Whitepaper - WebSphere Development Studio for iSeries™ V5R2

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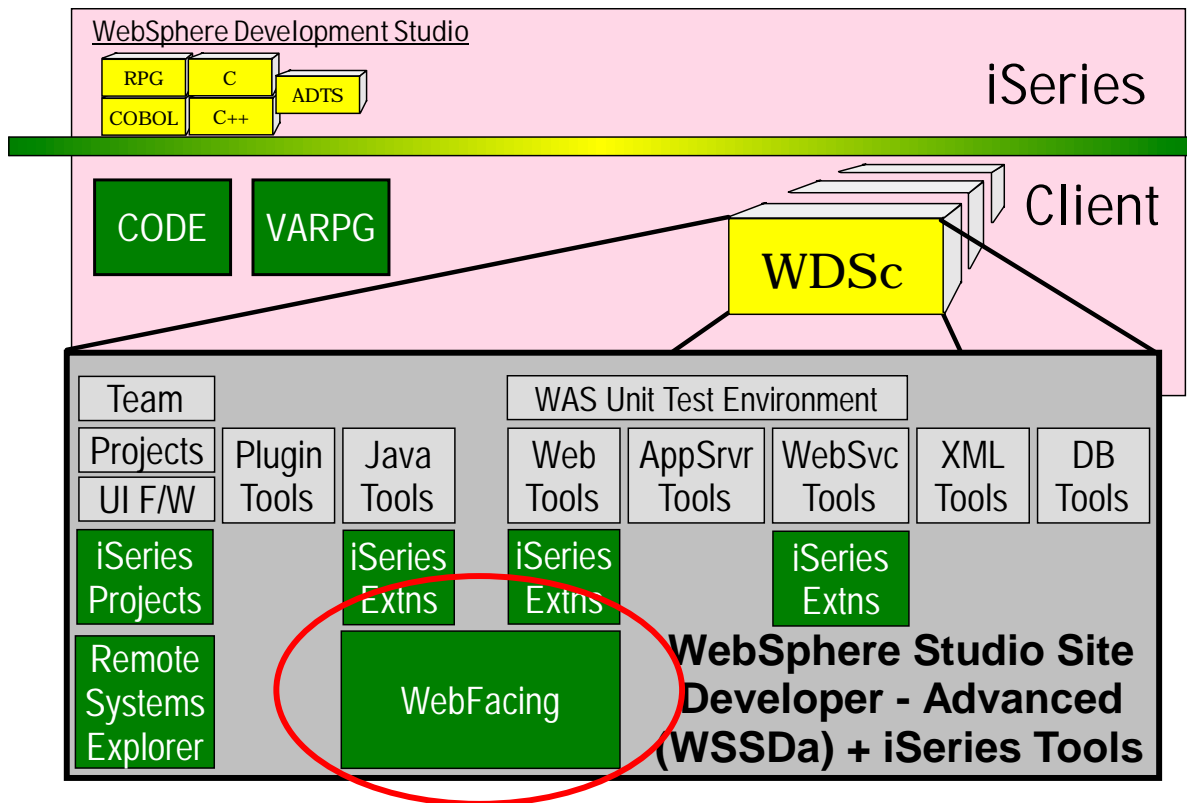iSeries Application Development
IBM

The first release of WebSphere Development Studio for iSeries represented a major shift in the packaging of IBM application development tools for the iSeries server. Rather than continuing to sell individual tools and compilers, the package consolidated all the key iSeries server development tools, both host and workstation, traditional and new, into one convenient, integrated, and attractively-priced iSeries offering. We wanted to make this new tool suite pervasive in the iSeries marketplace, so we made it a no-charge upgrade from any IBM iSeries application development tool with software subscription.

Market reaction has been extremely positive. We have shipped over 65,000 copies of WebSphere Development Studio for iSeries since its release on May 23, 2001.

The release of WebSphere Development Studio for iSeries in V5R1, was just the first step in a journey to integrate all iSeries application development tools. In this release, we ship a new, open standards-based, cross-platform Integrated Development Environment, the WebSphere Studio Workbench that facilitates the integration of all application development tools from both IBM and the community of vendors and partners. The core function comes from the Eclipse workbench. IBM donated the workbench source code to the open source community as an indication of its' commitment to open standards...a donation valued at U.S. $40 million. This open source tools platform and integrated development environment is managed by a consortium of application development tool vendors. For more details see the Eclipse Web site at *www.eclipse.org.*

The focus of this release is tool integration. A key example is the introduction of WebSphere Studio Site Developer Advanced. This new component of the workstation tools of WebSphere Development Studio for iSeries, integrates the capabilities of WebSphere Studio and VisualAge® for Java™ into this new IDE. The IBM WebFacing Tool, the most popular tool introduced in V5R1, is shipped as a plug-in to the workbench in this release. Our tools for Web development, Java development, and Web enabling share the same infrastructure and the same IDE.

From this new IDE, you can now launch all of the CODE capabilities for host / server development and you can view VisualAge RPG projects, launch the VisualAge RPG GUI designer, and launch and run VisualAge RPG applications. The help and associated search support for both CODE and VisualAge RPG are also accessible from the new IDE. We haven't completed our migration of the CODE and VisualAge RPG capabilities to the new IDE, so we

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WebSphere Development Studio

RPG
C
COBOL
C++
ADTS

iSeries

CODE
VARPG

WDSc

Client

Team
Projects
UI F/W

Plugin
Tools

Java
Tools

WAS Unit Test Environment

Web
Tools

AppSrvr
Tools

WebSvc
Tools

XML
Tools

DB
Tools

iSeries
Projects

iSeries
Extns

iSeries
Extns

iSeries
Extns

Remote
Systems
Explorer

WebFacing

**WebSphere Studio Site
Developer - Advanced
(WSSDa) + iSeries Tools**

CODE and VisualAge RPG as separate components in the new workstation tool set, called
WebSphere Development Studio Client for iSeries.

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This illustration shows the components of WebSphere Development Studio for iSeries. The parts of WebSphere Development Studio Client (WDSC) that are light gray in color are delivered as part of the component WebSphere Studio Site Developer Avanced. The components in green are the unique iSeries enhancements that are delivered as plug-ins to WebSphere Studio Site Developer Advanced as well as the unique iSeries tools, CODE and VisualAge RPG.

And the integration story doesn't stop at the IBM tools. A primary integration strategy is to use a source control / library management system to allow all the development tools, both IBM and third party tools, to inter operate. The key source control management (SCM) tool vendors in the iSeries market, Aldon, SoftLanding Systems and MKS, are integrating their source control and library management systems into this new IDE. They provide support for Java and C++ source code in the Integrated File System and are integrating their SCM solutions into WebSphere Studio Workbench.
We expect demand and usage of SCM tools to increase significantly for two reasons:
- The increase in Web application development will cause an explosion of Java parts that will need to be managed.
- The introduction of WebSphere Studio Workbench tooling in WebSphere Development Studio requires SCM tooling to facilitate AD tool inter operability

Advanced System Concepts, one of the key impact analysis tool vendors for the iSeries platform, also has plans to integrate their tools into the new IDE. Demand for their tooling is also expected to increase as e-business applications tend to be more complex than traditional iSeries applications.
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 the inter operability of the AD tools will significantly improve the ease of use of the development environment and improve the productivity of both traditional and e-business development.

Key Product Enhancements

IBM WebFacing Tool
The IBM WebFacing Tool was the most significant new enhancement to the iSeries AD tool set in V5R1. It enabled customers and partners to create a Web interface to existing 5250 applications quickly, easily and cost effectively. Since the IBM WebFacing Tool was first released in May 2001, IBM has delivered five sets of functional enhancements as service packs. These enhancements have been integrated into the new release and all of the IBM WebFacing Tool capabilities have been packaged as a plug-in to the WebSphere Studio workbench. The IBM WebFacing Tool shares the same IDE as the Web and Java development tools in Site Developer

Advanced, making it easier to leverage and extend applications that have been Web-enabled using the IBM WebFacing Tool.

The key enhancements in this release are:
- Expanded DDS keyword support so most applications can be converted with no DDS changes
- Full National Language support
- Authentication support
  - User ID and password can be required for each link
- Improved execution performance
  - Reduced amount of Java script generated for the browser
  - Reduced download time and processing time in the browser
- Integration into WebSphere Studio Site Developer Advanced makes the Web interface easier to extend with the Java and Web development tools

WebSphere Studio Site Developer Advanced

This tool is a great proof point for IBM's commitment to standards and tool integration. When WebSphere Studio and VisualAge for Java were introduced, they didn't work together. They supported different JDK™ levels. When the tools were packaged together in WebSphere Development Studio for iSeries V5R1, inter operability improved significantly. They had the same development kit level, VisualAge for Java had a WebSphere Application Server test environment for testing Java applications, and some of the JSP generation wizards were shared between the two tools.

In this release, the Java and Web development capabilities have been merged into one tool. The two most important tools for e-business development, creating the Web interface and creating the Java logic, are integrated into one tool and one IDE. And the iSeries Affinity enhancements for Java and Web development are delivered as workbench plug-ins. These enhancements provide easy access to iSeries programs and data. . In the last release, access to iSeries programs from VisualAge for Java and WebSphere Studio was different. In this release, a wizard is provided to wrapper the iSeries programs as Java beans. This provides a common interface to RPG programs for Web development, Java development and Web services development.
Java and Web development tools merged in a common IDE, a common interface to iSeries applications, and iSeries tool enhancements delivered as plug-ins to an architected API illustrate IBM's strategy to deliver a tools platform based on open standards that can integrate both IBM and third-party tools.

Web Services
In the last six months, there has been a lot of hype concerning the capabilities of delivering business-to-business applications through Web Services. This release of WebSphere Development Studio for iSeries introduces support for Web services. This new support allows 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 Java bean proxy to utilize these Web services in their application solutions. A wizard in Site Developer , part of the iSeries Affinity plug-in, wrappers iSeries programs as Java beans. The Web Services wizard creates a Web service from these Java beans with no programming required. Use of these two wizards can turn an iSeries program into a Web service.

Developers can package and deliver access to applications through a Web Services interface. These Web services can be made available via the Internet by publishing them to a UDDI registry, or privately through an Intranet connection. Companies can create distributed applications by accessing and combining application components consisting of internal programs and Web services.

CODE

CODE has been in the market for over a decade. CODE usage has increased dramatically in the last year because it is now packaged as a component of WebSphere Development Studio for iSeries. Some of the capabilities of CODE have been integrated in the IDE in this release. Remote Systems Explorer and Remote Systems Framework allow developers to:
- Create and manage connections to multiple iSeries systems
- Customize each server connection by installing filters to view only the requested objects
- Drill down through libraries, objects and members
- Manipulate objects using pop-up menus to edit, compile, rename, delete, display, and change object properties
- Run remote system commands
- Organize and monitor particular jobs or groups of jobs on remote system
- Invoke and launch the CODE component for syntax checking, program verification, CODE designer use, and distributed debugging

To the skeptic, this appears as if IBM is just moving CODE capabilities to the new IDE. However, these capabilities are not only available for CODE; they are available for any tool that integrates into the new IDE. And because RSE and RSF are written in Java, these remote server capabilities can be extended easily to other servers as well. RSE and RSF have leveraged and extended the already awesome capabilities of WebSphere Studio Workbench with remote server function.

Summary

WebSphere Development Studio for iSeries makes it easy for developers to expand the portfolio of e-business applications quickly and cost-effectively. The tool set has radically improved the e-business value proposition by:
- Making it easier to Web-enable 5250 applications using the IBM WebFacing Tool
- Providing plug-ins to WebSphere Site Developer Advanced to provide easy access to iSeries programs and data when developing new Java and Web applications
- Providing a tooling infrastructure (the workbench) to allow IBM and third-party development tools to inter operate effectively
- Providing remote server support from the workbench for IBM and third-party tools

- Delivering Web Services with no programming required

Even more enhancements are under development. To keep up-to-date on the latest news, visit the iSeries Application Development home page at **www.ibm.com/software/ad/wds400.**

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