reb	<pre>creat.txmire="unmetrprise.sop.ifrce.com"xmins.ss"="http://www.w3.org/2d cdore=true</pre> (dore=> cquerit.costor.ssmire="ifracount"> createrit.ssmire="if	< Bok Best > Drich Cancel

Search Statement

Salesforce object Search Statement (SOSL) is used to search specific data for your organization from Salesforce.com. It retrieves records for one or more objects. Analogous to the options described in previous section, Search statement also has buttons as provision for - Run Search test Tool, Execute Search and Refresh Bind Parameters.

Figure 4-12 Cloud Operation Configuration

Welcome to the Cloud Cont	nection Configuration Wizard - Step 3 of 5
Configure the Operation	n to Perform in the Oracle Salesforce Application
Basic Info Connection Operations Headers Summery	Select the target operation and business objects in the Oracle Salesforce application. ③ Select an Operation Type: SOSU, SOQL () avery () *Query Statement: Select di, name from Account where name = "Bname" ③ *WSDL Operation: @ Bnding Parameters: name: voldprine
	Test My Query creat My Query creat My Query creating and the set of the se
Help	< Back Bent> British Cancel

4.2.4 Header and Properties Page

The next page in Salesforce Cloud Adapter Configuration Wizard is – **Header and Properties** page, as shown in Figure 4-13.

The **Header and Properties** page is used to select header properties for the selected Oracle Cloud Adapter for Salesforce.com Cloud Operation. The values defined in this page can be overridden by properties defined at the composite level or in the EM console. For a detailed description of run-time properties, see section "

Oracle Cloud Adapter for Salesforce.com Run-Time Properties".

For more information on Salesforce.com headers, follow the link (http://www.salesforce.com/us/developer/docs/api/Content/soap_headers.htm).

For operation specific header information, refer to the section "Salesforce.com SOAP Headers".

👌 Welcome to the Cloud Connection Configuration Wizard - Step 4 of 5				
Salesforce Operation Header	Configuration			
Basic Info Connection Operations	Select Operations Headers			
Summary	Configure the Header Properties for the Selected Operation: The following header properties are available with the operation create INIONNONCHEADER			
	evallorNone: true evaluationHeader evaluationHeader evaluationHeader			
	ObuggingHeader EmailHeader			
	⊕ LocaleOptions ⊕ HruHeader			
	PackageVersionHeader			
Help	,	< Back Next > Finish Cancel		

Figure 4-13 Header and Properties Page (for create operation)

4.2.5 Finish Page

The next page in Salesforce Cloud Adapter Configuration Wizard is – **Finish** page. The **Finish** page summarizes the Oracle Cloud Adapter for Salesforce configuration.

When you complete the adapter configuration, a WSDL file named after the service name, you entered on the **Adapter Configuration Wizard - Service Name** page, appears in the **Application Navigator**, as shown Figure 4-14.

To finish adapter configuration, Click Finish.

Figure 4-14 Finish Page

Welcome to the Cloud Connection	on Configuration Wizard - Step 5 of 5		X
Salesforce Cloud Adapter A	rtifacts Summary	endormanora a faligio fal	*
ပု Basic Info ပု Connection	Cloud Adapter configuration was successful.		
Operations	Selected Operation Name: retrieve		
Headers Summary	Selected Object(s) Name: ActionLinkGroupTemplate		
	Selected SOAP Header: No Header Selected		
Help	J	< Back Next > Einish	Cancel

4.3 Design-time Artifact Generation

After clicking on Finish button on the last screen of Salesforce Cloud Adapter Configuration Wizard, composite.xml gets updated by adding a reference element along with jca file and integration WSDL file.

4.3.1 JCA File

The JCA file provides adapter configuration information for the service. A connection factory is specified so that the adapter run-time can connect to the Salesforce Cloud Servers, as shown in Figure 4-15.

Figure 4-15 Sample JCA File contents for delete operation



4.3.2 Integration WSDL

Integration WSDL is a simplified, abstract WSDL file as compared to the actual Salesforce WSDL. It has information in reference to selected operation and objects during configuration of the Oracle Cloud Adapter for Salesforce.com. Figure 4-16 and Figure 4-17 shows parts of the Sample Integration WSDL generated by Salesforce Adapter for delete operation.

Figure 4-16 Integration WSDL part showing delete operation request and response schema



Figure 4-17 Integration WSDL part displaying delete operation details

<wsdl:message name="deleteRequestMessage"> <wsdl:part name="parameters" element="nsl:delete"/> </wsdl:message> <wsdl:message name="deleteResponseMessage"> <wsdl:part name="parameters" element="nsl:deleteResponse"/> </wsdl:message> <wsdl:message name="UnexpectedErrorFault"> <wsdl:part name="parameters" element="fns:UnexpectedErrorFault"/> </wsdl:message> <wsdl:portType name="samplePortType"> <wsdl:operation name="delete"> <cloud:CloudOperation xmlns:cloud="http://xml.oracle.com/types" targetOperation="delete"/> <wsdl:input message="nsl:deleteRequestMessage"/> <wsdl:output message="nsl:deleteResponseMessage"/> <wsdl:fault name="UnexpectedErrorFault" message="nsl:UnexpectedErrorFault"/> </wsdl:operation> </wsdl:portType>

<u>5</u>

Integration with Different Service Components (BPEL/Mediator) in Oracle SOA Suite

Oracle Cloud Adapter for Salesforce.com facilitates integration to various Salesforce.com objects via operations exposed by the Salesforce.com API. This chapter walks you through a simple integration wherein user creates a new account on Salesforce.com using Oracle Cloud Adapter for Salesforce.com. The scenario would enable you to create an easy and seamless integration to Salesforce.com using BPEL Process Manager.

This section describes Oracle Cloud Adapter for Salesforce.com concepts through a use case, which is a complete walkthrough of the Adapter configuration wizard. In addition, this use case also describes how by using the Adapter configuration wizard, you can access various operations available to your Enterprise on Salesforce.com, select objects specific to your business requirements, generate corresponding WSDL to expose the necessary operations etc. These services are consumed to define partner links that are used in the BPEL process. You use the Adapter configuration wizard to both create and edit adapter services.

This chapter contains the following topics:

- Section 5.1, "Overview"
- Section 5.2, "Configuring the CSF Key on Enterprise Manager Console"
- Section 5.3, "Designing a Composite for Service Integration"
- Section 5.4, "Configure Oracle Cloud Adapter for Salesforce.com"
- Section 5.5, "Integration with BPEL"
- Section 5.6, "Deploy the Composite"
- Section 5.7, "Test the Composite"

5.1 Overview

Account is one of the various standard objects provided by Salesforce.com. An account on Salesforce.com represents an individual or business associated with the business. Oracle Cloud Adapter for Salesforce.com allows you to create an account on Salesforce.com. The below scenario would provide you step by step instructions to accomplish the same.

To integrate with Oracle BPEL Process Manager, the organization's Enterprise WSDL should be available to the user. The underlying adapter services must be exposed as WSDL files, which are generated during design-time in the configuration wizard of the Oracle Cloud Adapter for Salesforce.com. For more information, refer to the section "A.1 Generating the Enterprise WSDL".

The generated WSDL files are used to design the appropriate BPEL processes for outbound adapter services. A completed BPEL process must be successfully compiled in JDeveloper and deployed to an SOA Suite server. Upon deployment to an SOA Suite server, every newly deployed process is viewable in the Oracle Enterprise Manager console, where you can run, monitor, administer BPEL processes, and monitor adapter events.

5.2 Configuring the CSF Key on Enterprise Manager Console

For steps to configure the CSF key on Enterprise Manager Console, refer to the section "CSF Key in Enterprise Manager".

5.3 Designing a Composite for Service Integration

The steps mentioned below design a composite using the Oracle JDeveloper Studio Edition (12.1.3.0.0), which is a comprehensive tool for developing Oracle Fusion Middleware applications. It provides an easy-to-use Integrated Development Environment that let you create your integrations efficiently.

5.3.1 Define Composite for BPEL and Mediator

Perform the following steps to define a composite for BPEL and Mediator:

1. In the File menu of JDeveloper, click New and select Application.

0	Oracle JDeveloper 12c Development Build - Testing.jws : S_E_B_13_001_02.jpr : C:\JDev										
<u>F</u> ile	<u>E</u> dit	<u>V</u> iew	<u>A</u> pplicatio	on	Refa <u>c</u> tor	<u>S</u> ear	ch	<u>N</u> avigate	<u>B</u> uild	<u>R</u> un	Tea <u>m</u>
	<u>N</u> ew				•	5	<u>A</u> p	plication			
	<u>O</u> pen			Ctrl-	0		<u>P</u> ro	ject			
	<u>R</u> eopen				•	*	BPI	EL <u>2</u> .0 Subpi	rocess		
	Check C	ode Co	mpliance			_		EL Process			
	Close			Ctrl-	EA	•	Bus	siness <u>R</u> ules			
	Close Al				+Shift-F4		<u>C</u> o	mposite Te	st		
×	Delete			Gar	00000		Cro	ss Re <u>f</u> erenc	e(XREF)		
-	_					- 🖽	<u>D</u> o	main Value	Map(D\	/M)	
	Save			Ctrl-	S	4	<u>E</u> ve	nt Definitio	n		
	S <u>a</u> ve As.					2	<u>H</u> u	man Task			
-	Save As	HTML				a		ve <u>n</u> POM fo	or Projec	:t	
6	Save A <u>I</u> I						_	diator			
	Rena <u>m</u> e							ing Context			
	Import					@	_	DL Docume			
	Export							L <u>S</u> chema			
	Compar	e With			•			uery File <u>v</u> e			
	Replace	_			•			uery <u>L</u> ibrary	ver 1.0.		
						- 65	<u>x</u> si	. Map			
.8.	Page Se Print	tup		Ctrl-	P	4	Fro	m <u>G</u> allery			Ctrl-N
	Print Pre	Niew		Cul-							
	Print Ar	_			,						
	E <u>x</u> it			Alt-	=4	-					

Figure 5-1 Navigation Window

2. The New Gallery page is displayed. Select SOA Application from the Items list, as shown in Figure 5-2.

Figure 5-2 Create SOA Application

🕐 New Gallery	X
Q	
<u>C</u> ategories:	Items: Show All Descriptions
Caregories.	Application from EAR File Application Template Custom Application Database Application Extension Application Database Application Database Application OEP Application Service Bus Application Service Bu
·····Spring ·····TopLink/JPA	UML Application
	WebCenter Portlet Producer Application OK Cancel

3. Provide a suitable name to your application, as shown in Figure 5-3.

Figure 5-3 Name your application

O Create SOA Application	- Step 1 of 3		×
Name your applicatio	n	01010101010101010101010101010101	F
	Application Name:		
Application Name	Application		
Project Name	Directory:		
O Project SOA Settings	C:\JDeveloper\mywork\Application		Browse
	Application Package Prefix:		
Help	< <u>B</u> ack	<u>N</u> ext > <u>F</u> inish	Cancel

4. Click Next and provide a suitable name to your project, as shown in Figure 5-4.

Figure 5-4 Name your project

Create SOA Application	- Step 2 of 3	
Name your project		01010101010101010101010
Application Name Project Name	<u>P</u> roject Name: Dir <u>e</u> ctory:	: Project1 C:\JDeveloper\mywork\Application\Project1 Browse
Project SOA Settings	Project Featu SOA Suite SOA Suite is a	
Help		< Back Next > Finish Cancel

- 5. Click Next.
- 6. Select Composite with BPEL Process from Standard Composite list, as shown in Figure 5-5.

Figure 5-5 Configure SOA Setting

Create SOA Application	- Step 3 of 3		-	23
Configure SOA settin	gs		17393939393356	F
Application Name Project Name Project SOA Settings	Composite Name: Project1 Start from: ① Standard Composite ② Composite With Human Task ③ Composite With BPEL Process ③ Composite With Subprocess ④ Composite With Subprocess ④ Composite With Business Rule ⑤ Composite With Spring ④ Composite With Mediator	SOA Template		
	<u>C</u> ustomizable			
Help	< <u>B</u> ack	Next >	<u>F</u> inish	Cancel

- 7. Click Finish.
- 8. Select the Synchronous BPEL Process from Template drop-down and click OK, as shown in Figure 5-6.

Figure 5-6 Create BPEL Process

🕜 Create BPE	L Process	x
	s cess is a service orchestration, based on the BPEL specification, used to describe/execute a ocess (or large grained service), which is implemented as a stateful service.	_
BPEL 2.0 S	pecification O BPEL 1.1 Specification	
<u>N</u> ame:	BPELProcess 1	
Namespace:	http://xmlns.oracle.com/Application/Project1/BPELProcess1	
Directory:	C:\JDeveloper\mywork\Application\Project1\SOA\BPEL	
Template:	😂 Synchronous BPEL Process	- 3
Service Name:	bpelprocess1_client	
	Expose as a SOAP service	
	Transaction: required	- 3
	Input: [http://xmlns.oracle.com/Application/Project1/BPELProcess1}process	_ 🔍
	Qutput: {http://xmlns.oracle.com/Application/Project1/BPELProcess1}processResponse	_ Q
Help	OK	Cancel

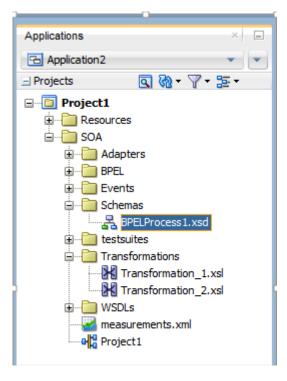
9. The composite.xml looks as shown in Figure 5-7.

Figure 5-7 Composite.xml

② Start Page × 여십 Project1 ★ 용 BF	ELProcess1.bpel ×	
🖌 🕼 🌌 💥 🖏 I 🕅 🧕 🖉 I 🛛	th 🔁 🏟 ঝ	Project1
Exposed Services	Components	External References
∢ Design Source History		

10. In the **Application Navigator**, under the **Schemas** folder, an XML schema file with the name **BPELProcess1.xsd** is displayed after BPEL process creation, as shown in Figure 5-8.

Figure 5-8 XML Schema File



11. Edit this schema file as per your business requirement. It is the responsibility of the front-end application to enforce the data validations and to ensure that the input sent to SFDC via SOA is error free. The structure of the schema used in this use case is as shown in Figure 5-9.

Figure 5-9 Edit XML Schema File

Find		
x1</td <td>al version="1.0" encoding="UTF-8"?></td> <td></td>	al version="1.0" encoding="UTF-8"?>	
⊟ <sch< td=""><td>mema attributeFormDefault="unqualified"</td><td></td></sch<>	mema attributeFormDefault="unqualified"	
	elementFormDefault="qualified"	
	<pre>targetNamespace="http://xmlns.oracle.com/Application2/Project1/BPELProcess1"</pre>	
	<pre>xmlns="http://www.w3.org/2001/XMLSchema"></pre>	
-	<element name="process"></element>	
	<complextype></complextype>	
	<sequence></sequence>	
	<pre><element name="Account_Name" type="string"></element></pre>	
	<element name="Phone" type="string"></element>	
	<element name="Website" type="string"></element>	
	<pre><element name="Description" type="string"></element></pre>	
	<element name="processResponse"></element>	
	<complextype></complextype>	
	<sequence></sequence>	
	<element name="ID" type="string"></element>	
	<pre><element name="Status" type="string"></element></pre>	
	<element name="Error_Fields" type="string"></element>	
	<pre><element name="Error_Code" type="string"></element></pre>	
	<pre><element name="Error_Message" type="string"></element></pre>	
ma 🗸		1:

12. Figure 5-10 shows **Create Account** page on Salesforce.com. The fields with red mark are mandatory fields. This structure may vary for different organizations.

Figure 5-10 Create Account Page on Salesforce.com

New Account Edit			Help for this Page 🥝
Account Edit	Save Save & New Cancel		
Account Information			= Required Information
Account Owner		Rating	None 🗸
Account Name		Phone	
Parent Account		Fax	
Account Number		Website	
Account Site		Ticker Symbol	
Туре	None V	Ownership	None 🗸
Industry	None V	Employees	
Annual Revenue		SIC Code	
Address Information			Copy Billing Address to Shipping Address
Billing Street	\bigcirc	Shipping Street	\bigcirc
Billing City		Shipping City	
Billing State/Province		Shipping State/Province	

5.4 Configure Oracle Cloud Adapter for Salesforce.com

Perform the following steps to configure a New Oracle Cloud Adapter for Salesforce.com:

1. In External References swim lane of the composite.xml file, right-click and select Salesforce adapter, as shown in Figure 5-11.

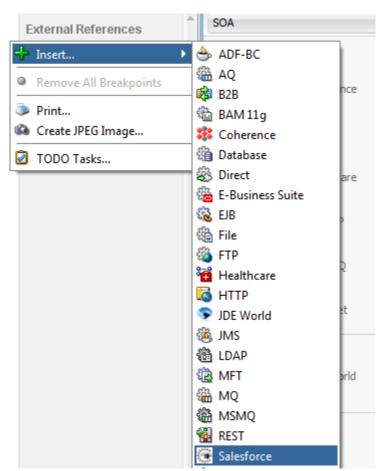


Figure 5-11 Salesforce Adapter

2. The Salesforce Cloud Adapter Configuration Wizard - Welcome page is displayed, as shown in Figure 5-12.

Figure 5- 12 Welcome Page

elcome to the Clour	d Connection Configuration Wizard		Sten.
Basic Info Basic Info Operations Headers Summary	d Connection Configuration Wizard This wizard helps you create a service using the Oracle Salesforce Cloud connection. You will be asked to specify configuration parameters and define an operation for the ser "What do you want to call your connection? SalesforceReference What does this connection do? Describe the connection's purpose and deta!	Ace.	

- 3. Click Next.
- 4. The Salesforce Cloud Server Connection page is displayed. The WSDL Location and Authentication Key text boxes are already populated. It picks up these values from the cache. You can re-enter these values. If you want to use a different value, click the Find existing WSDLs icon, which is located to the right of the WSDL Location field, as shown in Figure 5-13.

Figure 5-13 Salesforce Cloud Server Connection Page

Welcome to the Cloud Connection	n Configuration Wizard - Step 2 of 5		X
Salesforce Server Connectio	n	orestonetenenesteretelefeleres	*
Basic Info Connection Operations Headers Summary	A Salesforce Cloud Server connection is required to access the operations and business objects available. Where can I find the Objects you need? Enterprise WSDL Location: [1/SOA/WSDLs/Enterprise_SS_v33.wsd] Pick the key to get in the door Security Policy: CUSTOM *Authentication Key: SFDC_Test *		
Help	< <u>B</u> ack	Next > Einish	Cancel

5. The **WSDL** Chooser dialog is displayed, browse and select the downloaded Enterprise WSDL and click **OK**, as shown in Figure 5-14.

Figure 5-14 SOA Resource Browser

👌 WSDL Chooser	r	-	and Margaret Street	and and a				x
Application Server	File System	Project Libraries	SOA-MDS	UDDI	WSIL			
Location:	C:\offical					- C C	🖸 🚱	•= =
Work Project Application	Ele Name: Sales	nterprise.wsdl	.wsdl					
Home	File Type: Web	Service Definition	on Files (*.wsdl)					
Selection: file:/C:/	offical/Salesforce	Enterprise.wsdl						
Help						0	к	Cancel

6. Click OK. The following screen appears as shown in Figure 5-15.

Figure 5-15 Localize Files Dialog

O Localize Files
file:/C:/SVN/SNC/DEMO/SFDC_TO_SNC/Project1/SOA/WSDLs/Enterprise_SS_v33.wsdl is external to the current project. In order to make this file available to your project at runtime, JDeveloper can now make a local copy of this file and any dependent files that it imports or includes.
Copy Options: Maintain original directory structure for imported files The following files will be created in directory C:\SVN\SNC\DEMO\SFDC_TO_SNC\Project2\SOA :
WSDLs/Enterprise_SS_v33.wsdl
Help OK Cancel

7. Click **OK**. You are returned to the Salesforce Cloud Server Connection page.

Figure 5-16 Salesforce Cloud Server Connection Page

Welcome to the Cloud Cor	onnection Configuration Wizard - Step 2 of 5	×
Salesforce Server Con	nection expension and a second a se	*
Basic Info Connection Operations Headers Summary	A Salesforce Cloud Server connection is required to access the operations and business objects available. Where can I find the Objects you need? "Enterprise WSDL Location: [:I/SOA/WSDLs/Enterprise_SS_v33.wsd] Pick the key to get in the door Security Policy: CUSTOM *Authentication Key: SFDC_Test Test	
Help	< Back Next > Einish	Cancel

Note that as an alternative, you can store WSDL at an MDS location and access it, as shown in Figure 5-17.

Figure 5-17 SOA Resource Browser

	Components Resources ×				
PDEMO	Provent Anter Name				
•	± My Catalogs				
	IDE Connections				
	🕀 📲 Application Server				
	🗄 📲 Database				
	🗄 📲 SOA-MDS				
	👜 📲 MDSConnection_76				
	🖃 📲 SOA_DesignTimeRepository				
	≟ i j				
	🖮 💼 wsdls				
	@ SalesForceEnterpriseAPI.wsdl				

- 8. Traverse to IDE Connections → SOA-MDS. Select the appropriate SOA-MDS connection where you placed the Enterprise WSDL. Select the WSDL file to be used in the adapter configuration and click **OK**.
- The WSDL location should be of the form 'oramds:/apps/SOA/WSDLs/Integration/SalesforceReference.wsdl', as shown in Figure 5-18.

Figure 5-18 WSDL location

Welcome to the Cloud Connection	n Configuration Wizard - Step 2 of 5	×
Salesforce Server Connectio		*
Basic Info Connection Operations Headers Summary	A Salesforce Cloud Server connection is required to access the operations and business objects available.	
Help	< <u>B</u> ack <u>N</u> ext > Einish	Cancel

10. Click OK.

11. Click "+" button to create a new Authentication Key, as shown in Figure 5-19.

Welcome to the Cloud Conne	ection Configuration Wizard - Step 2 of 5	×
Salesforce Server Conne	ection experimentation approximation of	* >
Basi Info Connection Operations Headers Summary	A Salesforce Cloud Server connection is required to access the operations and business objects available.	
Help	< <u>B</u> ack <u>N</u> ext > Einish	Cancel

Figure 5-19 Create a New Authentication Key

12. The **Add Credential** dialog box is displayed, as shown in Figure 5-20. Provide a suitable name and the Salesforce.com credentials and click **OK**.

Note: The password should be a combination of Salesforce.com password and Salesforce.com Security Token.

Figure 5-20 Add Credential

		X
ОК	Cance	4
	OK	OK Cance

13. Click **Test Connection** button to validate the Authentication Key, as shown in Figure 5-21.

Figure 5-21 Test Connection

Welcome to the Cloud Connect	tion Configuration Wizard - Step 2 of 5		×
Salesforce Server Connect	ion		*
Basi: Info Connection Operations Headers Summary	A Salesforce Cloud Server connection is required to access the operations and business objects available. ② Where can I find the Objects you need? "Enterprise WSDL Location: [1/SOA/WSDLs/Enterprise_SS_v33.wsd] ② Pick the key to get in the door Security Policy: CUSTOM "Authentication Key: SPSF_Test		
Help	< Back	lext > Einish	Cancel

14. Click Next.

15. The Cloud Operation Configuration page is displayed, as shown in Figure 5-22.

Figure 5-22 Cloud Operation Configuration Page

O Welcome to the Cloud Connect	tion Configuration Wizard - Step 3 of 5	N. Papers Concernants of		
Configure the Operation t	o Perform in the Oracle Salesfor	ce Application		
Basic Info	Select the target operation and busine	ss objects in the Oracle Salesforce application.		
U headers U Summary	(2) Select an Operation Type:	CRUD		
	"Select Business Objects (Salesforce Available: Account	API 33.0): Q=	Selected:	× *
	AccountContacRole <u>Account_vod_c</u> Account_vod_c ActoniInKGroupTemplate ActoniInKGroupTemplate AdditionaNumber Addrea vod_c Announcement			
	(2) "WSDL Operation:	rreate		
Help	0			< Back Next > Enish Cancel

16. Since the scenario is to create an Account on Salesforce.com, select Operation Category as CRUD and SFDC Operation as create. Now move Account from the list of Available objects to the list of the Selected objects. The WSDL Operation by default is create (same as SFDC Operation). You can edit the same by providing an operation name suitable to your business requirement, as shown in Figure 5-23.

Welcome to the Cloud Conne	ection Configuration Wizard - Step 3 of 5	×
Configure the Operation	to Perform in the Oracle Salesforce Application	*
Basic Info <u>Connection</u>	Select the target operation and business objects in the Oracle Salesforce application.	
Operations Headers Summary	(2) Select an Operation Type: CRUD create	
	*Select Business Objects (Salesforce API 33.0): Available: Account_Test_C Account_rod_C AccountTestRole ActonLinKGroupTemplate Acditras_vod_C Address_vod_C Announcement ApexClass *Solt Operation: ** ** ** ** ** ** ** ** ** *	<i>≈ ∞</i>
Help	" < <u>Back Next</u> > Enish	Cancel

Figure 5-23 Cloud Operation Configuration Page

17. Click Next. The Header and Properties page is displayed, as shown in Figure 5-24.Figure 5-24 Header and Properties Page

Welcome to the Cloud Connection	on Configuration Wizard - Step 4 of 5				×
Salesforce Operation Heade	er Configuration		01010101010		*
Basic Info Connection Destations Headers Summary	Select Operations Headers Configure the Header Properties for the Selected Operation: The following header properties are available with the operation create AllorNone: true AllowFieldTruncationHeader AllowFieldTruncationHeader AssignmentRuleHeader DebuggingHeader EnailHeader EnailHeader EnailHeader HucaleOptions HuruHeader				
	PackageVersionHeader				
Help	· · ·	< <u>B</u> ack	<u>N</u> ext >	Einish	Cancel

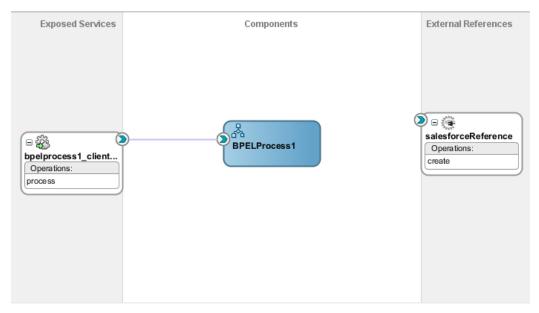
- **18.** Select the appropriate header to your requirement. Headers displayed in this page depend on the operation selected in the previous page.
- 19. Click Next.
- **20.** The finish page is displayed. It provides a complete summary of the operation selected, object on which the operation would operate and the headers selected for that operation, as shown in Figure 5-25.

Figure 5-25 Finish Page

Welcome to the Cloud Connection	n Configuration Wizard - Step 5 of 5			×
Salesforce Cloud Adapter Ar	rtifacts Summary		eresterenteresteresteres	1013a 🌤 🏷
♀ Basic Info ♀ Connection	Cloud Adapter configuration was successful.			
Operations	Selected Operation Name: create			
Headers Summary	Selected Object(s) Name: Account			
	Selected SOAP Header: AllOrNoneHeader.allOrNone : true			
Help	0	< <u>B</u> ack	Next >	ish Cancel

- 21. Click the **Finish** button to complete the Adapter Configuration Wizard.
- **22.** After clicking on **Finish** button, the following screen appears, as shown in Figure 5-26.

Figure 5-26 SFDC Cloud Account

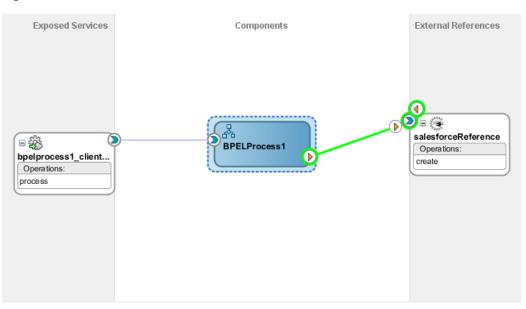


5.5 Integration with BPEL

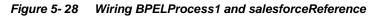
Perform the following steps to integration with BPEL:

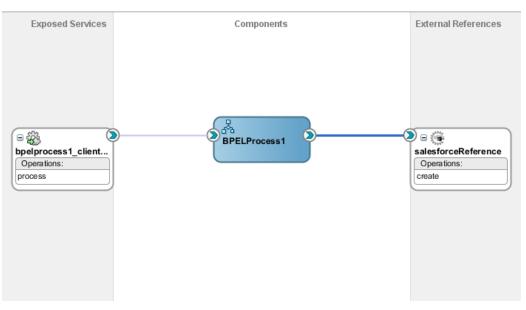
 Connect BPELProcess1 and salesforceReference via a wire, as shown in Figure 5-27.

Figure 5-27 Wired BPELProcess1 and salesforceReference



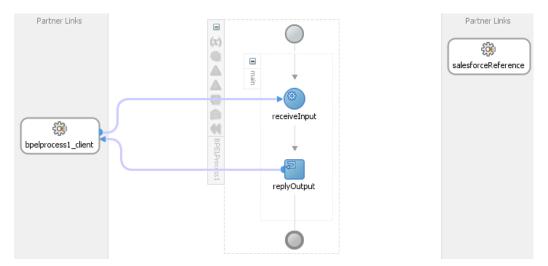
2. After wiring your composite looks like as shown in Figure 5-28.





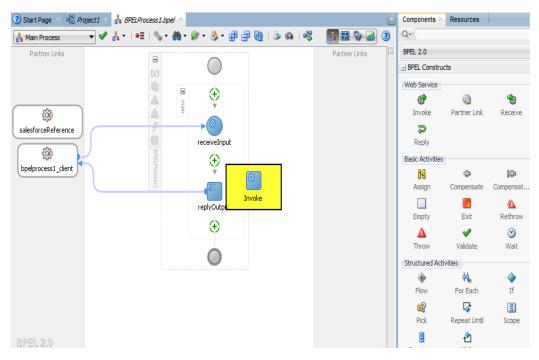
3. Double-click and open **BPELProcess1**. The salesforceReference adapter should be present as a part of the Partner Links, as shown in Figure 5-29.

Figure 5-29 Open BPELProcess1



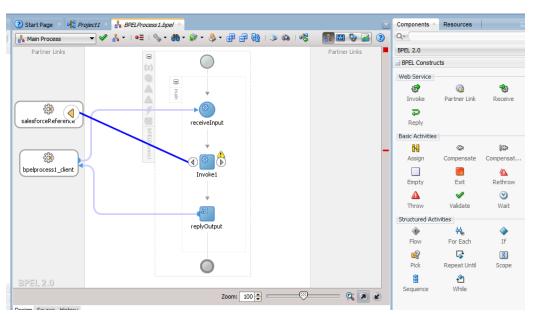
- **4.** Add an invoke activity to invoke the salesforceReference Partner Link. To add the invoke activity, follow the below provided steps:
 - a) Drag and drop the invoke activity from the BPEL constructs, as shown in Figure <u>5-30</u>.

Figure 5- 30 Add invoke activity to invoke the salesforceReference Partner Link



 b) After dropping the Invoke property, wire the invoke activity to the salesforceReference partner link. Now, the composite will appear as shown in Figure 5-31.

Figure 5- 31 Composite Window



 Create an input variable to the partner link by clicking the '+' button adjacent to Input text box in the Variables section. The Create Variable dialog is displayed, as shown in Figure 5-32.

Figure 5- 32 Create an Input Variable

👌 Edit Invo	oke 🛛 🕅	
Assertion	ns Skip Condition Headers Sources Targets	
Genera	al Correlations Properties Annotations	
<u>N</u> ame:	Invoke1	
Conversa	ation ID:	
👌 Create V	Variable	
Name:	Invoke1_create_InputVariable_1	
Type:	{http://xmlns.oracle.com/pcbpel/adapter/salesforce/Automation/Sample	
Help	OK Cancel	
Opera	ation: 🐚 create 💌	
Variabl	les	
Input	: 🔤 🗣 🔍	
Outpu	ut: 🛛 🕌 🔍	
<u>H</u> elp	Apply OK Cancel	

 Create an output variable from the partner link by clicking the '+' button adjacent to Output text box in the Variables section. The Create Variable dialog is displayed, as shown in Figure 5-33.

Assertions Sk	ip Condition	Headers	Sources	Targets		
General	Correlation	ns	Properties		Anno	tations
<u>N</u> ame:	Invoke 1					
Conversation ID	:					F _x
Create Variable	-	_				Σ
lame: Invok	e1_create_Out	putVariable	_1			
ype: {http:	//xmlns.oracle.	com/pcbpe	/adapter/sa	lesforce/A	utoma	ation/Samp
	//xmlns.oracle. bal Variable 🔇			lesforce/A	utoma	ition/Samp
					utoma	
				lesforce/A OK	utoma	ation/Samp Cancel
<u>ی</u> واد					utoma	
⊙ <u>G</u> la Help	obal Variable 🔾				utoma ▼	
<u>H</u> elp Operation:	obal Variable 🔾				utoma	
Get Get Get Operation: Variables Input:	obal Variable 🔾				- -	
<u>Gla</u> <u>H</u> elp <u>Op</u> eration: Variables	obal Variable 🔾				- -	Cancel

Figure 5-33 Create an Output Variable

7. Introduce two transform activities, one prior to the invoke activity and another after it, as shown in Figure 5-34.

Partner Links Partner Links - (\mathbf{x}) -Δ main Δ receiveInput 4 × Transform1 £30 鏓 bpelprocess1_client sfdcCreateAccount Invoke1 30 Transform2 Transformation Transform? Invasoralisationselassian[2] 523

Figure 5-34 Transform Activities

8. Map Transform1 values from receive activity's input variable to invoke activity's input variable, as shown in Figure 5-35.

General Transformation Source: Image: Constraints Variable Part inputVariable payload Imaget Variable: Target Part	: 合 寻
Variable Part inputVariable payload	· 合 马
inputVariable payload	
Target Variable: Target Par	
(x) Invoke 1_create_InputVariable	etters
Mapper File: 2\SOA\Transformations\Transformation_1.xsl	• 🕈 🥖

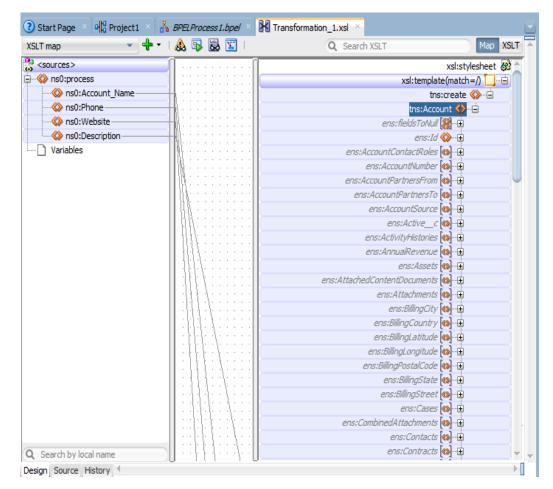
Figure 5-35 Edit Transform

9. Click the '+' button adjacent to Mapper File text box to open the Transformation_1.xsl file.

10. Perform the mapping between inputVariable and Invoke1_create_InputVariable:

- Map Account_Name with Name.
- Map Phone with Phone.
- Map Website with Website.
- Map Description with Description, as shown in Figure 5-36.

Figure 5-36 Mapping between inputVariable and Invoke1_create_InputVariable



11. Map Transform2 values from invoke activity's output variable to reply activity's input variable, as shown in Figure 5-37.

Edit Transfor	mation	-		×
Annotations	Skip Condition	Sources	Targets	
Gene	ral		Transforma	ation
Source:			4	/×÷3
Variable		Part		
Invoke1_crea	te_OutputVarial	ble param	eters	
Target Variab				get Part: payload
Mapper File:	:\SOA\Transform	nations\Transf	formation_2.	xsl 🔍 🖶 🥒
Help		Apply	0	K Cancel

Figure 5- 37 Edit Transform

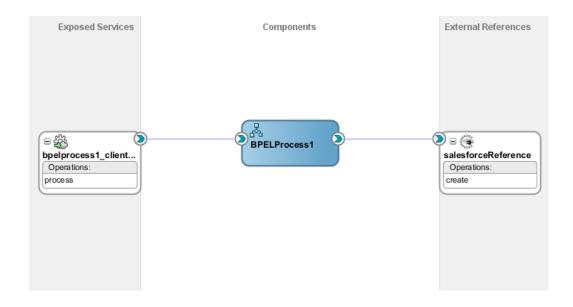
12. Perform the mappings for output variable, as shown in Figure 5-38.

Figure 5-38 Mappings for Output Variable

Sources> xsl:stylesheet & Image: stress in the s	KSLT map 🔹 🚽 🖌	🔈 🕞 🐻 🔚 I	Q Search XSLT	Map XSLT
Image: Space with the space with th	<pre>sources></pre>	1		xsl:stylesheet 👸
A ns0:SaveResult tns:processResponse tns:In tns:In tns:In tns:In tns:In tns:Error_Fields tns:Error_Fields tns:Error_Code tns:Error_Message tns:Error_Message tns:Error_Message			xsl:ter	nplate(match=/) 🚺 🖃
Image: Status Code Image: Status Code Image: Status	🗄 📣 ns0:SaveResult			
Bergen Status Status	🖨 🔣 ns2:errors			
Image: Status Code Image: Status Code Image: Status Code Image: Status Code <td></td> <td></td> <td>tne</td> <td></td>			tne	
ns2:statusCode tns:Error_Code tns:Error_Message ns:Error_Message ns:Error_Message				
				-
ns2:success			ths:Error_M	lessage <>>
Variables				
	····· 📋 Variables			

 This completes the project creation. The composite.xml looks, as shown in Figure 5-39.

Figure 5- 39 Composite.xml after Project Creation



5.6 Deploy the Composite

Perform the following steps to deploy the composite.

1. In the Application Navigator pane, right-click Project1 and select Deploy \rightarrow Project1, as shown in Figure 5-40.

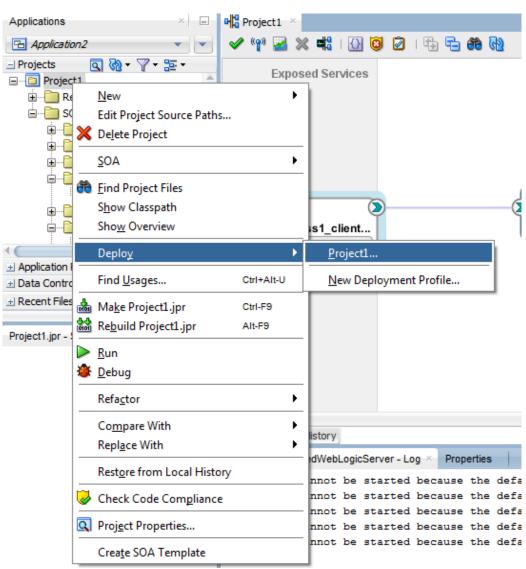


Figure 5- 40 Deploy the Composite

2. Select the **Deploy to Application Server** option and follow the instructions. Using this option, you can deploy the composite on the Application server after providing the details of the server.

5.7 Test the Composite

You can run and test the instances of deployed SOA composite applications from Oracle Enterprise Manager Grid Control Console. This enables you to manage a composite application, initiate and track an instance of a composite and to view detailed component instance audit trails. Perform the following process to test the composite:

5.7.1 Test the Outbound Process

Perform the following steps to test the Outbound process:

- 1. Login to Enterprise Manager Console for the server on which you have deployed your project.
- 2. Open Project1 under the Default partition.
- 3. Click the **Test** button to test the Web service, as shown in Figure 5-41.

Figure 5- 41 Test the Web Service

SOA Composi	te 🔻		
Active Retir	shut Down	Test Settings 👻 🥞	4
		Instances Unit Toots Policies Test Service	
Compor Name	nents		
BPELPro	cess1		

4. Provide the input payload and click the **Test Web Service** button, as shown in Figure 5-42.

Figure 5- 42 Test Web Service



5. After successful execution, the response contains ID of the account created on Salesforce.com and **Status** as success, as shown in Figure 5-43.

Figure 5- 43 Test Status

Test Status	equest successfully re	ereived P	
Response Time (ms) 8			
Tree View 🔻			
A new flow instance was	generated Laund	h Flow Trace	
A NEW HOW INSIGNCE Was			
		Value	
Name	Type	Table	
Name ⊿ payload	payload	TODE	
		001900000shBZFAA2	
⊿ payload	payload		
⊿ payload ID	payload string	001900000shBZFAA2	
⊿ payload ID Status	payload string string	001900000shBZFAA2	

 Click the Launch Flow Trace button to view the Audit Trail, as shown in Figure 5-44.

Figure 5-44 Launch Flow Trace

Flow Trace ⁽¹⁾

This page shows the flow of the message through various composite and component instances.

Error Message	Fault Nan	ne	Error Code
faults found.			
Actions View Show Instance			
Actions View Show Instance IDs	Туре	Usage	State
Actions • View • Show Instance IDs IDs	Type Service	Usage	State Completed
ACTIONS VIEW V		-	

7. The Audit Trail will look like Figure 5-45.

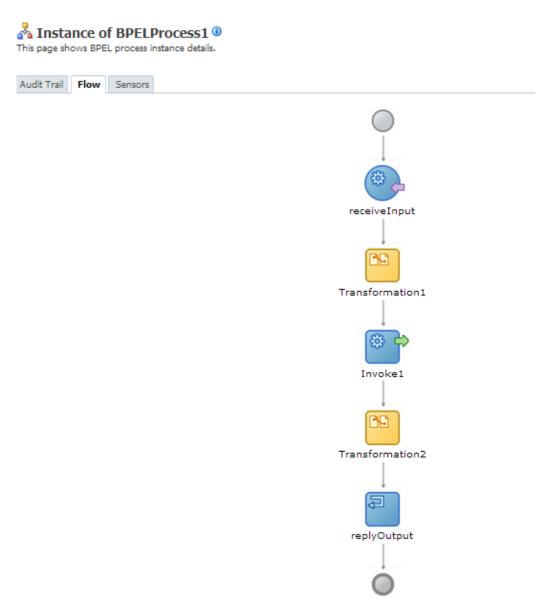
Figure 5- 45 Audit Trail

This page shows BPEL process instance details.

Actions - View - Highlight Faults	
<process></process>	
▲ <main (64)=""></main>	
A @@receiveInput	
Apr 2, 2014 4:30:14 PM	Received "process" call from partner "bpelprocess1_client"
View Payload	
Transformation1	
Apr 2, 2014 4:30:14 PM	Updated variable "Invoke1_create_InputVariable_1"
View Payload	
Apr 2, 2014 4:30:14 PM	Completed assign
🔺 🦇 Invoke 1	
Apr 2, 2014 4:30:14 PM	Started invocation of operation "create" on partner "salesforceReference".
▲ Apr 2, 2014 4:30:14 PM	Invoked 2-way operation "create" on partner "salesforceReference".
View Payload	
Transformation2	
Apr 2, 2014 4:30:14 PM	Updated variable "outputVariable"
View Payload	
Apr 2, 2014 4:30:14 PM	Completed assign
🔺 🦇 replyOutput	
▲ Apr 2, 2014 4:30:14 PM	Reply to partner "bpelprocess1_client".
View Payload	
Apr 2, 2014 4:30:14 PM BPEL	process instance "40474" completed

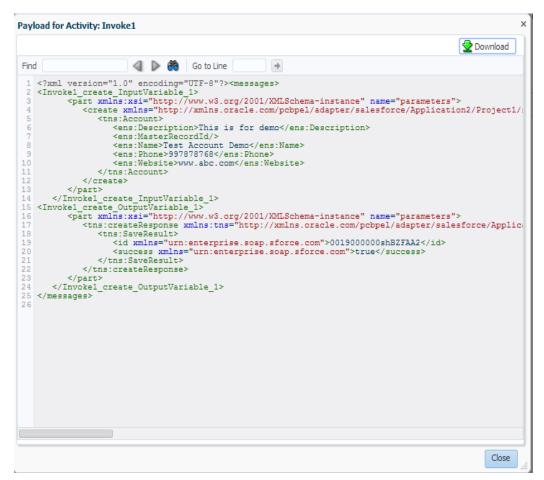
8. Click on Flow tab, The Flow tab is shown in Figure 5-46.

Figure 5- 46 Flow Tab

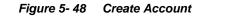


9. The Invoke activity of the process is shown in Figure 5-47.

Figure 5- 47 Invoke Activity



10. This completes the Create Account scenario. The success of the task can be verified on Salesforce.com using the ID returned as response of create call, as shown in Figure 5-48.



Test Acco	ount Demo		istomize Page Edit Layout Printable View Help for this Page
Show Feed			istomize Page Edit Layout Printable View Help for this Page
	<u>0</u>	pportunities [0]	
Account Detail	Edit Delete Include Offli	ne	
Account Owner	Distantine limet [Change]	Rating	
Account Name	Test Account Demo [View Hierarchy]	Phone	997878768
Parent Account		Fax	
Account Number		Website	http://www.abc.com
Account Site		Ticker Symbol	
Туре		Ownership	
Industry		Employees	
Annual Revenue		SIC Code	
Account_Ext_Id			
Project_Street_Address			
Project_City			
Project_Zipcode			
Billing Address		Shipping Address	
Customer Priority		SLA	
SLA Expiration Date		SLA Serial Number	
Number of Locations		Upsell Opportunity	
Created By	Shalindra Singh, 2/4/2014 4:28 PM	Last Modified By	Shalindra Singh, 2/4/2014 4:28 PM
AccountMap			

<u>6</u>

Configuring Outbound Processing Using Oracle Service Bus

Oracle Service Bus (OSB) make use of the Oracle Cloud Adapter for Salesforce.com via the Oracle SOA Suite components and JDeveloper IDE. This chapter describes the process of creating OSB projects using JDeveloper IDE or using OSB console, deploying the OSB services to an OSB domain, and finally testing the OSB services.

This chapter contains the following topics:

- Section 6.1, "Overview of Application Adapter Integration with Oracle Service Bus"
- Section 6.2, "Creating Outbound Processes Using Oracle Service Bus"

6.1 Overview of Application Adapter Integration with Oracle Service Bus

Oracle Service Bus can be leveraged to access the APIs exposed by Salesforce.com to achieve application integration via the Oracle Cloud Adapter for Salesforce.com. OSB uses the Oracle SOA Suite components and JDeveloper to employ the Oracle Cloud Adapter for Salesforce.com. This chapter will use the same business case of creating an Account in Salesforce.com as in Chapter 5:

Integration with Different Service Components (BPEL/Mediator) in Oracle SOA Suite.

6.2 Creating Outbound Processes Using Oracle Service Bus

Oracle Service Bus interacts with the Oracle Cloud Adapter for Salesforce.com through the 'Oracle Cloud Adapter for Salesforce.com Artifacts' generated using the SOA components. This section describes the process of generating the Oracle Cloud Adapter for Salesforce.com artifacts and creating OSB services based on these artifacts.

Oracle Service Bus provides two ways of designing OSB projects. One is JDeveloper IDE, and second option is to create projects and services directly on the Oracle Service Bus console. This chapter explains both ways of creating OSB projects and services.

6.2.1 Creating OSB Projects Using OSB Console

This section explains how to create OSB projects using OSB console. For this you first need to generate Oracle Cloud Adapter for Salesforce.com artifacts using JDeveloper 12c, and then those artifacts would be used while creating OSB projects and services using OSB console.

For information on how to test the OSB projects created using OSB console, refer to the section "Testing OSB project from Service Bus Console".

Generating Oracle Cloud Adapter for Salesforce.com Artifacts:

To create OSB projects using OSB Console, you need to use Oracle Cloud Adapter for Salesforce.com artifacts generated using JDeveloper 12c.

To create a BPEL composite, refer to the section "Designing a Composite for Service Integration". Next, to configure the Oracle Cloud Adapter for Salesforce.com, refer to the section "Configure Oracle Cloud Adapter for Salesforce.com". Save the Oracle Cloud Adapter for Salesforce.com artifacts in a directory. You will use the artifacts generated in section 5.4 "Configure Oracle Cloud Adapter for Salesforce.com" in creating OSB business services in OSB console.

Creating OSB projects and services using the OSB console:

Follow the steps given below to create OSB projects and services using the OSB console.

- 1. Log in to OSB Console: <host:port/sbconsole>
- 2. On right side of webpage, click on **Create**, as shown in the Figure below. This opens a new session in the OSB console to enable you to make changes.

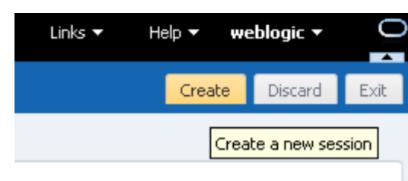


Figure 6-1 Create an OSB Session

3. Enter a new project name, right-click on All Projects and click Create - Project, as shown in the Figure below.

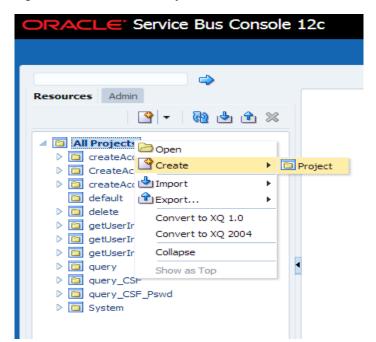


Figure 6-2 Add a New Project to OSB

- 4. A dialog box will appear with title Create a new project.
- 5. Enter the project name in the **Resource Name** field, and provide the description in **Description** field, as shown in the Figure below.

Figure 6-3 Create a New Project

Create a new Project		
* Resource Name	SFDC_create	
Description	Creating simple Business Service in OSB	
3	Create Cancel	

- 6. Click on Create. A new project named SFDC_Create appears in under All Projects.
- 7. Import the Oracle Cloud Adapter for Salesforce.com artifacts in this project. Rightclick on the Project name, Select **Create** and then **WSDL** as shown in the Figure below.

Figure 6-4 Choose WSDL Resource

ORACLE' Service E	Bus Console 1	L2c	
Resources Admin		SFDC_create × Project Definition	
All Projects All Projects CreateAccount CreateAcc	name	Proxy Service Business Service	ole B
delete delete getUserInfo getUserInfo getUserInfo delete	port 🕨	WSDL WADL Schema WS Policy	Det
Co Query Co Query Co Query_CSF Co Query_CSF Co	nvert to XQ 2004 Ilapse ow as Top	C Binding XQuery XSLT MFL	-
V 🖬 System		Service Account Service Key Provider Archive Archive Alert Destination	-
		ML Document Throttling Group Cross Reference (XRef)	<u>8</u> +0
		JavaScript	Sher

8. WSDL Creation Page is displayed. Click on **Browse** and browse to the directory where the artifacts received from the JDeveloper 12c are stored. Choose the Oracle Cloud Adapter for Salesforce.com WSDL, as shown in the Figure below.

Figure 6-5 Create WSDL

Create	WSDL			×
• Res	ource Name Description	SalesForceEnterprise		
				.::
	File Upload	SalesForceEnterprise.wsdl	Update	
?			Create	Cancel

- 9. Click Create.
- **10.** Again right-click on the Project name, from the menu select **Create** and then **WSDL**. Now on the WSDL Creation Page, browse for salesforceReference WSDL as shown in the Figure below.

Figure 6-6 Create WSDL

Create WSDL	;	<
* Resource Name	salesforceReference	
Description		
File Upload	salesforceReference.wsdl Update	
?	Create Cancel	

- 11. Click Create.
- **12.** Select **JCA Binding** from the **Create** drop-down list under **Project Name**, as shown in the Figure below.

Figure 6-7 Select JCA Binding from Create Resource list

ORACLE Service Bus Console 12c			
		SFDC_create ×	salesforceEnterpri
Resources Admin	► E	WSDL Definiti	on
 All Projects createAcco createAcco default delete getUserInfi getUserInfi getUserInfi getUserInfi query_CSF SFDC_createret System 		Proxy Service Business Service WDL WDL WDL WSDL WS Policy Schema WS Policy SCA Binding KQuery KSLT Service Account Service Account Archive Archive Archive Archive Cross Reference () COSS Reference () DVM JavaScript	

13. The JCA Binding creation dialog box is displayed. Click on **Browse** and browse to the directory where the artifacts received from the JDeveloper 12c are stored. Choose the Oracle Cloud Adapter for Salesforce.com JCA file, as shown in the Figure below.

Figure 6-8 Create Adapter JCA Binding

Create JCA Binding			
* Resource Name	salesforceReference_salesforce		
Description			
File Upload	salesforceReference_salesforce.jca Upda	ate	
3	Create	Cancel	

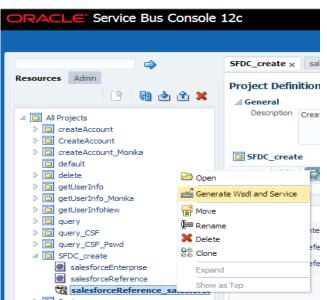
- 14. Click Create. You are returned to the project page.
- **15.** You may get an error message as "The JCA Binding 'salesforceReference_salesforce' was successfully created with validation errors. View the JCA Binding/Conflicts to see detailed diagnostic messages." This error is thrown because JCA binding cannot find the associated WSDL.
- 16. To rectify the above error, click on the JCA file created and then click on Edit.
- **17.** Click **Browse**. Search for the WSDL you created and click **Submit** after choosing the WSDL, as shown in the Figure below.

Figure 6-9 Edit JCA Binding References

JCA Binding Definition		③ □ at s =
3 General Description		
// WSDL Dependency		
Name satesforce/Enformerce	Q	
Fully SPOC_preate		

- 18. Click Save.
- 19. Go back to the project folder.
- **20.** Right-click on the JCA Binding just created, and click on "Generate WSDL and Service" option as shown in the Figure below.

Figure 6-10 Generate WSDL and service from JCA Binding



21. Enter a new name for the WSDL name in the **New WSDL Name** field and the service name in the **New Service Name** field.

Note: Choose the correct location for the new WSDL and service to be generated.

22. Click Generate, as shown in the Figure below.

nerate Wsdl and Service			
JCA Binding Name	salesforceReference_salesforce		
* New WSDL Name	salesforceReference_salesforce		
New Business Service Name	salesforceReference_salesforce		
Destination			
View 🗸 🔁 🖶			
Co default			
Resources			
✓ Image Action Ces			
Resources			
✓ I getUserInfoNew			
Resources			
🔺 🛅 query			
Resources			
✓ D query_CSF			
🚞 Resources			
⊿ is query_CSF_Pswd			
Resources			
SFDC_create			
		Generate	Cance

Figure 6-11 Generating WSDL and Business Service for Salesforce

- 23. The new WSDL and the new business service are generated.
- **24.** Activate the OSB session by clicking on **Activate** in the right corner, as shown in the Figure below.

Links -	Help 🗸	weblogic	- 0
😔 weblogic Session	Activate	Discar	d Exit
	Activ	ate the cur	rrent session

Figure 6-12 Activate Session

- **25.** A **Confirm Session Activation** dialog box will appear. Click on **Activate** to activate the session as shown in the Figure below.
- Figure 6-13 Confirm Session Activation

Confirm Ses	sion Activation	×
	weblogic weblogic	
Description		
	Activate Cancel	

Click **Activate** on the Activate Session page. Once the session is activated, all the generated artifacts and the services are deployed to the OSB server.

6.2.2 Creating OSB Projects Using JDeveloper

This section explains how to create OSB projects using JDeveloper 12c. It includes creating an empty composite for OSB, then defining an OSB outbound process and finally deploying that OSB project on server.

6.2.2.1 Create an Empty Composite for OSB

Perform the following steps to create an empty composite for OSB:

1. Create a new OSB application, Select File → New → Application, as shown in the Figure below.

Figure 6-14 New Application Page

<u>F</u> ile	<u>E</u> dit	<u>V</u> iew	<u>Application</u>	Refa <u>c</u> tor	<u>S</u> earch	<u>N</u> avigate	<u>B</u> uild	<u>R</u> un	Tea <u>m</u>	<u>T</u> ools	<u>W</u> indow	<u>H</u> elp
<u>[</u>	lew			•	🔁 <u>А</u> р	plication				۰ 🏶		
	<u>)</u> pen		Ct	rl-O	🖻 <u>P</u> ro	oject						
<u> </u>	<u>l</u> eopen			•	Å BP	EL 2.0 Subp	ocess					

The New Gallery page is displayed as shown in Figure 6-14.

Figure 6-15 Choose Application

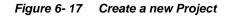
Q service bus	8	
<u>C</u> ategories:	 Items:	Show All Description
Service Bus TierServicesInterfacesTransformationsSecurityUtilityUtilitySystemSOA TierFaultsFaultsInterfaces	 Service Bus Application (Application Create a new Service Bus application with application is needed for the import of a S Service Bus Application with Service Bus P Service Bus Configuration (Deployment Pr Service Bus Project (Deployment Profiles) Service Bus Project (Projects) 	out a project. Useful when a Service Bus Service Bus configuration jar. Project (Applications) rofiles)

2. Enter a name for the new SOA Application and click **Finish**, as shown in the Figure below.

Figure 6-16 Name Your Application

🕜 Create Service Bus App	lication - Step 1 of 1			×
Name your application	DN	010101010101010	19999999999	5
Application Name	Application Name: ServiceBusApplication1 Directory:			
	C:\JDeveloper\mywork\Jdev12c Application <u>P</u> ackage Prefix:	_Stage 14\ServiceBusApplica	ition 1	B <u>r</u> owse
Help		Next >	<u>F</u> inish	Cancel

3. Create a new OSB application, Select File → New → Project, as shown in the Figure below.



ategories:	 Items:	Show All Description
	Eaching Service Bus Application (Applications) Service Bus Application with Service Bus Project (Application 2000) Service Bus Configuration (Deployment Profiles) Service Bus Project (Deployment Profiles) Service Bus Project (Projects) Create a new Service Bus Project	

4. The Name Your Project page is displayed, as shown in the Figure below.

Figure 6-18 Name Your Project	Figure	6- 18	Name You	ır Project
-------------------------------	--------	-------	----------	------------

Create Service Bus Proje	ect - Step 1 of 1		X
ame your project		0101010101010101010101010	
Project Name	Project Name:	SBProject1	
	Directory:	C:\JDeveloper\mywork\ServiceBusApplication1\SBProject1	Browse
	Project Featu	res:	
		s is a proven, lightweight SOA integration platform. It is designed manage interactions between heterogeneous services, legac	
		enterprise service bus (ESB) instances across an enterprise-v	

5. Click Finish.

6.2.2.2 Define an OSB Outbound Process

This section describes how to define an OSB outbound process for the Salesforce.com integration using Oracle Cloud Adapter for Salesforce.com, which consists of the following stages:

- 1. Configure a Salesforce Adapter Component.
- 2. Configuring an Outbound OSB Process Component.

Configure a Salesforce Adapter Component

- 1. Open JDeveloper.
- 2. Drag and drop the Salesforce Adapter component from the **Resources Components** pane to the **External Service** pane, as shown in the Figure below.

	Resources	Components ×		
SBProject1	Q.			0
External Services	Service Bus			•
		- 	- 	^
	FTP Transport	JCA	JMS	
	命		£03	
	Local	MQ Transport	SFTP	
	**			
	Third Party			
	Cloud			
	•			
	Salesforce			¥
Ge Salesforce				× =
A Salesforce Cloud ad		and receive mes	sages	?
from Salesforce Cloud	server.			

Figure 6-19 Salesforce Adapter Configuration Wizard

The **Welcome** page of the Adapter configuration wizard is displayed, as shown in the Figure below.

Figure 6-20 Welcome Page

Welcome to the Cloud Connect	ection Configuration Wizard - Step 1 of 5	×
Welcome to the Cloud Co	onnection Configuration Wizard	
Basic Info Connection Operations Headers Summary	This wizard helps you create a service using the Oracle Salesforce Cloud connection. You will be asked to specify configuration parameters and define an operation for the service. "What do you want to call your connection? SalesforceReference What does this connection do? Describe the connection's purpose and detail	
Help	< Back Next > Einish	Cancel

- **3.** Enter a reference name for the Salesforce Adapter reference in the **Name** field and then click **Next**.
- **4.** On the Connection Information page, browse for the Enterprise WSDL location by clicking on the browse button as highlighted in the Figure below.

Welcome to the Cloud Cor	onnection Configuration Wizard - Step 2 of 5	×
Salesforce Server Con	nection expression and a second s	*
Basic Info Connection Operations Headers Summary	A Salesforce Cloud Server connection is required to access the operations and business objects available. Image: Cloud Server connection is required to access the operations and business objects available. Image: Cloud Server connection is required to access the operations and business objects available. Image: Cloud Server connection is required to access the operations and business objects available. Image: Cloud Server connection is required to access the operations and business objects available. Image: Cloud Server connection is required to access the operations and business objects available. Image: Cloud Server connection is required to access the operations and business objects available. Image: Cloud Server connection is required to access the operations and business objects available. Image: Cloud Server connection: Image: Clo	
Help	< Back Next> Brish	Cancel

Figure 6-21 Connection Page

5. The WSDL Chooser dialog is displayed. Browse and select the downloaded Enterprise WSDL and click OK, as shown in the Figure below.

Figure 6-22 SOA Resource Browser

WSDL Choose	er	Children Configure	for Wood	lig (41)			×
Application	Application Server	n File System	Project Libraries	SOA-MDS	UDDI	WSIL	
Location	n: 🛅 C: \of	ficial				- 🗘 🗘 🔯) = =
Work Project Application	Sales	orceEnterprise.wsdl					
	<u>F</u> ile Name:	SalesforceEnterprise	wsdl				
Home	File <u>Type</u> :	Web Service Definitio	n Files (*.wsdl)				•
Selection: file:/C	:/official/Sale	sforceEnterprise.wsdl					
Help						ОК	Cancel

6. Click **OK**. The following screen appears as shown in the Figure below.

Import Service Bus Reso	ources - Step 1 of 2	2	x
Source			
Source	Resource Type: Source URL: Resource Name:	ad select an import destination. WSDL [C:\official\SalesforceEnterprise.wsdl SalesforceEnterprise.wsdl [C:\Developer\mywork\12C_RC3\ServiceBusApplication1\SBProject1\Resources	
<u>H</u> elp		< Back Next > Einish C	ancel

Figure 6-23 Import Service Bus Resources

7. Click Next. The following screen appears as shown in the Figure below.

Figure 6-24 Import Service Bus Resources

1 Import Service Bus Res	sources - Step 2 of 2		×
Configuration			
y <u>Source</u>	Select the resources to import.		
Configuration			5 F
	Resource	Operation	URL
	Image: ServiceBusApplication 1 Image: ServiceBusApplication 2 Image: ServiceBusApplication 2	d Create	file:/C:/official/SalesforceE
Help	< 8	ack Next >	<u>Finish</u> Cancel

8. Click Finish. You are returned to the Salesforce Cloud Server Connection page.

Figure 6-25 Connection Page

Welcome to the Cloud Conne	ection Configuration Wizard - Step 2 of 5		×
Salesforce Server Conne	ction		*
Basi Info Connection Operations Headers Summary	A Salesforce Cloud Server connection is required to access the operations and business objects available. Where can I find the Objects you need? "Enterprise WSDL Location: [1/SOA/WSDLs/Enterprise_SS_v33.wsd] Pick the key to get in the door Security Policy: CUSTOM *Authentication Key: SFDC_Test CUSTOM CUSTOM CUSTOM CUSTOM CUSTOM CUSTOM CUSTOM CUSTOM CUSTOM		
Help	< <u>B</u> ack <u>N</u> ext >	Einish	Cancel

- **9.** Select an authentication key from the dropdown, if available, or create a new Authentication key by clicking on "+" button.
- **10.** The **Add Credential** dialog box is displayed, as shown in the Figure below. Provide a suitable name and the Salesforce.com credentials and click **OK**.

Note: The password should be a combination of Salesforce.com password and Salesforce.com Security Token.

Figure 6-26 Add Credential

👌 Create CSF Key	×
*CSF Key Name:	
*Username:	
*Password:	
*Re-Enter Password:	
Help	OK Cancel

11. Click **Test Connection** button to validate the Authentication Key, as shown in the Figure below.

Figure 6-27 Connection Page

Welcome to the Cloud Connection Configuration Wizard - Step 2 of 5		×
Salesforce Server Connection	010101010101010101010101010	*
Basic Info Connection Operations Headers Summary Pick the key to get in the door Security Policy: CUSTOM *Authentication Key: SPSF_Test *		
Help < Back Ne	ext > Einish	Cancel

12. Click **Next.** The Operation Configuration page is displayed, as shown in the Figure below.

Figure 6-28 Operation Configuration Page

Welcome to the Cloud Connect	ction Configuration Wizard - Step 3 of 5			
Configure the Operation	to Perform in the Oracle Salesforce	Application		
Basic Info Connection Operations Headers	Select the target operation and business of	ojects in the Oracle Salesforce application.		
U Summary	Select an Operation Type:	CRUD		
	"Select Business Objects (Salesforce API Account AccountContacRole <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u> <u>AccountContacRole</u>	Qr(Selected:	\$ \$
	Anoncement	create	• • • • • • • • • • • • • • • • • • •	
Reb				< Back Boot > Drich Cancel

13. The default operation is create. Select the **Account** object from the Available objects list, and move to the selected objects list as shown in the Figure below.

Configure the Operatio	n to Perform in the Oracle Salesforce Application	
Basic Info <u>Connection</u>	Select the target operation and business objects in the Oracle Salesforce app	plication.
Operations Headers Summary	Select an Operation Type: CRUD CRUD	•
	"Select Business Objects (Salesforce API 33.0): Account_Test_c Account_Test_c AccountContactRole ActionLinKGroupTemplate ActionLinKGroupTemplate AdditonalNumber Address_vod_c Annourcement ApexClass	Selected:

Figure 6-29 Operation Configuration Page

14. Click Next. The Header and Properties Page is visible as shown in the Figure below.

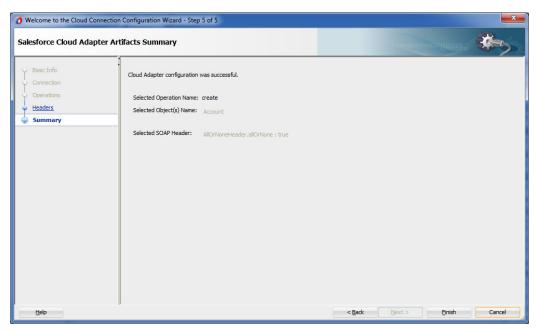
Figure 6- 30 Headers Page

Welcome to the Cloud Connection	n Configuration Wizard - Step 4 of 5				×
Salesforce Operation Header	r Configuration		0101010101010101		*
Basic Info Connection Operations Headers Summary	Select Operations Headers Configure the Header Properties for the Selected Operation: The following header properties are available with the operation create AllorNoneHeader allorNone: true AllowFieldTruncationHeader AssignmentRuleHeader CoebuggingHeader EmailHeader LocaleOptions MuruHeader PackageVersionHeader				
Help		< <u>B</u> ack	Next >	Einish	Cancel

- **15.** Select any header and provide its value.
- 16. Click Next.

The Finish page is displayed, as shown in the Figure below.

Figure 6- 31 Finish Page



Configuring an Outbound OSB Process Component

Perform the following steps to configuring an Outbound OSB Process Component:

1. Right-click on **Pipeline/Split Joins** pane and click on **Insert** and then **Pipeline** as shown in the Figure below.



o <mark>la</mark> SBProject1 ×		
₩ < X		
Proxy Services	Pipelines/Split Joins	
		Proxy Services Pipelines/Split Joins Insert) Pipeline To create re SplitJoin From the component palette to the canvas

The Create Pipeline Service dialog is displayed, as shown in the Figure below.

Oreate Pipeline Service	- Step 1 of 2						x
Create Service						-	5
Create Service	General Service Name: Location: Description	Pipeline C: \JDeveloper \mywork	(12C_RC3\ServiceB	usApplication 1\SBP	roject1		ď
Help			< <u>B</u> ack	<u>N</u> ext >	Einish	Cancel	

Figure 6-33 Create Pipeline Service

- **2.** In the **Service Name** field, enter a name to identify the pipeline name and select the corresponding location of the project.
- 3. Click Next and select the Service Type as WSDL, as shown in the Figure below.

Figure 6- 34	Create Pipeline Service
--------------	-------------------------

O Create Pipeline Service	- Step 2 of 2		X
Туре		cicicioioioioicioioioioi	
<u> <u> Create Service</u> </u>	Service Type: V	VSDL-based service	
🔘 Туре	() WSDL:		۱
		Binding:	
	O Any SOAP:	SOAP 1.1	
	◯ Any <u>X</u> ML		
	O Messaging:	Reguest:	
		Response:	
	✓ Expose as a	Proxy Service	
	Proxy Name:	PipelineProxyService	
	Proxy Location:	C:\JDeveloper\mywork\12C_RC3\ServiceBusApplication1\SBProject1	9
	Proxy Transport:	http 🗸	
	Messages:		
	🔞 A WSDL resou	rce must be specified.	
Help		< Back Next > Finish C	ancel

- 4. Click **Browse** icon which is located to the right of the WSDL URL, to select the WSDL from the file system.
- 5. Select the appropriate WSDL file from the Application \rightarrow Resources, as shown in the Figure below.

Figure 6- 35	Select WS	SDL					
👌 Select WSDL							×
Application	Application Server	File System	Project Libraries	SOA-MDS	UDDI	WSIL	
	n ject1 esources SalesforceEnte salesforceRefe		vsdl				
Selection: file:/C:/	JDeveloper/myw	ork/12C_RC3/Ser	viceBusApplicati	on 1/SBProject 1/Re	esources/salesfor	ceReference-conc	rete.wsdl
Help						ОК	Cancel

6. Click OK.

The selected WSDL and corresponding binding is displayed, as shown in the Figure below.

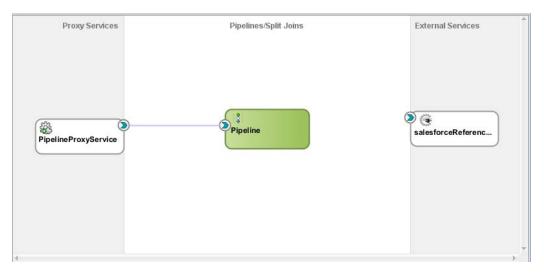
Figure 6-36 Create Pipeline Service

Oreate Pipeline Servic Type		×
<u> <u> <u> </u> <u> </u></u></u>	Service Type: WSDL-based service • MSDL: SBProject1/Resources/salesforceReference-concrete Binding: salesforceReferencePortType-binding • Any §OAP: SOAP 1.1 • Any §ML • Reguest: Response: • ()	۵
	Image: Expose as a Proxy Service Proxy Name: PipelineProxyService	Q
Help	Messages:	ncel

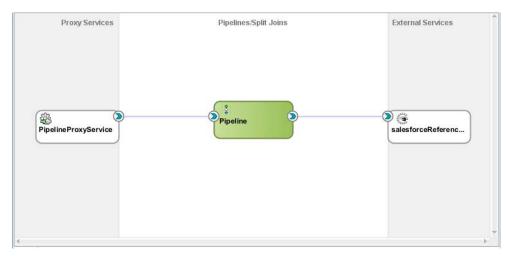
- 7. Select checkbox for Expose as a Proxy Service.
- 8. Select Proxy Transport as http.
- 9. Click Finish.

The Pipeline component is displayed as shown in the Figure below.

Figure 6-37 Pipeline Component

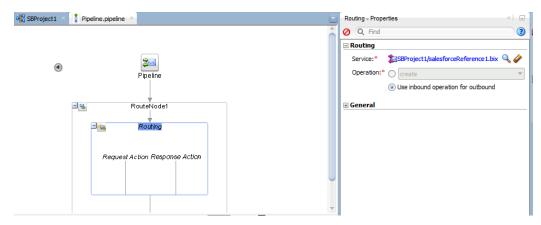


10. Connect salesforceReference to the Pipeline, as shown in the Figure below..*Figure 6- 38 Pipeline Component*



11. Open the pipeline which shows the default routing. Verify the service and corresponding operation will be displayed in the Routing Properties, as shown in the Figure below.

Figure 6-39 Routing Properties



The outbound endpoint is ready to be deployed.

6.2.2.3 Deploying Outbound OSB Process

Perform the following steps to deploy the outbound OSB Process:

1. Select the project and **Deploy to Service Bus Server**, as shown in the Figure below.

```
Figure 6- 40 Deployment Action Page
```

Deploy ServiceBusApplication1_SBProject1_ServiceBusProjectProfile				
Deployment Action				
Deployment Action	Select a deployment action from the list below.			
Summary	Deploy to Service Bus Server			
	Deploy a Service Bus project to a Weblogic server which includes a Service Bus runtime.			
<u>H</u> elp	< Back Next > Einish Cancel			

2. Select the already configured Application Server and click **Next**, as shown in the Figure below.

Figure 6- 41 Select Server Page

ication1_SBProject1_ServiceBusProjectProfile	-		×	<u> </u>
Application Servers:		.	te (1	3
IntegratedWebLogicServer (domain unconfigured)				
< Back Next > F	inish	Car	ncel	
	IntegratedWebLogicServer (domain unconfigured) server 132	Application Servers: IntegratedWebLogicServer (domain unconfigured) server132 Overwrite modules of the same name	Application Servers:	Application Servers: IntegratedWebLogicServer (domain unconfigured) server132 Overwrite modules of the same name

3. Check the deployment summary and click Finish, as shown in the Figure below.

Figure 6- 42 Summary Page

O Deploy ServiceBusAppli	cation1_SBProject1_ServiceBusProjectProfile	x
Summary		
Deployment Action Select Server Summary	Deployment Summary: Service Bus Deployment Summary Server Name: server 132 Server Platform: Weblogic 12.x Service Bus Application Deployment Settings	
Help	< Back Next > Einish Canc	el

4. The Project is successfully deployed, as shown in the Figure below.

Figure 6-43 Success Message Page

Build - Issues			
Description	File	Location	Project
Success! Build	completed with 0 errors, (0 warnings, 0 infos	

The successfully deployed project can be tested from service bus console.

6.3 Testing OSB project from Service Bus Console

Follow the steps given below to test OSB project form Service Bus Console:

1. Open the **Service Bus Console** and enter user ID and Password, as shown in the Figure below.

Figure 6-44 Service Bus Console

RACLE' Service Bus Console 12c	
	Sign In
	User ID weblogic
	Password
	[Sign In]

2. All the deployed projects are displayed under **All Projects**, as shown in the Figure below.

Figure 6- 45 Service Bus Console

Resources Admin	
 Al Projects createAccount CreateAccount default delete getUserInfo getUserInfoNew query_CSF query_CSF_Pswd SBProject1 Resources gelpelneProxyService salesforceReference SFDC_create System 	

3. Open the project you want to test and click on Business Service of that project. For example, **salesforceReference** in this case, as shown in the Figure below.

Figure 6-46 Business Service Definition

DRACLE' Service Bus Console	12c	Linis + Heb + weblogic + C
		Create Discard Exit
•	salesforceReference x	E 🗊 🕽 🕅 -
Resources Admin	Business Service Definition	🕚 🖂 🖂 😕
3 😫 💩 🗶 🗙	Configuration Security SLA Alert Rules	
Image: A projects Image: Im	General General Transport Transport Detail Description Message Handing Performance Description Service *50AP 1.1 Service *50AP 1.1 W2X2, SBPUget11/Resource;AublinforceReference-concrete Bruding salesforceReferencePortType binding	
30 32 1 32 1000/ramination Manael/ramonaada	Conflicts 🔂 Hatary 📴 References 🔍 Search results 🍈 Find And Replace Results	

4. Option for **Launch Test Console** (Green arrow button) is displayed for testing the outbound endpoint, as shown in the Figure below.

Figure 6-47 Launch Test Console

Exit
3+0
Console
unch Test

5. Launching Test Console opens new window displaying Business Service and the operation to test along with **Execute**, **Execute-Save**, **Reset** and **Close** button, as shown in the Figure below.

Figure 6-48 Business Service Testing Page

a Business Ser	rvice Testing - salesforceReference	Help
-		
Execute	Execute-Save Reset Close	
Service Ope	ration	
Operation:	create Y	
🔁 Request Doo	cument	
Forr	n XML	
50AP Header:	<soap:header xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"> </soap:header>	
* Payload:	Choose File No file chosen	
	<pre><salcreate xminssal="http://xmins.oracle.com/pcbuel/adapter/salesforce/ServiceBusApolication1/SBProject1/salesforceReference"> <salcacount xminssum="umsobject.enterprise.soap.sforce.com" xminssum1="um:enterprise.soap.sforce.com"> <l-zero more="" or="" repetitions:-=""> <um:fieldstonull>string</um:fieldstonull> <um:di>string <um:di>string</um:di><</um:di></l-zero></salcacount></salcreate></pre>	
	<ur> <ur> <ur> <ur></ur></ur></ur></ur>	
	<urr:fieldstonul>string</urr:fieldstonul> <urr:fid>stringstring</urr:fid> <urr1:size>3/urn1:size></urr1:size>	
	 Optional: <urr:accountnumber>string</urr:accountnumber> Optional:	•
🗏 Transport		8

Request Document section contains the Request Payload.

6. Provide the input and click on the **Execute** button.

This would send the payload to Salesforce and the response is displayed under **Response Document** section.

7

Configuring the Outbound Processing Using BPM

Oracle Cloud Adapter for Salesforce.com allows you to seamlessly integrate with Salesforce.com through the operations exposed by the Salesforce.com API. This chapter walks you through a simple integration wherein user creates a new account on Salesforce.com using Oracle Cloud Adapter for Salesforce.com. The scenario will enable you to create an easy and seamless integration to Salesforce.com using BPM.

This section describes how you can use Oracle Cloud Adapter for Salesforce.com to create the artifacts according to your business requirements, i.e. select salesforce.com objects and operations in the adapter configuration wizard. These generated artifacts are consumed in the BPM process. You can use the Adapter configuration wizard to both create and edit the Adapter services.

7.1 Overview

Account is one of the various standard objects provided by Salesforce.com. An account on Salesforce.com represents an individual or business associated with your organization. Oracle Cloud Adapter for Salesforce.com allows you to create an account on Salesforce.com. The scenario shown in the following sections will walk you through the same using BPM.

To integrate using a BPM process, the organization's Enterprise WSDL should be available to the user. The underlying adapter services must be exposed as WSDL files, which are generated during design-time in the configuration wizard of the Oracle Cloud Adapter for Salesforce.com. For more information, refer to the section "A.1 Generating the Enterprise WSDL".

The generated WSDL files are used to design the appropriate BPM services for outbound adapter services. A completed BPM process must be successfully compiled in JDeveloper and deployed to a SOA Suite server. Upon deployment to a SOA Suite server, every newly deployed process can be seen in the Oracle Enterprise Manager console, where you can run, monitor, administer BPM processes, and monitor adapter events.

7.2 Configuring the CSF Key on Enterprise Manager Console

For steps to configuring the CSF key on Enterprise Manager Console, refer to the section "<u>CSF Key in Enterprise Manager</u>".

7.3 Designing a Composite for Service Integration

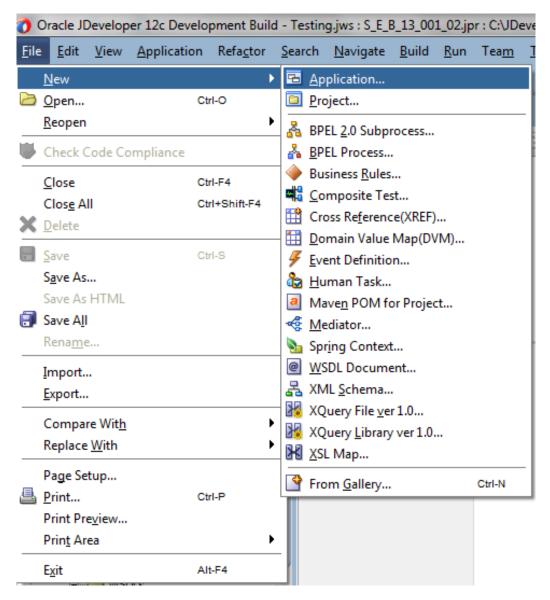
This section walks you through the steps to configure the Oracle Cloud Adapter for Salesforce.com with a BPMN process in Oracle SOA Suite and to deploy it to the WebLogic server. The composite can then be executed from the Enterprise Manager Console.

7.3.1 Define Composite for BPM

Perform the following steps to define a composite for BPM

1. In the File menu of JDeveloper, click New and select Application.

Figure 7-1 Navigation Window



2. The New Gallery page is displayed. Select **BPM Application** from the **Items** list, as shown in the Figure below.

Figure 7-2 Create BPM Application

New Gallery	Components	<u> </u>
-		Show All Descriptions
ategories: Applications Connections Deployment Descriptors Deployment Profiles Diagrams Java Maven Projects UML SML BMTier Activity Guide Business Components Case Management Simulation Business Tier MDF Business Components Contexts and Dependency Injecti Data Controls	Items: Image: Service Bus Application Image: Service Bus Application	Show All Descriptions

3. Provide a suitable name to your application, as shown in figure below.

Figure 7-3 Name your application

Create BPM Application	- Step 1 of 3		×
Name your application	on	010101010101010104040404040404	F
Application Name Project Name Project SOA Settings	Application Name: BpmApplication Directory: C:\JDeveloper\mywork\BpmApplication Application Package Prefix:		Browse
Help	< <u>B</u> ack	<u>N</u> ext > <u>F</u> inish	Cancel

4. Click Next and provide a suitable name to your project, as shown in figure below.

Figure 7- 4 Name your project

Create BPM Application	- Step 2 of 3	Company of the local division of the local d	×
Name your project		01	F
Application Name Project Name	<u>P</u> roject Name: Dir <u>e</u> ctory:	BpmProject C:\JDeveloper\mywork\BpmApplication\BpmProject	Bro <u>w</u> se
Project SOA Settings	Project Fea <u>t</u> ur	res:	
	BPM BPM Technolo	рду	
	SOA Suite SOA Suite is a	a suite of tools to model SOA(Service Oriented Architecture) a	applications.
Help		< <u>B</u> ack <u>N</u> ext > <u>F</u> inish	Cancel

- 5. Click Next.
- 6. Select Composite with BPMN Process from Standard Composite list, as shown in the Figure below.

Figure 7-5 Configure SOA Setting

Create BPM Application	- Step 3 of 3
Configure SOA settin	gs
Application Name Project Name Project SOA Settings	Composite Name: BpmProject Start from: Standard Composite SOA Template
	Empty Composite Composite With Mediator Composite With Human Task Composite With BPEL Process
	Composite With BPMN Process Composite With Case Management Composite With Subprocess Composite With Spring Composite With Spring
	Composite With Business Rule
Help	< Back Next > Finish Cancel

- 7. Click Finish.
- 8. Select the Synchronous Service from Type section and click Finish, as shown in the Figure below.

Figure 7-6 Create BPM Process

👌 BPMN 2.0 Process Wizar	rd		x
BPMN 2.0 Process W	izard		
Definition	Name:	Process	۲
Ar <u>auments</u> Initial Implementation Advanced	Description:		۲
	Directory:	C:\JDeveloper\mywork\BpmApplication\BpmProject\SOA\processes	٩
	Synch		
<u>H</u> elp		< <u>Back</u> <u>Next</u> > <u>Finish</u> Cance	

9. The composite.xml will look like the one displayed in the Figure below.

Figure 7-7 Composite.xml

Process	

10. Next we will create the schema for our process. In the Application Navigator, under your project folder, right click on the schema folder and select New and then select From Gallery as shown in the Figure below.

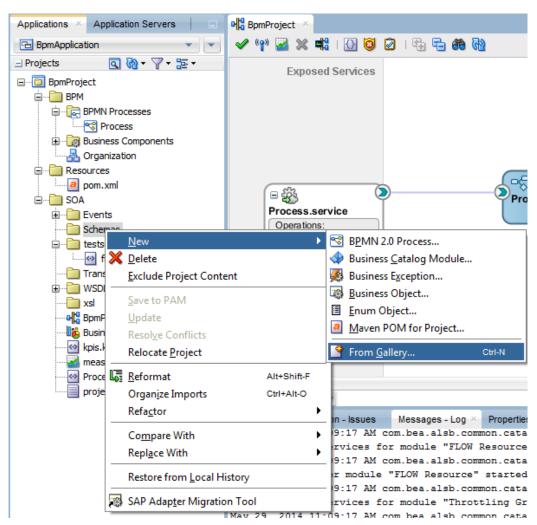


Figure 7-8 Create New Schema from Gallery

11. The New Gallery page is displayed. Select XML Schema from the Items list, and click OK as shown in the Figure below.

Figure 7-9 Select XML Schema

🕐 New Gallery	×
٩	
Categories:	Items: Show All Descriptions
📮 General	A NXSD Schema
Ant Applications	🐼 XML Document
Connections	ML Document from XML Schema
Deployment Descriptors Deployment Profiles	
Diagrams	器 XML Schema
Java	Opens the Create XML Schema dialog, in which you define a directory and
Maven	filename for a new XML schema (.xsd) file. To enable this option, you must select
Projects	a project or a file within a project in the Application Navigator.
	A XML Schema from XML Document
BPM Tier	🐻 XQuery File
Activity Guide	
Business Components	XQuery File ver 1.0
Case Management	XQuery Library ver 1.0
GBusiness Tier	XSL Map
ADF Business Components	XSL Map From XSL Stylesheet
Business Rules	
	🐼 XSL Style Sheet 🚽
Help	OK Cancel

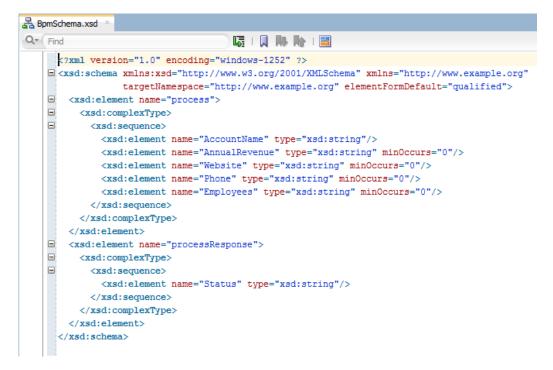
12. The **Create XML Schema** page is displayed, provide a suitable name to your schema and click **OK** as shown in the Figure below.

Figure 7- 10 Create XML Schema

Create XML Schema
Enter the details of your new file.
<u>F</u> ile Name:
BpmSchemal xsd
Directory:
C:\JDeveloper\mywork\BpmApplication\BpmProject\SOA\Schemas Browse
Target Namespace:
http://www.example.org
Prefix:
Help OK Cancel

13. Edit the schema file as per your business requirement. It is the responsibility of the frontend application to impose the data validations and to ensure that the input sent to SFDC via SOA is correct. The structure of the schema used in this use case is shown in the Figure below.

Figure 7-11 Edit XML Schema



7.4 Configure Oracle Cloud Adapter for Salesforce.com

Perform the following steps to configure a New Oracle Cloud Adapter for Salesforce.com:

1. In External References swim-lane of the composite.xml file, right-click and select Salesforce adapter, as shown in the Figure below.

Figure 7- 12 Salesforce Adapter

External References	SOA	
🕂 Insert 🕨	💩 ADF-BC	
Remove All Breakpoints	AQ	nce D
Print	– 🔯 B2B 🛍 BAM 11g	nce L
🕼 Create JPEG Image	St Coherence	
TODO Tasks	Database	
	🛞 Direct	are
	🖀 E-Business Suite	
	🚳 EJB	
	🏭 File	
	🚳 FTP	
	错 Healthcare	ŕ
	🚺 НТТР	
	📀 JDE World	et
	🎕 JMS	
	🖓 LDAP	
	C MFT	orld
	🛍 MQ	
	A MSMQ	
	强 REST	
	Salesforce	

2. The Salesforce Cloud Adapter Configuration Wizard - Welcome page is displayed, as shown in the Figure below.

Figure 7-13 Welcome Page

Welcome to the Cloud Cor	nnection Configuration Wizard - Step 1 of 5	×
Welcome to the Cloud	Connection Configuration Wizard	*
Basic Info Connection Operations Headers Summary	This wizard helps you create a service using the Oracle Salesforce Cloud connection. You will be asked to specify configuration parameters and define an operation for the service. "What do you want to call your connection? SalesforceReference What does this connection do? Describe the connection's purpose and detail	
Help	< Back Next > Enis	h Cancel

- 3. Click Next.
- 4. The Salesforce Cloud Server Connection page is displayed. The WSDL Location and Authentication Key text boxes are already populated. It picks up these values from the

cache. You can re-enter these values. If you want to use a different value, click the **Find existing WSDLs** icon, which is located to the right of the **WSDL Location** field, as shown in the Figure below.

Figure 7-14 Salesforce Cloud Server Connection Page

Welcome to the Cloud Connection	ion Configuration Wizard - Step 2 of 5	×
Salesforce Server Connection		5
Basic Info. Connection Operations Headers Summary	A Salesforce Cloud Server connection is required to access the operations and business objects available. ③ Where can I find the Objects you need? "Enterprise WSDL Location: 11/SOA/WSDLs/Enterprise_SS_v33.wsdl ④ Pick the key to get in the door Security Policy: OUSTON "Authentication Key: SPDC_Test Test	
Help	< <u>B</u> ack <u>N</u> ext > Einish C	Cancel

5. The WSDL Chooser dialog is displayed, browse and select the downloaded Enterprise WSDL and click OK, as shown in the Figure below.

Figure 7-15 SOA Resource Browser

🔿 WSDL Chooser	×
Application Server File System Project Libraries SOA-MDS UDDI WSIL	
Location: C:\offical	- 0 0 🛱 🖻 🗉
Work Project Application	
Eile Name: SalesforceEnterprise.wsdl	
Home File Type: Web Service Definition Files (*.wsdl)	
Selection: file:/C:/offical/SalesforceEnterprise.wsdl	
Help	OK Cancel

6. Click OK. The Localize Files Dialog appears, as shown in the Figure below.

Figure 7-16 Localize Files Dialog

O Localize Files	X
file:/C:/SVN/SNC/DEMO/SFDC_TO_SNC/Project1/SOA/WSDLs/Enterprise_SS_ project. In order to make this file available to your project at runtime, JDevelo file and any dependent files that it imports or includes.	
Copy Options: Maintain original directory structure for imported files The following files will be created in directory C:\SVN\SNC\DEMO\SFDC_TO_SNC\Project2\SOA :	
WSDLs/Enterprise_SS_v33.wsdl	
Help	OK Cancel

7. Click **OK**. You will be returned to the Salesforce Cloud Server Connection page.

Figure 7- 17 Salesforce Cloud Server Connection Page

Welcome to the Cloud Connection	n Configuration Wizard - Step 2 of 5	×
Salesforce Server Connectio		*
Basic Info Connection Querations Headers Summary	A Salesforce Cloud Server connection is required to access the operations and business objects available. Where can I find the Objects you need? "Enterprise WSDL Location: [1/SOA/WSDLs/Enterprise_SS_v33.wsd] Image: Cloud Server connection is required to access the operations and business objects available. Image: Cloud Server connection is required to access the operations and business objects available. Image: Cloud Server connection is required to access the operations and business objects available. Image: Cloud Server connection is required to access the operations and business objects available. Image: Cloud Server connection is required to access the operations and business objects available. Image: Cloud Server connection is required to access the operations and business objects available. Image: Cloud Server connection is required to access the operations and business objects available. Image: Cloud Server connection is required to access the operations and business objects available. Image: Cloud Server connection is required to access the operation of the operation	
Help	< <u>B</u> ack <u>N</u> ext > Enish	Cancel

Note that as an alternative, you can store WSDL at an MDS location and access it, as shown in the Figure below.

Figure 7-18 SOA Resource Browser

	Components Resource	es ×		
PDEMO	📬 🗸 🔍 Name			
A				
	+ Application Server			
	🕀 🔂 Database			
	i⊇®ii soa-mos			
	🖮 🚞 wsdls			
	@ Sal	esForceEnterpriseAPI.wsdl		

- 8. Traverse to IDE Connections → SOA-MDS. Select the appropriate SOA-MDS connection where you placed the Enterprise WSDL. Select the WSDL file to be used in the Adapter configuration and click **OK**.
- **9.** The WSDL location should be of the form 'oramds:/apps/SOA/WSDLs/Integration/SalesforceReference.wsdl', as shown in the Figure below.

Figure 7-19 WSDL location

Welcome to the Cloud Connection	on Configuration Wizard - Step 2 of 5	×
Salesforce Server Connection	on exemplanation of statistics	*
Basc Info Connection Operations Headers Summary	A Salesforce Cloud Server connection is required to access the operations and business objects available.	
Help	< Back Next > Finish	Cancel

10. Click OK.

11. Click "+" button to create a new Authentication Key, as shown in the Figure below.

Figure 7-20 Create a New Authentication Key

Welcome to the Cloud Connect	tion Configuration Wizard - Step 2 of 5	×
Salesforce Server Connect	tion expression of suggests	i s
Basi Info Connection Operations Headers Summary	A Salesforce Cloud Server connection is required to access the operations and business objects available. Where can I find the Objects you need? *Enterprise WSDL Location: 11/SOA/WSDLs/Enterprise_SS_v33.wsd Pick the key to get in the door Security Policy: Patherprise MSDL Location: 11/SOA/WSDLs/Enterprise_SS_v33.wsd Pick the key to get in the door Security Policy: Putherprise Test Test	
Help	< <u>B</u> ack <u>N</u> ext > Enish	Cancel

12. The **Add Credential** dialog box is displayed, as shown in the Figure below. Provide a suitable name and the Salesforce.com credentials and click **OK**.

Note: The password should be a combination of Salesforce.com password and Salesforce.com Security Token.

Figure 7-21 Add Credential

Create CSF Key			x
*CSF Key Name:			
*Username:			
*Password:			
*Re-Enter Password:			
Help	OK	Canc	el

13. Click **Test Connection** button to validate the Authentication Key, as shown in the Figure below.

Figure 7-22 Test Connection

Welcome to the Cloud Con	nection Configuration Wizard - Step 2 of 5		×
Salesforce Server Conn	ection		*
Basic Info Connection Operations Headers Summary	A Salesforce Cloud Server connection is required to access the operations and business objects available ② Where can I find the Objects you need? *Enterprise WSDL Location: [1]/OA/WSDLs/Enterprise_SS_v33.wsd] ③ ③ Pick the key to get in the door Security Policy: CUSTOM *Authentication Key: SFSF_Test ④ ④ ✓		
Help	< Back	Next > Einish	Cancel

14. Click Next.

15. The **Cloud Operation Configuration** page is displayed, as shown in the Figure below. *Figure 7-23 Cloud Operation Configuration Page*

O Welcome to the Cloud Con	nection Configuration Wizard - Step 3 of 5	Page 1 Concession of		×
Configure the Operation	n to Perform in the Oracle Salesforce	Application		
Basic Info Connection Operations Headers	Select the target operation and business	objects in the Oracle Salesforce application.		
U Summary	3 Select an Operation Type:	CRUD 💌 create 💌		
	"Select Business Objects (Salesforce AF Available: Account AccountContactRole Account_Test_c Account_Yod_c	n 33.0): Q.*	Selected:	& V
	ActionLinkGroupTemplate ActionLinkTemplate AdditionalNumber Address_vodc Announcement			
	(2) "WSDL Operation:	create		
Help				< gade Best > Brigh Cancel

16. Now move Account from the list of Available objects to the list of the Selected objects. The WSDL Operation by default is create (same as SFDC Operation). You can edit the same by providing an operation name suitable to your business requirement, as shown in the Figure below.

Welcome to the Cloud Con	nnection Configuration Wizard - Step 3 of 5	X
Configure the Operatio	on to Perform in the Oracle Salesforce Application	*
Basic Info	Select the target operation and business objects in the Oracle Salesforce application.	
Operations Headers Summary	② Select an Operation Type: CRUD ▼ create ▼	
	*Select Business Objects (Salesforce API 33.0): Available: Account_TestC Account_ord_c Account_ord_c ActonLinkTornplate ActonLinkTornplate AdditionalNumber AdditionalNumber Additions_vodc Announcement ApexClass VMSDL Operation: create	\$ \$
Help	J < Back Next > Enish	Cancel

Figure 7-24 Cloud Operation Configuration Page

17. Click **Next**. The **Header and Properties** page is displayed, as shown in the Figure below.

Figure 7-25 Header and Properties Page

Welcome to the Cloud Connection	Configuration Wizard - Step 4 of 5	× ·
Salesforce Operation Header	Configuration	
Basic Info Connection Derations Headers Summary	Select Operations Headers Configure the Header Properties for the Selected Operation: The following header properties are available with the operation create AllorHoneHeader allorNone: true AllowFieldTruncationHeader AllowFieldTruncationHeader Configure true Configure the Header Co	
Help		< Back Next > Einish Cancel

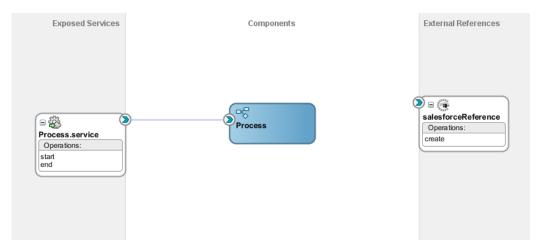
- **18.** Select the appropriate header according to your requirement. Headers displayed in this page depend on the operation selected in the previous page.
- 19. Click Next.
- **20.** The finish page is displayed. It provides a complete summary of the operation selected, object on which the operation will operate and the headers selected for that operation, as shown in the Figure below.

Figure 7-26 Finish Page

Welcome to the Cloud Connect	ion Configuration Wizard - Step 5 of 5			×
Salesforce Cloud Adapter	Artifacts Summary		01	*
မှ Basic Info မှ Connection	Cloud Adapter configuration was successful.			
Operations	Selected Operation Name: create			
 Headers Summary 	Selected Object(s) Name: Account			
	Selected SOAP Header: AllOrNoneHeader.allOrNone : t	rue		
Help		< Back	Next > Enish	Cancel

- 21. Click the Finish button to complete the Adapter Configuration Wizard.
- **22.** After clicking on **Finish** button, the following screen appears, as shown in the Figure below.

Figure 7-27 SFDC Cloud Account



7.5 Integration with BPM

Perform the following steps to integrate with BPM:

1. In the composite.xml file of your project, a component with the name **Process** exists. Double-click and open the same. **Process.bpm** page opens, as shown in the Figure below.

Figure 7-28 Process.bpm in composite.xml

alta BpmProject × Stracess ×	2
a v and	🔍 Search
Activity interactive Nouncation Catch mrow Gateway Artifacts	
Start End	
Highlight Level: Warnings Designer Scripting Collaboration History	• 100% ▼ 🕵 🗐 🆽

2. Double-click on the Start activity. **Properties-Start** page is opened as shown in the Figure below.

Note: The Model Starts and Ends with two circular icons. The Left circle is a **Start Activity** and the circle which is on the right side is the **End Activity**. These two activities are joined with the help of a line that represents the flow of activities through the process known as Sequence Flow.

_

Figure 7-29 Start Activity

Propertie:	s - Start	-	x
Basic Imp	ementation		
Name:	Start	٠	
Description:			۲
Is Draft:			
Help		ОК	Cancel

3. Left-click on **Implementation** Tab. Now in the **Argument Definition**, click on the '+' sign to create the input argument/s.

🕜 Properties - Start	X
Basic Implementation	
Implementation Type: 💿 Message	•
Message Exchange	
Type: 🧔 Define Interface	▼
Conversation: Default Advanced 	
Define Interface	
Arguments Definition	🕂 / 💥
Name 👌 Edit Argument	
Name: argument1	
Type:	
Operatio	
Help	OK Cancel
23 Data Associations VV Correlations	E Log Handlers
Message Headers Service Properties	
Help	OK Cancel

Figure 7- 30 Start – Implementation Tab – Add Argument

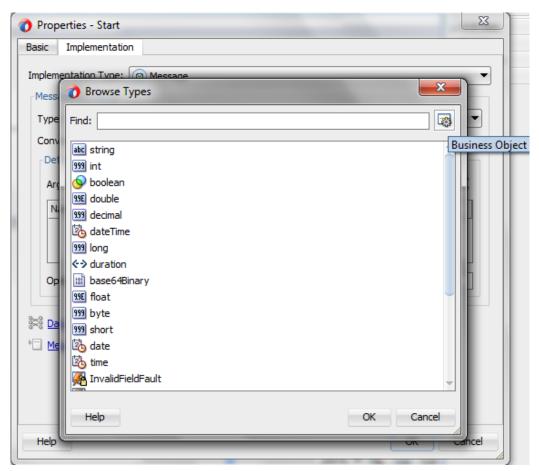
4. In the Edit Argument page, provide a name to your argument in the Name section and in the Type section, scroll down and select the Browse option.

Figure 7-31 Edit Argument

🕐 Properties - Start 🛛 🕅 🕅
Basic Implementation
Implementation Type: O Message
Message Exchange
Type: 😡 Define Interface 🗸
Conversation: Default Advanced
Define Interface
Argume 👩 Edit Argument
Name Name: argument_Input
Type: abc string
♦ duration
Operati Help in base64Binary
999 byte
🗱 Data Associations 1999 short
Message Headers date
Showse
Browse
Help OK Cancel

5. Next, a new **Browse Type** page opens. Click on the **Business Object** button to create one.

Figure 7- 32 Browse Types



6. In the **create business object** page, provide a **Name** to it and then click on the **Magnifying** icon in front of the **Destination Module** to browse for a module in which the business object exists.

Figure 7-33 Create Business Object

🕐 Properties - Start 🛛 🛛 🔀
Basic Implementation
Implementation Type: Message
Mess Browse Types
Type Find:
Conv abc string
Del 1999 int
Create Business Object
Business Object
Name: BusinessObject_Input
Destination Module:
Based on External Schema Browse.
Help OK Cancel
The time
InvalidFieldFault
Help OK Cancel
Help

7. In the **Browse Module** Page, create a new module there by clicking on the module button as shown in the Figure below.

Figure 7-34 Select Module

👌 Properties - St	art	23
Basic Implemen	Itation	
Implementation T Mess Brow Type Find: Conv Del 999 int Create Busines Business Obje Name: Destination I Based or Help Kim Mess Inv Help	🕐 Browse Modules 📃	
Help	Help OK Cancel	Cancel

8. In the create module page give a suitable **Name** to the module and click on **OK** button. Select the module you just created in the Browse module page and click **OK** as shown in the Figures below.

Figure 7-35 Create Module

Create Module	
Module: Module_Input	
Help	OK Cancel

Figure 7-36 Select created module

Browse Modules		×
Search:		
Search Results:		
Business Catalog		
Errors		
Events		
HumanTasks		
Module_Input		
Rules		
E Types		
Module_Input		
Help	OK Ca	ancel

9. In the **Create Business Object** page, click on the checkbox **Based On External Schema** and browse to the respective schema file and select the input element (**Process** in this case) from the Schema and click on **OK**.

👌 Type Chooser	x
	*
Type Explorer	
Project Schema Files	
process	
processResponse	
Type: {http://xmlns.oracle.com/BpmApplication/BpmProject/BpmSchema}process	
Show Detailed Node Information	
Help OK Car	ncel

Figure 7- 37 Select input element from external schema

10. The create Business object page appears. Click OK.

Figure 7-38 Business object created

Create Business Object			
Business Object			
Name:	BusinessObject_Input		
Destination Module:	Module_Input		
✓ Based on External Schema	acle.com/BpmApplication/BpmProject/BpmSchema}process		
Help	OK Cancel		

11. Now a Business Object is created. Select the business Object you have created for the input and click **OK**, as shown in the Figure below.

Figure 7- 39 Select the created Business Object

1	Browse Types	x
ſ	Find:	3
l		
l	999 short	
l	🖄 date	
i	20 time	
l	🔏 InvalidFieldFault	
l	🄏 InvalidIdFault	
l	🄏 InvalidSObjectFault	
l	K UnexpectedErrorFault	
l	🤯 BusinessObject_Input	
l	🚜 Update	
l	R UpdateResponse	
l	🚜 InvalidFieldFault	
	🚜 InvalidIdFault	
l	R InvalidSObjectFault	
l	R UnexpectedErrorFault	-
l	Nodule_Input.BusinessObject_Input	
	Help ОК С	ancel

12. Properties-Start page will contain an argument for the input.

Figure 7- 40 Input Argument added

Properties - Start				
Basic Implementation				
Implementation Type: 🔘 Message 🗸 🗸				
Message Exchange				
Type: 😡 Define Interface				
Conversation: Default Advanced				
Define Interface				
Arguments Definition 🕹 🦯 💥				
Name Type				
argument_input BusinessObject_Input				
Operation Name: start				
Mata Associations Data Associations				
Message Headers Ervice Properties				
Help OK Cancel				

Follow the same steps to create Business object for output in the End activity of your process. But choose the respective schema file and select the Output element (processResponse in this case) from the Schema in Create Business Object page.

Figure 7-41 Output argument added

👌 Properties - End			x
Basic Implementation			
Implementation Type: 💿 Messa	age	•	ð Ál
Force commit after execution			
Message Exchange			
Type: 😡 Define Inte	rface	•	
Conversation: Default A 	Advanced		
Define Interface			
Arguments Definition		+/×	
Name	Туре		
argument_Output	Business	Object_output	
🔿 Asynchronous 💿 Synchr	onous		
Reply To:	🐵 Start	- 🧳	
Throw Error		۹. 🧳	
2010 Data Associations	D <u>Correlations</u>	Log Handlers	
• Message Headers	Service Properties		-
Help		OK Can	cel

14. Again go to the **Start** activity and click on **Implementation** tab. Next, click on **Data Association** as shown in the Figure below.

Figure 7- 42 Select Data Associations

🕐 Properties - Start				
Basic Implementation				
Implementation Type: 💿 Message 🔹				
Message Exchange				
Type: 😡 Define Interface	▼			
Conversation: Default 				
Define Interface				
Arguments Definition	+ ∕ ×			
Name	Туре			
argument_input	BusinessObject_Input			
Operation Name: start				
Data Associations De Correlations	E Log Handlers			
* Message Headers Service Proj	perties			
Help	OK Cancel			

- **15.** New Data Association page opens. In the data objects under **process**, create **Data objects** for Input, Output and Salesforce Adapter Response.
- 16. Right-click on the data object and click New as shown in the Figure below.

Figure 7-43 Add new data object

Output		H
) Start -	Drag objects here	Process So
		+ × 4 3
From	То	
] Validate target after assigning output	data associations	

17. Provide a suitable **Name** for the data object (Input in this case) and in the **Type** section, scroll down and select the **Browse** option.

Figure 7- 44 Create Data Object

🕜 Cre	ate Data Object
Name:	dataObject_Input
Type:	abc string 👻
	<>> duration
	📓 base64Binary
Help	199E float
	999 byte
_	999 short
	🖄 date
	🖄 time
	🔍 Browse 👻
	Browse

18. Browse Type page opens. Select the business object you created for Input argument and click **OK** button as shown in the Figure below.

Figure 7- 45 Browse to input business object

🕐 Browse Types	×
Find:	
🖄 date	A
🖄 time	
🖗 InvalidFieldFault	
🖗 InvalidIdFault	
🌠 InvalidSObjectFault	
M UnexpectedErrorFault	
BusinessObject_Input	
BusinessObject_output	
Can Update	
Contraction of the second seco	
Real InvalidFieldFault	
RealidIdFault	
RealidSObjectFault	
Contracted Error Fault	Ŧ
Module_Input.BusinessObject_Input	
Help	OK Cancel

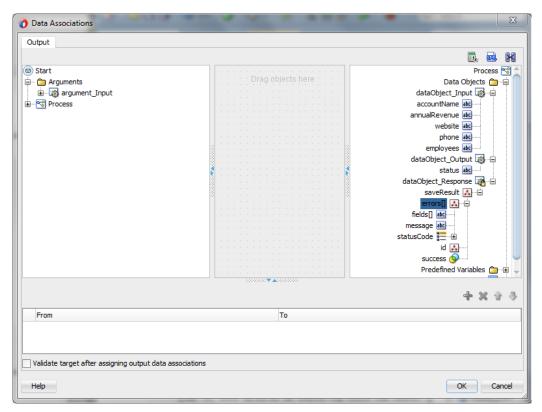
- 19. Click OK on Create Data Object page.
- **20.** Data object is created for Input which can be seen under **Data Objects** of **Process**, as shown in the Figure below.

Figure 7-46 Input data object added

Image: Start Image: Start	Drag objects here	Process (Data Objects) dataObject_Input () accountName (abc annualRevenue (abc website (abc phone (abc phone (abc phone (abc Predefined Variables) BpmProject S
	505665000 V A00565000	
		4• X 4• (
From	То	

21. Follow the same steps for creating **Data Objects** for Output and Response (createResponse in this case).

Figure 7-47 Output data object added



22. Map the **argument_input** under **Start** to **dataObject_Input** and click **OK** button as shown in the Figure below.

Figure 7-48 Map Data Associations

🚺 Data Associations		×
Output		
© Start ☐ ☐ Arguments	Drag objects here	Process 😪 Data Objects 🍙
		dataObject_Input dataObject_Output dataObject_Response
		Predefined Variables ᠿ – 🤀 SOA 🤯 – 🤀
Copy From: argument_input	To: dataObject_Input	🖳 🕂 🗙 🕁 🤴
From	То	
📋 폟 argument_input	🐯 dataObject_Input	
Validate target after assigning output data association	lS	
Нер		OK Cancel

14. Drag the **Service** activity from the **Activity** tab and place it in between **Start** and **End** Activity. A new page **Properties – ServiceTask** opens as shown in the Figure below.

Figure 7- 49 ServiceTask

Properties - Servio	ceTask 👘	* Z *	A Second	×
Basic Implementati	ion			
^ي	Name:	ServiceTask	٢	
	Description:			
	Is Draft:			
	∃ Sampling	Point		
Help			ок с	ancel

15. Click on Implementation tab and select Service call in Type Section.

Figure 7- 50 Select Service Call for Type

Properties - ServiceTask	x
Basic Implementation	
Implementation Type: 🔯 Service task	-
Force commit after execution	
Message Exchange	
Type: Service Call	
Conversation: Not Implemented	
Service Call - Service Call	
Service: Service Call	
Operation:	
Data Associations De Correlations	
* Message Headers Service Properties	
Help OK Ca	ncel

16. In **Service** section, click on **Magnifier** button and select your service for Salesforce as shown in the Figure below.

Properties - Se	rviceTask		X)
Basic Implemen	tation		
Implementation Ty	pe: 👩 Service task		
Force commit a	fter execution		
-Message Exchar	👌 Service	×	
Type:	Search:		-
Conversation:			
Service Call —	Search Results:		
Service: S			S 🖉
Operation:			-
💐 Data Associa			5
Image Hea			
Help			Cancel
Varnings	Help	OK Cancel	100%
1 Collaboration Histo			

Figure 7-51 Choose Salesforce Adapter Service

17. Click on **Data Association** and a new **Data Association** page will open as shown in the Figure below.

Figure 7- 52 Data Associations

Data Associations Input Output		×
Process Data Objects dataObject_Input dataObject_Coutput dataObject_Response Contendened Variables BpmProject	Drag objects here	ServiceTask Arguments कि-⊡ create ∰-⊕
		+× + 3
From Validate target after assigning input data as:	To	
Help		OK Cancel

18. Now Click on **Transformation** button and drag it to **create** under Arguments in **ServiceTask**.



🔿 Data Associations		×
Input Output		
		R. 🛋 🔀
😚 Process 🖨 🗂 Data Objects		ServiceTask 👸
Data Objects Data Object Input dataObject_Input dataObject_Output dataObject_Response Predefined Variables Brever S BpmProject	Drag objects here	Arguments — — — (reating 100) account
		+ × 4 3
From	То	
Validate target after assigning input data as	ssociations	
Help		OK Cancel

19. A new page **Create Transformation** opens. Now, move **dataObject_Input** from the list of **Source** side to the list of **Selected** and click **OK** Button as shown in the Figure below.

Figure 7-54 Create Transformation

Oreate Transformation	×
Sources Sources:	Selected:
Target	update ▼
Create Use Existing	dataObject_Input_parameters
Help	OK Cancel

20. Click on the Output tab and map the updateResponse from the serviceTask to the dataObject_Response in Process and click OK button, as shown in the Figure below.

Figure 7- 55 Map Data Associations

O Data Associations		×
Input Output		
		🖳 🛋 🔀
ServiceTask → Arguments → → <td< th=""><th>Orag objects here</th><th>Process S Data Objects</th></td<>	Orag objects here	Process S Data Objects
Copy From: updateResponse	To: dataObject_Response	🛃 🕂 🗙 🕆 🦫
From	То	
💼 🚜 updateResponse	ataObject_Response	
Validate target after assigning output data association	ns	
Help		OK Cancel

21. Perform the mapping from Source side to the Target side:

- Map AccountName to Name.
- Map AnnualRevenue to AnnualRevenue

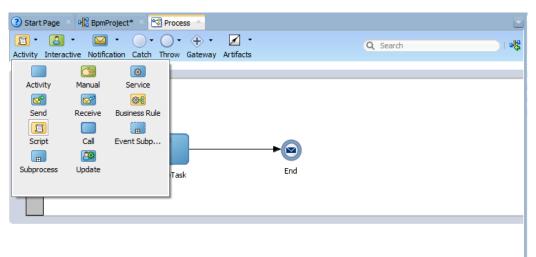
- Map Website to Website.
- Map Phone to Phone.
- Map Employees to NumberOfEmployees.

Figure 7-56 Mappings for input variable



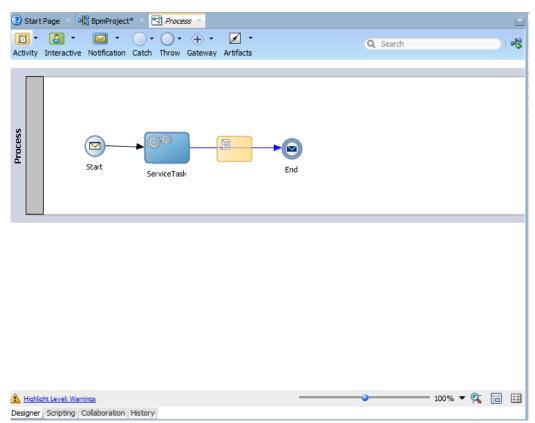
22. From the **Activity** Tab, click and drag the **Script** Activity in between **ServiceTask** and **End** Activity, as shown in the Figures below.

Figure 7- 57 Activity Tab



				-	_	_
🔺 <u>Highlig</u>	ht Level: Wa	rnings		 - 🔍		
Designer	Scripting	Collaboration	History			
	_					

Figure 7-58 Script Activity



23. A new page **Properties-ScriptTask** opens. Click on **Implementation** tab and then click on **Data Association** as shown in the Figure below.

Figure 7-59 Select Data Associations

Properties - ScriptTask		x
Basic Implementation		
Implementation Type: 🛅 Script task		-
Force commit after execution		
👯 Data Associations	Log Handlers	
Help	OK Car	ncel

24. A new **Data Association** page opens. Click and drag the transformation icon to **dataObject_Output** under **DataObjects** of **process** as shown in the Figure below.

Figure 7-60 Transform in Data Associations

		. N
ScriptTask Arguments Process	Drag objects here Drag objects here Data Object dataObject_Input @ dataObject_Quiput @ status ind dataObject_Response Dredefined Variables	
	+ ×	<u>ک</u> ا
From	То	
From alidate target after assigning output data associati		

25. The **Create Transformation** page opens. Move **dataObject_Response** from the list of **Source** side to the list of **Selected** and click **OK** Button as shown in the Figure below.

Figure 7-61 Create Transformation

O Create Transformation	
Sources: dataObject_Input dataObject_Output	Selected: Selected:
Target Target:	<pre> dataObject_Output </pre>
Create Use Existing	dataObject_Response_dataObject_Output dataObject_Input_parameters
Help	OK Cancel

26. Now perform the mapping from Source side to the Target side.

Figure 7- 62 Mappings for Output Variable

sources>	i آ	xsl:stylesheet 🔬
ScreateResponse		xsl: template(match=/)
⊟ ☆ ns0:SaveResult		ths:processResponse 🚸 📋
⊕ 🛞 ns2:errors		tns:Status 🔇
s2:success		
Variables		

27. Now Double Click the **End** activity and then click on **Implementation** tab and then click on **Data Association** as shown in the Figure below.



Properties - End		
Basic Implementation		
Implementation Type: 💿 Message	•	ĥ
Force commit after execution		
Message Exchange		
Type: 😡 Define Interfac	e 🔹	
Conversation: Default Adva 	anced	
Define Interface		
Arguments Definition	💠 🖉 💥	
Name	Туре	
argument_Output	BusinessObject_output	
Asynchronous Synchrono	us	
Reply To:	🐵 Start 👻 🎸	
Throw Error		
Stata Associations	Correlations	U
* Message Headers	Service Properties	÷
Help	OK Cancel	

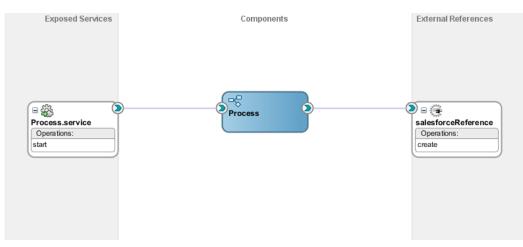
28. A new **Data Association** page will open, map the **dataObject_Output** of **process** to **argument_Output** of **End** and click **OK** as shown in the Figure below.

Figure 7-64 Map Data Associations

👌 Data Associations		
Input		
SProcess □ Data Objects □ Image:	Drag objects here	I I I I I I I I I I I I I I I I I I I
Copy From: dataObject Output		🖳 🕂 🗙 🕆 🕹
From: dataObject_Output	To: argument_Output	
From	To argument_Output	
Validate target after assigning input data associations		
Help		OK Cancel

29. This completes the project creation. The composite.xml looks as shown in the Figure below.

Figure 7-65 Composite.xml



7.6 Deploy the Composite

Perform the following steps to deploy the composite

1. In the Application Navigator pane, right-click BpmProject and select Deploy \rightarrow BpmProject, as shown in the Figure below.

Figure 7-66 Deploy the composite

		_	Y
Applications	New	<u> </u>	🕆 📲 BpmProject 🐣 😒 Process 🛛
🔁 BpmAppli	Edit Project Source Paths	,	🐱 📲 I 🚯 🔯 🗹 I 🖶 🖶 🏘
	Delete Project		
🖃 🖓 🔁 🖂 🖉	Version Project		sed Services
🖨 🛅 BF	version <u>P</u> roject		
□ … 	<u>B</u> PM	•	
	SOA	•	
	Find Project Files		
	S <u>h</u> ow Classpath		
🛓 👘 Se 🔤	Sho <u>w</u> Overview		
<u> </u>	Deplo <u>y</u>	•	<u>B</u> pmProject
	Save to PAM		<u>N</u> ew Deployment Profile
	<u>U</u> pdate		
	Resolve Conflicts		service
	Relocate Project		ons:
│	Relocate Project		
	Find Usages	Ctrl+Alt-U	
	Ma <u>k</u> e BpmProject.jpr	Ctrl-F9	
		Alt-F9	
	Run		
₽ [?	<u>D</u> ebug		
	Refa <u>c</u> tor	•	
····· 0	Compare With	•	
	Replace With	•	
····· <	• -		
	Restore from Local History		
•	SAP Adapter Migration Tool		History
	Project Properties		Messages - Log × Properties
± Data Contro	r roject riopettes		mooragoo . Log Hopenada
🗄 Recent Files	Create SOA Template		xtensions × SOA ×

2. Select the **Deploy to Application Server** option and follow the instructions. Using this option, you can deploy the composite on the Application server after providing the details of the server.

7.7 Test the Composite

You can run and test the instances of deployed BPM composite applications from Oracle Enterprise Manager Console. This enables you to manage a composite application, initiate and track an instance of a composite and to view detailed component instance audit trails. Perform the following process to test the composite.

7.7.1 Test the Outbound Process

Perform the following steps to test the Outbound process:

- 1. Login to Enterprise Manager Console for the server on which you have deployed your project.
- 2. Open **BpmProject** under the **Default** partition.
- 3. Click the **Test** button to test the Web service, as shown in the Figure below.

Figure 7-67 Test the project

n Delier	ch. + D		0-11				
tive Retire	Shut Down			👻 🚱			
shboard Composi	ite Definition	Flow Instances	Unit Tests	Policies			
Components							
Name							
Process							
eler locess							
Services and Re	eferences						
	eferences				Tur		Lisage
Services and Re Name	eferences				Тур	e b Service	Usage Service

4. Provide the input payload and click the **Test Web Service** button, as shown in the Figure below.

Figure 7-68 Test Web Service

Test Web Service Web service, enter the WSDL or WADL and click

5. After successful execution, the response contains **Status** as true for Account update, as shown in the Figure below.

Figure 7- 69 Test Status

Request	Response		
Response Tree Vie	e Time (ms) 10802	t successfully received ated. Launch Flow	
Name		Туре	Value
⊿ parame	eters	parameters	
⊿ pro	cessResponse	processResponse	
	Status	string	true

6. Click the Launch Flow Trace button to view the Audit Trail, as shown in the Figure below.

Figure 7- 70 Flow Trace

Recover 👻 View 👻					Flow Instance 200
Error Message		Fault Owner			Fault Time Recovery
io faults found.					
Columns Hidden 8					
	Show Instance IDs				
Instance		Type	Usage	State	Time Composite
		Service	Service	Completed	May 30, 2014 6:17:41 PM BpmProject [1.0]
🛛 💁 Process.service		BPMN		Completed	May 30, 2014 6:17:41 PM BpmProject [1.0]
Process.service Process			Reference	Completed	May 30, 2014 6:17:41 PM BpmProject [1.0]

7. Click on List view and select Tree view to see the Audit trail in details, as shown in the Figure below.

Figure 7-71 Audit Trail

This page shows BPMN process (1)

ıdit Trail				
List View 🔻 Hur	man Activities; Service Activiti 💌 🛛 🖣	û 🖓		
List View				
Tree View	Status	Start	End	Location
Graphical View	Activity completed	May 30, 2014 6:17:41 PM	May 30, 2014 6:17:51 PM	/Process
THEE VIEW				

8. The Audit Trail will look like as shown in the Figure below.

Figure 7-72 Audit Trail – Tree View

Tinstance of Process (1)

lit Trail		
Free View Human Activities	; Service Activiti 💌	
Process	Thread 0	Instance created May 30, 2014 6: 17:41 PM
Start		Activity completed May 30, 2014 6:17:41 PM
Start	Thread 0	Instance entered the activity May 30, 2014 6:17:41 PM
Start	Thread 0	Instance left the activity May 30, 2014 6:17:41 PM
ServiceTask	Thread 0	Activity completed May 30, 2014 6:17:41 PM
ServiceTask	Thread 0	Instance entered the activity May 30, 2014 6:17:41 PM
ServiceTask	Thread 0	Instance left the activity May 30, 2014 6:17:51 PM
ScriptTask	Thread 0	Activity completed May 30, 2014 6:17:51 PM
ScriptTask	Thread 0	Instance entered the activity May 30, 2014 6:17:51 PM
ScriptTask	Thread 0	Instance left the activity May 30, 2014 6:17:51 PM
🖻 End	Thread 0	Activity completed May 30, 2014 6:17:51 PM
End	Thread 0	Instance entered the activity May 30, 2014 6:17:51 PM
🖾 End	Thread 0	Instance left the activity May 30, 2014 6:17:51 PM

9. The Service Task of the process is shown in the Figure below.

Figure 7-73 End Activity with Response returned



10. This completes the Create Account scenario. The created account can be seen in the Figure below.

Figure 7-74 Created Account

David Jones		Custonice Page Edit Layout Printable View Help for this Page
	Gozortunities (c) Quotes (c) Contacts (c)	
Account Detail	Edit Delete Include Offline Submit for Approval	
Account Owner	Shalindra Singh [Change] Rating	
Account Name	David Jones [View Hierarchy] Phone	12345678
Parent Account	Fax	
Account Number	Website	http://www.david.com
Account Site	Ticker Symbol	
Туре	Ownership	
Industry	Employees	
Annual Revenue	SIC Code	
Account_Ext_Id		
Project_Street_Address		
Project_City		
Project_Zipcode		
CaseLookup		
Account_Test_Lookup		
Billing Address	Shipping Address	
Customer Priority	SLA	
SLA Expiration Date	SLA Serial Number	
Number of Locations	Upsell Opportunity	
Created By	Shalindra Singh, 30/5/2014 11:25 AM Last Modified By	Shalindra Singh, 30/5/2014 5:30 PM
AccountMap		

8

Configuring the Oracle Cloud Adapter for Salesforce.com on Oracle WebLogic Server

This chapter gives an overview of the design-time and run-time configuration properties. This chapter contains the following topics:

Section 8.1, "Oracle Cloud Adapter for Salesforce.com Run-Time Properties"

8.1 Oracle Cloud Adapter for Salesforce.com Run-Time Properties

The section describes different run-time properties. This section is subdivided into multiple sections that includes:

- Section 8.1.1, "Generic Properties"
- Section 8.1.2, "Properties available in the response"
- Section 8.1.3, "Retry Properties"
- Section 8.1.4, "Precedence of Salesforce.com Property Values"

8.1.1 Generic Properties

Table 8-1 shows the Run-time properties supported by Oracle Cloud Adapter for Salesforce.com. You can provide the values for these properties while creating the BPEL process inside the invoke activity or using the Enterprise Manager console, as desired.

Some of these properties are also available in **Salesforce Cloud Adapter Configuration Wizard** for some particular operations.

Property Name	Туре	Default Value	Description	Configurable At
jca.salesforce.A llOrNoneHeade r.allOrNone	Boolea n	True	The AllOrNoneHeader hea der property allows a call to roll back all changes unless all records are processed successfully.	Oracle Cloud Adapter for Salesforce Configuration Wizard/ BPEL invoke activity
jca.salesforce.L ocaleOptions.la nguage	String	en_US	Specifies the language of the labels returned. The value must be a valid user locale (language or country), such as en_US.	BPEL invoke activity

Table 8-1 Run-time Properties

Property Name	Туре	Default Value	Description	Configurable At
jca.salesforce.Q ueryOptions.bat chSize	integer	500	Specifies the batch size for queries. The default is 500; the minimum is 200, and the maximum is 2,000.	Oracle Cloud Adapter for Salesforce Configuration Wizard/ BPEL invoke activity
jca.salesforce.H ttpTimeout	Integer	10 sec	Maximum value 120 sec. It specifies the timeout value for the transactions.	BPEL invoke activity
jca.salesforce.q ueryLocator	String	NA	The queryLocator value is returned in case of query and queryAll calls from Salesforce.com. If queryLocator value is not empty, it means there are more records to fetch for the same query. You can assign the queryLocator value to this property (jca.salesforce.queryLocato r) in your BPEL process and invoke query or queryAll again. It will fetch the next set of records for the same query string. It is similar to calling queryMore operation to fetch the next set of records. Refer to the section "How to use query and queryMore Operations"	BPEL invoke activity

 Table 8-1
 Run-time Properties (Continued)

8.1.2 **Properties available in the response**

Table 8-2 shows the properties available in the response.

Property Name	Туре	Default Value	Description	Configurable At
jca.salesforce.re sponse.debugLo g	String	NA	debugLog is returned as part of Header response, if you provide a value for debug header in the configuration wizard of the Salesforce.com adapter. To access this value you need to create a variable of type 'string' and extract the value of debug log into this variable in the properties section of your Invoke activity.	BPEL invoke activity

Property Name	Туре	Default Value	Description	Configurable At
jca.salesforce.re sponse.limitInfo .current	String	NA	This value is returned as part of Header response, specifying the number of calls that have already been used in the organization. (Supported in Salesforce.com 29.0 version or higher)	BPEL invoke activity
			To access this value you need to create a variable of type 'string' and extract the value of this property into that variable in the properties section of your Invoke activity.	
jca.salesforce.re sponse.limitInfo .limit	String	NA	This value is returned as part of Header response, specifying the organization's limit for the number of calls it can make. (Supported in Salesforce.com 29.0 version or higher). To access this value you need	BPEL invoke activity
			to create a variable of type 'string' and extract the value of this property into that variable in the properties section of your Invoke activity.	

 Table 8-2
 Properties Available in the Response (Continued)

Providing the Property Values in BPEL Invoke Activity

Figure 8-1 depicts the properties available in the Invoke activity of BPEL Process. The prefix **jca.salesforce** determines that these properties are pertaining to the Salesforce.com adapter. In the value section, you can assign values to these properties using a variable or an expression if the type of property is "input". On the other hand, if the type of property is "output", its value can be extracted into a variable.

ssertions	Skip Condition	Headers	Sou	rces	Targets		
General	Correlatio	ns	Prop	perties		Annotat	ions
Properties:							
Name			١	/alue	T	уре	
							-
jca.msmq.m		- D L					
	essage.MaxTimeTr	okeachQuei	Je				
	essage.Priority						
	essage.SentTime						
	essage.TimeToLive						-
	ce.AllOrNoneHead	er.allOrNone	е				
	ce.HttpTimeout						
	ce.LocaleOptions.l						
	ce.QueryOptions.I	oatchSize					
	ce.queryLocator						_
	ce.response.debu						-
	ce.response.limitIr						
	ce.response.limitIr	nto.limit					_
jca.socket.h							
jca.socket.p							
jca.ums.bcc							
ica.ums.cc							T
🛃 <u>F</u> it to Wie	dth						

Figure 8-1 Properties Available in the Invoke Activity of BPEL Process

8.1.3 Retry Properties

Table 8-3 shows the configurable properties related to Oracle Cloud Adapter forSalesforce.com. These properties can be modified in the composite file or at the EnterpriseManager console.

Table 8-3 Oracle Cloud Adapter for Salesforce.com Configurable Properties

Property Name	Туре	Default Value	Description	Available at
jca.retry.count	integer	4	Specifies the number	Composite.xml, EM console
			of retries to post the message.	EIVI console
jca.retry.backoff	integer	2	Specifies the retry	Composite.xml,
			interval growth factor.	EM console
jca.retry.interval	integer	1	Specifies the time	Composite.xml,
			interval between two	EM console
			retries.	
jca.retry.maxInte	integer	120	Specifies the	Composite.xml,
rval			maximum interval	EM console
			between two retries.	

8.1.3.1 Providing the Property Values in the Composite

Figure 8-2 shows the properties available in the composite.xml file.

Figure 8-2 Composite.xml File Properties

Find	1 🖓 I 🖓 🗛 🗛 I 🔤
	 <property many="false" name="bpel.config.oneWayDeliveryPolicy" type="xs:string">async.persist</property>
	<reference name="salesforceReference" ui:wsdllocation="WSDLs/salesforceReference.wsdl"></reference>
	<pre><interface.wsdl interface="http://xmlns.oracle.com/pcbpel/adapter/salesforce/Application6/Projectl/s</td></tr><tr><td></td><td><pre><pre>operty name=" jca.retry.count"="" many="false" override="may" type="xs:integer">4</interface.wsdl></pre>
	<pre><pre>oproperty name="jca.retry.interval" type="xs:integer" many="false" override="may">l</pre></pre>
	<pre><pre>operty name="jca.retry.backoff" type="xs:integer" many="false" override="may">2</pre></pre>
	<pre><pre>sproperty name="jca.retry.maxInterval" type="xs:integer" many="false" override="may">120</pre></pre>
	<pre></pre>
	<source.uri>bpelprocessl_client_ep</source.uri>
	<target.uri>BPELProcessl/bpelprocessl_client</target.uri>
	<pre></pre>
	<source.uri>BPELProcess1/salesforceReference</source.uri>
	<target.uri>salesforceReference</target.uri>

You can also edit the value of these properties in the **Properties** section of Salesforce.com Adapter. The properties section appears if you click on the Salesforce.com Adapter in the **External References** section as shown in Figure 8-3.

Figure 8-3 Salesforce Adapter Properties

External References	anon voneneauer ano. oracle.cloud.rt.sfdcA targetOperation selectedObjects					
	Composite Properties Properties					
		÷				
	Name	Value				
	jca.retry.count	4				
	jca.retry.interval	1				
P = 🤤 📄	jca.retry.backoff	2				
SalesforceReference Operations:	jca.retry.maxInterval	120				
create	··· Binding Properties ···					
······································		4-				
	Name	Value				
	Callback Binding Prop (No callback binding) Policies	perties				
	···· Binding Policies ······					
	URI Categ	ory Status				
-	···· Callback Binding Polic	ies				

8.1.3.2 **Providing the Property Values at Enterprise** Manager Console

To provide the property values at the Enterprise Manager Console, follow the steps given below:

1. Proceed to Services & References section of your project, as shown in Figure 8-4.

Figure 8-4 Services & References Section

✓ Services and References				
Name	Туре			
Spelprocess1_client_ep	Web Service			
RgetUpdatedDemo	JCA Adapter			

2. Select the service name of your Salesforce.com Adapter from this section, and click on the Properties tab on the subsequent page, as shown in Figure 8-5.

Figure 8-5 Salesforce Adapter Properties

ashboard Policies Properties Adapter Reports	
/ou can edit or delete the following binding properties. Click Add	to add additional properties.
View → 🛟 Add 🗒 Revert	
Name (Operation or Port Type)	Value
jca.retry.count	4
jca.retry.backoff	2
jca.retry.interval	1
jca.retry.maxInterval	120

Precedence of Salesforce.com Property Values 8.1.4

If there is provision to set a particular property at multiple positions, the highest priority would be given to the value provided at the Enterprise Manager Console, next priority would be given to the value provided while creating the composite, while the lowest priority would be given to the value provided at Salesforce Cloud Adapter Configuration Wizard.

Troubleshooting and Error Messages

This chapter explains the troubleshooting information and error messages that you can come across while configuring the Oracle Cloud Adapter for Salesforce.com. It contains the following topics:

- Section 9.1, "Troubleshooting and Error Messages"
- Section 9.2, "API Fault"
- Section 9.3, "Status Code"
- Section 9.4, "Known Issues"

9.1 Troubleshooting and Error Messages

The Oracle Cloud Adapter for Salesforce.com supports the adapter diagnostic framework for reporting and alerting. This provides run-time adapter diagnostic information as read-only reports in EM console.

The troubleshooting information is categorized as follows:

- Oracle Cloud Adapter for Salesforce.com Design-Time JDeveloper
- Oracle Cloud Adapter for Salesforce.com Run-Time

Log file information that can be relevant in troubleshooting can be found in the following locations based on the adapter installation.

The Oracle Cloud Adapter for Salesforce.com trace information can be found under the following directory:

For Oracle SOA Suite:

```
<ORACLE_HOME>\soa\user_projects\domains\${soa_server
domain}\servers\${soa_server name}\logs\soa-server_diagnostic.log
```

9.1.1 Oracle SFDC Cloud Adapter Design-Time JDeveloper

Table 9-1 shows the common errors faced while using Oracle Cloud Adapter for Salesforce.com in JDeveloper and their possible solutions.

Table 9-1 Oracle Cloud Adapter for Salesforce.com in JDeveloper

Error	Solution
The login credentials are not valid, or the maximum number of logins has been exceeded. Contact your administrator for more information.	Provide the valid Salesforce.com credentials. Delete the CSF key and add it again providing the correct credentials.

Error	Solution
Unable to connect to Salesforce.com server.	Ensure that you are connected to the internet and not blocked by or behind the firewall of your organization.
Error deploying the composite on soa_server: Composite with same revision ID already exists.	Check whether the project is already deployed on the server. Check the overwrite composites with the same revision box or change the revision number.
java.net.ConnectException: Connection refused: connect; No available router to destination.	Check whether the SOA server is up and running.

 Table 9-1
 Oracle Cloud Adapter for Salesforce.com in JDeveloper (Continued)

9.1.2 Oracle SFDC Cloud Adapter Run-time

Table 9-2 shows the common errors faced in the SOA server run-time.

Table 9-2 Error in SOA server Run-time

Error	Solution
Unable to find username in credential store.	Make sure that CSF key being used in the adapter during the design-time is available in the credential store in the WebLogic server.
Invalid ID. ID does not belong to the selected object.	Ensure that you are providing only the ID's corresponding to the objects selected at the design-time for the operation.
Bind Parameter's values are missing.	Ensure that you have provided the values of all the bind parameters defined in the query or search string at design-time.
Bind Parameter's value is empty.	Ensure that the value of bind variable is not empty.
FileNotFoundException.	Ensure that the Enterprise WSDL file you have provided is localized into your composite, or, in case you are using MDS, make sure that it is available in the MDS.
Unknown exception while transforming request message.	Please make sure that parameter Hostname Verification field (Under the tab SSL) is set to NONE on the server side as this is the most common reason.

Set Hostname Verification to None

You might come across the Exception: *javax.net.ssl.SSLKeyException* due to failed hostname verification check on the server side when you test your composite. This error comes when Hostname Verification parameter on the server side is set to a value other than "*None*". To overcome this you can follow the below mentioned steps:

1. Login into WebLogic console.

- **2.** Browse to the servers and select manage server on which Salesforce adapter is running (e.g., soa_server1).
- **3.** Go to Configuration \rightarrow SSL.
- 4. Expand Advanced section. You will see 'Hostname Verification'.
- 5. Select the "None" value from the dropdown and save the changes.

9.2 API Fault

You can refer the link below to get more information about the API Fault.

http://www.salesforce.com/us/developer/docs/api/Content/sforce _api_calls_concepts_core_data_objects.htm#i1421192

9.3 Status Code

You can refer the link below to get more information about the Status Code.

http://www.salesforce.com/us/developer/docs/api/Content/sforce _api_calls_concepts_core_data_objects.htm#i1421521

9.4 Known Issues

 Run-Time execution failure due to absence of the local copy of Enterprise WSDL in JDeveloper SOA Project: While configuring Oracle Cloud Adapter for Salesforce.com, user need to browse the Enterprise WSDL of the Salesforce.com organization. When user points to the location of the WSDL, JDeveloper creates a copy of the WSDL in the JDeveloper SOA Project (say Project1). This copy of the WSDL is needed by the Oracle Cloud Adapter for Salesforce.com during Run-Time execution.

The next time you create the adapter in a different project (say Project2), the adapter (by default) picks the location of the Enterprise WSDL localized in the previous project (Project1) and the previously CSF key from the cache, as shown in Figure 9-1.

Figure 9-1 WSDL Location

Welcome to the Cloud Control	nection Configuration Wizard - Step 2 of 5	NAMES OF TAXABLE PARTY.	×
Salesforce Server Conn	ection		*
Basic Info. Connection Operations Headers Summary	A Salesforce Cloud Server connection is required to access the operations and business objects available.		
Help	< Back	Next > Einish	Cancel

You can click on **Next** button without browsing for the WSDL again and the adapter will be configured, but the execution will fail during Run-Time as the Enterprise WSDL has not been localized in the folder of Project2.

Temporary Fix: To avoid this, always browse to the location of the Enterprise WSDL (either in the file system or MDS) to localize it in the project folder.

- 2. Package Version Header does not support multiple package versions: Salesforce.com supports multiple package versions per operation in its SOAP calls. In Cloud Adapter for Salesforce.com, currently only one Package Version can be configured per operation, using the Header page of the Adapter Configuration Wizard.
- **3. Double-click does not select WSDL in WSDL Chooser dialog:** You cannot select the Enterprise WSDL of your Salesforce organization in the WSDL chooser dialog of connection page, by double-clicking on it. You need to select the WSDL at the appropriate location, and then click **OK**.
- 4. Double-click to select Salesforce Object doesn't work: On the 'Cloud Operation Configuration' Page in the Business Objects sections, if you double-click on an object in the 'Available' section, it does not move to the 'Selected' section. Vice-versa is also true, when you double-clicking on an object in the 'Selected' section, it does not move to the 'Available' section.

Temporary Fix: Use the arrow buttons to select or unselect objects.

- 5 No limit for CSF Key Username and Key Name: User is able to provide unlimited characters in CSF Key Username and Key Name. Currently, there is no check for this.
- 6 When user configure the Adapter, CSF key is not getting pre-selected.
- 7 Binding parameters textbox is getting generated when user click WSDL operation textbox. When user provides a bind query in query statement text area and click WSDL operation textbox, it generates Binding parameters text box.

- 8 TestMyQuery link is not working on single-click: On Operations page, when user provides any query in Query Statement text area and click **Test My Query**, it does not work with a single-click. User have to press this link twice.
- 9 User is allowed to change the Reference name in Edit mode.
- **10** Response headers is not working for OSB: Limitinfo current, Limitinfo limit and debug header is not working.
- **11** In the current version; Suppress response, Clear cache and Offline configuration is not supported.
- **12** Incorrect Headers are getting displayed on Summary page while editing the adapter.

10 Migration Support

This chapter provides information about the migration support in 12c version of Oracle Cloud Adapter for Salesforce.com for the 11g version of Oracle Cloud Adapter for Salesforce.com. This can be used as a reference by the organizations currently using the Oracle Cloud Adapter for Salesforce.com on Oracle SOA Suite 11g and migrating to the Oracle SOA Suite 12c.

This chapter contains the following topics:

- Section 10.1, "Complete Backward Compatibility"
- Section 10.2, "Migrating 11g Application and Projects to 12c"
- Section 10.3, "Points to Remember"

10.1 Complete Backward Compatibility

The Oracle Cloud Adapter for Salesforce.com is completely compatible with the previous release for Oracle SOA Suite 11g. All your composites containing the Oracle Cloud Adapter for Salesforce.com created in Oracle SOA Suite 11g can be ported to Oracle SOA Suite 12c by a simple process outlined in the next section of this chapter.

This will allow you to seamlessly upgrade to the latest version of Oracle SOA Suite and enjoy a host of new features. Once the migration of projects and application is done in the JDeveloper of 12c, you can upgrade your existing Oracle Cloud Adapter for Salesforce.com to the latest version by either double-clicking the adapter in External References swim lane or by right-clicking on it and selecting "Edit" as shown in the following section.

10.2 Migrating 11g Application and Projects to 12c

This section will outline the steps to migrate your applications and projects created in Oracle SOA Suite 11g to the latest version of Oracle SOA Suite 12c. Follow the steps as shown:

- 1. Create a copy of your existing 11g applications in a new directory inside your "mywork" folder, for example $-C:\Developer\mywork\11g-12c$
- 2. Open JDeveloper 12c.
- 3. Click on Open Application

Eile Edit View Application Refac ♀ ▶ ■ ■ ■ ■			<u>H</u> elp
Applications	×		
New Application			
Open Application			
Structure	×		
l			

Figure 10- 1 Open Existing Application

4. Select the .jws file of the 11g application you had copied into the location mentioned in step 1. If you only wish to migrate a single project, you can select the .jpr file of that project.

Figure 10- 2 Choose .jws of 11g application

🕜 Open Applic	ation(s)			×
Location:	C:\JDeveloper\mywork\11g for 12c\DemoAppForMigration	00	🗳 🗳	ŧΞ Ⅲ
Work Work Home Desktop Documents	S_E_B_01_033_01 S_E_B_01_034_01 S_E_B_01_035_01 S_E_B_01_036_01 S_E_B_01_039_01 S_E_B_01_041_01 S_E_B_01_042_02 S_E_B_01_043_02 S_E_B_01_044_02 S_E_B_01_044_02 S_E_B_01_044_02 S_E_B_01_044_02 Src .adf DemoApp.jws File Name: DemoApp.jws File Type: Application files (*.jws)			
Help		Open	c	ancel

5. You will see a prompt warning stating that you are about to migrate your 11g files to the 12c format. Click "Yes" to continue.

Figure 10- 3 Confirm Migration to 12c

Open Warn	ing 📃
	You are about to migrate the application C:\JDeveloper\mywork\11g for 12c\DemoAppForMigration\DemoApp.jws to JDeveloper version 12.1.3.0.0 file format. This operation will also migrate all projects contained in the application.
	Once the application and its contents are migrated, you will not be able to open the application or its projects using an older release. You may want to back up the application contents before proceeding.
	Do you want to migrate these files?
Help	<u>Y</u> es <u>N</u> o

6. Wait for a few minutes while JDeveloper migrates your application to 12c format. This process can take a few minutes depending upon the size of your application. During this time you will see the following dialog.

Figure 10- 4 Wait while migration completes

Migration Status	
Migrating files to JDeveloper version 12.1.3.0.0 file format	

7. After a few minutes, you will see the following dialog stating that successful migration for all your project files in the application.

Figure 10- 5 Migration successfully completed

	Migration successfully completed for the following file(s):
(i)	C:\JDeveloper\mywork\11g for 12c\DemoAppForMigration\DemoApp.jws
	C:\JDeveloper\mywork\11g for 12c\DemoAppForMigration\Bind Parameter\Bind Parameter.jpr
	C:\JDeveloper\mywork\11g for 12c\DemoAppForMigration\S_E_B_01_001_01\S_E_B_01_001_01.
	C:\JDeveloper\mywork\11g for 12c\DemoAppForMigration\S_E_B_01_002_01\S_E_B_01_002_01.
	C:\JDeveloper\mywork\11g for 12c\DemoAppForMigration\S_E_B_01_003_01\S_E_B_01_003_01.
	C:\JDeveloper\mywork\11g for 12c\DemoAppForMigration\S_E_B_01_004_01\S_E_B_01_004_01.
	C:\JDeveloper\mywork\11g for 12c\DemoAppForMigration\S_E_B_01_005_01\S_E_B_01_005_01.
	C:\JDeveloper\mywork\11g for 12c\DemoAppForMigration\S_E_B_01_006_01\S_E_B_01_006_01.
	C:\JDeveloper\mywork\11g for 12c\DemoAppForMigration\S_E_B_01_007_01\S_E_B_01_007_01.
	C:\JDeveloper\mywork\11g for 12c\DemoAppForMigration\S_E_B_01_008_01\S_E_B_01_008_01.
	C:\JDeveloper\mywork\11g for 12c\DemoAppForMigration\S_E_B_01_009_01\S_E_B_01_009_01.
	C:\JDeveloper\mywork\11g for 12c\DemoAppForMigration\S_E_B_01_010_01\S_E_B_01_010_01.
	C:\JDeveloper\mywork\11g for 12c\DemoAppForMigration\S_E_B_01_011_01\S_E_B_01_011_01.
	C:\JDeveloper\mywork\11g for 12c\DemoAppForMigration\S_E_B_01_012_01\S_E_B_01_012_01.
	C:\JDeveloper\mywork\11g for 12c\DemoAppForMigration\S_E_B_01_013_01\S_E_B_01_013_01.
	C:\JDeveloper\mywork\11g for 12c\DemoAppForMigration\S_E_B_01_013_02\S_E_B_01_013_02.
	C:\JDeveloper\mywork\11g for 12c\DemoAppForMigration\S_E_B_01_013_03\S_E_B_01_013_03.
	C:\JDeveloper\mywork\11g for 12c\DemoAppForMigration\S_E_B_01_013_04\S_E_B_01_013_04.
	C:\JDeveloper\mywork\11g for 12c\DemoAppForMigration\S_E_B_01_013_05\S_E_B_01_013_05.
	C:\JDeveloper\mywork\11g for 12c\DemoAppForMigration\S_E_B_01_014_01\S_E_B_01_014_01.
	C:\JDeveloper\mywork\11g for 12c\DemoAppForMigration\S_E_B_01_014_02\S_E_B_01_014_02.
	C:\JDeveloper\mywork\11g for 12c\DemoAppForMigration\S_E_B_01_014_03\S_E_B_01_014_03.
	C:\Developer\mywork\11g for 12c\DemoAppForMigration\S_E_B_01_015_01\S_E_B_01_015_01.
	C:\JDeveloper\mywork\11g for 12c\DemoAppForMigration\S_E_B_01_015_02\S_E_B_01_015_02.
	C:\Developer\mywork\11g for 12c\DemoAppForMigration\S_E_B_01_015_03\S_E_B_01_015_03.
	C:\Developer\mywork\11g for 12c\DemoAppForMigration\S_E_B_01_015_04\S_E_B_01_015_04.
	C:\Developer\mywork\11g for 12c\DemoAppForMigration\S_E_B_01_016_01\S_E_B_01_016_01.
	C:\Developer\mywork\11g for 12c\DemoAppForMigration\S_E_B_01_016_02\S_E_B_01_016_02.
	C:\Developer\mywork\11g for 12c\DemoAppForMigration\S_E_B_01_016_03\S_E_B_01_016_03.
	C:\Developer\mywork\11g for 12c\DemoAppForMigration\S_E_B_01_016_04\S_E_B_01_016_04.
	C:\Developer\mywork\11g for 12c\DemoAppForMigration\S_E_B_01_017_01\S_E_B_01_017_01.
	C:\Developer\mywork\11g for 12c\DemoAppForMigration\S_E_B_01_017_02\S_E_B_01_017_02.
	C:\Developer\mywork\11g for 12c\DemoAppForMigration\S_E_B_01_017_03\S_E_B_01_017_03.
	C:\Developer\mywork\11q for 12c\DemoAppForMigration\S E B 01 017 04\S E B 01 017 04.
	OK

8. Click **OK** and you will see all your projects in the Projects Tab in Application. If you expand one of your projects, you will see the inner directory structure to be different than it was in 11g (this is expected behavior and will not affect the functioning of your projects).

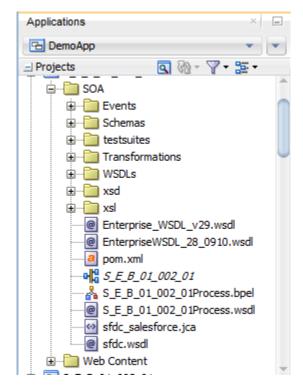
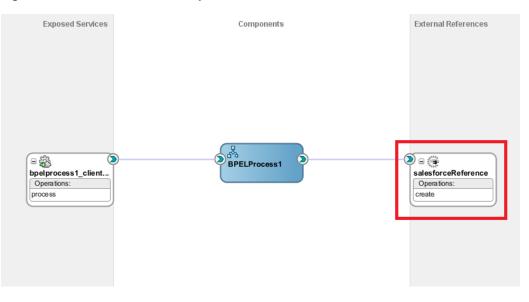


Figure 10- 6 Migrated Project Structure

- **9.** This completes the migration of your 11g application/projects to 12c. You can now proceed to update your Oracle Cloud Adapter for Salesforce.com to the latest version.
- **10.** Open the composite.xml of the project you wish to update the adapter in, and edit the Oracle Cloud Adapter for Salesforce.com in External References swim-lane. (This project shown contains only one instance of the adapter, your projects may contain more and each instance will require the Steps 10.)

Figure 10- 7 Edit Oracle Cloud Adapter for Salesforce.com



On editing the adapter, you will see the Adapter Configuration Wizard – Page 1, you cannot make any changes here to maintain the sanctity of your mappings in the BPEL process. Click "Next".

Welcome to the Cloud Con	nnection Configuration Wizard - Step 1 of 5		×
Velcome to the Cloud	Connection Configuration Wizard		*
Basic Info Connection Operations Headers Summary	This wizard helps you create a service using the Oracle Salesforce Cloud connection. You will be asked to specify configuration parameters and define an operation for the service. "What do you want to call your connection? SalesforceReference What does this connection do? Describe the connection's purpose and detail		
Help		Next > Einish	Cancel

Figure 10- 8 Oracle Cloud Adapter for Salesforce.com Welcome Screen

12. On the page that follows, you will see the Authentication Key field already populated with the key you had created during 11g project creation for the adapter. You will need to enter the username and password for this key again by clicking on the Edit button. (Please note that this step has to be followed only the first time you edit the adapter in a newly migrated application. Once you have configured the same key again in this application, it will show up in all future adapter edits within this application and you can skip the steps 13-14)

Figure 10- 9 Oracle Cloud Adapter for Salesforce.com Connection Page - Edit CSF Key

Welcome to the Cloud Control	nnection Configuration Wizard - Step 2 of 5		×
Salesforce Server Con	nection		*
Basic Info Connection Operations Headers Summary	A Salesforce Cloud Server connection is required to access the operations and business objects available. Where can 1 find the Objects you need? *Enterprise WSDL Location: 11/SOA/WSDLs/Enterprise_SS_v33.wsd Pick the key to get in the door Security Policy: CUISTOM *Authentication Key: SPSF_Test		
Help		Next > Einish	Cancel

- **13.** Configure the Authentication key as shown in section "4.2.2.2 Authentic Key".
- **14.** Click "**Next**" on all the subsequent screens without making any changes and Finish the configuration of the adapter on the Finish page.
- **15.** This completes the migration of your Oracle Cloud Adapter for Salesforce.com from 11g version to the latest 12c version.

16. You can now proceed with deploying the composites to the WebLogic Server.

10.3 Points to Remember

There are certain points you must remember while migrating your projects from 11g to 12c.

- **1.** Take a backup of your 11g applications/projects in a separate location before you migrate.
- 2. Once an application has been migrated, it will no longer be usable in Oracle SOA Suite 11g. This will not affect your already deployed composites, but you will not be able to make any changes to them after migration.
- **3.** It is better to make a copy of your 11g applications and then open it in 12c, this way if you face any issues during your migration, your original composites will still remain usable and editable.

Note: In case you edit your adapter in 12c after importing the 11g projects, a new CSF key would be required to be created in *oracle.wsm.security* map in the Credential Store of the domain.

<u>11</u>

Oracle Cloud Adapter for Salesforce.com Use Cases

This section provides details of a few Use Cases to illustrate the end-to-end use of Oracle Cloud Adapter for Salesforce.com. These can be used as a reference by an organization planning to integrate with Salesforce.com using the Oracle Cloud Adapter for Salesforce.com on Oracle Fusion Middleware.

This chapter aims to introduce the user to different integration scenarios to Salesforce.com using various components of Oracle SOA Suite. The chapter focuses on guiding the user on various functionalities of the Oracle Cloud adapter for Salesforce.com – queryMore operation, MDS, Salesforce headers, etc. by means of few examples. These examples would be beneficial in resolving any complexities associated with the integration to Salesforce.

This chapter is divided into two parts:

- Section 11.1, 'BPEL Use Cases'
- Section 11.2, 'BPM Use Cases'

11.1. BPEL Use Cases

This section provides details of a few BPEL Use Cases to illustrate the end-to-end use of Oracle Cloud Adapter for Salesforce.com. These can be used as a reference by an organization planning to integrate with Salesforce.com using the Oracle Cloud Adapter for Salesforce.com on Oracle Fusion Middleware.

This chapter contains the following topics:

- Section 11.1.1, "How to use query and queryMore Operations?"
- Section 11.2.1, "I do not have a net connection right now or Salesforce.com is down, how I create my Integration using Cloud Adapter for Salesforce.com?"
- Section 11.3.1, "How to use MDS for importing WSDL into JDeveloper?"
- Section 11.4.1, "How to use Debug Header (Response header)?"

11.1.1. How to use query and queryMore Operations?

Perform the following steps to use query and queryMore Operations.

- 1. Create a New project in an existing application or in a new application.
- 2. Provide a suitable name to your project as shown in Figure 11-1.

Figure 11 - 1 Name your project

Create SOA Application	- Step 2 of 3				×
Name your project			010101010101	010101919191919191	BS
Application Name Project Name	<u>P</u> roject Name: Dir <u>e</u> ctory:	QueryProject1 C:\JDeveloper\myworl	<th>/Project1</th> <th>Bro<u>w</u>se</th>	/Project1	Bro <u>w</u> se
Project SOA Settings	Project Featu SOA Suite SOA Suite is	res: a suite of tools to mode	I SOA(Service Orier	nted Architecture) :	applications.
Help		< <u>B</u> ack	<u>N</u> ext >	<u>F</u> inish	Cancel

Create BPEL Process

Perform the following steps to create BPEL Process.

1. Click Next and select Composite with BPEL Process from Standard Composite list, as shown in Figure 11-2.

O Create SOA Application	- Step 3 of 3
Configure SOA settin	gs
Application Name Project Name Project SOA Settings	Composite Name: QueryProject1 Start from: Start from: Start fro
Help	Customizable Customizable EackEinish Cancel

Figure 11 - 2 Configure SOA Setting

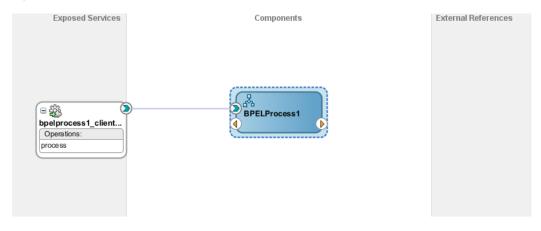
- 2. Click Finish.
- **3.** Select the BPEL 1.1 radio button and **Synchronous BPEL Process** from **Template** drop-down and click **OK**, as shown in Figure 11-3.

Figure 11 - 3 Create BPEL Process

🕜 Create BPE	L Process	x			
A BPEL proc	BPEL Process A BPEL process is a service orchestration, based on the BPEL specification, used to describe/execute a business process (or large grained service), which is implemented as a stateful service.				
O BPEL 2.0 Sp	pecification () BPEL 1.1 Specification				
<u>N</u> ame:	BPELProcess1				
Namespace:	http://xmlns.oracle.com/Application7/QueryProject1/BPELProcess1				
Directory:	C:\JDeveloper\mywork\Application7\QueryProject1\SOA\BPEL	Q			
Template:	र्क्ति Asynchronous BPEL Process	- 3			
Ser <u>v</u> ice Name:	Asynchronous BPEL Process Synchronous BPEL Process One Way BPEL Process Define Service Later Base on a WSDL Subscribe to Events Company Foundation (Section (Company) Company) Company	@ Q			
Help	Qutput: http://xmlns.oracle.com/Application7/QueryProject1/BPELProcess1}processRespon	ise 🔍 Cancel			

The composite.xml looks like Figure 11-4.

Figure 11 - 4 Composite.xml



4. In External References swim-lane of the composite.xml file, right-click and select Salesforce adapter, as shown in Figure 11-5.

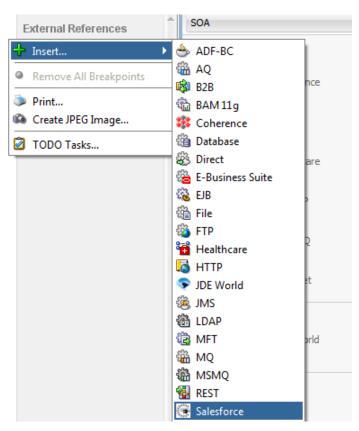


Figure 11 - 5 Salesforce adapter

5. The Salesforce Cloud Adapter Configuration Wizard -Welcome page is displayed, as shown in Figure 11-6.

Figure 11 - 6 Welcome Page

Welcome to the Cloud Control	nnection Configuration Wizard - Step 1 of 5		X
Welcome to the Cloud	Connection Configuration Wizard	ensiting an enclosed and a second sec	*
Basic Info Cornection Operations Headers Summary	This wizard helps you create a service using the Oracle Salesforce Cloud connection. You will be asked to specify configuration parameters and define an operation for the service. "What do you want to call your connection? SalesforceReference What does this connection do? Describe the connection's purpose and deta!		
Help	< Back	Next > Einish	Cancel

6. In the Welcome page, Enter a Reference Name in the Name field, as shown in Figure 11-7

Figure 11 - 7 Name your Service

Welcome to the Cloud Cor	nnection Configuration Wizard - Step 1 of 5		×
Welcome to the Cloud	Connection Configuration Wizard		*
Basic Info Connection Operations Headers Summary	This wizard helps you create a service using the Oracle Salesforce Cloud connection. You will be asked to specify configuration parameters and define an operation for the service. "What do you want to call your connection? SalesforceReference_query] What does this connection do? Describe the connection's purpose and detail		
Help	< Back	Next > Einish	Cancel

- 7. Click Next.
- 8. The Salesforce Cloud Server Connection page is displayed. The WSDL Location and Authentication Key text boxes are already populated. It picks up these values from the cache. You can re-enter these values. If you want to use a different value, click the Find existing WSDLs icon, which is located to the right of the WSDL Location field, as shown in Figure 11-8.

👌 Welcome to the Cloud Connection Configuration Wizard - Step 2 of 5					
Salesforce Server Connectio		*			
Basi Info Connection Operations Headers Summary	A Salesforce Cloud Server connection is required to access the operations and business objects available. Where can I find the Objects you need? Tenterprise WSDL Location: 11/SOA/WSDLs/Enterprise_SS_v33.wsd Pick the key to get in the door Security Policy: CUSTOM *Authentication Key: SFDC_Test				
Help	< <u>B</u> ack <u>N</u> ext > Enish	Cancel			

Figure 11 - 8 Salesforce Cloud Server Connection Page

9. The **WSDL Chooser** dialog is displayed, browse and select the downloaded Enterprise WSDL and click **OK**, as shown in Figure 11-9.

Figure 11 - 9 SOA Resource Browser

👌 WSDL Chooser			Read 1	101 (I				X
Application Server	File System	Project Libraries	SOA-MDS	UDDI	WSIL			
Location:	C:\WSDL					- 🔾 🔘 [ä 🗳	: : :
Work	Enterprise.w	isdl						
	<u>File Name</u> : Enter	prise.wsdl						
Home	File <u>Type</u> : Web	Service Definition	on Files (*.wsdl)					•
Selection: file:/C:/	WSDL/Enterprise.	wsdl						
Help						ОК		Cancel

Note: Alternatively, you can store WSDL at an MDS location and access it, as shown in Figure 11-10.

Figure 11 - 10 SOA Resource Browser

	Components	Resources ×			
PDEMO	🗳 - 🔍 Nar	ne			
A	± My Catalogs				
	- IDE Connectio	ns			
	🕀 📷 Application	n Server			
	🗈 🗟 Database	🛃 Database			
	🖻 📲 SOA-MDS				
	🖶 📲 MDSC	onnection_76			
	🖮 🖏 SOA_	DesignTimeRepository			
	🖻 … 🛅 a	pps			
	ė	wsdls			
		@ SalesForceEnterpriseAPI.w	sdl		

- 10. Click OK.
- 11. Traverse to IDE Connections \rightarrow SOA-MDS. Select the appropriate SOA-MDS connection where you placed the Enterprise WSDL. Select the WSDL file to be used in the adapter configuration and click **OK**.
- **12.** The WSDL location should be of the form 'oramds:/apps/SOA/WSDLs/Integration/WSDLNAME.wsdl', as shown in Figure 11-11.

Figure 11 - 11 WSDL location

Welcome to the Cloud Connect	tion Configuration Wizard - Step 2 of 5		×
Salesforce Server Connect	tion	01	*
Basic Info Connection Operations Headers Summary	A Salesforce Cloud Server connection is required to access the operations and business objects available Where can I find the Objects you need? Tenterprise WSDL Location: oramds:/apps/Enterprise.wsd Pick the key to get in the door Security Policy: CUSTOM *Authentication Key: SPDC_Test Test A Salesforce Cloud Server connection is required to access the operations and business objects available A Salesforce Cloud Server connection is required to access the operations and business objects available * Test A Salesforce Cloud Server connection is required to access the operations and business objects available * A Salesforce Cloud Server connection is required to access the operations and business objects available * Test * A Salesforce Cloud Server connection is required to access the operations and business objects available * A Salesforce Cloud Server connection is required to access the operations and business objects available * A Salesforce Cloud Server connection is required to access the operation server connection is required to access the operation server connection server connec	ie.	
Help	< Back	Next > Einish	Cancel

13. Click OK.

14. Click + button to create a new Authentication Key, as shown in Figure 11-12.

Welcome to the Cloud Cor	nection Configuration Wizard - Step 2 of 5		X
Salesforce Server Con	nection		*
Basic Info Connection Operations Headers Summary	A Salesforce Cloud Server connection is required to access the operations and business objects available Image: Server connection is required to access the operations and business objects available Image: Server connection is required to access the operations and business objects available Image: Server connection is required to access the operations and business objects available Image: Server connection is required to access the operations and business objects available Image: Server connection is required to access the operations and business objects available Image: Server connection is required to access the operations and business objects available Image: Server connection is required to access the operations and business objects available Image: Server connection is required to access the operations and business objects available Image: Server connection is required to access the operations and business objects available Image: Server connection is required to access the operations and business objects available Image: Server connection is required to access the operation is		
Help	< <u>B</u> ack	Next > Einish	Cancel

Figure 11 - 12 Create a New Authentication Key

15. The **Add Credential** page is displayed, as shown in Figure 11-13. Provide a suitable name and the Salesforce.com credentials. The password should be a combination of Salesforce.com password and Salesforce.com Security Token.

Figure 11 - 13 Add Credential

🔿 Create CSF Key		
*CSF Key Name:		
*Username:		
*Password:		
*Re-Enter Password:		
Help	OK	Cancel

16. Click **Test Connection** button to validate the Authentication Key, as shown in Figure 11-14.

Figure 11 - 14 Test Connection

Welcome to the Cloud Conne	nection Configuration Wizard - Step 2 of 5	×
Salesforce Server Conne	ection expression of the second s	*
Basic Info Connection Operations Headers Summary	A Salesforce Cloud Server connection is required to access the operations and business objects available.	
Help	< <u>Back</u> Next > Einis	h Cancel

17. Click Next.

18. The Cloud Operation Configuration page is displayed, as shown in Figure 11-15.

Figure 11 - 15 Cloud Operation Configuration Page

Welcome to the Cloud Connection	n Configuration Wizard - Step 3 of 5	A spectra from a sequence of			×
Configure the Operation to	Perform in the Oracle Salesforce /	Application		and an	*
Basic Info	Select the target operation and business of	yjects in the Oracle Salesforce application.			
J Summary	3 Select an Operation Type:	CRUD			
	"Select Business Objects (Salesforce API Available: Account AccountContactRole Account_Test_c	33.0): Q*	Selected:		& V
	Account_vod_c ActionLinkGroupTemplate ActionLinkTemplate AdditionalNumber Address_vod_c Announcement		20 20 20 20 20 20 20 20 20 20 20 20 20 2		
	(2) *WSDL Operation:	create			
Help	1			< Back Next > Einish	Cancel

19. From the list of **Operation Category**, select **SOSL/SOQL**, as shown in the Figure 11-16.

Figure 11 - 16 Select SOSL/SOQL

Basic Info Connection	Select the target operation and business objects in the C	Oracle Salesforce application.	
Operations Headers Summary	Select an Operation Type: CRUE CORE CORE CRUE	E	
	*Select Business Objects (Salesforce API 33.0): MISC Available: Account Account_Test_c Account_vod_c AccountContactRole AccountContactRole ActionLinkTemplate Address_vod_c Announcement ApexClass	Selected:	2 2
	(2) *WSDL Operation: creat	te	

20. Now, the query operation will automatically be selected. Provide the query string in the text box, as shown in the Figure 11-17.

Figure 11 - 17 Provide the query String

Welcome to the Cloud Connect	ction Configuration Wizard - Step 3 of 5	x
Configure the Operation	to Perform in the Oracle Salesforce Application	5
Basic Info <u>Connection</u> Operations	Select the target operation and business objects in the Oracle Salesforce application.	
Headers Summary	② Select an Operation Type: SOSL/SOQL ▼ query ▼	ĥ
	*Query Statement: Select Id,Name FROM Account	
	"WSDL Operation: query Binding Parameters: No Parameters	
Help	Test My Query	-

21. You can also test the query string after clicking on the **Query Test** button. As shown in Figure 11-18.

Figure 11 - 18 Query Test button

Welcome to the Cloud Connection	on Configuration Wizard - Step 3 of 5	X
Configure the Operation to	Perform in the Oracle Salesforce Application	*
Basic Info Connection Operations Headers Summary	Select the target operation and business objects in the Oracle Salesforce application. ③ Select an Operation Type: SOSL/SOQL *Query Statement: Select Id,Name FROM Account ③ *WSDL Operation: Query ③ Binding Parameters: No Parameters	
Help	< Back Next > Enish	Cancel

22. After clicking on query test button, a **Query Test** dialog appears, as shown in Figure 11-19.

Figure 11 - 19 Query Test

Welcome to the Cloud Con	nection Configuration Wizard - Step 3 of 5	
Configure the Operatio	n to Perform in the Oracle Salesforce Application	
Basic Info Connection Operations Headers	Select the target operation and business objects in the Oracle Salesforce application. (2) Select an Operation Type: SOSI/SOQL • query •	
U Summary	"Query Statement: Select Id,Name FROM Account	
	*WSDL Operation: query 3 Binding Parameters: No Parameters	
	Test My Query vector das sait type = %fl.Account *>	÷
Help		< Back Next > Enich Cancel

23. Click on **Next**. The **Header and Properties** page is displayed. Provide the value of headers as per your business requirement, as shown in Figure 11-20.

Welcome to the Cloud Connection	Configuration Wizard - Step 4 of 5				X
Salesforce Operation Header	Configuration		91010101010		*
Basic Info Connection Operations Headers Summary	Select Operations Headers Configure the Header Properties for the Selected Operation: The following header properties are available with the operation query MruHeader UpdateMru: false PackageVersionHeader majorNumber: namespace: DateSpace: D				
Help		< <u>B</u> ack	<u>N</u> ext >	Einish	Cancel

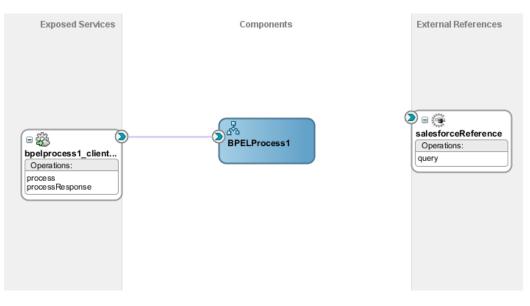
- 24. Click Next.
- **25.** The finish page is displayed. It provides a complete summary of the operation selected, object on which the operation would operate and the headers selected for that operation, as shown in Figure 11-21.

Figure 11 - 21 Finish Page

Welcome to the Cloud Connect	ction Configuration Wizard - Step 5 of 5		×
Salesforce Cloud Adapter	Artifacts Summary	energian construction of the second sec	*
ပု Basic Info ပု Connection	Cloud Adapter configuration was successful.		
Operations	Selected Operation Name: query		
 <u>Headers</u> 	Selected Object(s) Name: [Account]		
Summary	Selected SOAP Header: No Header Selected		
Help		< Back Next > Einish	Cancel

- 26. Click the Finish button to complete adapter configuration.
- **27.** After clicking on **Finish** button, the following screen appears, as shown in Figure 11-22.

Figure 11 - 22 Composite Screen



Understanding query Response

The response returned by query operation has the following structure:

- 1. done: It is a Boolean element that contains the following values:
 - **True:** If all records are returned in a single invoke to query operation.
 - **False:** If all records are not returned in a single invoke to query operation, i.e., there are more records to fetch.
- **2. queryLocator:** If the value of the element **done** is false, then query operation returns a queryLocator value that is used to make queryMore call to Salesforce.com.
- 3. **Records:** The set of records queried by the user.
- 4. Size: The number of records for that particular query.

Figure 11-23 shows all the above mentioned values.

Figure 11 - 23 Query Operation Structure

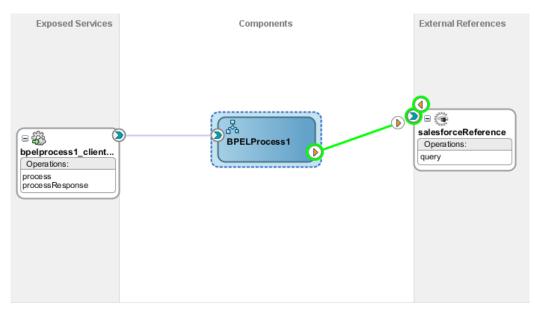


Integration with BPEL

Perform the following steps for integration with BPEL:

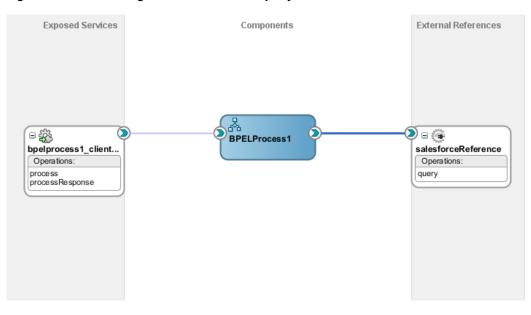
1. Connect BPELProcess1 and query via a wire, as shown in Figure 11-24.

Figure 11 - 24 Wiring BPELProcess1 and query



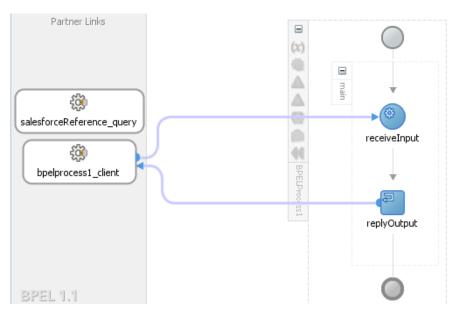
2. After wiring, your composite will look, as shown in Figure 11-25.

Figure 11 - 25 Wiring BPELProcess1 and query

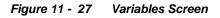


3. Double-click and open **BPELProcess1**. The **query** adapter should be present as part of Partner Links, as shown in Figure 11-26.

Figure 11 - 26 Open BPELProcess1



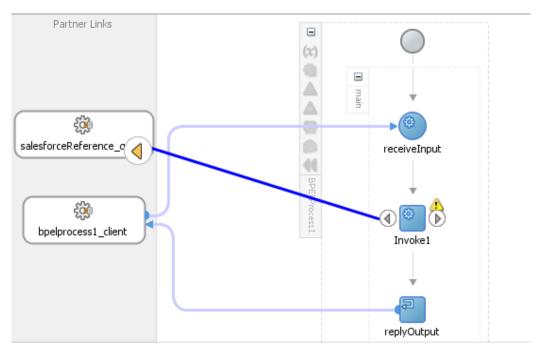
4. Create two variables **varDone** and **varQueryLoc** to track the values of "queryLocator" and "done" returned in query response from Salesforce.com, as shown in Figure 11-27.



	News	T	🕂 🥢 🗙
	Name	Туре	QName
(x)	inputVariable	MessageType	dient:BPELProcess1RequestMess
(x)	outputVariable	MessageType	client:BPELProcess1ResponseMes
(x)	varDone	Simple Type	xsd:boolean
(x)	varQueryLoc	Simple Type	xsd:string

5. Add an invoke activity to invoke the query Partner Links, as shown in Figure 11-28.

Figure 11 - 28 Invoke activity



 Create an input variable to the partner link by clicking the '+' button adjacent to Input text box in the Variables section. The Create Variable dialog is displayed, as shown in Figure 11-29.

D Edit Invoke			23
Assertions	Skip Condition Head	ers Sources Tar	gets
General	Correlations	Properties	Annotations
<u>N</u> ame:	Invoke 1		
Conversation I	ID:		f _x
👌 Create Variat	ble		×
Name: Invo	oke1_query_InputVaria	ble	
Type: {htt	p://xmlns.oracle.com/p	cbpel/adapter/salesfor	ce/Application7/QueryP
	Slobal Variable 🔘 Loca	Variable	
<u>ه</u> (۱)	<u>B</u> lobal Variable OLoca	l Variable	
⊙ ⊆ <u>H</u> elp	Global Variable 🔵 Loca	l Variable	OK Cancel
	Slobal Variable 🔵 Loca	l Variable	OK Cancel
Help		l Variable	OK Cancel
Help Operation:		l Variable	OK Cancel
Help Operation: Variables Input:		l Variable	
<u>H</u> elp O <u>p</u> eration: Variables		l Variable	OK Cancel
Help Operation: Variables Input:		l Variable	
Help Operation: Variables Input:		Apply	

Figure 11 - 29 Create Variable

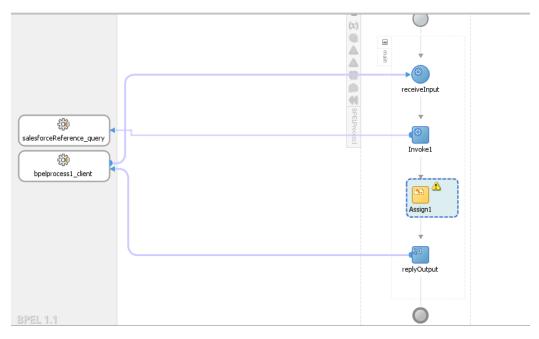
 Create an output variable from the partner link by clicking the '+' button adjacent to Output text box in the Variables section. The Create Variable dialog is displayed, as shown in Figure 11-30.

Figure	11 -	30	Create	Variable
--------	------	----	--------	----------

👩 Edit Invo	ke		0				23
Assertions Genera	_	Condition He Correlations	eaders	Sources Properties	Targets	Annotat	tions
<u>N</u> ame: <u>C</u> onversa	tion ID:	Invoke 1					
🕜 Create V	🕜 Create Variable						
<u>N</u> ame: <u>T</u> ype:	{http://	1_query_Output /xmlns.oracle.com al Variable 〇 년	m/pcbpe	l/adapter/sa	lesforce/A	Application	n7/QueryF
<u>H</u> elp					ОК		Cancel
O <u>p</u> era Variable		ng query	-			•	_
Input: O <u>u</u> tpu		invoke1_query_1	[nputVar	iable		- + +	0
Help				<u>A</u> pply	ОК		Cancel

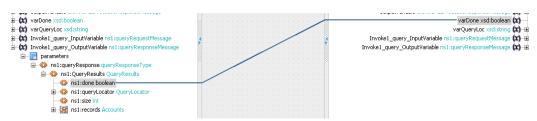
8. Introduce Assign activity right after the invoke activity, as shown in Figure 11-31.

Figure 11 - 31 Introduce Assign activity



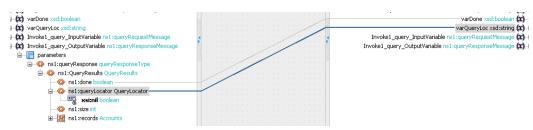
9. Inside the Assign activity, assign the value of "Invoke1_query_OutputVariable/done" variable to "varDone" variable, as shown in Figure 11-32.

Figure 11 - 32 Wire the Assign activity



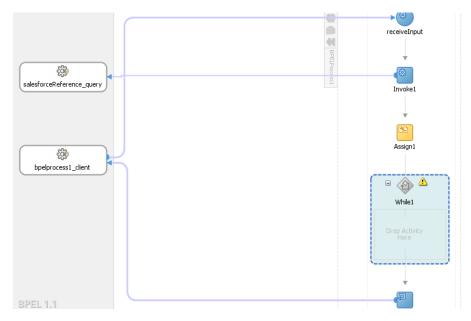
- **10.** Next, assign the value of "Invoke1_query_OutputVariable/queryLocator" variable to "varQueryLoc" variable in the same Assign activity, as shown in Figure 11-33.
- 11. Click on Apply and then OK.





12. Add a While activity after the Assign activity, as shown in Figure 11-34. While activity is used to introduce iterations in the BPEL flow.

Figure 11 - 34 Add a While activity



13. Double-click on the While Activity, a dialog box appears where you can specify condition for the while loop. Here, provide the condition, as shown in Figure 11-35.

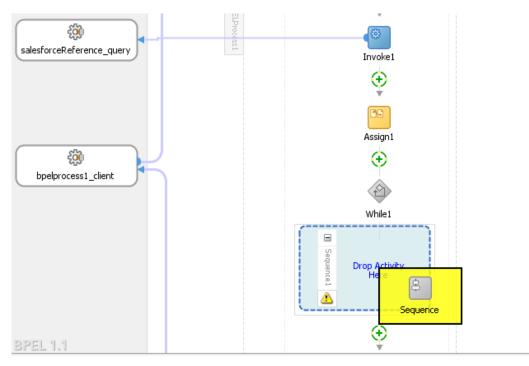
Figure 11 - 35 Edit While activity

👩 Edit While				x
General Annotations	Skip Condition	Sources	Targets	
Name: While1				
Condition:				
\$varDone = false				
<u>H</u> elp	<u>A</u> pply		ж	Cancel

14. Click on Apply and then OK.

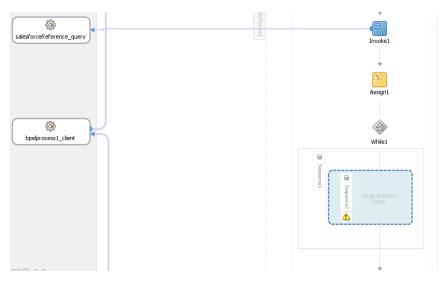
15. Drag and drop a Sequence Activity inside the While, as shown in Figure 11-36.

Figure 11 - 36 Add Sequence Activity



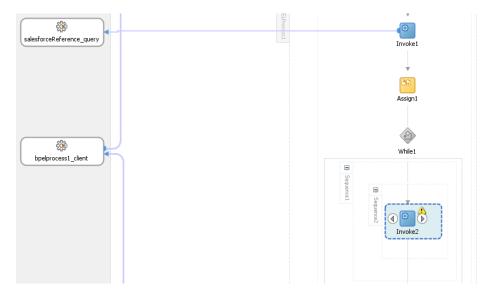
The While Activity will look like Figure 11-37.





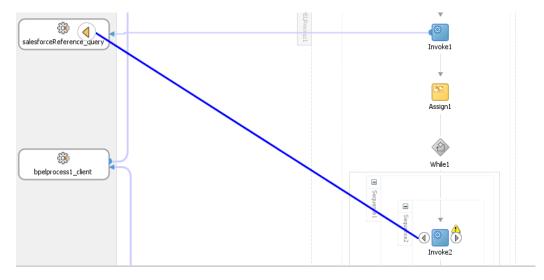
16. Drag and drop Invoke activity in the Sequence, as shown in Figure 11-38.

Figure 11 - 38 Add Invoke activity in the Sequence



 Wire this invoke activity to the partner link named "query", as shown in Figure 11-39.

Figure 11 - 39 Wire the invoke activity



18. An "Edit Invoke" dialog will appear. Create input and output variables for this invoke activity by clicking on "+" sign, as shown in Figure 11-40.

	p Condition Headers	Sources Targ	ets
General	Correlations	Properties	Annotations
lame:	Invoke2		
onversation ID:			.
etail Label:			
	Invoke as Detail		
 <u>Interaction</u> T 	ype: 🔯 Partner Link 🔻	·] [
Partner Role W	/eb Service Interface —		
Partner <u>L</u> ink:	salesforceReference_qu	ery	0
	"" I f D-f	Dent Trees	-
Port <u>Type</u> :	🖏 salesforceReference	e_queryPortType	
Port <u>Typ</u> e: O <u>p</u> eration:		e_queryPortType	•
		e_queryPorti ype	•
Operation:			- - -
Operation: Variables	n query	riable	

Figure 11 - 40 Edit Invoke

19. Click on **Properties** tab in the same dialog. Search for the property named "jca.salesforce.queryLocator", as shown in Figure 11-41.

Assertions	Skip Condition	Headers	Sources	Targets	
General	Correlatio	ons	Properties	;	Annotations
Properties:					
Name		V	alue	Туре	
jca.msmq.m	essage.BodyLeng	th			
jca.msmq.m	essage.Delivery				
jca.msmq.m	essage.Id				
jca.msmq.m	essage.MaxTimeT	oRe			
jca.msmq.m	essage.Priority				
jca.msmq.m	essage.SentTime				
jca.msmq.m	essage.TimeToLiv	e			
jca.salesfor	ce.AllOrNoneHead	ler.a			
•	ce.HttpTimeout				
•	ce.LocaleOptions.	-			
-	ce.QueryOptions.	batc			
	ce.queryLocator				
	ce.response.debu				
	ce.response.limitI				
	ce.response.limitI	nfo.li			
jca.socket.h					
jca.socket.p	port				-
Fit to Wi	dth				

Figure 11 - 41 Properties Tab

20. Browse for the variable by double-clicking on the button shown in Figure 11-42.

General Correlations	Propertie	es Anno	tations
Concidentia	Tropera		Cardonia
Properties:			
Name	Value	Туре	
jca.msmq.message.BodyLength			
jca.msmq.message.Delivery			
jca.msmq.message.Id			
jca.msmq.message.MaxTimeToRe			
jca.msmq.message.Priority			
jca.msmq.message.SentTime			
jca.msmq.message.TimeToLive			
jca.salesforce.AllOrNoneHeader.a	i		
jca.salesforce.HttpTimeout			
jca.salesforce.LocaleOptions.lang			
jca.salesforce.QueryOptions.batc			0
jca.salesforce.queryLocator		i put	
jca.salesforce.response.debugLog	-		
jca.salesforce.response.limitInfo.			
jca.salesforce.response.limitInfo.l	i		
jca.socket.host			
jca.socket.port			
 Fit to Width 			

Figure 11 - 42 Browse for the variable

21. Adapter Property Value dialog box is displayed. Click on the Search, as shown in Figure 11-43.

	Headers Sources	Targets	
General Correlations	Properties	5 A	Annotations
roperties:			
Name	Value	Туре	
ca.msmq.message.BodyLength			
Adapter Property Value			×
Variable <u>Expression</u>			
<u>Variable</u> <u>Expression</u>			
Variable Expression			Q
Variable Expression			Q
Variable Expression		ОК	Cancel
Variable		ОК	Cancel
		ОК	Cancel
ca.salesforce.queryLocator ca.salesforce.response.debugLo	og	ОК	Cancel
ca.salesforce.queryLocator ca.salesforce.response.debugLo ca.salesforce.response.limitInfo	og	ОК	Cancel
ca.salesforce.queryLocator ca.salesforce.response.debugLo ca.salesforce.response.limitInfo ca.salesforce.response.limitInfo	og	ОК	Cancel
ca.salesforce.queryLocator ca.salesforce.response.debugLo ca.salesforce.response.limitInfo ca.salesforce.response.limitInfo ca.socket.host	og	OK	Cancel
ca.salesforce.queryLocator ca.salesforce.response.debugLo ca.salesforce.response.limitInfo ca.salesforce.response.limitInfo	og	ОК	Cancel

Figure 11 - 43 Search Property Value

22. Select the variable varQueryLoc and click OK, as shown in Figure 11-44.

ssertions Skip Condi		Sources	Targets	
General Cor	relations	Properties	A	nnotations
Properties:				
Name	Va	lue	Туре	
jca.msmq.message.Bod	yLength			
Adapter Property	Value			×
	ession			
	Casion			
varQueryLoc				9
varQueryLoc				
varQueryLoc				Cancel
varQueryLoc		(ж	Cancel
	ator	_		Cancel
jca.salesforce.queryLoc)K input	Cancel
jca.salesforce.queryLoc	.debugLog	_		Cancel
jca.salesforce.queryLoc jca.salesforce.response jca.salesforce.response	.debugLog .limitInfo	_		Cancel
jca.salesforce.queryLoc	.debugLog .limitInfo	_		Cancel
jca.salesforce.queryLoc jca.salesforce.response jca.salesforce.response jca.salesforce.response	.debugLog .limitInfo	_		Cancel

Figure 11 - 44 Select the variable varQueryLoc

23. Click on OK and select the Type as input, as shown in Figure 11-45.

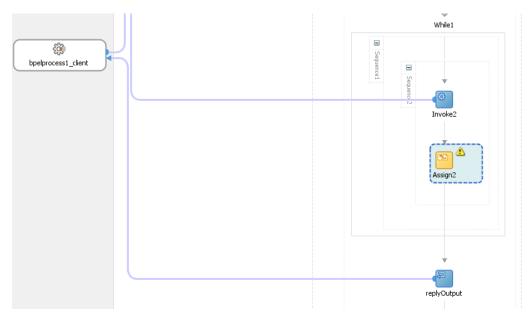
ssertions	Skip Condition	Headers	Sources	Targets	
General	Correlatio	ons	Properties	A	nnotations
roperties:					
Name		Val	ue	Туре	
ca.msmq.m	essage.BodyLeng	th			
ca.msmq.m	essage.Delivery				
ca.msmq.m	essage.Id				
ca.msmq.m	essage.MaxTimeT	oRe			
ca.msmq.m	essage.Priority				
ca.msmq.m	essage.SentTime				
ca.msmq.m	essage.TimeToLiv	e			
ca.salesfor	ce.AllOrNoneHead	er.a			
	ce.HttpTimeout				
	ce.LocaleOptions.	-			
	ce.QueryOptions.				
	ce.queryLocator		QueryLoc//	input	-
	ce.response.debu			input	
	ce.response.limitI			output	
	ce.response.limitI	nfo.li			
ca.socket.p	port				-
🖌 <u>F</u> it to Wi	dth				
ca.socket.h ca.socket.p	nost port	nto.li			

Figure 11 - 45 Select the Type as input

24. Click on Apply and then OK.

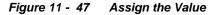
25. Drag and drop the Assign activity in the While Sequence, as shown in Figure 11-46.

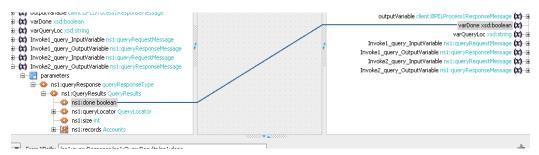
Figure 11 - 46 Drag and drop Assign activity



26. Double-click on **Assign activity**, and assign the value of "Invoke2_query_OutputVariable/done" variable to "varDone" variable, as shown in

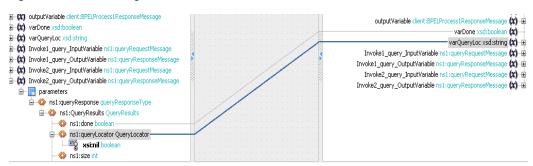
Figure 11-47.





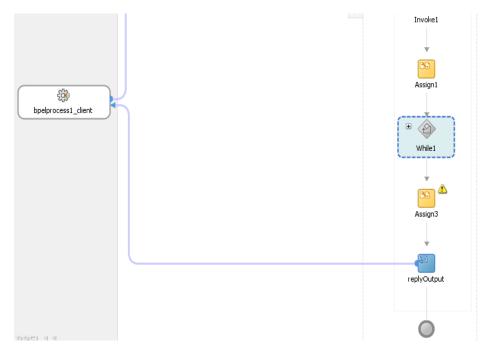
27. Assign the value of "Invoke2_query_OutputVariable/queryLocator" variable to "varQueryLoc" variable, as shown in Figure 11-48.

Figure 11 - 48 Assign the Value



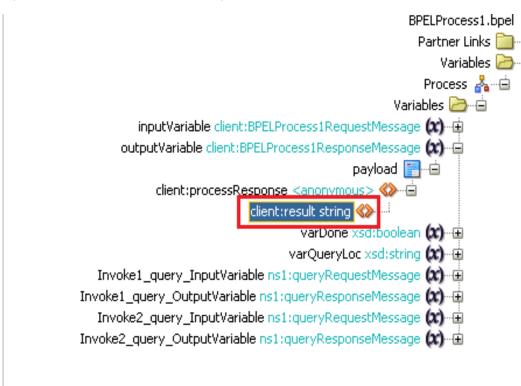
- **28.** Click on **Apply** and then **OK**.
- **29.** Drag and drop **Assign** activity right after the **While** activity, as shown in Figure 11-49.

Figure 11 - 49 Drag and drop Assign activity



30. Double click on **Assign** activity and look for the variable **processresponse/result**, as shown in Figure 11-50.

Figure 11 - 50 Double click on Assign activity



31. Drag and drop the Expression over to this variable, as shown in Figure 11-51.

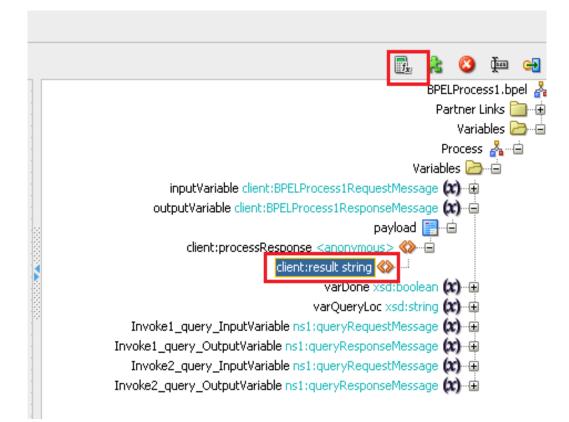


Figure 11 - 51 Drag and drop the Expression over to this variable

32. Expression Builder dialog box is displayed. Provide an expression value, as shown in Figure 11-52.

Figure 11 - 52 Expression Builder Dialog

uild an expression by typing directly into the Expression field, using Ctrl+ ragment editors below the Expression field. Expression: Process Completed	Space for XPath assistance if available, and/or insert fragments from the
📣 Insert In	to Expression
BPEL Variables	Functions
Variables Variables Variables Variables Variables Variables Variables Variables Variable client:BPELProcess1RequestMessage Variable client:BPELProcess1ResponseMessa Variables	String Functions Compare compare-ignore-case concat contains create-delimited-string ends-with format-string
Content Preview: xp20:compare()	
escription: Returns the lexicographical difference between inputString and cor both the strings. Returns -1 if inputString lexicographically precede compareString are equal. Returns 1 if inputString lexicographically f	s the compareString. Returns 0 if both inputString and

- 33. Click OK.
- 34. In the Assign activity, click on Apply and then OK.

Deploy the Composite

Perform the following steps to deploy the composite.

1. In the **Application Navigator** pane, right-click **Project1** and select **Deploy** -> **Project1**, as shown in Figure 11-53.

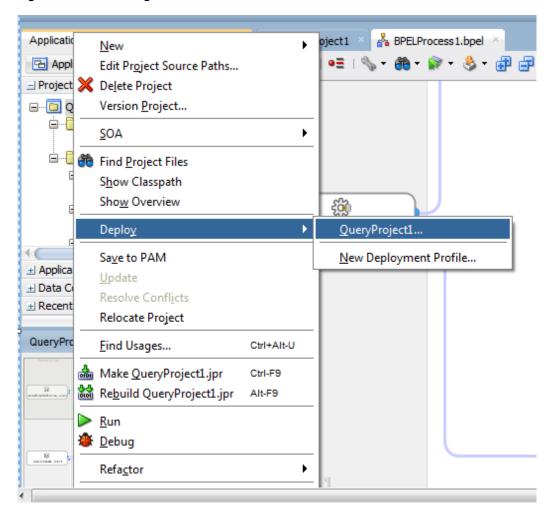


Figure 11 - 53 Navigator Screen

2. Select the **Deploy to Application Server** option and follow the instructions displayed on the screen. Using this option you can deploy the composite on the Application server after providing the details of the server.

Test the Composite

Perform the following process to test the composite.

- 1. Login to Enterprise Manager Console for the server you deployed your project on.
- 2. Open QueryProject1
- 3. Click the Test button to test the Web service, as shown in Figure 11-54.

Figure 11 - 54 Test Tab

		e ryPro Compos	ject1 [1.0] ⓐ site ↓					
ſ	Active Dash	_	re Shut Dow Composite Definition	Settings. Unit Tests	🗸 🖌	a		
	Na	Compo						
	6	BPELPro	ocess 1					

Since we are not mapping the input variable anywhere, you can provide any random input here.

4. Click on **Test Web Service** button, as shown in Figure 11-55.

```
Figure 11 - 55 Test Web Service
```

```
Test Web Service Test Web Service
Use this page to test any WSDL or WADL, including WSDLs or WADLs that are not in the farm. To test a Web service, enter the WSDL or WADL and click Parse WSDL or WADL. When the page refreshes with the WSDL or WADL details, first select the Service/Resource, then select the Port/Method, and then select the Operation/Media type that you want to test. Specify any input parameters, and click Test Web Service.
```

```
WSDL or WADL http://HOSMDM04.bcone.com:7003/soa-infra/services/default/QueryProject1/bpelprocess1_client_ep?WSD Q Parse WSDL or WADL HTTP Basic Auth Option for WSDL or WADL Access
```

5. After successful execution the response contains the expression that you provided in the last assign activity, as shown in Figure 11-56.

Figure 11 - 56 Execution Window

Li ce view 💽

A new composite instance was generated	Launch	Flow Trace
Name	Туре	Value
⊽ payload	payload	
result	string	Process Completed

6. Click the **Launch Flow Trace** button to view the **Audit Trail**, as shown in Figure 11-57.

Figure 11 - 57	Launch Flow Trace
----------------	-------------------

low Trace ③ is page shows the flow of the message throu	ugh various composite and component i	nstances.	-	Data Refreshe CID 9e4b8ce653d1e16f:4265d5f2:143443d4ba5:- ted Jan 7, 2014 2:43:25 PM
aults (0)				
aults				
Select a fault to locate it in the trace view.				
Error Message			Recovery	Fault Time Fault Location
≥ Sensors (0)				
Sensors (0) Generation instance to see its detailed frow Instance IDs	d audit trail.			
ace Tlick a component instance to see its detailed	d audit trail. Type	Usage	State	Time Composite Instance
ace Click a component instance to see its detailed show Instance IDs		Usage Service	State ✔ Completed	Time Composite Instance Jan 7, 2014 2:43:25 PM QueryProject1 of 1150146
race Lick a component instance to see its detailed show Instance IDs	Туре			
ace Click a component instance to see its detailed how instance IDs Instance Stance Stance Stance	Type Web Service		 Completed 	Jan 7, 2014 2:43:25 PM QueryProject1 of 1150148
ace Click a component instance to see its detailed how Instance IDs The frame The set of the	Type Web Service BPEL Component	Service	Completed Completed	Jan 7, 2014 2:43:25 PM QueryProject1 of 1150148 Jan 7, 2014 2:43:39 PM QueryProject1 of 1150148
ace lick a component instance to see its detailed biow Instance IDs □ Instance ♥	Type Web Service BPEL Component JCA Adapter	Service	 Completed Completed Completed 	Jan 7, 2014 2:43:25 PM QueryProject1 of 1150148 Jan 7, 2014 2:43:39 PM QueryProject1 of 1150148 Jan 7, 2014 2:43:36 PM QueryProject1 of 1150148

7. The Audit Trail will look like Figure 11-58.

Figure 11 - 58 Audit Trail

Audit Trail Flow Sensor Valu	es Faults
Expand a payload node to view the details.	
▼ <process> ▼ <main (88)=""></main></process>	
⊽ 🕬 receiveInput	
▼ Jan 7, 2014 3:57:57 PM ▷ <payload></payload>	Received "process" call from partner "bpelprocess1_client"
🗸 🥠 Invoke1	
Jan 7, 2014 3:57:57 PM	Started invocation of operation "query" on partner "query".
✓ Jan 7, 2014 3:58:01 PM View XML Document	Invoked 2-way operation "query" on partner "query".
🗸 📑 Assign 1	
▼ Jan 7, 2014 3:58:01 PM ▷ <payload></payload>	Updated variable "varDone"
▼ Jan 7, 2014 3:58:01 PM ▷ <payload></payload>	Updated variable "varQueryLoc"
Jan 7, 2014 3:58:01 PM ▼ <while1 (109)=""></while1>	Completed assign
🗸 🛃 count loop	
Jan 7, 2014 3:58:01 PM ▼ <sequence1 (110)<="" b="">></sequence1>	Begin loop 1, condition "\$varDone = false" is evaluated to true
🗸 🥠 Invoke2	
Jan 7, 2014 3:58:01	PM Started invocation of operation "query" on partner "query".
Jan 7, 2014 3:58:01	PM Sending property "jca.salesforce.queryLocator", value is "01g90000002TdmMAAT-200"
✓ Jan 7, 2014 3:58:06 View XML Document	PM Invoked 2-way operation "query" on partner "query".
∇ Assign2	

8. Click on **Flow** tab, The Flow tab will look like Figure 11-59.

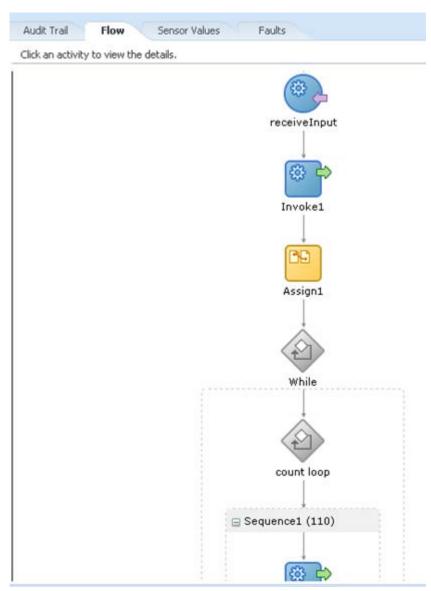


Figure 11 - 59 Flow Tab

9. Click on any invoke activity inside the While loop, here you can see how the value of queryLocator is being passed, as shown in Figure 11-60.

Figure 11 - 60 Invoke 2

🐗 Invoke2

```
[2014/01/07 15:58:01]

Started invocation of operation "query" on partner "query".

[2014/01/07 15:58:01]

Sending property "jca.salesforce.queryLocator", value is "01g9000000ZTdmMAAT-200".

[2014/01/07 15:58:06]

Invoked 2-way operation "query" on partner "query".

<u>View xml document</u>
```

11.1.2. How to use MDS for importing WSDL into JDeveloper?

Oracle Metadata Services (MDS) provides a unified store for Metadata and ensures reliable access to metadata for fusion middleware artifacts like XSD, WSDL, etc. This Use Case intends to make you familiar with how Enterprise WSDL placed in MDS can be used in Oracle cloud adapter for Salesforce.com. It first provides a brief introduction about placing the Enterprise WSDL in MDS and then explains you how this file can be used in the Oracle Cloud Adapter for Salesforce.com.

Steps to Place Enterprise WSDL in MDS:

- 1. Create SOA Application.
- 2. Create an MDS connection.
- **3.** Transfer artifacts to MDS.

Create SOA Application

Follow the steps from 1-32 of section <u>11.1.1 Creating the BPEL Process</u>.

Create an MDS connection.

Now you need to create a new MDS connection for you application.

1. For this, press Ctrl+N and search for SOA-MDS Connection option and select it, a new window will pop up asking for MDS connection details Popup window has been shown in Figure 11-61.

Create SO/	A-MDS	Connection		×
		a Database-based connecti MetaData Service (MDS) Se		•
Create connec Co <u>n</u> nection Na		O Application Resources	IDE Connections	
MDSConnectio	n1			
Connection Ty	pe:			
DB Based MDS	S			•
Connection:	Connec	tion1	•	+ /
User Nar	ne:	SFDCFEB3_MDS		
Driver:		oracle.jdbc.OracleDriver		
Connect	String:	jdbc:orade:thin:@//10.30	.32.76:1521/soa76	
Select MDS par	rtition:			
soa-infra				-
Test Conne	ection			
Help		(ОК	Cancel

Figure 11 - 61 Create SOA-MDS Connection

For this Use Case we will be using the connection type as DB Based MDS. To enter DB connection details, please click on "+". You will see the Create database connection pop-up as shown in Figure 11-62. Please enter the connection details as per your installation and DB configuration of the SOA SUITE.

👌 Create Database	e Connection	The Tennet H	-	×
Configure a new da	tabase connection and add it to the current appli	cation (Application	1).	5
Cre <u>a</u> te Connection I	in: 🛃 IDE Connections			-
Connection Name:	Connection 1			
Connection Type:	Oracle (JDBC)			
<u>U</u> sername:		<u>R</u> ole:		-
Password:		✓ Save Pass	word	
- Orade (JDBC) Set			JDBC Para <u>m</u>	eters
Driver:	thin	•		
Host Name:	localhost		JD <u>B</u> C Port:	1521
) S <u>I</u> D:	XE			
○ Ser <u>v</u> ice Name:	XE			
Test Connection				
Help		O	<	Cancel

Figure 11-62 Create Database Connection

 Once the connection has been established with MDS, under the Resources tab, in IDE Connections, you will see the SOA-MDS connection as shown in the Figure 11-63.

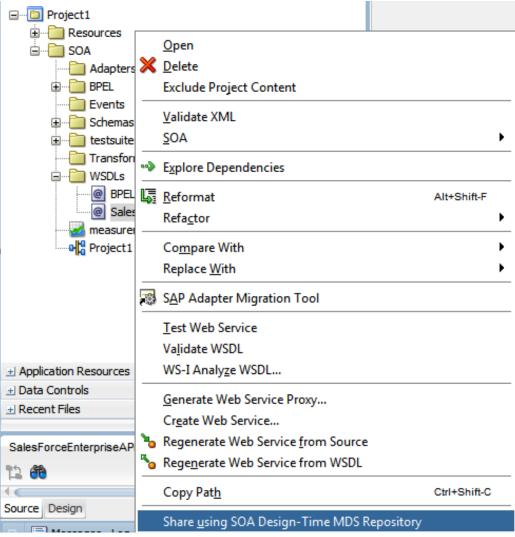
Figure 11-63 Create Database Connection

Components	Resources ×	
🗳 - 🔍 Nar	me	
IDE Connectio	Ins	
🕀 📷 Applicatio	n Server	
🗄 🗟 Database	2	
🖮 🖏 SOA-MDS		
	Connection 1	
😑 💼 a	pps	
	ioa	
🖃 📲 SOA_	DesignTimeRepository	
🛅 a	ipps	

Transfer Enterprise WSDL to MDS

 In your project, Under WSDL's directory, right-click on the Enterprise WSDL and select the Share using SOA Design-Time MDS Repository as shown in the <u>Figure</u> <u>11-64</u>.

Figure 11-64 SOA Design-Time MDS Repository



2. Now you will see a SOA-MDS Transfer Wizard as shown in the Figure 11-65.

Figure 11-65	SOA-MDS Transfer Wizard
i igui o i i oo	

O SOA-MDS Transfer Wiza	ard - Step 1 of 4
Welcome	
Welcome Choose Target Dependencies References	Welcome to the SOA-MDS Transfer Wizard This will transfer SalesForceEnterpriseAPI.wsdl to SOA-MDS design time repository. Design-time repository is defined in adf-config.xml. If no design-time repository is defined in adf-config.xml, then by default SOA_DesignTimeRepository connection will be used. The wizard will transfer the selected file and all the files, in the current project, that this file depends on. The relative path would be maintained while transferring dependent files. For e.g. if CustomerOrder.wsdl file is importing a XSD file as '/Schemas/Customer.xsd', then on transferring this WSDL file, relative path to the schema will be maintained in the target SOA-MDS repository. Remote references, (http, oramds etc. URLs) will not be modified. All files will be transferred under '/apps' or its sub-folders. Before proceeding please close all the open editors.
Help	< Back Next > Einish Cancel

3. Click on the **Next** button and you will see 'apps' folder as shown in the <u>Figure 11-66</u>. You can also notice the Transfer Location.

Figure 11 - 66 SOA-MDS Transfer Wizard

O SOA-MDS Transfer Wiza	rd - Step 2 of 4			×
Choose Target				
 Welcome Choose Target Dependencies References 	Transfer File: SalesForcef Select target SOA-MDS Folde Search SOA-MDS Search SOA-MDS (apps) (apps) Transfer Location: /apps/Sale	: 		
Help	< <u>B</u> a		Einish	Cancel

4. Click **Next**, You will see what all files are being transferred and you can also note MDS URL of the WSDL File as shown in Figure 11-67.

O SOA-MDS Transfer Wiza	rd - Step 3 of 4	X				
Dependencies						
O Welcome	Following files will be transferred to the target SOA-MDS connection.					
	File Name	Target URL				
<u>Choose Target</u>	@ SalesForceEnterpriseAPI.wsdl	oramds:/apps/SalesForceEnterpriseAPI.wsdl 🖋				
Dependencies						
References						
	Overwrite if document exists in the tar	get MDS repository				
Help	< <u>B</u> ack	Next > Einish Cancel				

Figure 11 - 67 SOA-MDS Transfer Wizard

5. Click Next, You can see what all files would be updated with the oramds URLs <u>Figure 11-68</u>.

```
Figure 11 -68 SOA-MDS Transfer Wizard
```

O SOA-MDS Transfer Wiza	ard - Step 4 of 4				×
References					
ပု Welcome	Following referenced		ted with the appro	priate oramds URLs	
Choose Target	Show references to:	All			•
Dependencies		File Name		Target URL	-
References					
Help		< <u>B</u> ack	Next >	<u>F</u> inish	Cancel

6. Click **Finish** to transfer the WSDL to SOA_DesignTimeRepository. Please note that once the file is transferred then it is no more part of your SOA project. Check your

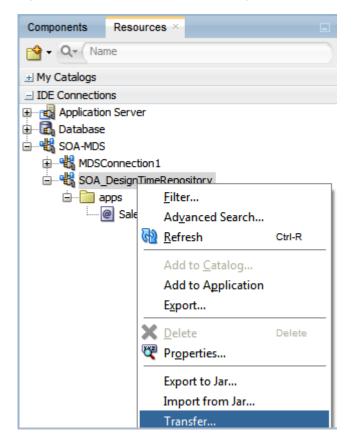
resources palette now. Expand SOA-MDS connection to see the transferred file as shown in the Figure 11-69.

Figure 11 -69 After Transferring WSDL to SOA_DesignTimeRepository

Applications · R	Page Anopect1			Components Reference - salesfor Resources
Application 1 *	🗸 🕂 🖼 🗙 🖏 🖽 🕲 🕲 🖓		Project1	9 - Q+ Name
Application 1 Project 2 Project 1 Project 2 Project 3 Project 3 Project 3 Project 3	Exposed Services	Components	Defernal Parferences	IPC Calor IPC Connections IPC Connect

 Now to transfer WSDL File from SOA_DesignTimeRepository to Target MDS Connection, Right-Click on the SOA_DesignTimeRepository and select the Transfer option as shown in the Figure 11-70.

Figure 11 - 70 Transfer from SOA_DesignTimeRespository



8. In the pop-window, select the Enterprise WSDL and click on **Transfer** as shown in the Figure 11-71.

Transfer from SOA_DesignTimeRepository	x
Select documents to transfer: Q 	
Target Connection: MDSConnection 1	• /
Help Transfer Cance	el

Figure 11 -71 Transfer from SOA_DesignTimeRespository

10. You will get a confirmation message after file has been transferred to target MDS connection as shown in the Figure 11-72.

Figure 11 - 72 Confirmation for Transfer of WSDL File to MDS Connection

Transfer from SOA_DesignTimeRepository						
i	Transferred 1 documents to "MDSConnection1" successfully.					
	OK					

Using Enterprise WSDL placed at MDS in Oracle Cloud Adapter for Salesforce.com.

To make use of the WSDL file that is placed in MDS, Open the Adapter in Edit mode and navigate to the connection page as shown in Figure 11-73.
 Figure 11 - 73 Connection Page in Edit Mode

Oracle Cloud Adapter for Salesforce.com Use Cases 11-43

Welcome to the Cloud Cor	nnection Configuration Wizard - Step 2 of 5
Salesforce Server Conr	nection
Basic Info Operations Headers Summary	A Salesforce Cloud Server connection is required to access the operations and business objects available.
Help	<back next=""> Enish Cancel</back>

2. Click on the WSDL Chooser button and select SOA-MDS tab as shown in Figure <u>11-74.</u>

Figure 11 - 74	Connect	ion page i	n edit mode				
🔿 WSDL Chooser	1.000	-	range and the	ap 2 of 1			×
	_	-					
Application Server	File System	Project Libraries	SOA-MDS		WSIL		
							62
Q Search SOA-ME	DS						
Selection:							
Help						ОК	Cancel

3. Expand apps folder and select the **Enterprise WSDL** as shown in Figure 11-75. This is the WSDL that was transferred to MDS in the previous steps.

👌 WSDL Choose	er	-	righter i	1911 (M			X
Application Server	File System	Project Libraries	SOA-MDS	UDDI	WSIL		
Q. Search SOA							බො
Sale:	ForceEnterpriseAF	I.wsd					
Selection: oramd	s:/apps/SalesForce	EnterpriseAPI.v	wsdl				
Help						OK	Cancel

Figure 11 - 75 WSDL Chooser Page

- **4.** Subsequent steps for configuration would remain the same as in section 11.1.1 Creating the BPEL Process for the Use Case 11.1 How can I build integration in which the SOA client is not interested in the response?
- 5. In your JCA file, you can notice that the targetWSDLURL property has been updated with MDS file location see as shown in Figure 11-76.

Figure 11 - 76 Connection page in edit mode

6. Subsequent steps for deployment and testing would remain the same as mentioned in the use case 11.1 How can I build integration in which the SOA client is not interested in the response?.

11.1.3. How to use Debug Header (Response Header)?

Perform the following steps to use debug header and response headers.

- 1. Create a New project in an existing application or in a new application.
- 2. Provide a suitable name to your project, as shown in Figure 11-77.

Figure 11 - 77	Name your project
----------------	-------------------

👌 Create SOA Project - Ste	ep 1 of 2	- House - Hous	x
Name your project		01	
Project Name Project SOA Settings	Project Name: Dir <u>e</u> ctory:	Project1 C:\JDeveloper\mywork\Application12c\Project1	Bro <u>w</u> se
	Project Featu	res:	
	SOA Suite is a	a suite of tools to model SOA(Service Oriented Architecture) ap	plications.
Help		< <u>B</u> ack <u>N</u> ext > <u>F</u> inish	Cancel

3. Click **Next** and select **Composite with BPEL Process** from Standard Composite list, as shown in Figure 11- 78.

×

Figure 11 - 78	Configure SOA Setting	
Create SOA Pro	piect - Step 2 of 2	

Create SOA Project - Step	52012		
Configure SOA setting	gs	01	
Project Name	Composite Name: Project1 Start from: Start from: Empty Composite Composite With Human Task Composite With BPEL Process Composite With Subprocess Composite With Subprocess Composite With Spring Composite With Mediator	SOA Template	
Help	<u>C</u> ustomizable < <u>B</u> ack	Next > Einish	Cancel

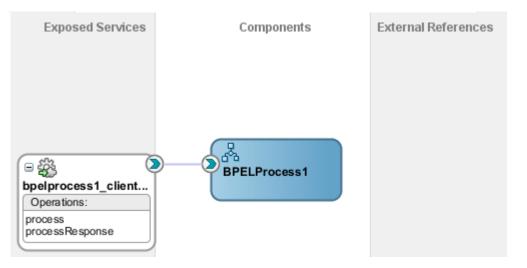
- 4. Click Finish.
- 5. Select the Synchronous BPEL Process from Template drop-down and click OK, as shown in Figure 11- 79.

Figure 11 - 79	Create BPEL Process
----------------	---------------------

👩 Create BPE	EL Process	x				
BPEL Process A BPEL process is a service orchestration, based on the BPEL specification, used to describe/execute a business process (or large grained service), which is implemented as a stateful service.						
O BPEL 2.0 S	pecification () BPEL 1.1 Specification					
<u>N</u> ame:	BPELProcess1					
Namespace:	http://xmlns.oracle.com/Application12c/Project1/BPELProcess1					
Directory:	C:\JDeveloper\mywork\Application12c\Project1\SOA\BPEL] 🔍				
Template:	Asynchronous BPEL Process	0				
Ser <u>v</u> ice Name:	Asynchronous BPEL Process					
	One Way BPEL Process					
	② Define Service Later ᠗ Base on a WSDL	3				
	Output: {http://xmlns.orade.com/Application12c/Project1/BPELProcess1}processResponse					
Help	OK Car	ncel				

The composite.xml shown in Figure 11-80.

Figure 11 - 80 Composite.xml



6. In External References swim-lane of the composite.xml file, right-click and select Salesforce adapter, as shown in Figure 11- 81.

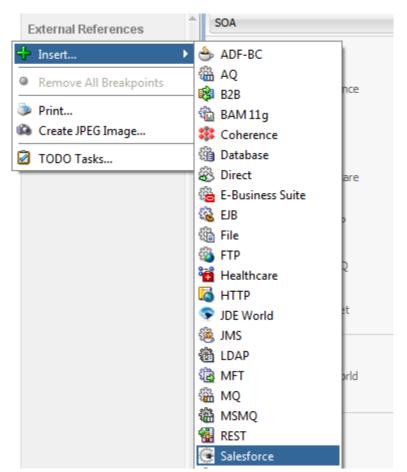


Figure 11 - 81 Salesforce adapter

7. The Salesforce Cloud Adapter Configuration Wizard - Welcome page is displayed, as shown in Figure 11- 82.

Figure 11 - 82 Welcome Page

Welcome to the Cloud Connection	on Configuration Wizard - Step 1 of 5	×
Welcome to the Cloud Conn	nection Configuration Wizard	*
Basic Info Conection Operations Headers Summary	This wizard helps you create a service using the Orade Salesforce Cloud connection. You will be asked to specify configuration parameters and define an operation for the service. *What do you want to call your connection? aftic What does this connection do? Describe the connection's purpose and detail	
Help	< <u>Back</u> <u>Mext</u> > Einish	Cancel

- 8. Click Next.
- **9.** The **Salesforce Cloud Server Connection** page is displayed. The **WSDL Location** and **Authentication Key** textboxes are already populated. It picks up these values

from the cache. You can re-enter these values. If you want to use a different value, click the **Find existing WSDLs** icon, which is located to the right of the **WSDL Location** field, as shown in Figure 11- 83.

Welcome to the Cloud Connect	tion Configuration Wizard - Step 2 of 5
Salesforce Server Connect	ion experimentation and a second
Basic Info Connection Operations Headers Summary	A Salesforce Cloud Server connection is required to access the operations and business objects available.
Help	< <u>B</u> ack <u>M</u> ext > Einish Cancel

Figure 11 - 83 Salesforce Cloud Server Connection Page

10. The **WSDL** Chooser dialog is displayed, browse and select the downloaded Enterprise WSDL and click **OK**, as shown in Figure 11- 84.

Figure 11 - 84 SOA Resource Browser

👌 WSDL Chooser							×
Application Server	File System	Project Libraries	SOA-MDS	UDDI	WSIL		
Location:	C:\WSDLs					- 🔾 🖓 🖏	🖻 📰 🖿
Work	Enterprise_)	VSDL_v29.wsdl					
	Eile Name: Ente	prise_WSDL_v2	9.wsdl				
Home F	File <u>T</u> ype: Web	Service Definitio	n Files (*.wsdl)				•
Selection: file:/C:/W	/SDLs/Enterprise	_WSDL_v29.wsd	JI				
Help						OK	Cancel

Note that as an alternative, you can store WSDL at an MDS location and access it, as shown in Figure 11-85.

🗿 WSDL Chooser	×
Application Server File System Project Libraries SOA-MDS UDDI WSIL	
Q Search SOA-MDS	62
apps SalesForceEnterpriseAPI.wsdl	
Selection: oramds:/apps/SalesForceEnterpriseAPI.wsdl	
Help	OK Cancel

Figure 11 - 85 SOA Resource Browser

- **11.** Copy WSDL to Your Project Folder.
- 12. Traverse to IDE Connections \rightarrow SOA-MDS. Select the appropriate SOA-MDS connection where you placed the Enterprise WSDL. Select the WSDL file to be used in the adapter configuration and click **OK**.
- **13.** The WSDL location should be of the form

'oramds:/apps/SalesforceEnterpriseAPI.wsdl', as shown in Figure 11-86.

Figure 11 - 86 WSDL location

Welcome to the Cloud Connection	n Configuration Wizard - Step 2 of 5	×
Salesforce Server Connectio		*
Basic Info Connection Operations Headers Summary	A Salesforce Cloud Server connection is required to access the operations and business objects available. Where can I find the Objects you need? Teterprise WSDL Location: [1]SOA[WSDLs]Enterprise_SS_v33.wsd] Pick the key to get in the door Security Policy: CUSTOM *Authentication Key: Test	
Help	< Back Next > Einish	Cancel

- 14. Click OK.
- 15. Click "+" button to create a new Authentication Key, as shown in Figure 11-87.

Welcome to the Cloud Connect	tion Configuration Wizard - Step 2 of 5	
Salesforce Server Connect	tion were an	
Basic Info Connection Operations Headers Summary	A Salesforce Cloud Server connection is required to access the operations and business objects available. Where can I find the Objects you need? "Enterprise WSDL Location: <u>I1SOA[WSDLs'Enterprise_SS_v33.wsd</u> Pick the key to get in the door Security Policy: OUSTOM • *Authentication Key: • • • • • • • • • • • • • • • • • • •	
Help	< Back Next > Enish Cancel	

Figure 11 - 87 Create a New Authentication Key

16. The **Add Credential** page is displayed, as shown in Figure 11- 88. Provide a suitable name and the Salesforce.com credentials. The password should be a combination of Salesforce.com password and Salesforce.com Security Token.

Figure 11 - 88 Add Credential

		X
OK	Cancel	
	OK	OK Cancel

17. Click **Test Connection** button to validate the Authentication Key, as shown in Figure 11- 89.

Figure 11 - 89 Test Connection

Welcome to the Cloud Conne	ection Configuration Wizard - Step 2 of 5		×
Salesforce Server Conne	ction		*
Basic Info Connection Operations Headers Summary	A Salesforce Cloud Server connection is required to access the operations and business objects available.		
Help	< Back	Next > Einish	Cancel

- 18. Click Next.
- 19. Click OK in the next screen.
- 20. The Cloud Operation Configuration page is displayed, as shown in Figure 11-90.

Figure 11 - 90 Cloud Operation Configuration Page

Welcome to the Cloud Connect	ction Configuration Wizard - Step 3 of 5	×
Configure the Operation t	to Perform in the Oracle Salesforce Application	\$ -5
Basic Info Connection Operations	Select the target operation and business objects in the Oracle Salesforce application.	
Headers	3 Select an Operation Type: CRUD	
	*Select Business Objects (Salesforce API 33.0): Available: Available: Account: Account:	× ×
Help	< Back Next > Enish Enish	Cancel

21. From the list of Operation Category, select CORE, as shown in the Figure 11-91.

Figure 11 - 91 Select CORE

Welcome to the Cloud Conne	ection Configuration Wizard - Step 3 of 5	X
Configure the Operation	n to Perform in the Oracle Salesforce Application	*
Basic Info <u>Connection</u> Operations Headers	Select the target operation and business objects in the Oracle Salesforce application.	
Summary	Select an Operation Type: CORE convertLead	
	*Select Business Objects (Salesforce API 33.0): Available: Selected: Lead	& ≫
	*WSDL Operation: convertLead	
Help	<back next=""> Enish</back>	Cancel

- **22.** For **SFDC Operation**, the **convertlead** operation will automatically be selected. Select **SFDC Operation** as **undelete**.
- 23. Select Lead from Available object, as shown in the Figure 11-92.

Figure 11 - 92 Select Lead object

_	nection Configuration Wizard - Step 3 of 5		
Basic Info <u>Connection</u> Operations	Select the target operation and business objects in the Ora	de Salesforce application.	
U Headers Summary	Select an Operation Type: CORE "Select Business Objects (Salesforce API 33.0): Available: Event Idea IdeaComment June_Object_c Ead Macro MaimergeTemplate Mohrer_c Note WSDL Operation: undelet	undelete Selected: Selected:	
Help		< Back	ext > Einish Cancel

24. After selecting **Lead** object, move it to the **Selected** object area, as shown in Figure 11-93.

Figure 11 - 93 Select Lead object

O Welcome to the Cloud Conne	ection Configuration Wizard - Step 3 of 5	×
Configure the Operation	to Perform in the Oracle Salesforce Application	*
Basic Info Connection Operations	Select the target operation and business objects in the Oracle Salesforce application.	
Summary	Select an Operation Type: CORE undelete	
	*Select Business Objects (Salesforce API 33.0): Available: Event Event	& ≫
	Idea IdeaComment June_Object_c Macro MaimergeTemplate Mother_c Note	
	Opportunity • ③ *WSDL Operation: undelete	
Help	< <u>Back</u> <u>N</u> ext > ⊟nish	Cancel

- 25. Click Next. The Headers and Properties page is displayed.
- **26.** On the Headers and Properties, enter the value of DebuggingHeader debugLevel as **DETAIL**. As shown in Figure 11- 94.

Figure 11 - 94 Header and Properties page, set value of DebuggingHeader

Welcome to the Cloud Connection	on Configuration Wizard - Step 4 of 5		×
Salesforce Operation Head	er Configuration	energy and the second	*
Basic Info Connection Qperations	Select Operations Headers		
Headers Summary	Configure the Header Properties for the Selected Operation: The following header properties are available with the operation undelete AllorHoneHeader AllorHone: true AllowFieldTruncationHeader DebuggingHeader debugLevel: DETAIL CocaleOptions PackageVersionHeader		
	majorNumber:		÷
Help		< Back Next > Einish	Cancel

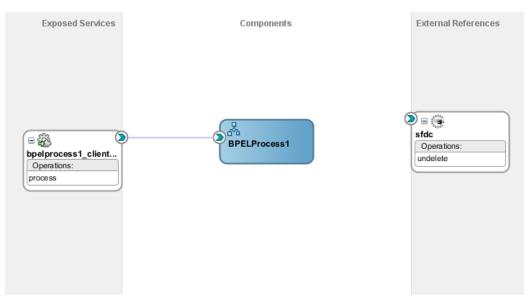
- 27. Click Next.
- **28.** The finish page is displayed. It provides a complete summary of the operation selected, object on which the operation would operate and the headers selected for that operation, as shown in Figure 11- 95.

Figure 11 - 95 Finish Page

Welcome to the Cloud Connection	1 Configuration Wizard - Step 5 of 5	×
Salesforce Cloud Adapter Ar		*
Connection	Cloud Adapter configuration was successful.	
Operations	Selected Operation Name: undelete	
Headers	Selected Object(s) Name: Lead	
Summary	Selected SOAP Header: DebuggingHeader.debugl.evel : DETAIL, AllOrNoneHeader.allOrNone : true	
Help	< Back Next > Einish	Cancel

- **29.** Click the **Finish** button to complete adapter configuration.
- **30.** After clicking on **Finish** button, the following screen appears, as shown in Figure 11-96.



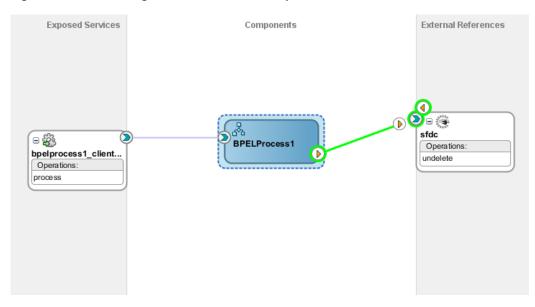


Integration with BPEL

Perform the following steps for integration with BPEL:

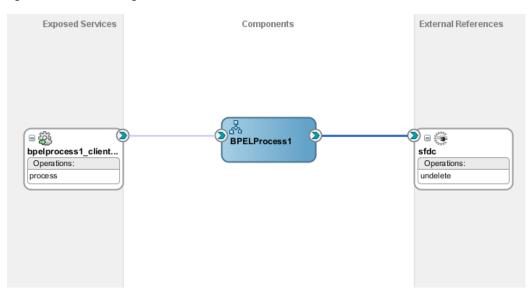
1. Connect BPELProcess1 and SFDC via a wire, as shown in Figure 11-97.

Figure 11 - 97 Wiring BPELProcess1 and adapter



2. After wiring, your composite will look like Figure 11-98.

Figure 11 - 98 Wiring BPELProcess1 and undelete



3. Double-click and open **BPELProcess1**. The adapter should be present as part of the Partner Link, as shown in Figure 11- 99.

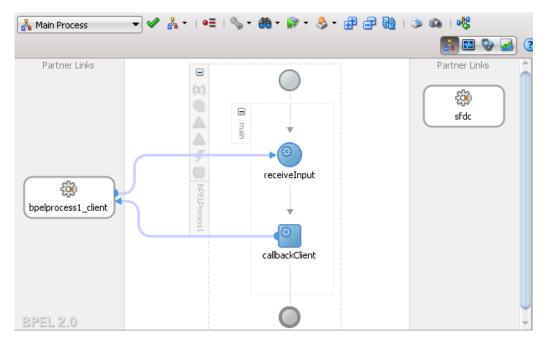


Figure 11 - 99 Open BPELProcess1

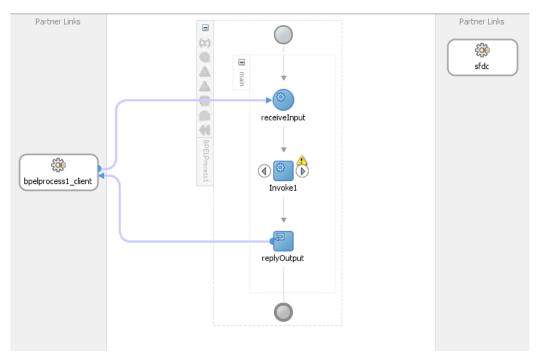
4. Create a variable **varDebugInfo** to track the debugLog returned in debuggingHeader from Salesforce.com, as shown in Figure 11- 100.

Figure 11 - 100 Variables Screen

	riables		••••••••••••••••••••••••••••••••••••••
<u>V</u> ariab	Name	Туре	QName
(x)	inputVariable	MessageType	client:BPELProcess1RequestMessage
			dient:BPELProcess1ResponseMes
(x)	varDebugInfo	Simple Type	xsd:string
<u>S</u> h	now Namespace URIs	1	
He	elp		OK Cancel

5. Add an **invoke activity** to invoke the query Partner Link, as shown in Figure 11-101.

Figure 11 - 101 Invoke Activity



6. Edit Invoke dialog is displayed. Create an input variable to the partner link by clicking the '+' button adjacent to **Input** textbox in the **Variables** section. The **Create Variable** dialog is displayed, as shown in Figure 11- 102.

👌 Edit Invo	ke		0				23
Assertion		p Condition Correlatio	Headers	Sources Properties	Targets	Annotati	ons
<u>N</u> ame: <u>C</u> onversa	tion ID:	Invoke1]
👌 Create V	ariable						×
<u>N</u> ame: <u>T</u> ype:	{http:/	1_undelete_ //xmlns.oracle pal Variable(e.com/pcbpe	l/adapter/sa	lesforce/A	pplication	12c/Proje
<u>H</u> elp					ОК		Cancel
Opera Variable <u>I</u> nput: O <u>u</u> tpu	es	indelete	2			- - - +	0
Help				Apply	ОК		Cancel

Figure 11 - 102 Create Variable

 Create an output variable from the partner link by clicking the '+' button adjacent to Output textbox in the Variables section. The Create Variable dialog is displayed, as shown in Figure 11- 103.

Figure	11 -	103	Create	Variable
--------	------	-----	--------	----------

👩 Edit Invoke	0			x
Assertions General	Skip Condition Headers Correlations	Sources To Properties	argets Annotations	
<u>N</u> ame: <u>C</u> onversation	Invoke1			
👌 Create Varial	ble			×
<u>Type:</u> {htt	oke1_undelete_OutputVar p://xmlns.oracle.com/pcbj global Variable 〇 Local Va	oel/adapter/salesf	orce/Application 12c/F	Proje
Help			OK Cance	el
Operation:	🐚 undelete		•	
Variables — <u>I</u> nput: O <u>u</u> tput:	Invoke1_undelete_Inp	utVariable		
Help		Apply	OK Cance	el

8. Go the properties tab and locate jca.salesforce.response.debugLog and double click on the "..." button under values as shown in Figure 11- 104.

Assertions	Skip Condition	Headers	Sources	Targets				
General	Correlatio	ns	Properties		Annotations			
Properties:								
Name			Value	Туре				
ica.msmo.m	essage.TimeToLive	•						
	ce.AllOrNoneHead							
,	ce.HttpTimeout							
-	ce.LocaleOptions.l	anguage						
	ce.QueryOptions.							
	ce.queryLocator							
jca.salesfor	ce.response.debu	gLog						
jca.salesfor	ce.response.limitIr	nfo.current						
jca.salesfor	ce.response.limitIr	nfo.limit						
jca.socket.ł	host							
jca.socket.p	port				-			
jca.ums.bco	2							
jca.ums.cc								
jca.ums.com	nments							
jca.ums.dat								
jca.ums.fro	m							
jca.ums.in-r	reply-to				-			
Fit to Wi	dth							

Figure 11 - 104 Properties Tab

9. In the AdapterPropertyValue dialog, click on search for the variable as shown in Figure 11- 105.

Assertions Skip Condition Headers	Sources T	argets
General Correlations	Properties	Annotations
Properties:		
Name 👻	Value	Туре
jca.salesforce.LocaleOptions.language		
Adapter Property Value		×
	ОК	Cancel
jca.ums.date	OK	Cancel
jca.ums.date jca.ums.from	OK	Cancel
jca.ums.from jca.ums.in-reply-to	OK	Cancel
jca.ums.from jca.ums.in-reply-to jca.ums.keywords	OK	Cancel
jca.ums.from jca.ums.in-reply-to jca.ums.keywords jca.ums.message-id	OK	Cancel
jca.ums.from jca.ums.in-reply-to jca.ums.keywords	OK	Cancel

Figure 11 - 105 Search Property Value

10. In the next dialog, click **varDebugInfo** variable and click **OK** as shown in Figure 11-106.

🔿 Variable XPath Builder	×
Variables Process Variables Variables Variables Variable client:BPELProcess1RequestMessage VarDebugInfo xsd:string Nroke1_undelete_InputVariable ns1:undeleteRequestMessage Nroke1_undelete_OutputVariable ns1:undeleteResponseMessage Nroke1_undelete_OutputVariable ns1:undeleteResponseMessage	
<u>X</u> Path:	
Help OK Ca	incel

Figure 11 - 106 Variable XPath Builder

11. After the variable is selected, click **OK** as shown in Figure 11- 107.

Figure	11 - 107	Select variable
--------	----------	-----------------

Adapter Property Value		×
Variable <u>Expression</u>		
varDebugInfo		
	OK	Cancel

12. Change the type to **Output** and click **OK**, as shown in Figure 11- 108.

Figure	11	- 108	Select	Output
--------	----	-------	--------	--------

	Skip Condition Headers	Sources	Targets	
General	Correlations	Properties	Annota	tions
roperties:				
Name 🤝		Value	Туре	
ca.salesforce	.LocaleOptions.language			-
ca.salesforce	.QueryOptions.batchSize			
ca.salesforce	.queryLocator			
ca.salesforce	.response.debugLog	varDebugIn	fo// input	-
ca.salesforce	.response.limitInfo.current		input	
	.response.limitInfo.limit		output	
ca.socket.ho	st			
ca.socket.po	rt			
ca.ums.bcc				
ca.ums.cc				
ca.ums.comm	ients			-
ca.ums.date				-
ca.ums.from				
ca.ums.in-rep				
ca.ums.keyw				
ca.ums.mess	-			
ca.ums.meta	data.amount			
Fit to Widt	h			

13. Introduce Transform activity right before invoke activity, as show in Figure 11-109

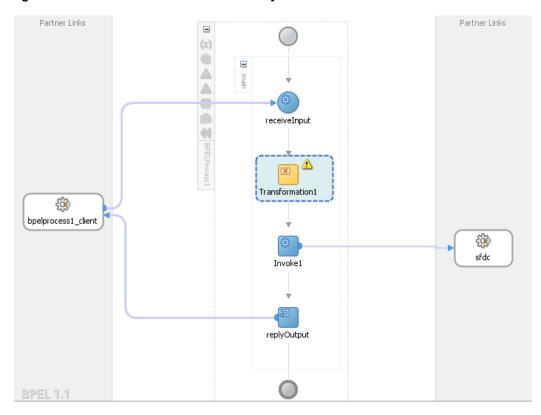


Figure 11 - 109 Introduce transform activity

14. Double-click on **Transform1** and add the source variable as inputVariable, as shown in Figure 11- 110.

O Edit Transformation	23
Annotations Skip Condition Sources Targets	
General Transformation	
Source Variable	
Source Variable:	
(x) inputVariable	
Source Part:	
🖥 payload	
	11
Help OK Cancel	
Mapper File: 1\SOA\Transformations\Transformation_1.xsl	
Help Apply OK Cancel	

Figure 11 - 110 Transformation Tab

15. Add the target variable "Invoke1_undelete_InputVariable" as shown in Figure 11-111, and click **OK**.

Edit Transformation	×
Annotations Skip Condition Sou General	urces Targets Transformation
Source:	🕂 / 🗙 🕁 🕂
Variable	Part
inputVariable	payload
<u>T</u> arget Variable: (x) inputVariable	Target Part:
(x) inputVariable	
(x) outputVariable	
(x) varDebugInfo	
 Invoke 1_undelete_InputVariable Invoke 1_undelete_OutputVariable 	
	n_1.xsl 🔍 🕂 🧪
<u>H</u> elp	Apply OK Cancel

Figure 11 - 111 Add target variable

16. Map the input to the source variable in the mapper file, as shown in Figure 11- 112.

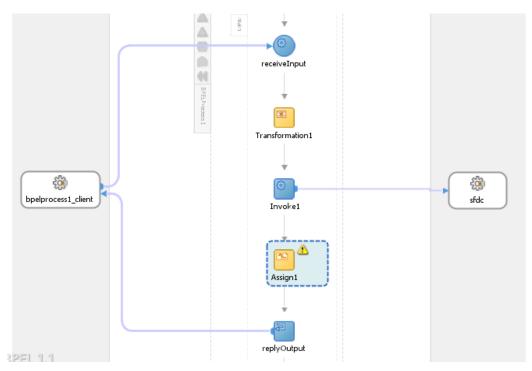
Figure 11 - 112 Map the input

<pre>Sources></pre>													-[xsl:stylesheet
🗄 🚸 ns0:process							:						- 11	xsl:template(match=/)
		<u>·</u>	<u> </u>		· ·								- 11	tns:undelete 🚸 🗔
Variables									_	-	 	 	4	tns:ids 🔇
—	I												- 11	
													- 11	
	I			• •		• •			• •					
													- 11	
	I													
													- 11	

17. Save all and move back to BPELProcess1.

18. Introduce **Assign** activity right after the invoke activity, as shown in Figure 11- 113.

Figure 11 - 113 Introduce Assign activity



19. Inside the Assign activity, assign the value of

"OutputVariable/payload//client:processResponse/client:debugInfo" variable to "varDebugInfo" variable, as shown in Figure 11- 114.

Figure 11 - 114 Wire the Assign activity

Insert New Rule After 💌		🖳 🚖 🥝 👾 🛥
BPEIProcess1.bpel Portext Links Variables Variables	Orag objects here	BPELProcess i be Peter ruins Variable: Process } Process } P
🗓 Сору 👻	To XPath: /dient:proces	ssResponse/client:debugInfo 🛛 🕂 🗙 👉 🗄
From	То	,
🗐 🕱 varDebugInfo//	(x) outputVariable/pay	load//dient:processResponse/dient:debugInfo

20. In the Assign activity, click on Apply and then OK.

Deploy the Composite

Perform the following steps to deploy the composite.

1. In the **Application Navigator** pane, right-click **Project1** and select **Deploy** -> **Project1**, as shown in Figure 11- 115.

🗄 🛅 Proj	iect1			L
	- 304	<u>N</u> ew	Ctrl-N	
🗄 🛛 🛅 Tes		Edit Project Source P <u>a</u> ths		
	×	Delete Project		
		Version Project		
	60	Find <u>P</u> roject Files		
		Show Overview		
	<u>д</u>	Ma <u>k</u> e Project1.jpr	Ctrl-F9	
	않아	Re <u>b</u> uild Project1.jpr	Alt-F9	
		Deploy	•	Project1
	L,	Re <u>f</u> ormat	Ctrl+Alt-L	
		Organ <u>i</u> ze Imports	Ctrl+Alt-O	
		Compare Wit <u>h</u>	•	Middleware\jdev
		Compare Wit <u>h</u> Replace <u>W</u> ith)	\Middleware\jdev
Application		Replace <u>W</u> ith)	
Data Cor	_	Replace <u>W</u> ith <u>R</u> estore from Local History	•	Middleware\jdev 1g composite "C:' 3PELC option 'cl;
		Replace <u>W</u> ith	•	

Figure 11 - 115 Navigator Screen

2. Select the **Deploy to Application Server** option and follow the instructions on the screen. Using this option you can deploy the composite on the Application server after providing the details of the server.

Test the Composite

Perform the following steps to test the composite.

- 1. Login to Enterprise Manager Console for the server on which you deployed your project.
- 2. Open Project1.
- 3. Click the **Test** button to test the Web service, as shown in Figure 11-116.

Figure 11 - 116 Test Tab

Project1 [1.0] ③ Independent SOA Composite →	
Active Retire Shut Down Test Settings • Shut Down • Shut Down • Shut Down • I I Shut Down • I Shut Down I Shut Down • I Shut Down • I Shut Down • I Shut Down Shut Down I Shut Down Shut Down Shut Down Shut Down I Shut Down Shut Down Shut Down Shut D	
Name	

4. Enter the ID of the objects you wish to undelete, as shown in Figure 11-117.

Figure 11 - 117 Enter ID

Tree View 💌	Туре	Value
∀ * payload	payload	Value
⊽ *ids	stringArray Size - [1]	
* ids	string	00Q9000000MoOtw

5. Click on **Test Web Service** button, as shown in Figure 11-118.

Figure	11 -	118	Test Web Service
--------	------	-----	------------------

Logged in as weblogic Host TDCVM13509 Page Refreshed Jan 7, 2014 2:37:46 PM IST 🔇	
Test Web Service DL and click Parse WSDL. When the page refreshes it to test. Specify any input parameters, and click Test	
5DL 🔍 Parse WSDL	

6. After successful execution, the response contains the expression that you provided in the last assign activity, as shown in Figure 11-119.

Figure 11 - 119 Execution Window

Request Resp	onse	
Test Status R Response Time (ms) 1 Tree View 💌	tequest successfully re 16650	aceived.
A new composite instanc	e was generated.	aunch Flow Trace
Name	Type	Value
⊽ payload	payload	
debugInfo	string	29.0 APEX_CODE,FINER;APEX_PROFILING,FINE;CALLOUT,INFO;DB,INFO;SYSTEM

7. Click the **Launch Flow Trace** button to view the **Audit Trail**, as shown in Figure 11-120.

Figure 11 - 120 Launch Flow Trace

aults (0)						
aults						
Select a fault to locate it in the trace view.						
Error Message No faults found				Recovery	Fault Time Fault Location	Composite Instance
race Click a component instance to see its detailed a show Instance IDs Instance	audit trail.	Usage	State		Time Composite Instance	
Ø Spelprocess1_dient_ep	Web Service	Service	Completed	lan 10, 2014 4:2	7:19 PM ExtractDebugInfo of 260070	
V BPELProcess1	BPEL Component	agr bei vice	Completed		7:24 PM ExtractDebugInfo of 260070	
C undelete	JCA Adapter	Reference	Completed		7:24 PM ExtractDebugInfo of 260070	

8. The Audit Trail will look like Figure 11-121.

Figure 11 - 121 Audit Trail

xpand a payload node to view the details.	Highlight Faults 🔲 Current /Judit Level: development 🔍 View Raw XML
<pre><pre>cprocess> V <main (67)=""> V @receiveInput</main></pre></pre>	
▼ Jan 10, 2014 4:27:20 PM > <payload> ▼ INT Transform1</payload>	Received "process" call from partner "bockprocess 1 clent"
♥ Jan 10, 2014 4:27:20 PM ▷ <payload></payload>	Updated variable "Imolectindelete_ImputVariable"
Jan 10, 2014 4:27:20 PM	Completed assign
▼ 🕸 InvokeUndelete	
Jan 10, 2014 4:27:20 PM	Started invocation of operation 'Undelete' on partner 'Undelete'.
▼ Jan 10, 2014 4:27:24 PM ▷ <payload></payload>	Lipidated variable "varibelaugitafu"
Jan 10, 2014 4:27:24 PM	Received property "jcs.releaforce.response.debugl.og", value is "29.0 APEV_CODE.FINER/APEV_PROFILING_FORE;CALLOUT_INFO;08,INFO;SYSTEM_FDIEST 02:54:57.243]CUMULATIVE_PROFILING_BEGIN 02:57.243]CUMULATIVE_PROFILIN
 ✓ Jan 10, 2014 4:27:24 PM > > > > > > > > <	Involved 2-way operation "underete" on partner "underete".
V Massign1	
♥ Jan 10, 2014 4:27:24 FM I> <payload></payload>	Lipdated variable "kutputtranable"
Jan 10, 2814 4:27:24 PM	Completed assign
V 🕬 replyOutput	
▼ Jan 10, 2014 4:27:24 PM ▷ <payload></payload>	Reply to perfore "boelprocess1_clent".

9. Click on Flow tab, the Flow tab will look like Figure 11-122.

udit Trail	Flow	Sensor Values	Faults	
ck an activity	y to view the o	details.		
			\sim	
			\bigcirc	
			(503)	
			receiveInput	
			Transform1	
			583 ->	
			InvokeUndelete	
			CD	
			Assign1	
			replyOutput	
			Ó	

Figure 11 - 123 Invoke Received Property

[2014/01/10.16:27:24] Received property 'jca.salesforce.response.debugt.og', value is '29.0 APEX_CODE_FINER;APEX_PROFILING_FINE;CALLOUT,INFO;08,INFO;SYSTEM_FINEST 02:54:57.243]CUMULATIVE_PROFILING_BEGIN 02:54:57.243]CUMULATIVE_PROFILING[No profiling information for SOQL operations 02:54:57.243]CUMULATIVE_PROFILING[No profiling information for SOSL operations 02:54:57.243]CUMULATIVE_PROFILING[No profiling information for DML operations 02:54:57.243]CUMULATIVE_PROFILING[No profiling information for method invocations 02:54:57.243]CUMULATIVE_PROFILING[No profiling information for DML operations 02:54:57.243]CUMULATIVE_PROFILING[No profiling information for method invocations 02:54:57.243]CUMULATIVE_PROFILING_END ''.

11. You can also see how the value of "debugLog" property is written to varDebugInfo value, as shown in Figure 11-124.

Figure 11 - 124 Invoke updated variable

[2014/01/10 16:27:24] Updated variable "varDebugInfo"
- <vardebuginfo> <vardebuginfo xmlns="" xmlns:ns="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns:string"> 29.0 APEX_CODE,FINER;APEX_PROFILING,FINE;CALLOUT,INFO;DB,INFO;SYSTEM,FINEST 02:54:57.243 CUMULATIVE_PROFILING_BEGIN</vardebuginfo></vardebuginfo>
02:54:57.243 CUMULATIVE_PROFILING No profiling information for SOQL operations 02:54:57.243 CUMULATIVE_PROFILING No profiling information for SOSL operations 02:54:57.243 CUMULATIVE_PROFILING No profiling information for DML operations 02:54:57.243 CUMULATIVE_PROFILING No profiling information for method invocations 02:54:57.243 CUMULATIVE_PROFILING_END
 <u>Copy details to clipboard</u>

11.2.BPM Use Cases

This section is intended to walk you through use cases specific to integrating to Salesforce via Oracle BPM. The examples provided in this chapter would be beneficial to a developer creating BPM processes to integrate to salesforce. This chapter is subdivided into the sections:

- Section 11.2.1, "Define Composite for BPM"
- Section 11.2.2, "Configure Oracle Cloud Adapter for Salesforce.com"
- Section 11.2.3, "Integration with BPM"
- Section 11.2.4, "Deploy the Composite"
- Section 11.2.5, "Test the Composite"

11.2.1. Define Composite for BPM

Perform the following steps to define a composite for BPM.

1. In the File menu of JDeveloper, click New and select Application.

Eile Edit View Application Refactor Search Navigate Build Run Team New Open Ctrl-O Reopen Check Code Compliance Close Ctrl-F4 Close All Ctrl-S BPEL 2.0 Subprocess BPEL Process Broject Broject Composite Test Cross Reference(XREF) Domain Value Map(DVM) Event Definition
Open Ctrl-O Reopen Image: Check Code Compliance Project Check Code Compliance BPEL 2.0 Subprocess Close Ctrl-F4 Close All Ctrl+Shift-F4 Delete Cross Reference(XREF) Save Ctrl-S
Reopen Image: String of the string of th
Check Code Compliance Image: Big
Image: Check Code Compliance Image: Bit is a stress of the stress o
Close Ctrl-F4 Close All Ctrl-F4 Ctrl+Shift-F4 Delete Ctrl-S Save Ctrl-S Ctrl-S Event Definition
Close All Ctrl+Shift-F4 Delete Cross Reference(XREF) Save Ctrl-S Event Definition
Delete Cross Reference(XREF) Save Ctrl-S Event Definition
Save Ctrl-S Event Definition
S <u>a</u> ve As 🏠 <u>H</u> uman Task
Save As HTML a Maven POM for Project
🗐 Save A <u>l</u> l 🍕 <u>M</u> ediator
Rename Spring Context
Import Import
Export A XML Schema
Compare With
Replace With
Viap
Page Setup Prom <u>G</u> allery Ctrl-N
Print Ctrl-P
Print Preview
Prin <u>t</u> Area
Exit Alt-F4

Figure 11 - 125 Navigation Window

2. The New Gallery page is displayed. Select **BPM Application** from the **Items** list, as shown in the screenshot below.

Figure 11 - 126 Create BPM Application

🕜 New Gallery	Composition	23	
Q			
<u>C</u> ategories:	Items:	Show All Descriptions	
Categories: Applications 	Items: Image: Service Bus Application Image: Service Bus Application Image: Service Bus Application Image: Service Bus Application		
		OK Cancel	

3. Provide a suitable name to your application, as shown in screenshot below.

Figure 11 - 127 Name your application

Oreate BPM Application	- Step 1 of 3		×
Name your application	on	01	BS
Application Name Project Name Project SOA Settings	Application Name: BpmApplication Directory: C:\JDeveloper\mywork\BpmApplication Application Package Prefix:		Browse
Help	< <u>B</u> ack	<u>N</u> ext > <u>F</u> inish	Cancel

4. Click **Next** and provide a suitable name to your project, as shown in screenshot below.

O Create BPM Application	- Step 2 of 3	Compared to Compar	×
Name your project		01	ES
Application Name Project Name	<u>P</u> roject Name: Dir <u>e</u> ctory:	BpmProject C:\JDeveloper\mywork\BpmApplication\BpmProject	Bro <u>w</u> se
Project SOA Settings	Project Featu BPM BPM Technolo SOA Suite SOA Suite is a		pplications.
Help		< <u>B</u> ack <u>N</u> ext > <u>F</u> inish	Cancel

Figure 11 - 128 Name your project

- 5. Click Next.
- 6. Select Composite with BPMN Process from Standard Composite list, as shown in screenshot below.

Figure 11 - 129 Configure BPM Setting

Create BPM Application	- Step 3 of 3	۲
Configure SOA settin	gs	
Application Name Project Name Project SOA Settings	Composite Name: BpmProject Start from: Start from:	
Help	Qustomizable < <u>B</u> ackNext >Einish Cancel	

- 7. Click Finish.
- 8. Select the Synchronous Service from Type section and click Finish, as shown in screenshot below.

🔿 в	PMN 2.0 Process Wiza	d	x
BPI	MN 2.0 Process W	izard	
•	Definition	Name: Process	۲
	Arguments Initial Implementation Advanced	Description:	۲
		Directory: C:\JDeveloper\mywork\BpmApplication\BpmProject\SOA\processes	Q
		Synchronous Service Creates a process with a synchronous interface definition	
		Manual Process	-
	<u>H</u> elp	< Back Next > Finish Cancel	

Figure 11 - 130 Configure BPM Setting

9. The Composite.xml looks like the one displayed in the screenshot below

Figure 11 - 131 Composite.xml

mProject × 瞷 🛃 💥 端 🕢 🦁 🙆 🖶 🖣	5 66 69	BpmProje
Exposed Services	Components	External References
Process.service	Process	
Operations: start		

10. Next we would create the schema for our process. In the Application Navigator, under your project folder, right-click on the schema folder and select New →From Gallery as shown in screenshot below.

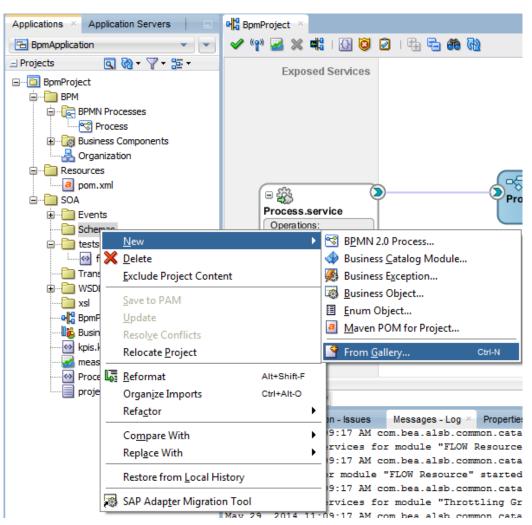


Figure 11 - 132 Application Navigator

11. The New Gallery page is displayed. Select XML Schema from the Items list, and click OK as shown in screenshot below.

Figure 11 - 133 Create XML Schema

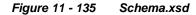
👌 New Gallery	
Q	
Categories:	Items: Show All Descriptions
General	La NXSD Schema
Ant	XML Document
Applications	
Connections	ML Document from XML Schema
Deployment Descriptors	ML Localization File (XLIFF)
·····Deployment Profiles ·····Diagrams	
Java	Reference and a second
Maven	Opens the Create XML Schema dialog, in which you define a directory and filename for a new XML schema (.xsd) file. To enable this option, you must select
Projects	a project or a file within a project in the Application Navigator.
UML	A XML Schema from XML Document
XML	
BPM Tier	🐻 XQuery File
Activity Guide	XQuery File ver 1.0
Business Components	
Case Management	XQuery Library ver 1.0
Business Tier	XSL Map
ADF Business Components	
Business Rules	XSL Map From XSL Stylesheet
Contrast on Donard Street	🐼 XSL Style Sheet 🧅
Help	OK Cancel

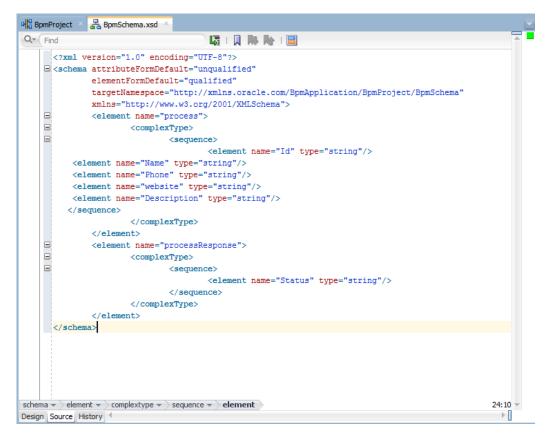
12. The **Create XML Schema** page is displayed, provide a suitable name to the schema and click **OK**, as shown in screenshot below.

Figure 11 - 134 Name Your Schema

Create XML Schema
Enter the details of your new file.
<u>F</u> ile Name:
BpmSchemal xsd
Directory:
C:\JDeveloper\mywork\BpmApplication\BpmProject\SOA\Schemas Browse
Target Namespace:
http://www.example.org
Prefix:
Help OK Cancel

13. Edit the schema file as per the business requirement. It is the responsibility of the frontend application to impose the data validations and to ensure that the input sent to SFDC via SOA is correct. The structure of the schema used in this use case is shown in the screenshot below.



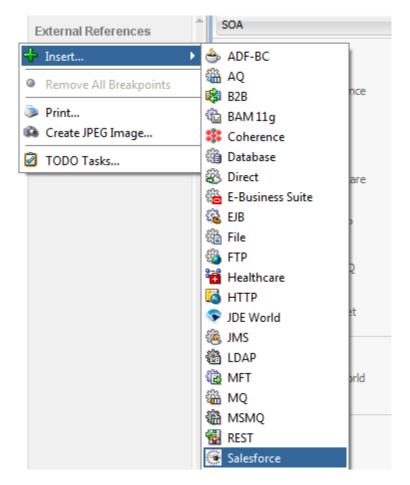


11.2.2. Configure Oracle Cloud Adapter for Salesforce.com

Perform the following steps to configure a new Oracle Cloud Adapter for Salesforce.com:

1. In External References swim-lane of the composite.xml file, right-click and select Salesforce adapter, as shown in the screenshot below.

Figure 11 - 136 Salesforce Adapter



2. The Salesforce Cloud Adapter Configuration Wizard - Welcome page is displayed, as shown in the screenshot below.

Figure 11 - 137 Welcome Page

Welcome to the Cloud Cor	nection Configuration Wizard - Step 1 of 5	×
Welcome to the Cloud	Connection Configuration Wizard	ensistementeres endersteres
Basic Info Connection Operations Headers Summary	This wizard helps you create a service using the Oracle Salesforce Cloud connection. You will be asked to specify configuration parameters and define an operation for the serv "What do you want to call your connection? SalesforceReference What does this connection do? Describe the connection's purpose and detail	ńce.
Help	<	Back Next > Einish Cancel

- 3. Click Next.
- 4. The Salesforce Cloud Server Connection page is displayed. The WSDL Location and Authentication Key text boxes are auto-filled. It picks up these values from the

cache. You can re-enter these values. If you want to use a different value, click the **Find existing WSDLs** icon, which is located to the right of the **WSDL Location** field, as shown in the screenshot below.

Welcome to the Cloud Cor	nnection Configuration Wizard - Step 2 of 5	X
Salesforce Server Conr	nection economic and a second a	*
Basic Info Connection Uperations Headers Summary	A Salesforce Cloud Server connection is required to access the operations and business objects available. (2) Where can I find the Objects you need? "Enterprise WSDL Location: oramds:/apps/Enterprise.wsdl (2) Pick the key to get in the door Security Policy: CUSTOM "Authentication Key: SEDC_Test " Authentication Key: CUSTOM Test	
Help	< gadk Next > Enish	Cancel

Figure 11 - 138 Salesforce Cloud Server Connection Page

5. The WSDL Chooser dialog is displayed, browse and select the downloaded Enterprise WSDL and click OK, as shown in the screenshot below.

Figure 11 - 139 SOA Resource Browser

🔿 WSDL Chooser							×
Application Server	ile System	Project Libraries	SOA-MDS	UDDI	WSIL		
Location:	C:\offical					- 🗘 🗘 🔯	🛉 📰 🖿
Work	SalesforceEn	erprise.wsdl					
1	le Name: Salesf	orceEnterprise.	wsdl				
Home - Fil	le <u>T</u> ype: Web 9	Gervice Definitio	n Files (*.wsdl)				•
Selection: file:/C:/off	fical/SalesforceEr	nterprise.wsdl					
Help						ОК	Cancel

6. Click OK. The following screen appears as shown in the screenshot below.

Figure 11 - 140	Localize Files Dialog
-----------------	-----------------------

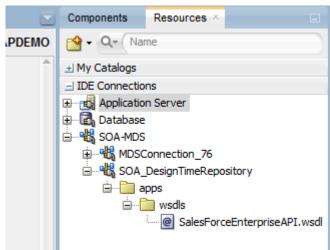
O Localize Files	×
file:/C:/SVN/SNC/DEMO/SFDC_TO_SNC/Project1/SOA/WSDLs/Enterprise_SS_v33.wsdl is exter project. In order to make this file available to your project at runtime, JDeveloper can now mak file and any dependent files that it imports or includes.	
Copy Options: Maintain original directory structure for imported files The following files will be created in directory C:\SVN\SNC\DEMO\SFDC_TO_SNC\Project2\SOA :	
WSDLs/Enterprise_SS_v33.wsdl	
<u>H</u> elp OK	Cancel

7. Click OK. It will be returned to the Salesforce Cloud Server Connection page.

Figure 11 - 141 Salesforce Cloud Server Connection Page

Basic Info A Salesforce Cloud Server connection is required to access the operations and business objects available. Operations Headers Summary	lesforce Server Con	nection were stated at the state of the stat	
	Connection Operations Headers	③ Where can I find the Objects you need? "Enterprise WSDL Location: oramds:/apps/Enterprise.wsdl ③ Pick the key to get in the door Security Policy: CUSTOM "Authentication Key: SFDC_Test	

Note that as an alternative, you can store WSDL at an MDS location and access it, as shown in the screenshot below.



SOA Resource Browser

- 8. Proceed to IDE Connections \rightarrow SOA-MDS. Select the appropriate SOA-MDS connection where you placed the Enterprise WSDL. Select the WSDL file to be used in the adapter configuration and click OK.
- 9. The WSDL location should be of the form: 'oramds:/apps/SOA/WSDLs/Integration/SalesforceReference.wsdl', as shown in the screenshot below.

Figure 11 - 143 WSDL location

Welcome to the Cloud Conn	ection Configuration Wizard - Step 2 of 5	x
Salesforce Server Conne	ection	
Basic Info. Onnection Operations Headers Summary	A Salesforce Cloud Server connection is required to access the operations and business objects available. Where can I find the Objects you need? *Enterprise WSDL Location: iorands:/apps/Enterprise.wsdl Pick the key to get in the door Security Policy: CUSTOM * *Authentication Key: SFDC_Test * Test	
Help	< Back Next > Einish Cancel	

- 10. Click OK.
- 11. Click "+" button to create a new Authentication Key, as shown in the screenshot below.

Figure 11 - 142

Welcome to the Cloud Connect	tion Configuration Wizard - Step 2 of 5	CONTRACTOR & ADDRESS OF	×
Salesforce Server Connect	tion		*
Base Info. Connection Operations Headers Summary	A Salesforce Cloud Server connection is required to access the operations and business objects available. Where can I find the Objects you need? Finterprise WSDL Location: [1\SOA\WSDLs/Enterprise_SS_v33.wsd] Pick the key to get in the door Security Policy: CUSTOM Authentication Key: Test		
Help	< <u>B</u> ack <u>N</u> ex	t > Einish	Cancel

Figure 11 - 144 Create a New Authentication Key

12. The **Add Credential** dialog box is displayed, as shown in the screenshot below. Provide a suitable name and the Salesforce.com credentials and click **OK**.

Note: The password should be a combination of Salesforce.com password and Salesforce.com Security Token.

Figure 11 - 145 Add Credential

		X
OK		Cancel
	OK	OK

13. Click **Test Connection** button to validate the Authentication Key, as shown in the screenshot below.

Figure 11 - 146	Test Connection
-----------------	-----------------

Welcome to the Cloud Co	nnection Configuration Wizard - Step 2 of 5		×
Salesforce Server Con	nection	01	
Basic Info Connection Operations Headers Summary	A Salesforce Cloud Server connection is required to access the operations and business Where can I find the Objects you need? "Enterprise WSDL Location: E1/SOA/WSDLs/Enterprise_SS_v33.wsd) Pick the key to get in the door Security Policy: CUSTOM "Authentication Key: SFDC_Test Test	objects available.	
Help	U	< Back Next > Einish	Cancel

- 14. Click Next.
- **15.** The **Cloud Operation Configuration** page is displayed, as shown in the screenshot below.

Figure 11 - 147 Cloud Operation Page

Welcome to the Cloud Cor	nnection Configuration Wizard - Step 3 of 5	X
Configure the Operation	on to Perform in the Oracle Salesforce Application	5
Basic Info Connection Operations Headers	Select the target operation and business objects in the Oracle Salesforce application.	
Summary	③ Select an Operation Type: □ CRUD □ The Lot Decise of the formula of the formula of the term of the term of the formula of the term of the term of the formula of the term of term o	
	*Select Business Objects (Salesforce API 33.0): Available: Account Account Account CrestC Account CrestC Account CrestC ActionLinkGroupTemplate ActionLinkGroupTemplate AdditionalNumber	~ ~
Help	<back next=""> Enish Car</back>	icel

16. Since the scenario is to update an Account on Salesforce.com, select Operation Category as CRUD and SFDC Operation as Update. Move Account from the list of Available objects to the list of the Selected objects. The WSDL Operation by default is create (same as SFDC Operation). You can edit the same by providing an operation name suitable to your business requirement, as shown in the screenshot below.

Figure 11 - 148 Cloud Operation Page

Welcome to the Cloud Connect	ction Configuration Wizard - Step 3 of 5	X
Configure the Operation	to Perform in the Oracle Salesforce Application	and the second sec
Basic Info Connection Operations Headers	Select the target operation and business objects in the Oracle Salesforce application.	
Summary	Select an Operation Type: CRUD Update	
	*Select Business Objects (Salesforce API 33.0): Available: Account_Test_c Account_ord_c AccountContacRole ActionLinkTemplate ActionLinkTemplate AdditorsaNumber Address_vod_c Announcement ApexClass @ "WSDL Operation: update	<i>≈</i> ∞
Help	l < Back []	Next > Einish Cancel

17. Click **Next**. The **Header and Properties** page is displayed, as shown in the screenshot below.

Figure 11 - 149 Header and Properties

👌 Welcome to the Cloud Connection Configuration Wizard - Step 4 of 5				
Salesforce Operation Header Configuration		escalation of the state of the	*	
Basic Info Connection Connection Corrections Headers Summary	Select Operations Headers Configure the Header Properties for the Selected Operation: The following header properties are available with the operation create AllorNoneHeader allorNone: al			
Help		< Back Next > Einish	Cancel	

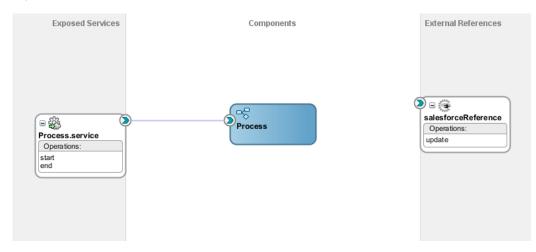
- **18.** Select the appropriate header according to your requirement. Headers displayed in this page depend on the operation selected in the previous page.
- 19. Click Next.
- **20.** The finish page is displayed. It provides a complete summary of the operation selected, object on which the operation would operate and the headers selected for that operation, as shown in the screenshot below.

Figure 11 - 150 Finish Page

Welcome to the Cloud Connection	n Configuration Wizard - Step 5 of 5			X
Salesforce Cloud Adapter Artifacts Summary			oroloioiararorora oroloioio	*
Basic Info Connection Operations	Cloud Adapter configuration was successful.			
Headers	Selected Operation Name: update			
Summary	Selected Object(s) Name: Account			
	Selected SOAP Header: AllOrNoneHeader.allOrNone : true			
Help	м 	< <u>B</u> ack	Next > Einish	Cancel

- 21. Click the Finish button to complete the Adapter Configuration Wizard.
- **22.** After clicking on **Finish** button, the following screen appears, as shown in the screenshot below.

Figure 11 - 151 Composite.xml



11.2.3. Integration with BPM

Perform the following steps for integration with BPM:

1. In the composite.xml file of your project, double-click the object named **Process**. Process.bpm page opens, as shown in the screenshot below.

Figure 11 - 152 Open Process

α ¦0 BpmProject × 😤 Process ×			
Image: Construction of the second	Q Search		- • K
Activity interactive Notification Catch Inrow Gateway Artifacts			
Start End			
A Highlight Level: Warnings		= 100% 🔻 🔍	= =
Designer Scripting Collaboration History	•	100 /0 / 90	

2. Double-click on the **Start** activity. **Properties-Start** page opens as shown in the screenshot below.

Note: The Model starts and ends with two circular icons. The Left Circle is a **Start Activity** and the circle which is on the right side is the **End Activity**. These two activities are joined with the help of a line that represents the flow of activities through the process known as Sequence Flow.

🕜 Properties - Start			
Basic Imp	ementation		
Name:	Start	۲	
Description:			۲
Is Draft:			_
Help		ОКС	ancel

Figure 11 - 153 Properties – Start

3. Left-click on the **Implementation** tab. Now, in the **Argument Definition**, click on the '+' sign to create the input argument/s.

Properties - Start	23
Basic Implementation	
Implementation Type: 💿 Message	-
Message Exchange	
Type: 😡 Define Interface	•
Conversation: Default Advanced 	
Define Interface	
Arguments Definition	/ 🗶 🛛
Name 🕜 Edit Argument	
Name: argument1	
Type: abc string	
Operatio	
Help OK Cancel	
Data Associations Correlations	
Message Headers Ervice Properties	
Неір ОК	Cancel

Figure 11 - 154 Edit Argument for Start

4. In the **Edit Argument** page, provide a name to the argument in the **Name** section and in the **Type** section, scroll down and select the **Browse** option.

Properties - Start	X
Basic Implementation	
Implementation Type: 🙆 Message	
Message Exchange	
Type: 😡 Define Interface	
Conversation: Default Advanced 	
Define Interface	
Arguments Definition	🕂 / 💥
Name 👩 Edit Argument	x
Name: argument_update_Input	
Type: abc string	
Operation Coperation	
Help isi base64Binary 99E float	
ata Associations 999 byte	
Message Headers 999 short	
🖄 date	
Time 1	
Srowse	Ť
Browse	
Help	OK Cancel

Figure 11 - 155 Edit-Argument Page

5. Next, a new **Browse Type** page opens, click on the **Business Object** button to create one.

) Prop Basic	erties - Start Implementation	
	entation Type: Message	
Mess	Browse Types	
Туре	Find:	
Conv	abc string	Business Ob
Def	999 int	
A	So boolean	
Arg	99E double	
N	999 decimal	
	ateTime	
	999 long	
14	<⇒ duration	
Ор	base64Binary	
1.1	199E float	
8≍8 <u>Da</u>	999 byte	
	i i i i i i i i i i i i i i i i i i i	
* 🗆 <u>M</u> e		
	time 🔯	
	MalidFieldFault	-
	Help	OK Cancel
Help		OK Cancel

Figure 11 - 156 Browse Type for Argument

6. In the **Create Business Object** page, provide a **Name** and click on the **Magnifying** icon in front of the **Destination Module** to browse for a module in which the business object exists.

0	Prop	erties - Start		X
B	asic	Implementation		
I	mplem	entation Type: Message		
	Messi	Browse Types		
	Туре	Find:		
	Conv	abc string		
	Def	999 int		
	Creat	te Business Object		
	Busi	iness Object		
	Na	ame:	BusinessObject_Input	
	De	estination Module:		Q
		Based on External Schema		Browse
		lelp		OK Cancel
		time		
		MaidFieldFault		
		. Usla		OK Cancel
		Help		
	Help			

Figure 11 - 157 Business Object

7. In the **Browse Module** page, create a new module by clicking on the Module button as shown in the screenshot below.

👌 Properties - St	art	23
Basic Implement	itation	
Implementation T Mess: O Brow Type Find: Conv Det 999 int Create Business Obje Name: Destination I Based or Help Help Help	🕐 Browse Modules 📃	
Help	Help OK Cancel	

Figure 11 - 158 Create Module

8. In the create module page give a suitable **Name** to the module and click on **OK** button. Select the module you just created in the Browse module page and click **OK** as shown in the subsequent figures.

Figure 11 -159 Name the Module

Create Module	22
Module: Module_Input	
Help	OK Cancel

👌 Browse Modules		x
Search:		
Search Results:		
Business Catalog		
Errors		
Events		
References		
Rules		
🗄 🕀 🖛 Services		
🗄 🕀 🔁 Types		
Module_Input		
Help	ок с	ancel

Figure 11 - 160 Selecting Module

9. In the **Create Business Object** page, click on the checkbox **Based on External Schema** and browse to the respective schema file and select the input element (**Process** in this case) from the Schema and click on **OK**.

👌 Type Chooser	×
	4 0
Type Explorer	
📄 🗁 Project Schema Files	
process	
processResponse	
Type: {http://xmlns.oracle.com/BpmApplication/BpmProject/BpmSchema}process	s
Show Detailed Node Information	
Help	Cancel

Figure 11 - 161 Select Schema for Business Object

10. The **Create Business Object** page is displayed, as shown in the screenshot below. Click **OK**.

Figure 11 - 162 Create Business Object

Create Business Object	×
Business Object	
Name:	BusinessObject_Input
Destination Module:	Module_Input
✓ Based on External Schema	acle.com/BpmApplication/BpmProject/BpmSchema}process
Help	OK Cancel

11. Now a Business Object is created. Select the Business Object that you have created for the input and click **OK** as shown in the screenshot below.

O Browse Types		— X
Find:		
999 short		<u>^</u>
ate time		
MalidFieldFault		
InvalidSObjectFault		
BusinessObject_Input		
🙀 Update		
Provide Response		
InvalidFieldFault		
InvalidIdFault		
InvalidSObjectFault		
Contracted Error Fault		Y
Module_Input.BusinessObject	Input	
Help		OK Cancel

Figure 11 - 163 Selecting Business Object For Argument

12. Properties-Start page is displayed. It contain an argument for the input.

Properties - Start	
Basic Implementation	
Implementation Type: O Message	▼
Message Exchange	
Type: 😡 Define Interface	•
Conversation: Default Advanced 	
Define Interface	
Arguments Definition	+ / ×
Name	Туре
argument_input	BusinessObject_Input
Operation Name: start	
Data Associations De Correlations	Log Handlers
Message Headers Ervice Prop	erties
Help	OK Cancel

Figure 11 - 164 Properties – Start

13. Follow the same steps to create Business object for output in the End activity of your process. Choose the respective schema file and select the Output element (processResponse in this case) from the Schema in Create Business Object page.

🕜 Properties - End				×
Basic Implementation				
Implementation Type: 💿 Mess	age			- Îl
Force commit after execution				
Message Exchange				
Type: 🦃 Define Inte	erface		-	
Conversation: Default 	Advanced			
Define Interface				
Arguments Definition			+ / X	
Name		Туре		
argument_Output		BusinessObject_c	output	
 Asynchronous () Synchr 	ronous			
Reply To:	💿 Start		>	
Throw Error			Q. 🤌	
🗱 Data Associations	D <u>Correlatio</u>	ons	Log Handlers	
* Message Headers	E Service Pr	roperties		-
Help			OK Car	ncel

14. Again proceed to the **Start** activity and click on the **Implementation** tab. Click on **Data Association** as shown in the screenshot below.

Properties - Start	×
Basic Implementation	
Implementation Type: O Message	▼
Message Exchange	
Type: 😡 Define Interface	•
Conversation: Default Advanced 	
Define Interface	
Arguments Definition	+ / ×
Name	Туре
argument_input	BusinessObject_Input
Operation Name: start	
Data Associations De Correlations	Log Handlers
Message Headers	<u>erties</u>
Help	OK Cancel

Figure 11 - 166 Data Associations for Start Activity

- **15.** New Data Association page opens. In the data objects under Process, create Data Objects for Input, Output and Response.
- 16. Right-Click on the data object and click New as shown in the screenshot below.

Figure 11 - 167 Data Association

O Data Associations	Z	
Output		
 Start □ Arguments □ ③ argument_input □ ③ Process 	Drag objects here	Process Sol
		+ × + -
From	То	
Validate target after assigning output dat	a associations	
Help		OK Cancel

17. Provide a suitable **Name** for the data object (Input in this case). In the **Type** section, scroll down and select the **Browse** option.

👌 Cre	ate Data Object
Name:	dataObject_Input
Type:	abc string 👻
	♦ duration
	📓 base64Binary
Help	199E float
	999 byte
_	999 short
	🖄 date
	🖄 time
	🔍 Browse 👻
	Browse

Figure 11 - 168 Creating dataObject

18. Browse Type page opens. Select the business object that you have created and click **OK** button as shown in the screenshot below.

O Browse Types	×
Find:	3
🖄 date	
🔯 time	
🥦 InvalidFieldFault	
🔏 InvalidIdFault	
A InvalidSObjectFault	
MunexpectedErrorFault	
👼 BusinessObject_Input	
BusinessObject_output	
P Update	
P UpdateResponse	
RealidFieldFault	
InvalidIdFault	
InvalidSObjectFault	
Contracted Error Fault	¥
Module_Input.BusinessObject_Input	
Help	OK Cancel

Figure 11 - 169 Selecting BusinessObject for dataObject

- 19. Click OK on Create Data Object page.
- **20.** Data object is created for Input which can be seen under **Data Objects** of **Process** as shown in the screenshot below.

Figure 11 - 170	Data Associations for Start Activity
-----------------	--------------------------------------

Data Associations Output		R. 📾 K
Start Arguments Harge argument_input Harge Argument_input Harge Argument_input Harge Argument_input Harge Argument_input Harge Argument_input Harge Argument_input	Drag objects here	Process Data Objects dataObject_Input id alo name alo phone alo website alo Predefined Variables SOA SOA
		+ × 4 3
From	То	
Validate target after assigning output	data associations	
Help		OK Cancel

21. Follow the same steps for creating the **Data Objects** for Output and Response (**updateResponse** in this case).

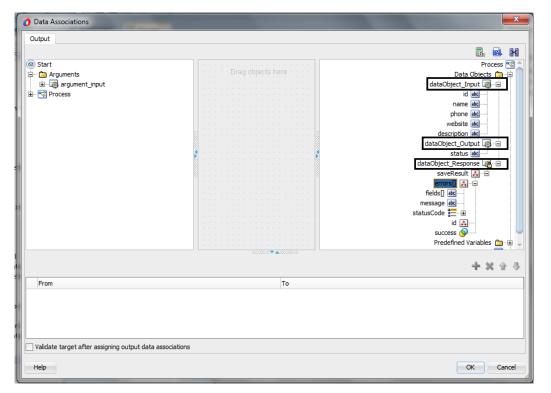


Figure 11 - 171 Data Associations For Start Activity

22. Map the argument_input under Start to dataObject_Input and click on OK button as shown in the screenshot below.

O Data Associations		X
Output		
		🖪 📾 🗷
● Start → Arguments →	Drag objects here	Process S Data Objects
Copy From: argument_input	🔢 To: dataObject_Input	🔜 🕂 🔀 🕆 🦑
From	То	
argument_input	ataObject_Input	
Validate target after assigning output data association	IS	
Help		OK Cancel

Figure 11 - 172 Mapping Source To Target

- Drag the Service activity from the Activity tab and place it in between Start and End Activity.
- 15. A new page **Properties ServiceTask** opens, as shown in the screenshot below.

Figure 11 - 173 Service Task

👌 Properties - Servi	ceTask	* Z *		x
Basic Implementat	ion			
÷	Name:	ServiceTask	۲	
	Description:			
	Is Draft:			
	∃ Sampling	Point		
Help			OK Ca	ancel

16. Click on Implementation tab and select Service call in Type Section.

Properties - ServiceTask	×
Basic Implementation	
Implementation Type: 🔯 Service task	
Force commit after execution	
Message Exchange	
Type: 📝 Service Call	-
Conversation: Not Implemented	
Service Call - Service Call	
Service: SalesforceReference	
Operation: update	-
🗱 Data Associations De Correlations	<u>llers</u>
Message Headers	
	Cancel
Help	DK Cancel

Figure 11 - 174 Selecting Type for Service – Task

17. In the **Service** section, click on **Magnifier** button and select your service for Salesforce as shown in the screenshot below.

Properties - Se	rviceTask		Sec.	X
Basic Implemen	tation			
Implementation Ty	/pe: 👩 Service task			-
Force commit a	after execution			
-Message Exchar	👌 Service	and the second se		
Type:	Search:			-
Conversation:	Search Results:			
-Service Call -	SalesforceReference			
Service: S				
Operation:				•
👯 Data Associa			<u>s</u>	
Message Hea				
Help				Cancel
Varnings	Help	ОК	Cancel	100%
1 Collaboration Histo				

Figure 11 -175 Selecting Service for Service - Task

18. Click **Data Association** and a new **Data Association** page opens as shown in the screenshot below.

Figure 11 - 176 Data Association

Data Associations		×
Input Output		
Process Data Objects dataObject_Input dataObject_Output Predefined Variables SOA	Drag objects here	ServiceTask ∰ Arguments — — update ∰ — ⊕
		+ × 4 3
From	То	
		Snipping Tool
Validate target after assigning input data as	sociations	Dran the cursor around the area
Help		OK Cancel

19. Click on the **Transformation** button and drag it to **update** under Arguments in **ServiceTask**.

Data Associations Input Output		R. 🛤 🕅
Second Secon	Drag objects here	ServiceTask @ Arguments (updit 20; -= account
		+ × ☆ ⇒
From	То	
Validate target after assigning input data as		ОК Сал

Figure 11 - 177 Adding Transformation

20. Create Transformation page opens. Now move **dataObject_Input** from the list of **Source** side to the list of **Selected** and click **OK** as shown in the screenshot below.

Figure 11 -178	Create Transformation

Oreate Transformation	X
Sources Sources:	Selected:
Target Target:	🕞 update 👻
Transformation Oreate Use Existing	dataObject_Input_parameters
Help	OK Cancel

21. Click on the Output tab and map the updateResponse from the serviceTask to the dataObject_Response in process and click OK button as shown in the screenshot below.

O Data Associations		
Input Output		
ServiceTask	Process Process Data Objects here	3
	Drag objects here Data Objects 💼 🛱	
	dataObject_Output	
	dataObject_Response Rame	
	Predefined Variables 🧰 🙃	
Copy From: updateResponse	🖳 To: dataObject_Response 🗒 👫 💥 🏠 🖑	
From	То	
📋 🚜 updateResponse	ataObject_Response	
Validate target after assigning output data associations		
	OK Cancel	
Help	OK Cancel	

Figure 11 - 179 Data - Association

- **22.** Now Perform the mapping from Source side to the Target side:
 - Map Account_Id with Id.

- Map Name with Name.
- Map Phone with Phone.
- Map website with Website.
- Map Description with Description as shown in figure

Figure 11 - 180 Mapping From Source to Target

cources> ths:Account () cources> ens:fieldsToMull () construction ens:fieldsToMull () ens:fieldsToMull () ens:fieldsToMull () ens:fieldsToMull () ens:fieldsToMull () ens:fieldsToMull () ens:fieldsToMull () ens:fieldsToMull () ens	SLT map 🔹 📌 🔹	। 🞄 🗣 📓 🔚 ।	Q Search XSLT	Map XSLT
Image: State in the state	<sources></sources>		tns:Account 🚸	ė ի
Important ContractRoles Important ContractRoles Important Important ContractRoles	ns0:process		ens:fieldsToNull 🞇… 🔅	
Image: Sign not state in the state in t			ens:Id 🚸 🕀	
Image: Construction of the stress of the			ens:AccountContactRoles 🚱 🕀	
Image: State of the second			ens:AccountNumber 📢 🛶	
Variables ens:AccountSource -0 ens:Account_Ext_Id_c -0 ens:Account_Test_Lookup_c -0 ens:Account_Test_Lookup_c -0 ens:Account_Test_Lookup_r -0 ens:Account_Test_Lookup_r -0 ens:Account_Test_Lookup_r -0 ens:Account_Test_Lookup_r -0 ens:Account_Test_Lookup_r -0 ens:Account_Test_Lookup_r -0 ens:AttachedContentDocuments -0 ens:AttachedContentDocuments -0 ens:BillingAddress -0 ens:BillingCututy -0 ens:BillingLongitude -0 ens:BillingLongitude -0 ens:BillingState -0 ens:CaseLookup_c -0 ens:CaseLookup_c -0 ens:CaseLookup_c -0 ens:ClaseLookup_c -0 ens:Clas			ens:AccountPartnersFrom 🚱 🕁	
ens:Account_Ext_Id_c -9 ens:Account_Test_Lookup_c -9 ens:Account_Test_Lookup_r -9 ens:BillingCountry -9 ens:BillingCountry -9 ens:BillingLatitude -9 ens:BillingLatitude -9 ens:BillingStreet -9 ens:BillingStreet -9 ens:CaseLookup_r -9 ens:CaseLookup_r -9 ens:CaseLookup_r -9 ens:CaseLookup_r -9 ens:ChildAccounts -9			ens:AccountPartnersTo 🚱 🕁	
ens:Account_Test_Lookup_r ens:Account_Test_Lookup_r ens:Account_Test_Lookup_r ens:ActivityHistories ens:ActivityHistories ens:AttachedContentDocuments ens:AttachedContentDocuments ens:Attachents ens:Attachents ens:BillingAddress ens:BillingCity ens:BillingCountry ens:BillingCountry ens:BillingLatitude ens:BillingLongitude ens:BillingLongitude ens:BillingState ens:BillingState ens:BillingState ens:BillingState ens:BillingState ens:CaseLookup_r ens:CaseLookup_r ens:Cases ens:Cases ens:Cases ens:Cases ens:Cases ens:Cases ens:Cases ens:Cases ens:Cases ens:ChildAccounts ens:Cases ens:Cases ens:Cases ens:Cases ens:Cases ens:Cases ens:Cases ens:ChildAccounts ens:Cases ens:ChildAccounts ens:Cases ens:ChildAccounts ens:Cases ens:ChildAccounts ens:Cases ens:ChildAccounts ens:Cases ens:ChildAccounts ens:Cases ens:ChildAccounts ens:Cases ens:ChildAccounts ens:Cases ens:ChildAccounts ens:ChildAccounts ens:Cases ens:ChildAccounts ens:ChildAccounts ens:Cases ens:ChildAccounts ens:Cases ens:Cases ens:Cases ens:ChildAccounts ens:Cases ens:ChildAccounts ens:Cases ens:ChildAccounts ens:Cases ens:ChildAccounts ens:Cases ens:ChildAccounts ens:Cases ens:ChildAccounts ens:Cases ens:Cases ens:ChildAccounts ens:Cases ens:ChildAccounts ens:Cases ens:Cases ens:Cases ens:Cases ens:Cases ens:ChildAccounts ens:Cases	🗋 Variables		ens:AccountSource 🔕 🖷	
ens:Account_Test_Lookup_r @ -@ ens:ActivityHistories @ -@ ens:Assets @ -@ ens:Assets @ -@ ens:AttachedContentDocuments @ -@ ens:AttachentDocuments @ -@ ens:BillingAddress @ -@ ens:BillingCupty @ -@ ens:BillingCountry @ -@ ens:BillingCountry @ -@ ens:BillingLatitude @ -@ ens:BillingLongitude @ -@ ens:BillingState @ -@ ens:BillingState @ -@ ens:BillingState @ -@ ens:BillingState @ -@ ens:CaseLookup_c @ -@ ens:CaseLookup_c @ -@ ens:CaseLookup_c @ -@ ens:CaseStookup_c @ -@ ens:CaseStookup_			ens:Account_Ext_Idc 📢 🕀	
ens:ActivityHistories ens:Assets ens:Assets ens:AttachedContentDocuments ens:AttachedContentDocuments ens:Attachements ens:BillingCourby ens:BillingCourby ens:BillingLatitude ens:BillingLatitude ens:BillingLongitude ens:BillingState ens:BillingState ens:BillingState ens:BillingState ens:BillingState ens:BillingState ens:BillingState ens:BillingState ens:BillingState ens:CaseLookup_c ens:CaseStookup_c			ens:Account_Test_Lookupc 🔕 🖷	-
ens:AnnualRevenue ens:Assets ens:Assets ens:AttachedContentDocuments ens:Attachements ens:BillingAddress ens:BillingCourby ens:BillingCourby ens:BillingLongitude ens:BillingLongitude ens:BillingPostalCode ens:BillingState ens:BillingState ens:BillingState ens:BillingState ens:BillingState ens:BillingState ens:CaseLookup_c ens:Cases			ens:Account_Test_Lookupr 🔕 🖷	
ens:Assets 0 - 0 ens:AttachedContentDocuments 0 - 0 ens:AttachedContentDocuments 0 - 0 ens:BillingAddress 0 - 0 ens:BillingContry 0 - 0 ens:BillingLattude 0 - 0 ens:BillingLongitude 0 - 0 ens:BillingPostalCode 0 - 0 ens:BillingStreet 0 - 0 ens:BillingStreet 0 - 0 ens:BillingStreet 0 - 0 ens:CaseLookup_r 0 - 0 ens:Cases 0 - 0 ens:Ca			ens:ActivityHistories 🔕 🖷	
ens:AttachedContentDocuments ens:Attachments ens:BillingAtdress ens:BillingAtdress ens:BillingCountry ens:BillingCountry ens:BillingLatitude ens:BillingLongitude ens:BillingState ens:BillingState ens:BillingState ens:BillingState ens:BillingState ens:CaseLookup_r ens:CaseLookup_r ens:CaseSt			ens:AnnualRevenue 🔕 🕁	
ens:Attachments ens:BillingAddress ens:BillingCity ens:BillingCounty ens:BillingCounty ens:BillingCounty ens:BillingCounty ens:BillingCounty ens:BillingPostalCode ens:BillingPostalCode ens:BillingState ens:BillingState ens:BillingState ens:CaseLookup_r ens:CaseLookup_r ens:Cases e			ens:Assets 🔕 🖷	
ens:BillingAidress ens:BillingCity ens:BillingCountry ens:BillingLatitude ens:BillingLatitude ens:BillingPostalCode ens:BillingPostalCode ens:BillingStreet ens:BillingStreet ens:BillingStreet ens:CaseLookup_r ens:CaseLookup_r ens:Cases ens:			ens:AttachedContentDocuments 🔕 🕁	
ens:BillingCity & ens:BillingCountry ens:BillingLatitude ens:BillingLatitude ens:BillingPostalCode ens:BillingStrate ens:BillingStreet ens:BillingStreet ens:CaseLookup_r ens:Cases on ens:Cases on ens:Cases on ens:Cases on ens:Cases on ens:Cases on ens:Cases on ens:Cases on ens:Cases on ens:Cases on ens:Cases on -			ens:Attachments 🔕 🖷	
ens:BillingCountry & - ens:BillingLatitude - ens:BillingLongitude - ens:BillingPostalCode - ens:BillingState - ens:BillingStreet - ens:CaseLookup_c - ens:CaseLookup_c - ens:Cases - - ens:Cases - - ens:Cases - - - - - - - - - - - - - -			ens:BillingAddress 📢 … 🗄	
ens:BillingLatitude ens:BillingLongitude ens:BillingPostalCode ens:BillingState ens:BillingStreet ens:CaseLookup_c ens:Cases			ens:BillingCity 🔕 🖷	
ens:BillingLongitude ens:BillingPostalCode ens:BillingState ens:BillingStreet ens:CaseLookup_r ens:Cases			ens:BillingCountry 🔕 🕁	
ens:BillingPostalCode ens:BillingState ens:BillingStreet ens:CaseLookup_c ens:CaseLookup_c ens:CaseSe ens:Case			ens;BillingLatitude 🔕 🖷	
ens:BillingState ()-0 ens:BillingStreet ()-0 ens:CaseLookup_c ()-0 ens:CaseLookup_r ()-0 ens:CaseS ()-0 ens:CaseS ()-0 ens:ChildAccounts ()-0 ens:ChildAccounts ()-0			ens:BillingLongitude 🔕 🕁	
ens:BillingStreet @@ ens:CaseLookupc @@ ens:CaseLookupr @@ ens:Cases @@ ens:ChildAccounts @@ ens:ChildAccounts @@			ens:BillingPostalCode 🔕 🖷	
ens:CaseLookup_c @ -@ ens:CaseLookup_r @ -@ ens:Cases @ -@ ens:ChildAccounts @ -@ ens:ChildAccounts @ -@			ens:BillingState 🐼 🕁	
ens:CaseLookup_r @-@ ens:Cases @-@ ens:ChildAccounts @-@ ens:ChildAccounts @-@			ens:BillingStreet 🔕 🖷	
ens:Cases 🕢 - 🖬 ens:ChildAccounts 🐼 - 🛱 ens:CombinedAttachments 🐼 - 🛱			ens:CaseLookup_c 🐼 🕁	
ens:ChildAccounts 🐼 🕀		· · · · · · · · · · · · · · · · · · ·	ens:CaseLookup_r 🚯	
ens:ChildAccounts 🐼 🕀		\square : $I_{i}(t)$: $t = 1$	ens:Cases 🐼 🕁	
ens:CombinedAttachments 🐼 - 🕀				
Search by local name			ens:ConnectionReceived	

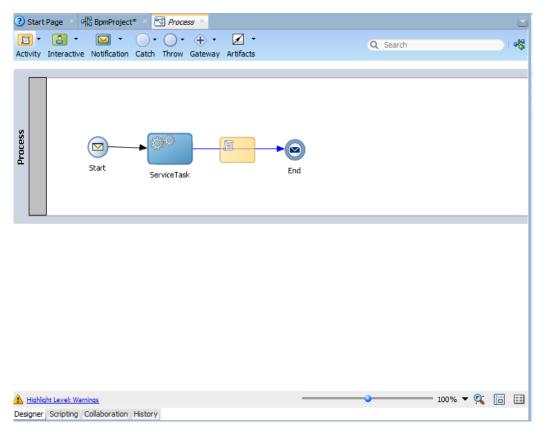
23. From the **Activity** Tab, click and drag the **Script** Activity in between **ServiceTask** and **End** Activity, as shown in the following screenshots.

Figure 11 - 181 Using Script Activity

Start Page	× 📲 Bpmf	Project* 💉 😒 P	ocess ×	2
			Q Search	
Activity Intera	ctive Notific	ation Catch Thr	ow Gateway Artifacts	
Activity	Manual	Service		
1	S	(\$P\$		
Send	Receive	Business Rule		
1				
Script	Call	Event Subp		
	29			
Subprocess	Update		Task End	

🔺 Highligh	it Level: Wa	rnings		 - 🔍	
Designer	Scripting	Collaboration	History		

Figure 11 - 182 Process



24. The **Properties-ScriptTask** page opens. Click on **Implementation** tab and then click on **Data Association** as shown in the screenshot below.

Properties - ScriptTask					
Basic Implementation					
Implementation Type: 🛐 Script task	•				
Force commit after execution					
🗱 Data Associations	Log Handlers				
Help	OK Cancel				

Figure 11 - 183 Properties - ScriptTask

25. A new **Data Association** page opens, click and drag the transformation icon to **dataObject_Output** under **DataObjects** of **Process** as shown in the screenshot below.

Figure 11 - 184 Adding Transformation

utput		
ScriptTask Carl Arguments Construction of the second sec	Drag objects here	Process C Data Objects dataObject_Input status ad dataObject_Response Predefined Variables SOA SOA
		+ × 4 3
From	То	

26. The Create Transformation page opens. Move dataObject_Response from the list of Source side to the list of Selected and click OK button as shown in the screenshot below.

O Create Transformation					
Sources: Sources:	Selected:				
Target Target:	dataObject_Output				
Transformation • Create Ouse Existing • Use Existing					
Help	OK Cancel				

Figure 11 - 185 Create Transformation

27. Perform the mapping from Source side to the Target side.

Sources> Sources> Sources> Sources> Sources> Sources> Sources> Sources> Sources> Sources> Sources> Sources> Sources> Sources> Sources> Sources> Sources> Sources> Sources So	xsl:stylesheet 🖗 xsl:template(match=/) 🛄 ins:processResponse 🚺 tns:Status 🎲
ImplateResponse ImplateResponse	xsl:template(match=/) 🛄 tns:processResponse 🚸
(iii) ns2:errors (iii) ns2:id (iii) ns2:success	tns:processResponse 🚸 🛁
(§) ns2:errors (%) ns2:id (%) ns2:success	
On ns2:id On ns2:id On ns2:success	
>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>	
Variables	
Search by local name	

Figure 11 - 186 Mapping from Source to Target

28. Double-click the **End** activity and click on **Implementation** \rightarrow **Data Association**, as shown in the screenshot below.

Properties - End	X					
Basic Implementation						
Implementation Type: 💿 Messa	ige 👻 🍙					
Force commit after execution						
Message Exchange						
Type: 🦃 Define Inter	rface 💌					
Conversation: Default A 	dvanced					
Define Interface						
Arguments Definition	₽ / X					
Name	Туре					
argument_Output	BusinessObject_output					
Asynchronous Synchronous						
Reply To:	💿 Start 🔹 🎸					
Throw Error	Sec. 201					
🞇 Data Associations	D Correlations					
Message Headers	Service Properties					
Help	OK Cancel					

29. A new **Data Association** page opens. Map the **dataObject_Output** of **Process** to the **argument_Output** of **End** and click **OK** as shown in the screenshot below.

O Data Associations		
Input		
Image: Solution of the second state of the second stat	Drag objects here:	End (@) Arguments 👝 🖨 argument_Output
Copy From: dataObject_Output	To: argument_Output	🗒 🕂 🗙 🕆 🕸
From	То	
ataObject_Output	🥵 argument_Output	
Validate target after assigning input data associations		
Help		OK Cancel

Figure 11 - 188 Data – Association Mapping

30. This completes the project creation. The composite.xml looks as shown in the screenshot below.

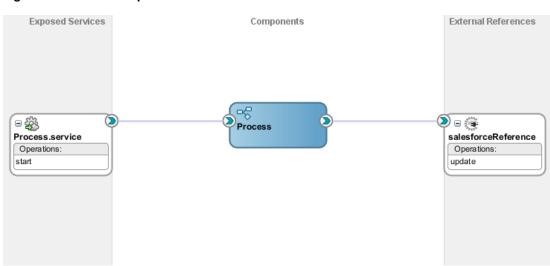


Figure 11 - 189 Composite.xml

11.2.4. Deploy the Composite

Perform the following steps to deploy the composite

1. In the Application Navigator pane, right-click BpmProject and select Deploy → BpmProject, as shown in the screenshot below.

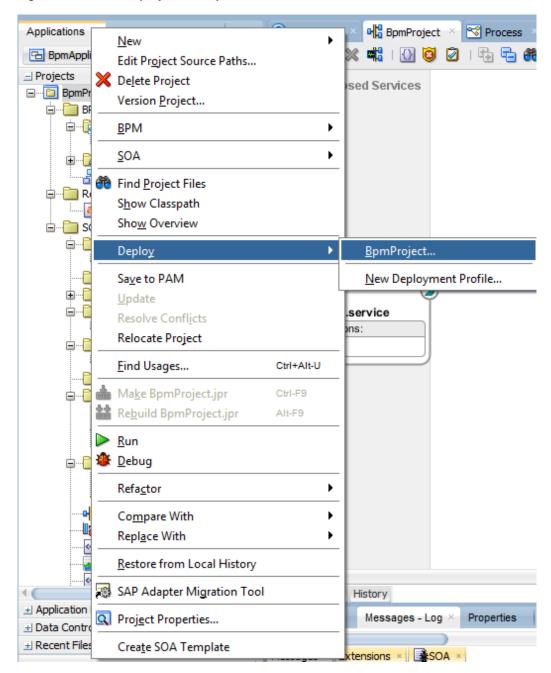


Figure 11 - 190 Deploy the Composite

2. Select the **Deploy to Application Server** option and follow the instructions. Using this option, you can deploy the composite on the Application server after providing the details of the server.

11.2.5. Test the Composite

You can run and test the instances of deployed BPM composite applications from Oracle Enterprise Manager Grid Control Console. This enables you to manage a composite application, initiate and track an instance of a composite and to view detailed component instance audit trails. Perform the following process to test the composite.

11.2.5.1 Test the Outbound Process

Perform the following steps to test the Outbound process:

- **1.** Login to Enterprise Manager Console for the server on which you have deployed the project.
- 2. Open **BpmProject** under the **Default** partition.
- 3. Click the **Test** button to test the Web service, as shown in the screenshot below.

Figure 11 - 191 Test the Web Service

BpmProject [1.0] () SOA Composite -		
Active Retire Shut Down Test Settings 👻 💁		
ashboard Composite Definition Flow Instances Unit Tests Policies		
Components		
Name		
Process		
▲ Services and References		
Name	Туре	Usage
Sprocess.service	Web Service	Service

4. Provide the input payload and click the **Test Web Service** button, as shown in the screenshot below.

Figure 11 - 192 Test Web Service



5. After successful execution, the response contains **Status** as true for Account update, as shown in the screenshot below.

Figure 11 - 193 Test Status

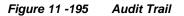
Request Response		
Test Status Request successfully received. Response Time (ms) 10802 Tree View A new flow instance was generated. Launch Flow Trace		
Name	Туре	Value
⊿ parameters	parameters	
⊿ processResponse	processResponse	
Status	string	true

6. Click the Launch Flow Trace button to view the Audit Trail, as shown in the screenshot below.

Figure 11 - 194 Launch Flow Trace

Recover - View -					Flow Instance
Error Message		Fault Owner			Fault Time Recovery
lo faults found.					
Columns Hidden 8					
Actions View Show Instan	te IDs				
Instance		Type	Usage	State	Time Composite
Process.service		Service	ut Service	Completed	May 30, 2014 6:17:41 PM BpmProject [1.0]
Process		BPMN		Completed	May 30, 2014 6:17:41 PM BpmProject [1.0]
		Reference	Reference	Completed	May 30, 2014 6:17:41 PM BpmProject [1.0]

7. Click the List view and select Tree view to see the Audit trail in detail, as shown in the screenshot below.



This page shows BPMN process instance details.

8. The Audit Trail looks like as shown in the screenshot below.

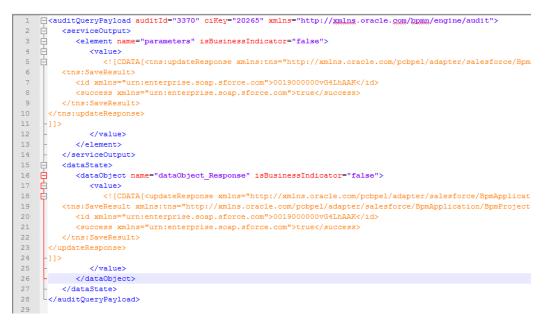
Figure 11 - 196 Audit Trail

-

it Trail		
ree View T Human Activitie	s; Service Activiti 💌	
Process	Thread 0	Instance created May 30, 2014 6:17:41 PM
Start		Activity completed May 30, 2014 6:17:41 PM
Start	Thread 0	Instance entered the activity May 30, 2014 6:17:41 PM
Start	Thread 0	Instance left the activity May 30, 2014 6:17:41 PM
ServiceTask	Thread 0	Activity completed May 30, 2014 6:17:41 PM
ServiceTask	Thread 0	Instance entered the activity May 30, 2014 6:17:41 PM
ServiceTask	Thread 0	Instance left the activity May 30, 2014 6:17:51 PM
ScriptTask	Thread 0	Activity completed May 30, 2014 6:17:51 PM
ScriptTask	Thread 0	Instance entered the activity May 30, 2014 6:17:51 PM
ScriptTask	Thread 0	Instance left the activity May 30, 2014 6:17:51 PM
🖻 End	Thread 0	Activity completed May 30, 2014 6:17:51 PM
🖻 End	Thread 0	Instance entered the activity May 30, 2014 6:17:51 PM
🖾 End	Thread 0	Instance left the activity May 30, 2014 6:17:51 PM

9. The Service Task of the process is shown in the screenshot below.

Figure 11 - 197 Service Task



10. This completes the Update Account scenario. The success of the task can be verified on Salesforce.com using the ID given by you for updating Account, as shown in the screenshot below.

David Jones			Custoniza Page Edit Layout Printable View Help for this Page
-p- snow reed			
	Opportunities (0)	Guotes (0) Contacts (0)	
Account Detail	Edit Delete Include Offline Submit for Appr	oval	
Account Owner	O Shalindra Singh [Change]	Rating	
Account Name	David Jones [View Hierarchy]	Phone	12345678
Parent Account		Fax	
Account Number		V/ebsite	http://www.david.com
Account Site		Ticker Symbol	
Туре		Ownership	
Industry		Employees	
Annual Revenue		\$IC Code	
Account_Ext_Id			
Project_Street_Address			
Project_City			
Project_Zipcode			
CaseLookup			
Account_Test_Lookup			
Billing Address Customer Priority		Shipping Address SLA	
SLA Expiration Date		SLA SLA Serial Number	
Number of Locations		Upsell Opportunity	
Created By	Shalindra Singh, 30/5/2014 11:25 AM	Last Modified By	Shalindra Singh, 30/5/2014 5:30 PM
AccountMap	onamora olign, oprozo 14 11.20 AM	Last would by	onamora origin, ourorzo re olou nim

Figure 11 - 198 Updated Account

Appendix

This appendix outlines the steps for generating enterprise WSDL for your Salesforce.com organization and how to configure the Credential Store Key in your Enterprise Manager. These steps are pre-requisites for proper adapter functioning and need to be performed only once, provided you do not make any object level changes in your organization. These sections have been referenced several times in the document and need to be followed exactly as described.

This appendix contains the following topics:

- Section A.1, "Generating the Enterprise WSDL"
- Section A.2, "CSF Key in Enterprise Manager"

A.1 Generating the Enterprise WSDL

To download the Web Services Description Language (WSDL) file, required by the adapter to integrate different applications with Salesforce.com, you must have "Modify All Data" permission. (The System Administrator profile has this permission.)

The generated WSDL defines all of the API calls, objects (including standard and custom objects), and fields that are available for API access for the organization.

Perform the following steps to generate the WSDL file for the organization:

1. Log in to your Enterprise, Unlimited, or Developer Edition Salesforce.com account. Open the Web browser and enter the following URL: www.salesforce.com

The login window is displayed, as shown in Figure A–1.



salesforce* User Name Password	GREAT CUST		
Log in to Salesforce Remember User Name Forgot your password? Sign up for free.	Learn more about Social Enterprise Learn more)	Chatter is now free for your whole company Learn more	NEW Chatter app for iPhone Get it now

2. Log in to the **Salesforce.com** using a valid user name and password.

Note that you must login as an administrator or as a user who has the **Modify All Data** permission. Logins are checked to ensure they are from a known IP address.

3. Click on User menu for user name, and select Setup, as shown in Figure A-2.

Figure A-2 Setup Window



4. Under **App Setup**, Expend **Develop** and click on **API** to display the WSDL download page, as shown in Figure A–3.

Quick Find Q Expand All Collapse All Force.com Home	API WSDL Salesforce's WSDL allows you to easily integrate salesforce to a place accessible to your development environment. Fo
System Overview	WSDL and Client Certificates
 Personal Setup My Personal Information Email Import Desktop Integration My Chatter Settings My Social Accounts and Contacts App Setup Customize Create Develop Apex Classes Apex Test Execution API Components Custom Settings Email Services 	Enterprise WSDL A strongly typed WSDL for customers who want to build an inte Generate Enterprise WSDL Partner WSDL A loosely typed WSDL for customers, partners, and ISVs who a Generate Partner WSDL Apex WSDL Click on the link below to download an Apex programming WS Generate Apex WSDL Click on the link below to download a Metadata WSDL file. Generate Metadata WSDL Click on the link below to download a Metadata WSDL file. Generate Metadata WSDL Click on the link below to download a Tooling WSDL file. Generate Tooling WSDL Click on the link below to download a Tooling WSDL file. Generate Tooling WSDL Click on the link below to generate and download a Delegated Download Delegated Authentication WSDL Click on the link below to generate and download a Delegated Download Delegated Authentication WSDL Client Certificate Click on the link below to download an SSL client certificate for

Figure A-3 WSDL Download Page

5. If the organization has managed packages installed in the organization, click **Generate Enterprise WSDL**, Salesforce.com will prompt you to select the version of each installed package to include in the generated WSDL.

OR

Right-click on Generate Enterprise WSDL and save it to a local directory.

Note that in the Right-click menu, Internet Explorer users can choose **Save Target As**, while Mozilla Firefox users can choose **Save Link As** to save it to the local directory.

6. The Save dialog is displayed, as shown in Figure A - 4.

Figure A-4 Save Dialog Box

😨 Save As		X		
C C C C C C C C C C C C C C C C C C C	► ► ► Search Libraries	٩		
Organize 🔻		?		
Favorites E Desktop Downloads Google Drive C OneDrive Recent Places C OneDrive for Bus	Libraries Open a library to see your files and arrange them by folder, date, and other properties Documents Library Music Library	- E		
Libraries Documents Subversion	Pictures Library Subversion	-		
File name: Enterprise.WSDL Save as type: All Files				
Hide Folders	<u>S</u> ave Cancel			

- **7.** Provide a name for the WSDL file and a location to save the WSDL file on your file system.
- 8. Click Save.

A.2 CSF Key in Enterprise Manager

The Oracle Cloud Adapter for Salesforce.com provides enhanced security through the Credential Store Framework (CSF) Key. This key needs to be presented on the WebLogic server where the adapter is being deployed, and has to be configured in the Enterprise Manager for the Cloud Adapter for Salesforce.com to be successfully able to retrieve the salesforce.com login credentials.

Follow the steps below to configure the CSF key in the Enterprise Manager:

Create "oracle.wsm.security" map in EM console (One-time setup)

- 1 Log in to Fusion Middleware Control Enterprise Manager
- 2 Expand 'Weblogic Domain' in the left panel
- 3 Right-click on the domain and select Security → Credentials, to display the page Credential store.

View General Administration Deployments Administration Server Administration Server Host TDCVM13S09 Administration Server Host TDCVM13S09 Administration Server Host TDCVM13S09 Administration Server Listen Port 9010 administration Server Listen Port 9010 Administration Server Listen Port 9010 prt Workbench Problems © 2 Administration Server Listen Port 9010 prt Workbench Problems © 2 Metadata Rep Control Ings peployments JDBC Data Sources JDBC Data Sources Messaging Credentials Cross Component Wiring Credentials Veb Services Security Provider Configuration Administration Administration Refresh WebLogic Domain Keystore System Policies System Policies Administration Keystore System Policies System Policies	Target Navigation	✓ Summary
SOA Administration Server Host TDCVM13S09. WebLogic Domain Administration Server Listen Port 9010 Administration Server Listen Port 9010 Prt Workbench Problems Soa_ser Diagnostics Metadata Rep Control User Messagin Logs Deployments SOA Deployment JDBC Data Sources JUSers and Groups Credentials Security Provider Configuration Administration Administration Refresh WebLogic Domain Application Roles Refresh WebLogic Domain Keystore System Policies Audit Policy		
AdminSt Home Image: Sob_ser Monitoring Image: Sob_ser Diagnostics Image: Sob_ser Deployments SOA Deployment JDBC Data Sources Messaging Cross Component Wiring Web Services Other Services Other Services Environment Administration Refresh WebLogic Domain Routing Topology Security Audit Policy	 SOA WebLogic Domain 	Administration Server Host TDCVM13S09
Logs Image: Cogs Deployments SOA Deployment JDBC Data Sources Image: Cogs Messaging Image: Cogs Cross Component Wiring Credentials Web Services Credentials Other Services Security Provider Configuration Administration Application Policies Administration Keystore Security System Policies Audit Policy Audit Policy	AdminSe Home Sob_ser Monitoring Soa_ser Diagnostics Metadata Rep Control	
Messaging Users and Groups Cross Component Wiring Credentials Web Services Security Provider Configuration Other Services Security Provider Configuration Environment Application Policies Administration Keystore Refresh WebLogic Domain System Policies Routing Topology System Policies Security Outleur	Deployments SOA Deployment	•
Outlet Services Application Policies Environment Application Policies Administration Application Roles Refresh WebLogic Domain Keystore Routing Topology System Policies Security Audit Policy	Cross Component Wiring Web Services	Users and Groups Credentials
Refresh WebLogic Domain	Environment	
er 1 Ste Contraur HDCVM	Routing Topology	System Policies
System MBean Browser	System MBean Browser	er1 Configur IDCVM:

Figure A-5 Navigation Page

- 4 In the Credential store, click 'Create Map' to create a new map
- 5 In the Create Map page, enter the 'Map Name' and click 'OK'.

Figure A- 6 Create Map



Create <CSF-KEY> under "oracle.wsm.security" map in EM console

At the time of adapter reference creation in JDeveloper, user has provide the <CSF-KEY> details in connection page. The same <CSF-KEY> information should also be available in the run-time. User needs to create it manually for the EM console.

- 1. Log in to Fusion Middleware Control Enterprise Manager
- 2. Expand 'Weblogic Domain' in the left panel
- 3. Right-click on the domain and select Security → Credentials, to display the page Credential Store.
- 4. In the Credential store, click 'Create Key' to create a new key.

- 5. In the Create Key page, select 'Select Map as oracle.wsm.security'
- **6.** Enter key as <CSF-KEY>
- 7. Select type as 'Password'
- 8. Enter User Name, Password, Confirm Password and Description (optional) details and click '**OK**'
- **9.** Import the client certificates to the trust store (DemoTrust.jks). (you can use your trust store if not default)

Adapter

An adapter is a software that an application client or an application server uses to connect to a specific Enterprise Information System (EIS).

Business Service

Also known as a Web service. A Web service is a self-contained, modularized function that can be published and accessed across a network using open standards. It is the implementation of an interface by a component and is an executable entity.

Integration WSDL

The non-polymorphic WSDL generated by the Oracle Cloud Adapter for Salesforce.com during design-time; contains the request and response structures for the selected operation and objects.

Enterprise WSDL

The enterprise WSDL file is a strongly typed representation of your organization's data. It provides information about your schema, data types, and fields to your development environment, allowing for a tighter integration between it and the Force.com Web service. This WSDL changes if custom fields or custom objects are added to, renamed, or removed from, your

organization's Salesforce.com configuration directly from Salesforce.com

- http://www.salesforce.com/us/developer/docs/api/Content/sforce_api_quickstart_intro.htm

MDS

An application server and Oracle relational database that keep metadata in these areas: a file-based repository data, dictionary tables (accessed by built-in functions) and a metadata registry. One of the primary uses of MDS is to store customizations and persisted personalization for Oracle applications.

CSF

Credential Store Framework (CSF) stores the login information of the user matched to a unique key called the CSF Key.

CSF Key

Credential Store Framework Key; used to externalize the login credentials of the user from design-time and run-time of the Oracle Cloud Adapter for Salesforce.com. The Oracle Cloud Adapter for Salesforce.com uses this key to retrieve the login information of the Salesforce.com user from the Credential Store.

OPatch

OPatch is the Oracle database's Interim (one-off) Patch Installer. If OPatch is not installed into your Oracle Home (\$ORACLE_HOME/OPatch), you may need to download it from Metalink and install it yourself. All patches that are installed with Oracle's OPatch Utility can be listed by invoking the **opatch** command with the **lsinventory** option.

Cloud SDK

Cloud Software Development Kit is a set of development tools that allows for the creation of the design-time and run-time of cloud adapters for Oracle SOA Suite.

- **CSF-** Credential Store Framework
- **DT** Design-time
- **OSB** Oracle Service Bus
- $\boldsymbol{RT}-Run\text{-}time$
- SFDC-Sales force.com
- SOA -Service-Oriented Architectures
- ${\color{black}{\textbf{SOSL}}}-{\color{black}{\textbf{Salesforce Object Search Language}}}$
- SOQL Salesforce Object Query Language
- WSDL -Web Services Description Language

А

Adapter Configuration Wizard, 1-3, 2-12 AllOrNoneHeader, 3-18 AllowFieldTruncationHeader, 3-19 Architecture, 1 AssignmentRuleHeader, 3-19 Audit Trail, 11-71 Authentication Key, 4-4 Authentication Key field, 10-6 Automatic Commit, 3-1

С

Certificate Export Wizard, 2-8 Component Palette, 4-1 convertLead, 3-2 ConvertLead, 2-5 Create XML Schema, 7-7 Create:, 2-5 Creating Outbound Processes Using Oracle Service Bus, 6-1 CSF Key, 2-2

D

Data Association, 7-36 Delete, 2-5 Design Phase, 3-22 Design-Time, 2-12 Destination Module, 11-93

E

Enterprise WSDL, 1-4 Execution Phase, 3-23

F

Filter Field, 4-7 Functional Overview, 1-1

G

getDeleted, 3-3 getUpdated, 3-4 getUserInfo, 3-11

К

М

0

Keystore, 2-11 Keytool, 2-10

merge, 3-5 Merge, 2-5

Oracle Metadata Services, 11-36

Р

Password, 2-1

Q

Query, 2-5 Query Test Tool, 3-26 queryAll, 3-15 queryLocator, 11-13

R

Refresh Bind Parameters, 4-8 Retrieve, 2-5 Run-Time, 2-13

S

Salesforce Exceptions, 3-26 Salesforce Faults, 3-26 Salesforce Host Unreachable, 3-26 Search, 2-5 Service Bus Console, 6-22 SOAP API, 1-4, 3-1 Supported Versions, 1-3

Т

Test Connection Functionality, 4-5

U

undelete, 3-5 Update, 2-5 upsert, 3-6 Upsert, 2-5 User Name, 2-1 varDone, 11-15 varQueryLoc, 11-15

W

WSDL Location, 2-16