IBM WebSphere Development Studio Client Advanced Edition for iSeries, V5.0 — An Advanced Level of Tool Integration for IBM iSeries Application Development

Overview

WebSphere® Development Studio Client Advanced Edition for iSeries™, V5.0 consolidates the standard set of application tools for iSeries server and e-business development into one comprehensive, integrated and attractively priced iSeries product.

The suite inherits the improved Web and J2EE development capabilities from WebSphere Studio Application Developer, V5.0 that make it easy to create, test, deploy, and maintain sophisticated e-business applications with little Java™, Web, or Web Services programming. It also includes a new visual builder for easily constructing Web applications conforming to the open-source Struts standard. An iFrame portlet and sample have been included to make it easy to integrate Web applications into the WebSphere Portal server, including those generated by the IBM WebFacing Tool.

With the IBM WebFacing Tool, you can easily Web-enable your existing 5250 applications. iSeries-specific wizards, additions to the Struts builder, and other extensions make it easy to build e-business applications that reuse existing iSeries programs, data, and skills.

The improved iSeries server development capabilities of the new Integrated Development Environment (IDE) provides many compelling reasons for application developers to upgrade from Application Development ToolSet (ADTS) or CODE. The Eclipse IDE reduces the learning curve by providing a consistent interface for developing iSeries server applications and e-business applications. This allows your developers to progress easily to new levels in their application development. The IDE delivers on the promise of tool integration and inter-operability. It enables seamless integration with best-of-breed tools from IBM and several key iSeries partners to support end-to-end application development life cycle.

Key Prerequisites

Refer to the Hardware Requirements and Software Requirements sections.

Planned Availability Date

April 25, 2003: Electronic and physical delivery

At a Glance

WebSphere Development Studio Client Advanced Edition for iSeries, V5 delivers:

- WebSphere Studio Application Developer V5 for e-business development
  - Powerful Java, Enterprise Java Beans (EJB), Web, Web Services, XML, and database tools
  - A builder for visually constructing Web applications based on the open-source Struts standard
  - Enhancements for Web, Web Services, and Java development including extensions to the Struts builder
- iSeries Extensions:
  - IBM WebFacing Tool for cost-effectively Web-enabling 5250 applications.
  - An iFrame portlet and sample.
  - Integrated file, project, edit, compile, and debug environment for iSeries RPG, COBOL, CL, and Data Description Specifications (DDS) development.
  - Seamless integration with best-of-breed tools from IBM and key iSeries partners.
- Cooperative development environment (CODE)
- VisualAge® RPG
- Distributed debugger

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WebSphere Development Studio Client Advanced Edition for iSeries, V5.0 is the next generation of advanced workstation development tools to create iSeries e-business applications that leverage the execution capabilities of WebSphere Application Server.

WebSphere Development Studio Client Advanced Edition for iSeries, V5.0 inherits and extends the application development environment for the creation and maintenance of J2EE and Web services applications from WebSphere Studio Application Developer V5.0. It also includes a robust, easy-to-use development for creating, building, and maintaining iSeries RPG, COBOL, C, C++ applications, and Web-enabled applications using the IBM WebFacing Tool. The Remote System Explorer also makes it easy to access UNIX®, Windows®, and Linux application resources.

WebSphere Studio Workbench

WebSphere Studio Workbench is a standards-based, cross-platform IDE based on the Eclipse foundation. The Workbench infrastructure facilitates the seamless integration of all development tools, IBM and non-IBM. Tool providers can focus on delivering additional function instead of being concerned about the underlying infrastructure and integration with other tools.

WebSphere Studio Application Developer

WebSphere Studio Application Developer is the IBM core application development environment for the creation and maintenance of J2EE and Web services applications. Based upon the latest innovations from Eclipse technology, and written to J2EE specifications, Application Developer extends the open universal Eclipse Platform to help you:

- Optimize and simplify J2EE application development by using best practices, templates, and code generation to quickly and easily create J2EE artifacts and database applications
- Shorten time to market by creating new applications with Web services wizards to generate Web services from the ground up or reuse existing development assets
- Realize immediate results of GUI design changes with the new Visual Editor for Java, which supports dynamic updates between source and visual design
- Increase productivity and reduce testing time by providing built-in test environment and generating automated test client so you can test on the fly
- Improve application performance with profiling and tracing tools to detect, isolate, and fix performance issues early in the development cycle
- Extend and customize your development environment by seamlessly integrate with IBM and third-party plug-ins, so you can focus on what you do best — building applications
- Numerous updates and new functions for Java, Web services, XML, Database, Test, and Analysis, and Web components including Struts support

WebSphere Studio Application Developer goes beyond basic Eclipse technology to provide end-to-end support for J2EE application development and is optimized for WebSphere Application Server deployment. This scalable product can easily extend support for other IBM middleware and non-IBM application servers via plug-ins, or integrate with third-party tools seamlessly to meet your evolving development challenges.

The IDE also includes significant iSeries-specific extensions for Web and Java development:

- Wizards make it easy to “wrapper” existing iSeries programs as Java beans and/or Web services. This lets the iSeries developer access these programs from a Java application, a Web application, or include them as the base for a Web service.
- Extensions to the Struts builder make it easy to visually construct Web applications based on the open-source Struts standard that accesses iSeries programs.
- Visual Custom Tags bring some of the power of DDS to Web pages.
- Includes iFrame portlet support so that generated iSeries Web applications can run inside IBM Portal Server.

IBM WebFacing Tool

One of the most exciting components of WebSphere Development Client Advanced Edition for iSeries is the IBM WebFacing Tool. The IBM WebFacing Tool creates a Web interface to an existing 5250 application in a development-time conversion process. The conversion process typically requires little or no change to the existing iSeries programs. The resulting application continues to support a green screen and will also support the Web interface. The tool creates standard JavaServer Pages and XML definitions, based on the display file DDS, and includes a servlet-based runtime. The JSPs and runtime run in any application server that supports these Java Web components.

The conversion process just keeps getting easier. With the increased DDS keyword support, most iSeries applications will convert without any code changes. A typical business application with 100 screens can be converted and published to the application server for test in just a few hours.

In this release, IBM introduces the performance and scalability enhancements to allow the IBM WebFacing Tool to support extremely large and complex applications with high traffic flows. IBM is also providing a Web interface to the most requested system support — WRKSPLF.

IBM is also making it easier to leverage and extend Web applications created with the IBM WebFacing Tool. IBM has provided an option during the code generation phase to output Struts-compliant Web application infrastructure that can be easily enhanced. The Struts-compliant runtime can now leverage the Struts tools to provide more customization capability. Also included in the IBM WebFacing Tool are:

- Conversion-time extension points to allow developers to replace the default HTML
- Option to use IBM and user-defined custom tags to enhance customization
- Ability to override command-key actions to invoke user-defined functions
- Support for displaying and printing iSeries spool files from inside your Web-enabled applications generated using the IBM WebFacing Tool
Tools for Developing Server Applications

In the V4.0 release of WebSphere Development Studio Client for iSeries, the first phase of support for RPG, COBOL, CL, and DDS development in the integrated development environment was introduced. This was a first step in the ultimate goal of reproducing the development capabilities of the classic ADTS and CODE tools, in a highly integrated and productive environment, offering a consistent experience for all development work from RPG to Java. This support included a Remote System Explorer (RSE) for PDM-like access to OS/400® resources, and iSeries Projects for disciplined team development that leverages the excellent team capabilities that Eclipse.

In the new V5.0 release, there are significant enhancements in both the RSE and the iSeries Projects support.

The RSE enhancements include:

- Enhanced support for library list manipulation
- User-defined actions that support all PDM substitution variables
- PDM-like table-view
- Easy enablement for working offline using iSeries projects
- The option to securely save passwords between sessions
- SSL for more secure communications
- Support for searching source members for text strings (“find string”) with integrated feedback (double click on a match to open the member and position to that matching line)
- Graphical wizards for creating libraries, source files and members, data areas, data queues, and message files
- Message files that can be expanded in the Remote Systems tree view, to show the messages within them
- Actions to create, edit, and delete messages in a message file
- Support for the new iSeries IASP capability
- Performance enhancements for retrieving lists and for editing
- Extensive support for dragging and dropping (Programmers can use drag and drop to copy source members between files on the same iSeries or different iSeries. They can even copy members to and from their local Windows file system, or a remote UNIX, Windows®, or Linux file system.)

The built-in editor available in the RSE has been significantly enhanced to include many more of the classic CODE editor capabilities.

- RPG, COBOL, CL, and DDS syntax checking.
- RPG, COBOL, and DDS program verification.
- RPG programmers will benefit from an outline view of their source.
- Language-sensitive F1 help available from the editor.
- Support for persistent markers for quickly accessing specific locations within source members.

Running and debugging iSeries programs is now tightly integrated with the RSE and the built-in editor.

- Ability to set a breakpoint in the editor for RPG, COBOL, CL, C, or C++ and run to the breakpoint.
- The debugger perspective that appears is the same Eclipse perspective used for Java and Web debugging.

The iSeries Projects support now includes significant enhancements:

- New extension points for Business Partners to leverage.
- Enhancements for build support, including monitoring of the build steps and error feedback.
- The text description is now captured for iSeries files and members imported into an iSeries project.
- Based on last modified timestamps, visually identify when local and remote copies of the same member are in conflict, and offer resolution support when the local member is pushed to the remote server.

Business partners can easily leverage and extend RSE and iSeries Projects. There are also many enhancements to make it even easier to tightly integrate their tools with the IBM-base development environment.

Many leading iSeries tool vendors are actively integrating their tools into this new release. These vendors include, but are not limited to change management and impact analysis tool suppliers.

While WebSphere Development Studio Client Advanced Edition for iSeries, V5.0 closes the gap for CODE classic function, there are still many loyal and happy CODE users. The classic CODE tools remain available and installed with WebSphere Development Studio Client Advanced Edition for iSeries, V5.0, and easily accessible directly from the RSE. For those who prefer direct access to these tools, a command is available to enable adding CODE entries to the Windows startup menu. Help for the classic tools can also be enabled.

The RSE is able to access iSeries OS/400 resources, Integrated File System (IFS) files and commands, remote UNIX, Windows, and Linux files and commands, and local Windows files. In V5.0, the “universal” support for files and commands has been dramatically improved. There is new support for drag-and-drop, command shells, and intelligent command interpretation. For example, if a programmer runs a remote compile, “make” or “grep” command, the results are shown in the RSE command console. The programmer can double click on an error or search result to open the editor on the file. Any local editor can be opened on any remote file, including for example the built-in Java editor for remote .java files. There is a new table view for files that complements the existing tree view. Programmers can now search a remote file system for a file name pattern and see the resulting matching files in a table view, and then use the full suite of actions on those files, including edit. There is new support for running local Window commands in the RSE command console.

VisualAge RPG

VisualAge RPG is shipped with WebSphere Development Studio Client Advanced Edition for iSeries, V5.0. VisualAge RPG allows RPG programmers to create rich GUI applications that run on Windows platforms. It allows users to easily access iSeries database files and provides all the features of the RPG IV language like external file description. VisualAge RPG also lets you generate Java code from VARPG source to run VisualAge RPG applications on platforms other than Windows. VisualAge RPG is easy to learn for experienced RPGIV programmers who want to create applications with a GUI. In this
version the language level of VisualAge RPG is upgraded to the language level of RPGIV V5R2. The enhanced features of the RPG IV language, including Free Form Statements, Monitor Group, and Qualified Data Structures, are now available in VARPG, with some exceptions when generating Java.

Also included are several features that improve your ability to extend and customize Web applications generated by the IBM WebFacing Tool. These features include an optional open-source Struts infrastructure, conversion-time extension points, an option to use IBM and user-defined custom tags, command-key action overrides for user-defined actions, and support for displaying and printing iSeries spool files.

**Accessibility by People with Disabilities**

WebSphere Development Studio Client Advanced Edition for iSeries, V5.0 supports the following features:

- Supports interfaces commonly used by screen readers
- Can be operated using only the keyboard
- Allows the user to request more time to complete timed responses
- Supports customization of display attributes such as color, contrast, and font size
- Communicates all information independently of color
- Supports interfaces commonly used by screen magnifiers
- Supports the attachment of alternative output devices
- Provides keys which can be distinguished by touch without activating them
- Provides documentation in an accessible format
- Requires minimal reach and manual dexterity
- Supports the attachment of alternative input and output devices
- Supports alternatives to audio information
- Supports adjustable volume control
- Does not flash the screen at rates that could induce epileptic seizures.

Some accessibility features may not be available in the following components/bundled products:
- DB2 Connect® Personal Edition, Version 7.2 FP7 or the Windows Operating Environments CD
- VisualAge RPG
- CODE

**Product Positioning**

WebSphere Development Studio Client Advanced Edition for iSeries meets the needs of the advanced iSeries developer. It includes all the functionality in WebSphere Development Studio Client for iSeries plus:

- Several features that improve the extensibility and customizability of the Web applications generated by the IBM WebFacing Tool:
  - An optional open-source Struts infrastructure
  - Conversion-time extension points
  - An option to use IBM and user-defined custom tags
  - Command-key action overrides for user-defined actions
  - Support for displaying and printing iSeries spool files
- The iFrame portlet that makes it easy to add existing Web applications (including the IBM WebFacing Tool applications) to the WebSphere Portal environment.

**Reference Information**


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Additional Information

WebSphere® Development Studio Client Advanced Edition for iSeries™, V5.0 is built on the WebSphere Studio Workbench, and extends WebSphere Studio Application Developer to include iSeries specific tools and features.

The key features of WebSphere Development Studio Client Advanced Edition for iSeries, V5.0 are:

- WebSphere Studio Application Developer is the IBM core application development environment for creating and maintaining J2EE applications. Built on Eclipse V2 innovations and written to J2EE specifications, WebSphere Application Developer helps you optimize and simplify J2EE application development with best practices, visual tools, templates, code generation, and the most comprehensive development environment in its class. Features include:
  - Support for J2EE 1.3 — EJB 2.0, Servlet 2.3, and JSP 1.2 specification.
  - Concurrent support for WebSphere Application Server V4 (J2EE 1.2) and WebSphere Application Server V5 (J2EE 1.3).
  - Enable WebSphere Application Server V4 users to adopt the latest innovations from Eclipse V2, and enhancements from WebSphere Studio V5 without server upgrade.
  - Numerous updates and new functions for Java™, Web services, XML, Database, Test and Analysis, and Web components including Struts support.
  - New support for J2EE 1.3 specifications — EJB 2.0, servlet 2.3, JSP 1.2.
  - Generates code for both J2EE 1.2 and 1.3 specifications.
  - Full EJB 2.0 support includes EJB Query Language, CMP 2.0 and Message-driven beans.
  - Tools for import/export, creation and code generation, editing, and support for standard deployment descriptors and extensions and bindings specific to WebSphere Application Server.
  - EJB-to-RDB mapping that provides the model, run-time, environment and interface for editing the mapping between EJBs and relational database tables with top-down, meet-in-the-middle and bottom-up capability.
  - New multiple-mapping support.
  - Editors for deployment descriptors (ejb-jar.xml and application.xml).
  - WAR/EAR deployment support.
  - Updated EJB test client.
  - Enhanced J2EE unit test environment including support for both WAS V4 and V5.
  - New Visual Editor for Java provides an interface for developing GUI components (Swing or AWT) with two-way synchronization between source and GUI.
  - New JavaDoc generation.
  - Updated code assist and refactoring tools.
  - JDK 1.3 support.
  - Pluggable run-time support for JDK switching and targeting multiple run-time environments from IBM and other vendors.
  - Automatic incremental compilation.
  - Dynamic debugging.
  - Common debugger for both local and remote debugging.
  - Ability to run code with errors in methods.
  - Crash protection and auto-recovery.
  - Error reporting and correction.
  - Java text editor with full syntax highlighting and complete content assist.
  - Intelligent search, compare, and merge tools for Java source files.
  - Scrapbook for evaluating code snippets.
  - Updated template support.
  - Allows you to create, browse, or import database schemas (including new DDL Export capability).
  - Enables exploring, importing design, and querying databases.
  - Supports working with either a local copy of an already deployed design, or creating an entirely new design to meet your requirements.
  - Provides a meta-data model that is used by all other tools that need relational database information including connection information, so that tools that are unaware of each other can share connections.
  - Provides a visual interface for creating databases, tables, and views.
  - Offers powerful SQL query builder, SQL editor with context assist, and SQL statement wizard to create and execute a wide range of statements.
  - Supports DB2®, DB2 for 400, DB2 for 390, Oracle, Sybase, MySQL, Informix™, and SQL Server. New in V5.0 support for Cloudscape, and Oracle9i.
  - Includes new support for DB2 stored procedure, user-defined functions (UDFs) builder.

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- Renders SQL views from specific tables in a database.
- Discover — Browse the Universal Description Discovery and Integration (UDDI) business registry or a WSIL document to locate existing Web services for integration.
- Create or Transform — Create Web services from existing artifacts, such as Java beans, EJBs, URLs that take and return data, DB2 XML Extender calls, DB2 stored procedures, and SQL queries.
- Build — Wrap existing artifacts as SOAP and HTTP GET/POST-accessible services and describe them in WSDL.
- Deploy — Deploy the Web service into the WebSphere Application Server or Tomcat test environments.
- Test — Test the Web service as it runs locally or remotely.
- Develop — Generate a sample application to assist you in creating your own Web service client application.
- Publish — Publish your Web services to a private or public UDDI business registry advertising your Web services so that other clients or businesses can access them.
- All Web services support is based on open standards such as UDDI V2, Simple Object Access Protocol (SOAP), Web Services Description Language (WSDL), and new support for Web Services Inspection Language (WSIL).
- XML editor helps you to create, view, and validate XML files. It provides both a Design view and a Source view for easy navigation, and the ability to add a DTD declaration or XML schema information effortlessly. The wizard driven editor simplifies XML creation from scratch, or reusing existing DTD or XML schema files.
- DTD editor assists you to create, view, and validate DTDs. Using the DTD editor, you can create and validate DTD elements, attributes, entities, and notations. You can generate XML schema files, Java beans, and HTML forms from DTD files easily with wizards. Additionally, it has a built-in mechanism to handle referential integrity. For example, the clean up occurs automatically when you delete or rename certain nodes.
- XML schema editor facilitates the creation, import, viewing, and validation of XML schemas. The wizard-driven editors helps you to generate DTDs, XML files, relational table definitions, Java beans, HTML documents, and DDLs from an XML schema quickly and easily.
- XSL editor simplifies XSL development with wizards, content assist to help you create, view, and validate XSL files.
- XSL debugger and transformation tool helps you to apply XSL files to XML files and transforms them into new XML, HTML, or text files. You can trace through the transformation and use the XSL debugger perspective to debug source files.
- XML to XML mapping editor provides a visual interface to help you map one or more source XML documents to a single target XML document and generates XSLT automatically.
- XML and SQL query wizard helps you to create an XML file from the results of an SQL query. You can optionally choose to create an XML schema or DTD file that describes the structure that the XML file has for use in other applications.
- Rational database (RDB) to XML mapping editor makes it easy to define the mapping between relational tables and a DTD file with a visual interface, automatically generates document access definition (DAD) files, and a test harness.
- New component test tools for test case definition, execution, and analysis.
- Built-in test environment where you can test J2EE artifacts, and the ability to configure other local or remote servers for integrated testing and debugging of J2EE applications. It supports the following run-times: Apache Tomcat, WebSphere Application Server V4 and V5.
- TCP/IP Monitoring Server forwards requests and responses, and monitor test activities.
- New JUnit wizard, JUnit view, and command line support for Ant.
- Support to help you easily identify repetitive execution behavior and eliminate redundancy, while focusing on the highlights of an execution.
- Tools to display which operations take the most time and help you find and solve memory leaks.
- Information display suited to object-oriented programs.
- Pattern extraction capabilities.
- Features to find and solve memory leaks.
- Distributed process monitoring allows to you concurrently monitor multiple, live processes that may reside on different machines.
- New support for object level profiling for easier performance analysis.
- Analysis of WebSphere Application Server activity logs and interaction with the symptom database.
- Editing support of symptom database using the Symptom database editor.
- Updated Page Designer with support for Visual Custom Tags.
- New support for XHTML and Struts.
- New Struts-based visual component construction environment.
- Web project creation using the J2EE container structure.
- JSP and HTML file creation, editing, and debugging.
- XML file creation and editing.
- Automatic update of links as resources are moved or renamed.
- Servlet creation by means of a wizard.
- Generation of Web applications from database queries and beans.
- A generic Remote System Explorer for working with remote systems.
- Support for iSeries, UNIX®, Linux, and Windows® remote systems.
- Support for defining persistent “connections” to remote systems.
- Support for subsystems that offer services to a remote system connection.
- An object subsystem for accessing remote file systems.
- Support for exporting and importing resources to and from the file systems supported by the supplied file subsystems.
- Access to both the IFS and native file systems on iSeries.
- Support for pre-defined and user-defined actions on the remote system. This replaces the CODE Project Organizer.
- Remote system command shell.
- Native operating system command shell.
- An advanced iSeries communication layer which is used by Workbench tools.
- Tool extensions into the Remote Systems Explorer for vendors to interface and exploit remote systems.
- iSeries project team development tools.
- Support for team development of iSeries applications.
- Ability to use one change management provider for Java, Web, and iSeries applications.
- Support for disconnected development.
- Support for creating projects based on existing library.
- Support for synchronizing source with remote systems defined in Remote System Explorer.

• Integrated iSeries debugger
  - Support for debugging iSeries *PGM/*SRVPGM in WebSphere Studio Workbench
  - Integration with Remote System Explorer and iSeries project team development tools

• IBM WebFacing Tool which integrates with Web, Java, and iSeries tools. It also includes several features that improve the extensibility and customizability of the Web applications generated by the IBM WebFacing Tool:
  - An optional open-source Struts infrastructure
  - Conversion-time extension points
  - An option to use IBM and user-defined custom tags
  - Command-key action overrides for user-defined actions
  - Support for displaying and printing iSeries spool files
  - The iFrame portlet that makes it easy to add existing Web applications (including the IBM WebFacing Tool applications) to the WebSphere Portal environment

• iSeries-specific extensions to Java tools
  - Export and Import to/from IFS, via common remote system frame-work support
  - Special Java “compile” action/view for remotely compiling Java classes
  - Special Java run action/view for remotely running Java applications
  - Special Java debug action/view for remotely debugging Java applications
  - Program Call wizard to “wrapper” any *PGM/*SRVPGM as a Java Bean
  - Previously supplied Java beans: datafile updates (DFU), object lists (PDM), and Swing formatting

• iSeries-specific extensions to Web tools
  - Visual Custom Tags (VCTs) replace the ActiveX Design-time Controls (DTCs). VCTs can be used and rendered in the HTML Designer.
  - VCTs provide the controls such as textField, label, dropDown, pushButton, and so on.

• Help with enhancing the input and output functionality of your Web interface.
  - JCA Program Call connector provides a standard interface to call any *PGM, based on the J2EE Connector Architecture.
  - Web Interaction wizard now generates a Web application based on a Struts runtime.
  - iSeries Web Tools Run-time Configuration wizard captures information such as server name, userid, password, and library list used by Web applications.

• Information Enhancements:
  - Help now appears in a separate window which can be resized, minimized, and moved around to give you more access to the rest of the user interface while you’re learning.
  - Information Roadmaps help you to identify your development goals and guide you through the large volume of information available.
  - A totally redesigned table of contents helps you find the information you need.

• Existing CODE functions, enhanced to support launching from Workbench

• Upgrade of VisualAge® RPG to the RPGIV V5R2 language specifications and additional customer-requested enhancements

WebSphere Development Studio Client Advanced Edition for iSeries, V5.0 Major Functional Objectives

• Develop/maintain iSeries applications using the Remote System Explorer
• Develop Web GUIs for iSeries classic applications using IBM WebFacing Tool and the other Web tools
• Develop client and server applications for iSeries using the Java tools
• Work with other integrated Application Developer tools

Develop iSeries Classic Applications Using the Remote Systems Explorer

• Using Remote Systems Tools
  - The Remote System Explorer provides a variety of remote system tools. These tools are accessed through the System perspective.
Managing System Connections
- Create and manage connections to multiple systems. This feature also allows multiple server connections to the same system, each with its own independent job environment.
- Within each connection, subsystems define particular functionality. Filters are used within each subsystem to filter and view only the requested objects. For iSeries connections, three subsystems are provided, each containing predefined filters. These are the Job, Object, and Command Subsystems.

Managing Native Objects
- The File Subsystem provides easy access to remote objects. Filters can be created to provide a customized view of libraries, objects, and members.
- Object manipulation is made quick and easy through the new environment. Selecting an object at anytime allows for object manipulation via pop-up menus. It provides useful actions such as edit, Compile for ILE RPG source members, rename, delete, and displaying/changing certain properties of any native objects.
- Objects can also be copied from one remote system to another.

Executing and Organizing Remote Commands
- The Command Subsystem provides the ability to execute remote commands. It is possible to create individual command sets and/or expand predefined filters to execute remote commands on the remote system. When a filter is expanded and the command is executed, the messages are displayed.

Managing Jobs
- The Job Subsystem provides features that allow the organization and monitoring of particular groups of jobs on the iSeries system. There is one filter provided, but it is possible to create new ones which subset lists based on the criteria specified. Expanding a filter provides a tree-like view of the selected Jobs.

Editing Server Applications
- As stated above, by selecting a source member object in the File Subsystem perspective, an Edit option is provided.

Developing in a Team Environment
- WebSphere Studio Application Developer provides team support across all projects: Remote Systems, Java, Web, XML, etc. WebSphere Studio Application Developer also provides team support using the Concurrent Versions System (CVS), an open source version control system available from: http://www.cvshome.org/

Using classic tools
- The classic CODE and VisualAge RPG tools can still be invoked. Through a tightly integrated communication design, the Remote System Explorer is capable of launching the classic tools seamlessly, providing features such as CODE editing, CODE program generation, CODE designer, and the Distributed Debugger.

Develop Web GUIs for iSeries Classic Applications Using IBM WebFacing Tool and the Web Tools

IBM WebFacing Tool
- Use the IBM WebFacing Tool to quickly convert classic application GUI components like DDS, help, and message files into Web GUI components.

Develop and Maintain Web GUls
- Use the Web tools iSeries Extensions to develop and maintain Web GUls to iSeries applications
- iSeries wizards help connect a *PGM/*SRVPGM to input and output Web pages

Testing and Deploying Web Applications
- Use the Server tools to test Web applications in the locally or remotely installed run-time environments

Developing Web Services
- UDDI for Java, which enables businesses to describe themselves, publish technical specs on how they want to conduct e-business with other companies, and search for other businesses that provide goods and services they need, all via online UDDI registries
- SOAP, which is a standard for reliably transporting electronic business messages from one business application to another over the Internet
- WSDL, which describes programs accessible via the Internet (or other networks), and the message formats and protocols used to communicate with them
- WSIL

Develop Client and Server Applications for iSeries Using the Java Tools

- Develop Java applications or applets with Interfaces to iSeries classic applications. These iSeries extensions include several beans and wizards to help accessing classic programs.
- Dynamic UI creation and deployment with iSeries specific Java beans.
- Ability to run code with errors in methods.
- Crash protection and auto-recovery.
- Error reporting and correction.
- Java text editor with full syntax highlighting and complete content assist.
- Refactoring tools for reorganizing Java applications.
- Intelligent search, compare, and merge tools for Java source files.
- Scrapbook for evaluating code snippets.
Work with Other Integrated WebSphere Studio Application Developer Tools

- Visual XML Development Environment
  - Debug and edit XSL with code assist
  - Create, view, and validate DTDs and XML schemas, XMLs, and XSLs
  - Create XML documents from a DTD/XML schema and vice-versa
  - Generate Java beans from XML and vice-versa
  - Define mappings between XML documents and generate XSLT
  - Create an HTML or XML document by applying an XSL stylesheet against an XML document, using the Xalan processor
  - Debug XSL Stylesheets using the XSL Debugger
  - Create and execute your XPath using the XPath wizard
  - Compile XSL stylesheets for fast execution
  - Produce XML-related artifacts from an SQL query
  - Update a relational table from an XML document
  - Define mappings between relational tables and DTD files
  - Generate a document access definition (DAD) script, used by DB2
  - XML Extender, to either compose XML documents from existing DB2 data or decompose XML documents into DB2 data
  - Generate XML and related artifacts from SQL statements and use these files to implement your query in other applications

- Database tools
  - Relational Database Schemas, SQL Wizard, and SQL Query Builder — Helps you create and manipulate the data design for your project in terms for relational database schemas. Application Developer allows you to create, browse, or import database schemas, including new DDL Export capability.
  - Enables exploring, importing design, and querying databases.
  - Supports working with either a local copy of an already deployed design, or creating an entirely new design to meet your requirements.
  - Provides a meta-data model that is used by all other tools that need relational database information including connection information, so that tools that are unaware of each other can share connections.
  - Provides a visual interface for creating databases, tables, and views.
  - Supports DB2, DB2 for OS/400®, DB2 for 390, Oracle, Sybase, MySQL, Informix, and SQL Server, Cloudscape, and Oracle9i.
  - Includes a new Stored Procedure Builder and SQL view.

Education Support

A multi-channel delivery strategy is planned to address the e-business education requirements in the iSeries marketplace.

For more education information, visit the following Web sites:

http://ibm.com/software/ad/iseries

http://ibm.com/websphere/developer/education/enablement

Service Offerings

IBM, in concert with its Business Partners, plans to offer the following services in support of the product offering:

- **IBM WebFacing Tool Conversion Feasibility Study**
  A one-day service offering in which you electronically send your DDS files to the consultant. The DDS is evaluated for suitability as a candidate for the conversion to a Web application using the IBM WebFacing Tool.

- **IBM WebFacing Tool Conversion Proof of Concept**
  A three-day, fixed-price service offering in which you send your DDS files to the consultant. A vertical slice of the application is then converted to a Web application with the IBM WebFacing Tool. The converted application is then hosted on a server at the service provider's Web site where you can log in and view the results.

- **IBM WebFacing Tool System Conversion**
  This service offering is a natural followup to the IBM WebFacing Tool Conversion Proof of Concept. This offering varies in duration based on the size and complexity of your application. A proposal is developed and, once accepted, the entire application is converted to a Web application. This offering is performed onsite. The consultant teaches your staff how to use WebSphere Development Studio Client Advanced Edition for iSeries to create and manage your Web development project based on your iSeries data and applications. Through a mentored workshop and a proof of concept, your staff has the opportunity to learn WebSphere Development Studio Client Advanced Edition for iSeries and apply this knowledge to create and deploy a Web application into your iSeries environment.

For more information on the service offerings, visit the following Web site:

http://www7b.software.ibm.com/wsdd/services/services.html

Promotional Material: A product specification sheet will be available at the announcement time at

http://www.ibm.com/software/ad/iseries

Demonstrations: IBM WebFacing tools

- A screen cam to demonstrate the use of the IBM WebFacing Tool to Web-enable a simple 5250 application. The demonstration converts a 5250 application that uses subfiles and a customer inquiry display file.
A screen cam to demonstrate the capabilities of the IBM WebFacing Tool. It uses APPCON’s Enterprise Information System to show the results of their Web-enabling efforts. The demonstration reviews the pre- and post-conversion application interfaces.

**iSeries Web Tools**

A screen camera that demonstrates the use of the iSeries Web tool functions to access iSeries data and applications.

For additional demonstration information, access OITOOL at:

http://w3.viewblue.ibm.com

http://w3.ibm.com/sales/ssi

- Select Demos and Presentations
- Search by keyword or “Search specific information sources”
- Obtain help via FAQ in ViewBlue>Offerings>OfferingsInfoRef

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**Offering Information**

Product information will be available on day of announcement through Offering Information (OITOOL) at:

http://www.ibm.com/common/ssi

and through the Passport Advantage Web site at:

http://www.ibm.com/software/passportadvantage

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**Publications**

All the documentation for this program is online, viewable with the built-in browser, or in PDF files which can be viewed and printed using Adobe Acrobat Reader.

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**Technical Information**

**Hardware Requirements**

**System**

- iSeries and AS/400® RISC models

If WebSphere Application Server on iSeries is used for applications built with WebSphere Development Studio Client Advanced Edition for iSeries components, refer to the WebSphere Application Server documentation for minimum iSeries hardware requirements.

**Workstation (minimum requirements)**

- Server development
  - Intel® Pentium® II processor
  - 256 MB RAM minimum
- Java/Web/WebFacing development
  - Intel Pentium II processor minimum; Pentium III 500 MHz, or higher, recommended
  - 512 MB RAM minimum
  - 768 MB RAM recommended for running or debugging in Unit Test Environment
- Required hard drive space: 1650 MB
  - Additional 700 MB of temporary hard drive space is needed during product installation.
- Windows: VGA graphics card (800x600, or higher, recommended, 256 colors)

**Software Requirements**

**System**

- OS/400 V5R1, or later, IBM WebFacing Tool and Remote System Explorer components will need additional PTFs. The PTF information is available on:
- OS/400 is only needed if the programming objects are located on the iSeries server or the applications contain backend code on the iSeries server.

**Workstation**

- For Windows NT®
  - Windows NT Server or Workgroup V4.0, SP6a, or later (refer to the Program Services section for details)
  - Microsoft™ Internet Explorer 5.5, SP1, or later
- For Windows 2000
  - Windows 2000 Professional, SP2, or later
  - Microsoft Internet Explorer 5.5, SP1, or later
- For Windows XP
  - Windows XP Professional

**Planning Information**

**Packaging:** The WebSphere Development Studio Client Advanced Edition for iSeries, V5.0 media package contains the following items packaged in an univenture sleeve:

- "IMPORTANT — Please Read" booklet
- WebSphere Development Studio Client Advanced Edition for iSeries, V5.0 (4 CDs)
- WebSphere Development Studio Client Advanced Edition for iSeries, V5.0 (1 DVD)
- DB2 Connect® Personal Edition, V7.2 FP7 for the Windows Operating Environments CDs
- DB2 Universal Database® Personal Edition, V7.2 FP7 for the Windows Operating Environments CDs
- DB2 Universal Database Image, Audio and Video Extenders and Text Extender V7.1 CD
- DB2 Universal Database XML Extender V7.2 FP7 CD

This program when downloaded from a Web site, contains the applicable IBM license agreement, and License Information (LI), if appropriate, and will be presented for acceptance at the time of installation of the program. The license and LI will be stored in a directory such as LICENSE.TXT for future reference.

**Security, Auditability, and Control**

WebSphere Development Studio Client Advanced Edition for iSeries, V5.0, V5.0 uses the security and auditability features of the respective operating systems.

The customer is responsible for evaluation, selection, and implementation of security features, administrative procedures, and appropriate controls in application systems and communication facilities.

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**Ordering Information**

This product is only available via Passport Advantage. It is not available as shrinkwrap.

- Product Group: Software
Product Identifier Description: WebSphere Development Studio Client Advanced Edition for iSeries, V5.0 (5724-D46)

Product Category: Application Development

WebSphere Development Studio Client Advanced Edition for iSeries, V5.0, is a stand-alone product with one charge unit – user. It is available in units of one.

Passport Advantage

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LI Form Number: Softcopy only

Limited Warranty Applies: Yes

Program Services: Available until November 30, 2005, for WebSphere Development Studio Client Advanced Edition for iSeries, V5.0

Windows NT will be supported to June 30, 2003. For customers using Windows NT, refer to:

http://www.microsoft.com/ntserver/ProductInfo/Availability/Retiring.asp

Money-Back Guarantee: If for any reason you are dissatisfied with the Program, return it within 30 days from the invoice date, to the party (either IBM or its reseller) from whom you acquired it, for a refund. This applies only to your first acquisition of the Program.

Copy and Use on Home/Portable Computer: Yes

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Passport Advantage Applies: Yes, and through the Passport Advantage Web site at:

http://www.ibm.com/software/passportadvantage

Usage Restriction Applies

Yes. For Usage Requirements, refer to the License which accompanies the product. The Program-unique Terms section of the license documents the restrictions of the use of the product and/or the software associated with the product.

Software Maintenance Applies: Yes

Software Maintenance, previously referred to as Subscription and Technical Support, is now included in the Passport Advantage Agreement. Installation and technical support for the product announced in this letter is provided by the Software Maintenance offering of the IBM International Passport Advantage Agreement. This fee service enhances customer productivity by providing voice and/or electronic access into the IBM support organizations.

IBM includes Software Maintenance with each program acquired during the coverage period. The coverage period means the period commencing on the date you acquire the program up to the first or second anniversary date, depending on whether you acquired coverage for one or two anniversaries. The coverage period for Software Maintenance acquired in the two months preceding an anniversary date will be extended to the next applicable anniversary date.

While your Software Maintenance is in effect, IBM provides you assistance for your routine, short duration installation and usage (how-to) questions, and code-related questions. IBM provides assistance via telephone and, if available, electronic access, only to your information systems (IS) technical support personnel during the normal business hours (published prime shift hours) of your IBM support center. This assistance is not available to your end users. IBM provides Severity 1 assistance 24 hours a day, every day of the year. For additional details, consult your IBM Software Support Guide at:

http://techsupport.services.ibm.com/guides/handbook.html

Software Maintenance does not include assistance for the design and development of applications, your use of programs in other than their specified operating environment, or failures caused by products for which IBM is not responsible under this agreement.

For more information, about the Passport Advantage Agreement, refer to the IBM International Passport Advantage Agreement Software Announcement 201-202, dated July 10, 2001, or visit the Passport Advantage Web site at:

http://www.ibm.com/software/passportadvantage

IBM Operational Support Services — Support Line: No

AIX®/UNIX Upgrade Protection Applies: No
Entitled Upgrade for Current AIX/UNIX Upgrade Protection Licensees: No

iSeries Software Subscription Applies: No

Variable Charges Apply: No

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**Prices**

**Passport Advantage**

For Passport Advantage and charges, contact your authorized Lotus® Business Partner. Additional information is also available on the Passport Advantage Web site:

http://www.ibm.com/software/passportadvantage

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http://www.ibm.com/financing

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