

WebSphere Development Studio for iSeries White Paper:

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IBM has executed a major shift in the packaging of IBM application development tools for the iSeries server. Rather than continuing to sell individual tools and compilers, this package consolidates all the key iSeries server development tools, both host and workstation, traditional and new, into one convenient, integrated, and attractively-priced iSeries offering. The new suite is a no charge upgrade from any of the IBM iSeries server Application Development tools with software subscription. It is designed to help developers rapidly expand the number of web-enabled, e-business applications for the iSeries server and allow the iSeries server to realize its potential as a premier e-business and Java server.

WebSphere Development Studio for iSeries supports e-business application development by delivering an open standards-based product that supports all the programming language technologies available on iSeries. The package includes the following host-based tools: Application Development Tool Set (ADTS), Integrated Language Environment (ILE) RPG, ILE COBOL, ILE C, and ILE C++. The package also includes unlimited workstation licenses of the following workstation-based tools: WebFacing Tool, WebSphere Studio for iSeries, VisualAge for Java for iSeries, CoOperative Development Environment (CODE), and VisualAge for RPG. WebSphere Development Studio for iSeries is designed to address three types of development projects: building new e-business applications, porting e-business applications from other platforms, and extending existing 5250 applications to the Web.

Building new e-business application

To address the needs of iSeries developers for creating new Web applications, IBM has enhanced WebSphere Studio (Professional Edition) by adding unique iSeries server support. Wizards have been added to provide easy access to iSeries server data and applications. Another wizard generates the code to publish the Web application to WebSphere Application Server. Enhancements to the page designer provides support for iSeries server subfiles and data types as well as edit code support. VisualAge for Java, Professional Edition, has been enhanced by adding Enterprise Toolkit/400 (ET/400) to provide easy access to iSeries server data, applications and system capabilities to make it easier to write or port Java applications to iSeries. The degree of integration between WebSphere Studio and VisualAge for Java has increased dramatically in the last two releases. The products work extremely well together in the current releases. The integration of these components reaches a new level in the next release - see the Futures section. When you are creating new e-business applications, you can develop the iSeries server business logic in the traditional iSeries server languages, ILE RPG and ILE COBOL, or use VisualAge for Java. If the solution is designed to be cross-platform/portable, then VisualAge for Java would be the preferred development environment. If the solution is being designed for the iSeries server, then writing the business logic in ILE RPG or ILE COBOL would yield significant productivity benefits as these languages are tuned for writing iSeries server business logic. Java

inter-operability enhancements have been added to ILE RPG and ILE COBOL to make it easier to develop e-business applications with these traditional languages.

Porting e-business applications:

e-business applications from other servers are normally written in either C, C++ or Java. In WebSphere Development Studio for iSeries, we have included new C and C++ compilers that are at the latest level of ANSI compliance available from IBM. These compilers have been ported from the pSeries server. This makes it much easier to port C and C++ application from other platforms to the iSeries server.

Java applications can be ported easily and effectively using VisualAge for Java.

Web-enabling 5250 applications

A key component of WebSphere Development Studio is the new WebFacing Tool which uses display file DDS to create Web GUI interfaces to existing host applications. This new WebFacing Tool runtime intercepts application data prior to 5250 datastream generation, avoiding the overhead of typical GUI solutions that first require the creation of the 5250 datastream and then the execution of a runtime conversion from a 5250 to Web or Windows interface. The WebFacing Tool converts, at development time, the display file source into Java Server Pages (JSPs), servlets and Java data beans. The servlets, JSPs and Java data beans are deployed to the application server for execution of the Web interface. There are no separate tool costs or runtime charges. A WebFaced application supports both the 5250 and Web interface so there is no dual maintenance. Extensions and customizations of the Web application from the WebFacing tool can be addressed with WebSphere Studio and VisualAge for Java.

Futures:

The release of WebSphere Development Studio for iSeries in V5R1, was just the first step in a journey to integrate all of the iSeries application development tools. In our next release, we will ship a new, open, standards-based, cross-platform Integrated Development Environment known as the WebSphere Studio Workbench that will facilitate the integration of all application development tools from both IBM and the vendor/partner community.

As an indication of IBM's commitment to open standards, the WebSphere Studio Workbench has been made an open-source product.

In the next release of WebSphere Development Studio for iSeries we will ship a new component called WebSphere Studio Site Developer that integrates the capabilities of WebSphere Studio and VisualAge for Java into this new integrated development environment. We will also integrate the WebFacing Tool, CODE and VisualAge for RPG to this new IDE. The primary integration point to allow the development tools to inter-operate is a source control / library management system. The key SCM vendors in the iSeries market; Aldon, SoftLanding and MKS; have been invited to integrate their source control / library management systems into this new IDE. Our goal is to make this new IDE a foundation for all of the AD tools to build upon. Having a common IDE that facilitates AD tool interoperability, will significantly improve the ease of use of the development environment and improve productivity of both traditional and e-business development.

We will also significantly improve the value proposition of the WebFacing Tool. We will add more DDS keyword support so that most 5250 applications can be Web-enabled quickly and easily. We will also expand support of the WebFacing Tool to the Tomcat application server to address the demand for e-business applications at the low end of the marketplace. Tomcat will address 2 key iSeries market requirements . Tomcat requires less resources, RAM and CPU, than other more sophisticated application servers and so can operate effectively in low-end iSeries servers. Tomcat is a no-cost application server for partner just starting out with either browser based GUI applications or intranet applications. As customer or partner applications mature and need high volume and secure transaction capabilities, upgrading from Tomcat to WebSphere Application Server will be the logical progression.

In the next release of WebSphere Development Studio for iSeries, we will also introduce Web Services support. This new support will allow developers to easily consume and construct Web services. Developers can browse the UDDI registry, a “yellow pages” of Web services, to locate existing, published Web services. They will be able to generate a JavaBean Proxy to utilize these Web services in their application solutions. We will also provide wizards to wrapper existing iSeries programs as Java beans and developers will then be able to create new Web services from these JavaBeans and databases. Developers will be able to deploy these Web services to WebSphere Application Server or Tomcat for testing with the built-in test client. Developers can then publish these newly created Web services to the UDDI registry. Web services has the potential to rapidly expand the development and deployment of new e-business applications and will allow developers to assemble new solutions from available (from UDDI) Web services. This is a dramatic enhancement to the concept of creating/assembling solutions from components - a new component assembly model. The Web services model may revolutionize the way companies integrate their IT solutions in the business to business marketplace.

The future is bright for e-business application development for the iSeries server.

Summary

The tools in WebSphere Development Studio for iSeries are designed to promote rapid and cost-effective e-business application development.. For more information on these tools, visit the iSeries Application Development home page at www.ibm.com/software/ad/wds400