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Application Note for OpenAccess™

Subject: Adding a Flexible Query Mechanism to a Web Service

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Introduction

Service-oriented Architecture (SOA) - and the growing use of discrete, self-contained business services-has become widely recognized as the most relevant strategic direction for enterprise computing. One of the requirements for a well-designed SOA is that the services provide flexibility to allow its use in future applications.

Implementing a flexible service for enterprise applications means implementing a query language in order to enable the selection and filtering of the large amount of information that may be accessible from the service. Structured Query Language (SQL) is a very powerful language that has been used for many years for accessing and processing data using the relational database management concepts.

OpenAccess™ can be used to add SQL compliant query feature over your data being managed by the Web Service. For example, if you are exposing a service over a CRM type of an application, you can expose a query() method that can be called to return filtered data from the various object type accessible through that service. Say you want to get all accounts assigned to a sales person X:

select * from ACCOUNTS where MANAGER='Joe Smith'

OpenAccess was designed from ground up to allow the efficient processing of SQL queries over many types of data management mechanisms. The interface between the OpenAccess SQL engine and the customized code layer (what we call the Interface Provider) has been designed to allow efficient processing of SQL on top of legacy file structures, objects implemented in C++, .NET or Java, memory data stores, and many other data structures. This design allows the OpenAccess SQL engine to be embedded within a Web Service container to process the incoming query on the data managed by the application server.

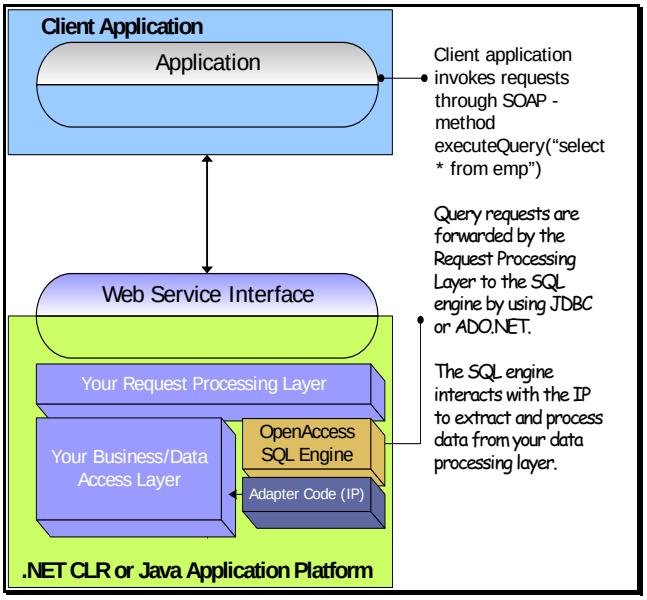

Figure 1: OpenAccess Based Solution

OpenAccess Solution

OpenAccess SDK provides the framework and pre-built components to quickly allow any data source

that is accessible through C, C++, Java, or .NET to appear and behave like a SQL database.

Figure 1 shows an implementation of a Web Service that supports SQL query to the underlying data. A query is issues through a method exposed by the Web Service. The Web Service implementation accepts the incoming query and calls a method in the OpenAccess SQL Engine to execute it. The SQL engine then uses the methods exposed by the Interface Provider to execute the query against the data source. The results are returned to the web service interface routine as record sets which can then be transformed into a XML format.

OpenAccess supports .NET and Java by allowing the integration code for your data source to be written in .NET language or in Java. This means you have direct access to your application data using the classes you have already implemented in your environment. For example, to SQL enable a Java data source all you have to do is implement a Java class that exposes the OpenAccess IP interface and write the required glue in Java.

The OpenAccess SQL engine is packaged as a Java and a .NET class so that in can be embedded within you application whether you are coding in Java or in .NET.

OpenAccess is supported on most of today's popular platforms and can be used to implement a SQL query interface in Java or .NET platform.

Your Development Effort

1. Design and code the adapter code in Java, or .NET (14 days)
2. Do your QA (4 days)
3. Package up for distribution (2 days)

Expected time of completion: **20 man days**

Conclusion

OpenAccess Query for Web Services SDK allows you to implement a powerful query processing capability as part of your web service. This makes the web service more flexible and easier to use. OpenAccess includes 99% of what you need to put in place a powerful query capability over your data or business logic. Use of a proven engine gets you to market quicker with a more feature rich offering.