

Positioning WebSphere Development Studio for iSeries

By: David Slater, iSeries AD Market Manager

Product Content

WebSphere¹ ® Development Studio for iSeries™, V5R1, is a host-based, tier-priced, iSeries product that consolidates all of the traditional and e-business development tools for the iSeries server into one offering. It includes the following host and workstation tools:

Host Tools

- ILE RPG
- ILE COBOL
- ILE C
- ILE C++

Application Development ToolSet (which includes PDM, SEU, SDA, RLU, DFU, and other tools)

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Workstation Tools

- WebFacing Tool
- WebSphere Studio, Standard Edition V3.5, plus iSeries Affinity Enhancements
- VisualAge® for Java™, Professional Edition, V3.5, plus Enterprise Toolkit /400
- CoOperative Development Environment (CODE)
- VisualAge RPG
- IBM® Distributed Debugger

These workstation tools are packaged into a PC software offering called “WebSphere Development Tools for iSeries.” Unlimited licenses per server are included with WebSphere Development Studio for iSeries.

Pricing

This new attractively priced tools offering is a no charge upgrade for customers with software subscription and our iSeries application development tools.

Refresh of the Workstation Tools

We will be shipping a substantial enhancement to our workstation tools in the summer. This will be the first release of the WebSphere Studio Workbench (also called the Eclipse IDE) for the iSeries. The workstation tools are being renamed as WebSphere Development Studio Client (WDSC) V4.1, to ensure that customers understand the association between the workstation product and the host product. The version and release number of WDSC will match the version and release number of WebSphere Application Server that the tools support. WebSphere Studio, Standard Edition, and VisualAge for Java, Professional Edition, are being merged into a new product called

WebSphere Studio Site Developer, which also includes the following significant enhancements:

- Web Services tooling - the ability to both create and use Web Services
- XML tooling
- Database tooling

The most significant enhancement in these new tools is the open, standards-based, cross-platform integrated development environment (IDE) for integrating IBM and vendor application development tools. Tool providers no longer have to provide a tooling infrastructure; this is provided by the WebSphere Studio Workbench as an integral part of the entire WebSphere Studio tool set. The new IDE provides a base for all of the application development tools to interoperate productively. The components of WebSphere Development Studio Client V4.1 are:

- WebSphere Studio Site Developer Advanced V4.1
 - iSeries Affinity plug-in
 - Enterprise Toolkit for OS/400® (ET/400) Plug-in
 - WebFacing Tool Plug-in
- CODE
 - CODE, partially integrated to the new IDE
 - Some RPG and COBOL capabilities, integrated in the new IDE
 - The standalone version of CODE is also included
- VisualAge RPG
- IBM Distributed Debugger

The Components of WebSphere Development Studio for iSeries

Because there are 10 application development tools in WebSphere Development Studio for iSeries (WDS), we are often asked which tool is best for a specific task. Here we address the most common questions.

Which language should I use to create e-business applications?

We have all heard it said that “e-business is the future of the IT industry and Java is the language of e-business.” Without expertise in Java development, it used to be difficult to create e-business applications. e-business is no longer the exclusive domain of the Java programmer. Now, all programmers can effectively contribute to the development of e-business applications.

The user interface for most e-business applications is Java. This user interface is either generated by the WebFacing Tool (based on the display file DDS from a 5250 application), or generated by a wizard from either WebSphere Studio for iSeries or from VisualAge for Java for iSeries. Developers can generate these Java interfaces to existing iSeries host applications with little or no Java expertise. Custom sophisticated user interfaces can also be written in Java using VisualAge for Java for iSeries.

Many people assume that the business logic for a new e-business application should be written in Java. Often this is *not* true. If the e-business application is to be ported to many servers, then the language of choice for the business logic is Java because Java applications are more portable than applications written in any other language. If the e-business application is for the iSeries server, however, it is much more productive to write the business logic in ILE RPG or ILE COBOL instead. ILE RPG and ILE COBOL were designed and built to write iSeries business logic quickly and easily. The C and C++ compilers are typically used for porting applications from other platforms or servers (usually UNIX) or for creating system management tools for the iSeries platform. These languages are not generally used for creating business solutions for the iSeries market.

Application Development ToolSet (ADTS) vs. CoOperative Development Environment (CODE)

ADTS is the most pervasive AD tool in the iSeries marketplace. CODE replaces and improves on ADTS. It's a graphical user interface workstation tool that offers many productivity advantages over ADTS. CODE can give developers a productivity boost of 15% to 30% over ADTS due to the edit process improvements associated with its program verify and error list windows, its

multilanguage and multiplatform debugger, its “ what-you-see-is-what-you-get” DDS designer, and its context-sensitive help.

Now that CODE is a component of WDS, CODE usage is expected to increase dramatically.

Client/Server Development (VisualAge RPG) vs. Web Development (WebFacing, WebSphere Studio, and VisualAge for Java)

In spite of 10 years of promotion and use, client/server applications never attained their predicted usage rates or associated success. Users loved the application capabilities that client/server development delivered, but the systems management difficulties of controlling the level or version of code on the client made the widespread use of client/server applications too difficult and expensive.

In the new e-business world, the application code is back on the server– this time on the application server--and the client is just a browser. There is no systems management problem because there is only one version of the application.

VisualAge RPG solved the systems management problem by providing the option to build the client application as an applet that could be downloaded to the user’s browser. You could now have rich, event-driven, GUIs without the systems management nightmare of the past. However, you had to be careful when creating these applets with VisualAge RPG. In this new breed of applications, the developer had to keep most of the application logic on the server. Otherwise, he could create an extremely fat applet that had to be downloaded to the browser before the application could run. Downloading fat applets would significantly degrade application execution performance.

Two conflicting trends affect the viability of applet-based e-business applications. First, most of the e-business application development tools focus on servlets versus applets in order to create extremely thin client applications that operate effectively even at 56.6K modem speeds. The second trend is the proliferation of high-speed Internet connections resulting from increasing demand for faster downloading of rich media from the Internet, primarily audio and video content. You can run rich, event-driven GUI front-ends using mid-sized applets with acceptable performance on high-speed Internet connections.

If you want to create e-business applications that can run effectively over any Internet connection, you need to create thin client e-business applications using the WebFacing Tool, WebSphere Studio, VisualAge for Java, or all three. If you want to create rich, event-driven fat client applications designed to run over

high-speed Internet connections, developing these applications using VisualAge RPG is easy and cost-effective.

Positioning WDS

Since there are 10 tools included in WebSphere Development Studio for iSeries, for simplicity, we will just cover the most requested comparisons.

Web development products

Contrasting WebSphere Studio, Standard Edition, V3.5 with WebSphere Development Studio for iSeries V5.1

Question: Is there any scenario in which you would recommend WebSphere Studio to an iSeries customer?

Answer: No.

Most iSeries customers require tools for both traditional and Web development. These customers need the host tools that can only be purchased as part of WebSphere Development Studio for iSeries. These customers receive unlimited licenses per server of WebSphere Studio for iSeries, an iSeries enhanced version of WebSphere Studio, as part of WebSphere Development Studio for iSeries.

In the unlikely scenario that a customer only wants to do Web development on the iSeries and only has one or two developers, I recommend WebSphere Development Tools for iSeries, which is only marginally more expensive than WebSphere Studio and contains WebSphere Studio for iSeries, a superset of WebSphere Studio. On top of the base WebSphere Studio product, the component includes enhancements for iSeries programmers, such as support for iSeries data types, edit codes, and edit words, as well as a subfile palette part. WebSphere Studio for iSeries also includes wizards to help developers access iSeries data and programs easily as well as wizards to publish these Web applications to a WebSphere application server on the iSeries. WebSphere Development Tools for iSeries also includes a WebSphere Unit Test Environment (as part of VisualAge for Java for iSeries) and a multi-tier, multi-platform and multi-language debugger for debugging e-business and Web applications (as part of CODE).

Contrasting WebSphere Studio Site Developer, Advanced Edition, V4, with WebSphere Development Studio Client for iSeries, V4

WebSphere Studio Site Developer, Advanced Edition, V4, a cross platform Web-development tool based on the WebSphere Studio Workbench / Eclipse IDE, will

become available soon. Within three months, the workstation components of WebSphere Development Studio V5R1 (WDSC V4) will be refreshed to add the iSeries enhancements to this cross-platform product. These enhancements include the iSeries Affinity plug-in for Web development, the ET/400 for Java development and WebFacing Tool plug-in for Web-enabling 5250 applications.

If iSeries developers urgently need to access the new capabilities provided in WebSphere Studio Site Developer, Advanced Edition, V4, (that is, the new WSW IDE, the new Java tooling, the new Web Services tooling, the new XML tooling, or the new database tooling), then they may want to purchase WSSDa V4, as soon as it comes out. The new capabilities, as well as the iSeries enhancements, will be provided to iSeries developers, as a refresh (a no charge upgrade) to WebSphere Development Studio for iSeries V5R1 within several months. WSSDa, V4, also includes a workstation-based library control and source control manager. This tooling was not included in the WDSC, V4 product because it did not address the SCM requirements for the iSeries server components.

Java development products

Contrasting VisualAge for Java with WebSphere Development Studio for iSeries

Question: Would you ever recommend that an iSeries customer purchase VisualAge for Java?

Answer: Yes.

WebSphere Development Studio for iSeries includes VisualAge for Java Professional Edition, plus Enterprise Toolkit for OS/400 (ET/400). ET/400 includes wizards to generate Java code to access iSeries data and applications from Java applications. ET/400 also includes the Java Toolbox for OS/400, which provides access to all iSeries system functions from a Java application. VisualAge for Java for iSeries includes many of the capabilities necessary for creating Java applications for the iSeries. However, for more robust applications that require J2EE or EJB support, this version of VisualAge for Java does not include these advanced features.

If you are creating portable, enterprise-ready (that is, J2EE) Java applications using Enterprise Java Beans, then you need to purchase VisualAge for Java, Enterprise Edition, or its successor, WebSphere Studio Application Developer. Only two percent of the iSeries developers are currently creating or planning to create J2EE applications using EJBs. The version of VisualAge for Java that is shipped with WebSphere Development Studio for iSeries will meet the needs of most iSeries Java developers.

WebSphere Studio Application Developer, V4

WebSphere Studio Application Developer, V4, is the successor to VisualAge for Java, Enterprise Edition, V4 and an upgrade to WebSphere Studio Site Developer, V4. The first Eclipse-based offering in the market, it shipped in English in November of 2001, and will be available in all National Languages starting in March 2002.

iSeries developers should consider this product for several reasons:

- WSAD, V4, is built on the Eclipse IDE and is currently available. It provides a rich Java development environment, supporting the latest, JDK, J2EE, EJB and servlet specs.
- It currently provides Web Services tooling, XML tooling and database tooling, whereas the iSeries deliverable is not planned until mid 2002.
- WSAD provides J2EE and EJB support that will not be available in the WDSC tooling. WSAD will also provide performance and trace tooling for problem determination of Web and e-business applications that will not be available in the WDSC component.

Contrasting Web-enabling tools (5250 Intercept products)* with WebSphere Development Studio for iSeries (WebFacing Tool)

Question: Why should I consider using the WebFacing Tool that is part of WebSphere Development Studio for iSeries instead of the 5250 intercept tools?

Answer: The WebFacing Tool offers significant advantages over the 5250 intercept tools in terms of standards, cost, ease of use, performance, and extensibility.

Standards

The WebFacing Tool creates a Web interface to an existing 5250 application by generating standard Java components: Java ServerPages (JSPs), Java beans, and servlets. The Java components can then be customized or extended with standard Java development tools and can execute in any application server that supports the Java standards.

Most of the 5250 intercept tools tie you to a proprietary, chargeable run-time environment. Any customization of the Web-enabled application requires the use of the original Web-enabling tools.

Costs

There are no additional tooling or run-time charges associated with a WebFaced application. The WebFacing Tool is a component of WebSphere Development Studio for iSeries, the standard iSeries The WebFacing Tool creates standard Java components that will run in any application server, including no-charge application servers such as Apache Tomcat and WebSphere Application Server 3.5.3, Standard Edition.

Most 5250 intercept tools have both a development-time tool charge as well as a run-time or usage charge.

An application that has been “WebFaced” supports both a 5250 and Web interface. There is no dual maintenance on the WebFaced application. Most of the 5250 intercept products create a new version of the application for the Web.

Ease of Use

You can Web-enable a basic 5250 application (with fewer than 200 screens) and publish it to the application server for testing or customization in a couple of hours. This can take considerably longer with some of the other Web-enabling options.

Performance

The Web interface is created in a development-time conversion step. The application data is created by the 5250 application, passed to a Java bean, and then sent to the JSP. The JSP then ships the HTML to the browser.

In most 5250 intercept products, the application data is built into a 5250 datastream and the 5250 intercept products interpret (or decompose) the 5250 datastream to create the Web interface. Because the 5250 datastream must be created and then interpreted, the performance of the Web interface created by the 5250 intercept products is typically slower than the interface created by the WebFacing Tool.

Extendability

The WebFacing Tool creates standard Java components, JSPs, servlets and Java beans, which in turn, can be leveraged and extended with standard Java tooling. Using the WebFacing Tool is typically the first step in leveraging your 5250 applications and extending them to an e-business footing. With intercept tools, you never create a base e-business or Web application that you can extend. Their e-business interfaces are transitory. They are generated at run time.

When would you use a 5250 Intercept product instead of the WebFacing Tool?

You would use a 5250 intercept tool if you do not have access to the workstation DDS source code (which is required by the WebFacing Tool) or if your DDS source code made extensive use of DDS keywords that were not supported by the WebFacing Tool.

If you want to Web-enable a small slice through an existing 5250 application, rather than Web-enabling the entire application, this capability is provided by WebSphere Host Publisher. Host Publisher can also be useful when you want to combine several 5250 displays into a single Web page without having to make changes to the base application.

Note:

This positioning of 5250 intercept products vs. the WebFacing Tool was originally done as a collaborative effort between the Host Integration team in Raleigh and the iSeries AD team in Toronto. It could be used as a basis to compare other 5250 intercept products such as CST Jacada and Seagull JWalk, with the WebFacing Tool. Any unique capabilities of these two vendor products have not been factored into this positioning.

Summary

WebSphere Development Studio for iSeries was designed to consolidate all of the key traditional and e-business development tools into one pervasive tool set. It enables solution providers to create new e-business applications without worrying about the cost impact of the e-business development tools on the solution stack price of the e-business solution. (Many business partner solutions are delivered as source code with AD tools for customization.)

This AD strategy would only be effective if WebSphere Development Studio for iSeries became the pervasive AD tool set for iSeries development. IBM has shipped more than 45,000 copies of WDS since the product became available in May of 2001. In less than one year, WDS has become the pervasive iSeries AD tool set.

For more details on WDS, see www.ibm.com/software/ad/wds400