Using Sybase WorkSpace to Build Service Oriented Architecture (SOA) Applications Quickly

Demonstration of a Commercial Tool

Meyer Tanuan

Sybase Canada
445 Wes Graham Way
Waterloo, Ontario N2L 6R2
mtanuan@sybase.com

Abstract

In the past years, there is significant growth in the number of new technologies for Java developers. More recently, Web Services and Service Oriented Architectures (SOA) are becoming popular. Projects are now more complex and are becoming more challenging to complete on time. Sybase WorkSpace is a service-oriented unified design and development environment that includes the power of enterprise modeling with comprehensive tooling capabilities. This demonstration shows how enterprise modeling, database development, Web application development, services-oriented development and orchestration, and mobile development all come together to build SOA applications quickly. It demonstrates how Sybase WorkSpace integrates the most important design and development tools in an easy-to-use open-source framework.

Categories and Subject Descriptors D.1.5 [*Programming Techniques*]: Object-oriented Programming; D.2.2 [*Software Engineering*]: Design Tools and Techniques—Computer-aided software engineering (CASE); D.2.6 [*Software Engineering*]: Programming Environments—Integrated environments;

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1. Description

Service-Oriented Architecture (SOA) is a set of frameworks, patterns, design & development principles enabling the implementation of loosely coupled software applications based on services as the architectural elements. A typical SOA application consists of services that encapsulate existing information sources from databases, messaging, Java classes, Simple Object Access Protocol (SOAP) and Enterprise JavaBeans (EJB). This demonstration will focus on how Sybase WorkSpace [4] helps build Service-Oriented Web applications quickly.

When building SOA-based applications, we add a service layer to an application in order to expose the business capabilities as services. The service layer provides services to different types of clients. To achieve this, the service layer will have different entities such as Web services, service registries (UDDI), service contracts (WSDL), and proxies that bind these services to an application [1]. We can provide new business processes by integrating services from a variety of service providers. The Eclipse Web Tools Platform (WTP) [2] extends the Eclipse-based Java integrated development environment (IDE) into the domain of Web applications. Unlike WTP that does not have tools for service orchestration, Sybase WorkSpace supports the design and execution of business processes.

Sybase WorkSpace has integrated tooling that includes the enterprise modeling to design databases and create tables, stored procedures and other database objects. Based on the Figure 1 below, Business Process (BP) service, a component of Unwired Orchestrator (UO), drives the entire business transaction's life cycle (e.g., from a customer order gets entered up to when it gets filled, shipped and paid). The UO packages and deploys services directly to the application server such as Sybase EAServer from within the Sybase WorkSpace. Business Activity Monitoring (BAM) is a monitoring tool that listens to the business process data and provides message alerts based specific business rules.
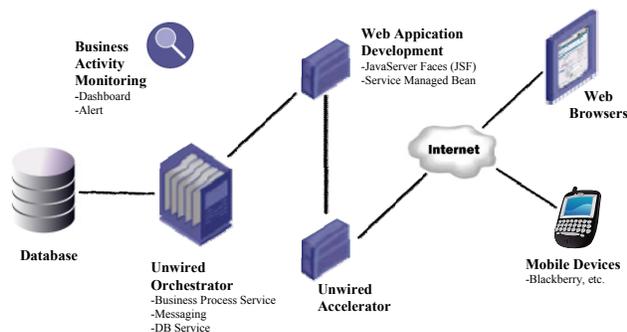
Figure 1. Example SOA Application Using Sybase WorkSpace

To access the services provided by the UO, we use the Web Application Development component of Sybase WorkSpace to build the presentation layer using JavaServer Faces (JSF). To create the GUI presentation for mobile devices, we use the Unwired Accelerator to create, preview and test the JavaServer Pages (JSP). Figure 1 was taken from a Sybase TechWave 2007 technical session that demonstrated the building of a SOA shopping cart application from scratch [3].

Sybase WorkSpace leverages the open-source Eclipse tooling framework and combines it with visual drag and drop development, debugging tools, sample code and cheat sheets, to drastically reduce manual coding and to cut the typical development tool learning curve.

2. About the Author

Meyer Tanuan received the MMath (2001) degree in Computer Science from University of Waterloo. Currently, he works as a full-time professor at Conestoga College where he teaches systems analysis and design, database application development, computer programming and software development courses including .NET and J2EE technologies. He also works as a part-time Staff Software Engineer under the Sybase EAServer and Sybase Work-Space QA organization.

Acknowledgments

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