

Siebel CRM On Demand Web Services

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INTRODUCTION

Siebel CRM On Demand offers a Web Services interface that allows customers to access their hosted data from any Web Services-enabled client. This white paper provides an overview of the Web Services architecture and details about how it can be used with Siebel CRM On Demand.

WEB SERVICES OVERVIEW

In recent years, a consortium of leading IT vendors have been working to institute a more formalized infrastructure for publishing and accessing services or processes (through remote procedure calls, or RPCs) over the Internet or a corporate intranet. These initiatives have resulted in what are now known as Web Services. A Web Service supports direct interactions with other software agents using XML-based messages exchanged via Internet-based protocols. More precisely, a Web Service is defined by the World Wide Web Consortium (W3C) as follows: “A software application identified by a URI [Uniform Resource Identifier] whose interfaces and bindings are capable of being defined, described, and discovered as XML artifacts.”¹

A Web Service supports direct interactions with other software agents using XML-based messages exchanged via Internet-based protocols.

Figure 1 illustrates the Web Services technology stack:



Figure 1: The Web Services technology stack consists of several layers.

¹ W3C, Web Services Architecture Requirements, www.w3.org/TR/2002/WD-wsa-reqs-20020819.

WSDL describes the Web Services interface and SOAP (based on XML) is the protocol for exchanging information.

Universal Description, Discovery, and Integration (UDDI)—The UDDI specification enables businesses to quickly, easily, and dynamically find and transact with one another. UDDI allows a business to:

- Describe its business and its services
- Discover other businesses that offer desired services
- Integrate with those other businesses²

Web Services Description Language (WSDL)—WSDL is an XML format for describing Web Services. WSDL enables the user to separate the description of the abstract functionality offered by a service from concrete details of a service description such as “how” and “where” that functionality is offered.³ Simply put, WSDL defines the Web Services interface, providing the initial point of contact for an external application or component.

Simple Object Access Protocol (SOAP)—SOAP provides a simple, lightweight mechanism for exchanging structured and typed information between peers in a decentralized, distributed environment using XML.⁴ It consists of a framework for describing the data in a message and how to process it and a means for encoding data types used in remote Web Service calls. SOAP messages are independent of any operating system or Internet protocol.

Web Services are based upon the universally accepted standards XML and the HTTP Web protocol, which has helped accelerate adoption. In addition, IT organizations have realized that Web Services present a tangible solution to many of their most pressing challenges. Specific benefits of Web Services include the following:

- **Reduced integration complexity**—Web Services provide greater flexibility and adaptability when integrating disparate systems.
- **Increased component reuse**—Numerous infrastructure vendors are providing mechanisms for publishing existing software components as Web Services. This approach allows organizations to maximize the value of legacy applications while decreasing total development costs.
- **Improved interoperability**—Microsoft and the J2EE community are focused on ensuring interoperability between .NET and J2EE using Web Services.
- **Migration toward a service-oriented architecture (SOA)**—While Web Services do not guarantee an SOA, leveraging Web Services for new development begins to instill the discipline required for an SOA.

² UDDI.org, FAQs, www.uddi.org/faqs.html.

³ W3C, Web Services Description Language (WSDL), www.w3.org/TR/wsdl.

⁴ W3C, Simple Object Access Protocol (SOAP) v1.1, www.w3.org/TR/SOAP/.

The WS-I standards, such as SOAP, are being quickly adopted by IT organizations because they offer increased interoperability and reduced cost of ownership.

WS-I Standards

The Web Services Interoperability (WS-I) Organization has been at the forefront of providing guidelines that will facilitate greater integration and interoperability between participating vendors. The WS-I standards have become the Web Services industry's most well-defined set of standards with the greatest momentum and industry adoption. IT organizations have been quick to adopt the WS-I standards, so they can benefit from the significant advantages over proprietary XML-RPC implementations.

The SOAP standard is at the heart of the WS-I standards and has experienced quick adoption due to its ability to overcome many of the limitations of prior technologies. SOAP can handle large, complex objects efficiently. This efficiency reduces the complexity of client applications when compared with previous technologies such as RPC, which were designed to primarily handle small objects and simple tasks.

In addition, the SOAP standard is platform-independent and defines a standard XML format for messages. The increased interoperability and reduced cost of ownership that are afforded by the use of such standards are responsible for the rapid replacement of proprietary XML-RPC implementations, in favor of SOAP and the other WS-I standards.

SIEBEL WEB SERVICES ON DEMAND

Siebel Web Services On Demand allows customers to access their hosted data via an interface that incorporates WS-I standards.

Siebel CRM On Demand contains Siebel Web Services On Demand—a Web Services interface that allows customers to access their hosted data from any Web Services-enabled client. In keeping with Oracle's tradition of supporting standards that provide superior benefits for its customers, the interface supports the WS-I standards. In contrast, many other hosted services today still continue to use proprietary XML-RPC implementations for their integration interfaces.

Siebel Web Services On Demand is a powerful integration interface utilizing the XML/SOAP industry standards. Using this interface, companies can create custom integrations with systems such as financial, order management, or e-commerce applications.

Siebel Web Services On Demand leverages the functionality of standard Web Services development tools such as those provided with the Oracle Application Server or Microsoft .NET. The identity of the external application is not relevant as long as it is Web Services-enabled—since the integration framework is Web Services-based, all the integration hooks will be provided as Web Services, facilitating integration with any application that interacts with the framework.

Customers can leverage Siebel Web Services On Demand to offer their users unique extensions and integrations to Siebel CRM On Demand.

Types of Web Services Applications

Figure 2 shows several Web Services-based applications interacting with Siebel CRM On Demand through the Siebel Web Services On Demand interface. Some common examples of client integrations include:

- **Integration of CRM and back-office applications**—Real-time sales, marketing, and service information can be retrieved from Siebel CRM On Demand and be used in financial and other back-office applications. For instance, information about recently closed opportunities can be retrieved through the Siebel Web Services On Demand interface and be inserted into an order entry system that has been fitted with a Web Services front end. In addition, information from back-office applications can be stored in Siebel CRM On Demand for instant access by users, visible in custom objects or custom fields on any Siebel CRM On Demand page.
- **Web-based portal applications**—Customized Web-based applications can be created using JSPs, ASPs, or similar Web technologies that access data via the Siebel Web Services On Demand interface. For instance, Siebel CRM On Demand customers can deploy a customized Web form on their corporate Web site, allowing visitors to submit requests for more information. The application creates new lead records in Siebel CRM On Demand for these requests, via Siebel Web Services On Demand. Another Web page allows customers to browse through solutions to common problems—all of which are stored in Siebel CRM On Demand and are retrieved in real time through Siebel Web Services On Demand.
- **Custom add-on modules**—Customers can also extend Siebel CRM On Demand functionality. Task-specific custom add-on modules can access data in Siebel CRM On Demand directly through the Siebel Web Services On Demand interface.

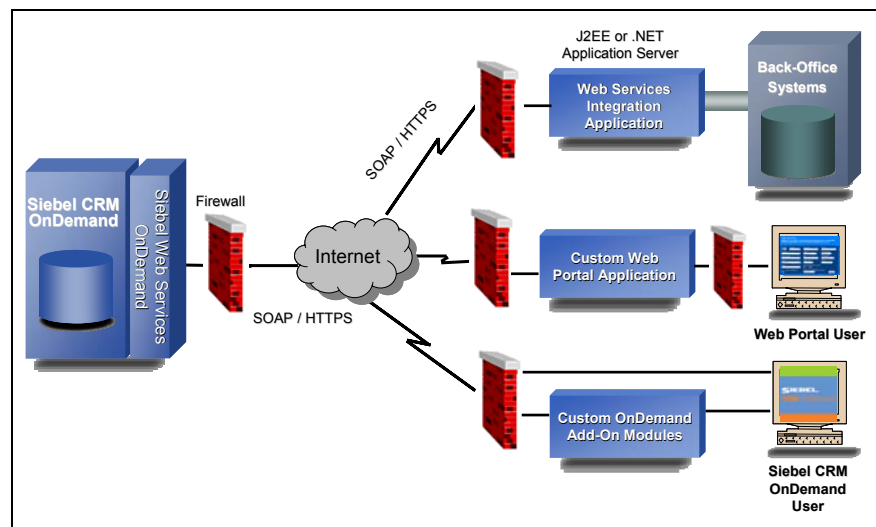


Figure 2: This diagram shows several examples of applications that use Siebel Web Services On Demand.

The steps required to access data via Siebel Web Services On Demand are straightforward.

Enabling Siebel Web Services OnDemand

Customers who wish to access their data in Siebel CRM On Demand from a Web Services-enabled client perform the following steps:

- A Siebel CRM On Demand Customer Care representative enables Siebel Web Services On Demand for the company. (For security reasons, this capability is not automatically enabled for new companies, unless specifically requested in advance.)
- The customer's designated CRM On Demand Administrator accesses the Siebel Web Services On Demand Administration page in Siebel CRM On Demand.
- The Administrator downloads WSDL files that have been published for the Siebel CRM On Demand entities that the Administrator wishes to access.
- The company incorporates the WSDL into its Web Services development environment—for instance, by generating Java or C# (“C Sharp”) proxy classes.
- Web Services-enabled clients, including client applications written in any language that interacts with the Web Services framework, establish a secure session with Siebel CRM On Demand. Throughout this session, they interact with the published Siebel Web Services On Demand entities to perform data retrieval, modification, creation, and deletion operations. All requests and resulting data are formatted as standard XML/SOAP messages.

Standards Support

Siebel Web Services On Demand incorporates the following standards: WS-I, HTTP 1.1, SOAP 1.1, XML Schema 1.0, and WSDL 1.1.

Accessing Data with Siebel Web Services On Demand

In order to use any Web Services capability, customers need to know which entities they have access to and what operations they can perform on those entities. In addition, they should be aware of the mechanisms that are in place to protect the security of their transactions. These three areas are discussed in more detail below as they relate to Siebel Web Services On Demand.

Published Web Services interfaces provide access to Siebel CRM On Demand parent and child entities, including custom objects and custom fields.

Published Entities

Siebel Web Services On Demand publishes a Web Services interface for CRM On Demand entities (such as Account, Contact, and Service Request). The interface provides access to fields defined for each entity.

In addition to the fields that are available for each major Siebel CRM On Demand entity, each entity defines a number of associated child components. For instance, the Account entity contains child components for Contact, Opportunity, Account Team, Service Request, Activity, and Note, among others.

Web Service requests may specify fields in the parent component as well as the child components, affecting both parent and child records in a single operation. For example, the Account entity contains Contacts among its child components; therefore, a query on the Account entity can retrieve Account records and associated child Contact records in a single request. In addition, inserts or updates that affect both parent and child records can be performed as one operation. This greatly simplifies client integrations, while providing very powerful query capabilities.

A key feature of Siebel CRM On Demand is the ability to create custom fields for every major entity, allowing quick customization of the service to meet a company's specific business needs. The Siebel Web Services On Demand entities provide access to all the custom fields that have been defined for a company.

Data Manipulation

Changes to data are performed via standard methods defined for each published entity.

Integration clients can manipulate data in Siebel CRM On Demand by calling methods that are defined for each published entity. These methods provide the ability to insert, update, and delete data—a row at a time, or with multiple rows at once. Table 1 lists the data access methods available to integration clients.

Method	Description
Insert	Insert a new record and associated records for any included child components.
Update	Update the specified record and associated records for any included child components.
InsertOrUpdate	If the record does not exist, perform an insert; otherwise update the existing record. Child components are also inserted or updated as appropriate.
Delete	Mark any records matching the example object as deleted (move them to the Siebel CRM On Demand "Deleted Items" container).

Table 1: Integration clients can manipulate Siebel CRM On Demand data in several ways.

Data access requests can apply to a single record or batches of records. For batches, the same methods are used—the SOAP message simply contains multiple records. Having one intelligent method for each type of data access operation means less complexity and more flexibility for integration clients.

Siebel Web Services On Demand offers a flexible and powerful query capability with Query By Example syntax support.

Advanced Query Capabilities

In addition to data access operations, customers need a mechanism for retrieving their hosted data for use in Web sites or other internal applications. The Siebel Web Services On Demand query capability is both flexible and powerful. The QueryPage method is available to integration clients to return data that matches query criteria. Data is returned in batches (“pages”) of a specified number of records, through multiple fetches, if necessary.

A straightforward Query By Example (QBE) syntax is supported for query requests. A single query request may specify matching criteria for multiple parent and child component fields. Standard operators like “>,” “<,” “>=,” “<=,” “<>,” “IS NULL,” “=,” and “LIKE” for wildcard matching are supported. In addition, case-insensitive matching and complex expressions, such as ones using AND and OR, may be used.

By default, queries return data from all fields for an entity and its child components. A “query by template” option is also available, allowing granular control over the fields and child components returned. This is done through intuitive “query by template” semantics, which allow desired entity fields, child components, and child component fields to be specified by SOAP tags in the query request. By restricting the results to only the required information, network performance is improved and client processing logic is greatly simplified.

The XML/SOAP syntax for a simple query is shown in Figure 3. The query returns accounts and contacts in the West or Central regions, where contacts were updated after a certain date and time. Because of the “query by template” format, the query only returns the account and contact fields that are specified in the query. In this example, only account Name and Region data will be returned for each account record, and only LastUpdated, FirstName, and LastName data is returned for the child contact records.

Intuitive “query by template” semantics improve network performance by returning only the specific data that is requested for parent and child objects.

```
<ListOfAccount>
  <Account>
    <Name />
    <Region>= 'West' OR = 'Central'</Region>
    <ListOfContact>
      <Contact>
        <LastUpdated>&gt; '01/17/2006 09:00:00'</LastUpdated>
        <FirstName />
        <LastName />
      </Contact>
    </ListOfContact>
  </Account>
</ListOfAccount>
```

Figure 3: This is an example of an XML/SOAP message for a query.

Several utility services are also provided, enabling very sophisticated and flexible client integrations. For example, the GetServerTime service can be used to synchronize the integration client’s clock with the Siebel CRM On Demand server clock, for very precise, time-sensitive operations. A service to retrieve the list of

valid values for picklists—as customized by the customer in Siebel CRM On Demand—is also available.

Security and Reliability

Siebel Web Services On Demand is a robust offering that includes the following security features:

- All communications are encrypted using SSL for security (minimum 128-bit).
- Access is session-based, requiring authorization with a valid Siebel CRM On Demand user name and password.
- Inactive sessions are closed automatically after a period of inactivity.
- The same data visibility and access capabilities that a user experiences when using the Siebel CRM On Demand hosted service are enforced for that user when connected via Siebel Web Services On Demand. Data visibility and access are restricted by the role that a company has assigned to a user. Permissions are checked every time data is accessed.
- A full audit trail of Web Services activity is maintained and available to a company's CRM On Demand Administrator through Siebel CRM On Demand Administration pages.
- A number of other proprietary solutions are in place to protect the system against malicious use of the Web Services interface. These are constantly reviewed and improved as new technologies and techniques become available.

To establish a connection with Siebel CRM On Demand through the Siebel Web Services On Demand interface, sessions are created via standard HTTPS requests. A client simply creates a new session using the “login” operation and closes it with “logout.” When a session is created, an encrypted session identifier is provided to the client. To ensure security, the session identifier must be included with each request during that session.

Rate and Session Limiting

Ongoing monitoring—including number of sessions per company, volume of messages, and data transfer rates—is performed for Web Service requests to safeguard against accidental or intentional misuse of the system. When limits are exceeded, the system automatically enforces limits on offending users. These built-in protection features ensure equitable sharing of system resources and also protect against unexpected performance swings that may result from a large number of users accessing the service at the same time.

Siebel Web Services On Demand is a highly secure interface. All transactions are encrypted and role-based data visibility rules defined in the Siebel CRM On Demand application are enforced.

Siebel Web Services On Demand offers customers a powerful, standards-based solution that allows integration of their Siebel CRM On Demand data with all of their Web Services-based applications.

CONCLUSION

By enabling different applications to communicate with each other via open standards over an Internet protocol backbone, Web Services promise to greatly reduce the cost and complexity of application integration.

Siebel Web Services On Demand provides the most standards-based, flexible solution available in a hosted CRM service today—including support for the latest WS-I standards. The advanced query capabilities, batch data access functionality, security features, and ease of use are unparalleled.

Using this rich framework, customers have a powerful tool that allows integration of their Siebel CRM On Demand data with all of their Web Services-based applications. By allowing customers to easily share data between their on premise systems and the Siebel CRM On Demand hosted service, Siebel Web Services On Demand provides the means for organizations to create a unified view of their data, while leveraging the significant advantages of a hosted solution.

For More Information

For more information call 1-866-906-7878 or visit www.crmondemand.com.



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