

Sybase® WorkSpace

The Future of Development



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SYBASE WORKSPACE GIVES DEVELOPERS FREEDOM AND FLEXIBILITY

Sybase WorkSpace, a unified application development environment, is the first designed to bridge the gap between the vision of a service-oriented architecture (SOA) and the reality of what traditional development tools can deliver. Sybase WorkSpace combines modeling, data management, services assembly and orchestration, Java™ development and mobilization in a single tool. Designed to support the principles of service-oriented development of applications (SODA), Sybase WorkSpace enables developers to quickly build and deliver many kinds of applications: from event- and data-driven applications to web-based, composite, and mobile applications. Sybase WorkSpace is built upon the Eclipse open source framework, making it easier and faster for developers to build complex applications that leverage heterogeneous infrastructures.



Eclipse is an open platform for tool integration built by an open community of tool providers. The Eclipse platform provides tool developers with ultimate flexibility and control over their software technology, giving developers freedom of choice in a multi-language, multi-platform, multi-vendor environment. Sybase was named a member of Eclipse in March of 2002 and a strategic board member in February 2005, joining an impressive list of industry leaders. Sybase is the leader of the Data Tools Platform project in Eclipse.

Source: www.eclipse.org

WHAT THE FUTURE OF DEVELOPMENT LOOKS LIKE.

Application developers seek a future in which critical information is delivered to employees, partners, and customers anytime, anywhere. Today's legacy of fragmented, heterogeneous technology infrastructures makes this a difficult task. SOA has gained momentum as a set of design principles to simplify the challenge of turning silos of data and business logic into a responsive flow of information.

While traditional development tools have made it easier and faster to build applications, they focus on creating individual applications that must then be integrated with each other. SODA is a natural evolution from traditional methods of application development, encompassing the tools and strategies to successfully reach the vision of SOA. Sybase WorkSpace supports a wide variety of application development styles, and allows developers to focus on higher level business process flows, rather than on making multiple components work together.

STAY ON THE CUTTING EDGE OF DEVELOPMENT

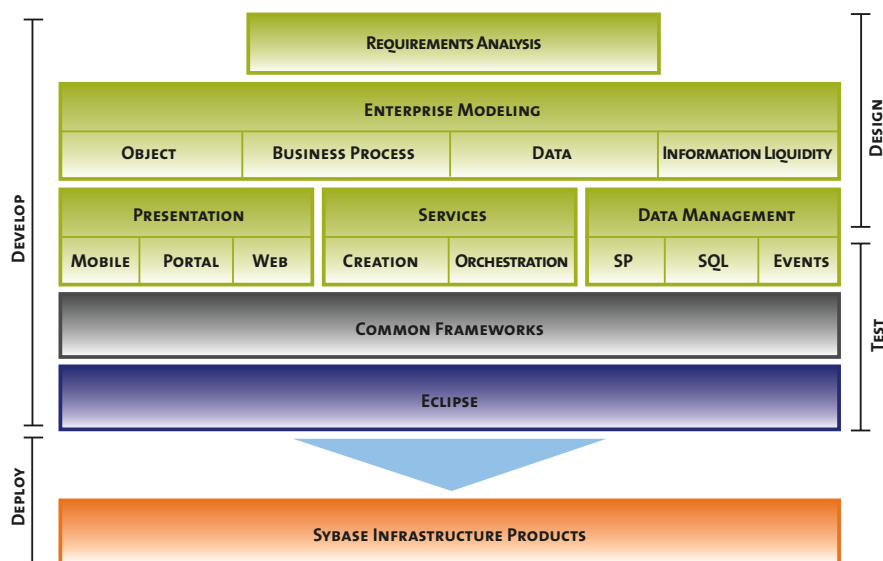
The choice of a development platform may vary depending upon the complexity of the application, the number of users, or the types of systems involved. With Sybase WorkSpace, developers can choose the right level of tooling functionality depending upon the characteristics of the target application. Sybase WorkSpace provides a powerful combination of productivity features present in graphical development styles while also automating more of the development process. Within one unified development environment, developers now have all the tools needed to deliver cutting edge applications quickly and efficiently.

KEY BENEFITS:

- Reduce the complexity of combining legacy and services-oriented applications
- Improve productivity with multi-mode development in a single tool
- Improve business agility through faster, flexible development
- Reduce errors and time spent on mundane tasks
- Reduce the cost of software maintenance through better design discipline
- Quickly mobilize information; extend Java to mobile development

ARCHITECTURAL OVERVIEW

Sybase WorkSpace presents a visually rich graphical environment that takes the developer through the stages of development. Integrated modeling, data management, Java development, services assembly, orchestration and mobile tools for application development are all supported in a unified way.



At the core level, Sybase WorkSpace uses services to aid developers in bridging diverse information sources. Sybase WorkSpace uses these discrete services in various kinds of applications such as Web applications, data- and event-driven applications, and true service-based composite applications. Developers can then implement an application using SODA as the design guideline across application boundaries.

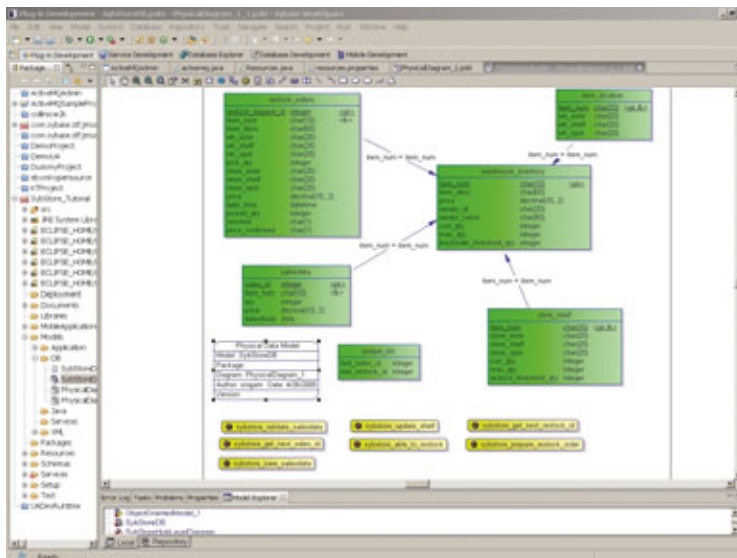
Sybase WorkSpace simplifies the linking of heterogeneous infrastructures including databases, messaging systems, and enterprise applications. This allows for rapid development of complex applications.

To support the full vision of SODA and mixed-mode development, Sybase WorkSpace includes the following major components: Enterprise Modeling, Database Development, Service Assembly and Orchestration, Java Development, and Mobile Development.



Enterprise Modeling.

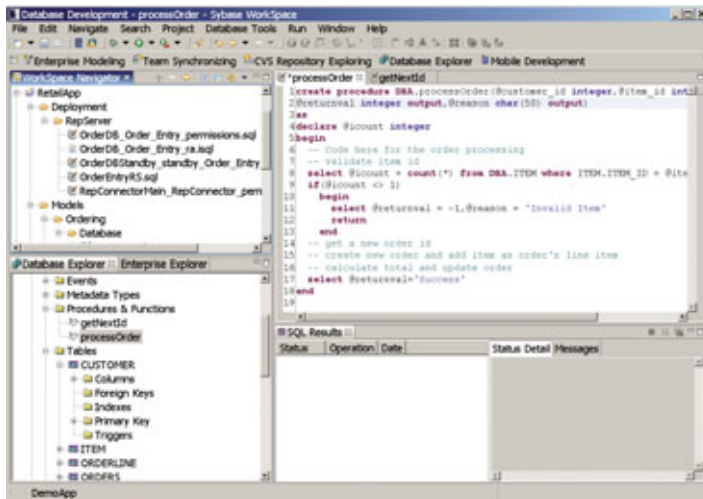
Sybase WorkSpace enables developers to model business processes, services, database schemas, XML, and EJBs. Developers can easily verify and refine models with built-in analysis and re-design features. Comprehensive round-trip engineering support ensures models and code are never out of synchronization. Sybase WorkSpace supports



requirements definitions that can be linked to any number of analysis and design models, to document requirement traceability. The model-driven approach to business process modeling allows analysis-level models to be created that document the business view and the technology view of an SOA. Supporting robust data modeling, Sybase WorkSpace's conceptual and logical models provide analysis level models, fully linked to multiple physical models for true multi-level design. Sybase WorkSpace includes full information liquidity modeling, to document data replication and synchronization, ETL layers and more. Sybase WorkSpace also supports XML-specific modeling techniques to document, generate and reverse engineer XML Schema and XML DTD structures. The XML models are linked to process models to document message formats or other XML exchanges.

Service Assembly and Orchestration.

Sybase WorkSpace supports SODA in a variety of ways within different modules. Business process activities can be bound to service invocations, and similarly, service interfaces can serve as inputs for mobile application definition. Services in the context of Sybase WorkSpace are above and beyond what is referred to as "Web Services" in the industry. Sybase WorkSpace maintains a clear separation between Service Consumer and Service Provider definitions. Service consumers can access services through various protocols such as HTTP and JMS using the access mechanisms for service definitions. The actual endpoint for service definition is independent of the access mechanism and is supported both by development time and deployment time realization. Quality of Service (QOS) characteristics can be assigned for setting boundary conditions for service delivery.



Sybase WorkSpace allows developers to visually capture business processes, and provides run-time bindings of these business processes to services derived from existing legacy sources or new service interfaces developed within Sybase WorkSpace. By using a visual model based on Business Process Modeling Notation (BPMN), Sybase WorkSpace provides a highly descriptive representation of the business's underlying processes. The process description is captured in a Business Process Execution Language (BPEL)-compliant document and is used to configure the run-time execution. Integration tooling is tightly integrated with the Business Process Model from the design-time tooling that enables a real-time

synchronization between the abstract model and concrete bindings of the business process. Sybase WorkSpace brings legacy data definitions and custom wire transforms into the business process definitions. With support for transformation development between various data definitions, Sybase WorkSpace bridges different information service sources from a visual design perspective.

Database Development.

Sybase WorkSpace supports the full spectrum of requirements across all of Sybase's data management and movement platforms including Sybase Adaptive Server® Enterprise, Sybase Adaptive Server Anywhere, Sybase IQ, Replication Server®, and Sybase MobiLink Server. This included features such as database modeling, database navigation, SQL development, SQL tuning, service generation and consumption, and debugging and testing.

Data tooling within Sybase WorkSpace caters to the needs of developers who build applications targeting databases such as Sybase ASE and Microsoft® SQL Server®. Sybase WorkSpace provides user-friendly visual SQL tools to generate and manage SQL code. Rich content assist functionality in data management tooling provides auto-completion for SQL keywords, tables, table columns, parameters, and so on, within the context of the tool used to edit various SQL artifacts (SQL Queries, Stored Procedures, etc.). This code generation can be controlled with a user-definable SQL code template to allow the reuse of repeated SQL code segments. By validating the syntax of the SQL construct before being deployed or executed on the database, Data management tooling reduces the round-trip delay caused by server-side verified SQL. Sybase WorkSpace tooling has the ability to run and debug procedural objects including stored procedures, triggers, events, and user-defined functions.

Java Development

Sybase WorkSpace leverages the Eclipse Java Development Tools (JDT) plug-in for Java development. There are also dozens of open-source plug-ins for a wide variety of Java development needs, which can be downloaded and used in sync with Sybase WorkSpace. Out of the box, the JDT plug-in includes a robust Java editor, including code assist and code select support; full debugging support; wizards for creating Java elements; and a Java compiler.



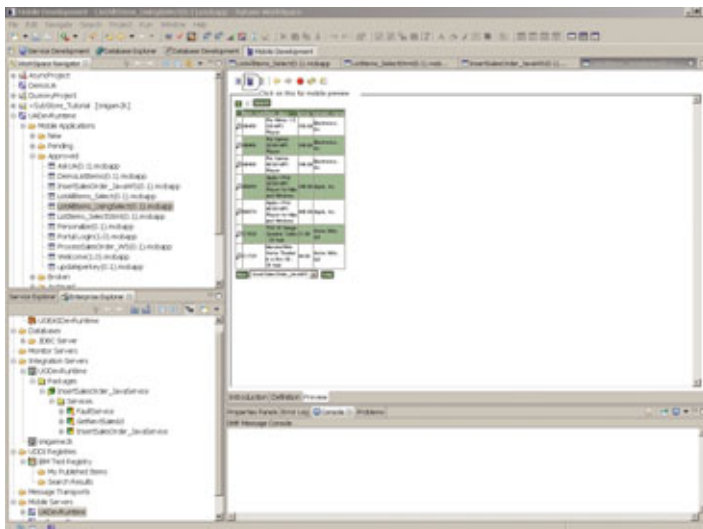
Mobile Development.

Sybase WorkSpace provides the ability to rapidly mobilize multiple kinds of resources. By supporting a wide range of devices (i.e., Blackberry®, Pocket PC®, and Palm®) similarly, developers do not have to deal with the intricacies of these devices. Mobile functionality within Sybase WorkSpace is a visual development environment targeting various data sources configured through the common enterprise navigator. There is a tight integration with other development tasks within the WorkSpace environment. For example, to expose database content for mobile users, developers can visually create the database query, then simply drag-and-drop the query artifact on the mobile application development tool. Services that can be publicly used can be pulled over from the service palette to serve as information sources for the mobile applications. Information from database, web, XML and other sources can be delivered to mobile users through mobile applications developed in Sybase WorkSpace.

Although it is flexible and extensible, Java development of mobile applications presents unique challenges.

Sybase WorkSpace enables applications to be deployed to the “point of impact”—the user or decision maker—on

time, in a usable form, using a durable architecture, and by leveraging existing assets. Sybase WorkSpace enables codeless mobilization of all kinds of enterprise applications and codeless mobilization of services. Sybase WorkSpace allows use of Java and J2EE as the programming platform, and includes a patent pending process to allow for occasionally connected service invocation.



DELIVERING SODA ON ECLIPSE

With this new offering, Sybase is demonstrating its proven industry leadership as a powerful and flexible technology platform for building and deploying SOA-based and composite business applications. Sybase WorkSpace combines modeling, data management, Java development, service assembly, orchestration and mobile deployment in a single tool. No other IDE offers a similar breadth and depth of functionality

With Sybase WorkSpace, developers can now easily develop a range of applications—from Java components to data-driven and event-driven applications, to mobile applications and beyond. This means developers are better equipped to respond to more demanding and rapidly evolving business requirements. By eliminating the need to purchase and learn multiple development styles to support different application requirements, Sybase WorkSpace reduces the cost of development. Most important, Sybase WorkSpace's visual environment and high level of automation mean applications get to market faster, and allow developers to focus on more innovative and purposeful development projects.

LEARN MORE ABOUT SYBASE WORKSPACE AND OTHER SYBASE SOLUTIONS FOR EFFICIENTLY DEVELOPING AND DEPLOYING APPLICATIONS.

WWW.SYBASE.COM/WORKSPACE

FEATURES

Overall Features

- Easily view databases, application servers, message queues, integration servers, mobile servers and UDDI registries with Enterprise Explorer
- Quickly perform standard tasks through cheat sheets
- Increase productivity with visual development and drag-and-drop features
- Common, Eclipse 3.0-based framework provides extensibility and open standards support

Enterprise Modeling

- Manage and analyze requirements; manage change through impact analysis
- Reverse engineer models from existing databases and applications
- Model database schemas, EJBs, services, and automated processes
- Use code generation to create object code, database scripts, replication scripts and services

- Support for open standards, including UML, XML and BPMN
- Design data movement graphically with Information Liquidity modeling

Data Tooling

- Visually create and edit database objects, including tables, stored procedures, events and user-defined functions (UDF)
- Navigate and manipulate database objects in the enterprise
- Export and import database objects and services to database servers
- Visually debug stored procedures, triggers, ASA events and ASA UDFs
- Support for ASE, ASA, ASIQ, and Rep Server

Services and Integration

- Discover components within the enterprise; expose as services
- Assemble composite applications visually from mixed Java and non-Java logic elements

- Create services from Java components, pre-defined processes, rules, database procedures, and messages
- Support for both SOAP and WSIF access interfaces

Event-Driven Development

- Create event messages to and from application components and assemble into simple message producer/consumer applications
- Create brokered event-driven applications using the Transformation Service
- Launch automated processes from events
- Use Message Designer feature to transform between Custom Wire Format, and leverage Sybase's patent-pending high-speed transformation engine

Mobile Development

- Instantly mobilize database procedures, applications, and services

- Deploy to handheld devices supporting both online and offline access
- Manage pages and composite applications

Testing and Deployment

- Create clean separations between packaging and deployment
- Use one-click wizards for both packaging and deployment
- Automate testing and dependency checking

Team Development

- Create seamless integration with Eclipse Team Providers, including automated access to source code control
- Export and import projects
- Boot-strap projects and share best practices with project templates
- Check and manage dependencies with built-in reference manager for resources and artifacts

