

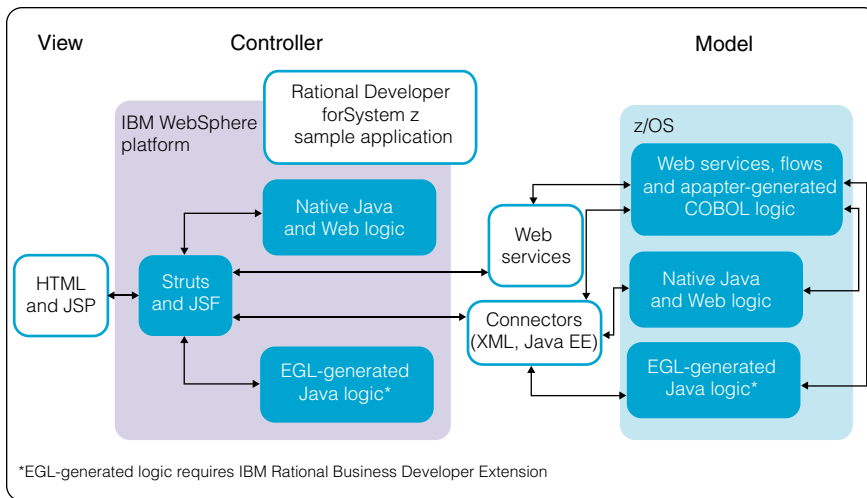


IBM Rational Developer for System z, Version 7.1

Highlights

- *Helps improve the productivity of developers creating and maintaining IBM z/OS, IBM CICS, IBM IMS, IBM WebSphere and batch applications before, during and after the transition to SOA-based services*
- *Assists developers with quickly creating modern, dynamic Web applications and Web user interfaces by facilitating the construction of visual processing through editors based on open JavaServer Faces and Struts implementations*
- *Facilitates shorter development cycles and helps reduce costs by extracting value from existing applications through reuse and transformation, making them accessible as Web services*
- *Helps simplify the overall service-flow development process with enterprise service tools*
- *Enables developers to rapidly create well-built composite processing that integrate transactional and WebSphere software-based environments*

Building a service-oriented architecture (SOA) is a key strategy for many IT organizations as they seek to improve flexibility and business efficiency. SOA promotes modern interfaces, supports process improvements and enables application reuse—thereby facilitating the rapid delivery of applications that can support the most rigorous quality-of-service environments. Today's SOAs can be complex, and often require support from a team of people with different technology backgrounds and areas of expertise. Ideally, everyone would possess the skills needed to construct SOA applications. The reality is that these teams include specialists, each with expertise in a different area, such as modern browser-based user-interface development in Java™ technology; connectivity development with Web services; and business development with languages such as



Rational Developer for System z software can simplify the composite development process by providing a JavaServer Faces and Struts visual construction, linking connectors and Web services to support SOA in a core transactional environment.

COBOL, PL/I, Java and C/C++. You want to extend these professional skills across your organization, and use both existing and new Web and Web services technologies—along with proven transactional environments, IBM CICS® and IBM IMS™—to speed your development and deployment processes.

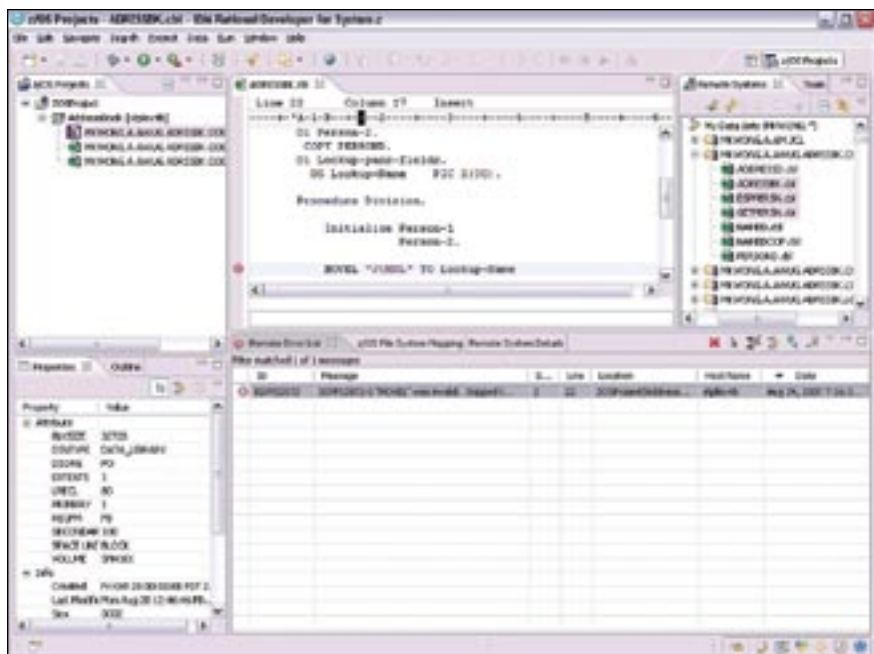
IBM Rational® Developer for IBM System z™ software can help you deliver core development capabilities; the power of Java Platform, Enterprise

Edition (Java EE); and rapid application development support to diverse enterprise application development teams. With comprehensive development tools to help create, deploy and maintain traditional enterprise and composite applications, Rational Developer for System z enables developers with different technical backgrounds to easily participate in important technology projects.

Improve productivity with IBM development technology throughout your enterprise

Built on Eclipse open source technology and written to Java EE specifications, Rational Developer for System z is designed to optimize and simplify application development for traditional processes—and for the SOA you're building to address your needs today and in the future—through best practices, visual tools, templates, code generation and a comprehensive development environment. These capabilities enable your developers to share a common view of applications and resources—accessible from linked environments.

Employing the common services of an integrated development infrastructure helps facilitate reuse, better management and improved communication. It also helps reduce requirements for manual integration—ultimately driving a shorter development process. And Eclipse plug-in technology allows you to integrate complementary development tools to extend the functionality of the total platform so you can interoperate with other Eclipse technology-based products.



Rational Developer for System z software helps developers maintain, enhance and reuse existing COBOL and PL/I mainframe applications.

Rational Developer for System z includes tools for building the underlying business process and infrastructure for Web applications. These tools support the popular, open source JavaServer Faces (JSF) and Struts run times. They also include a visual construction environment that allows developers to quickly link views implemented as HTML and

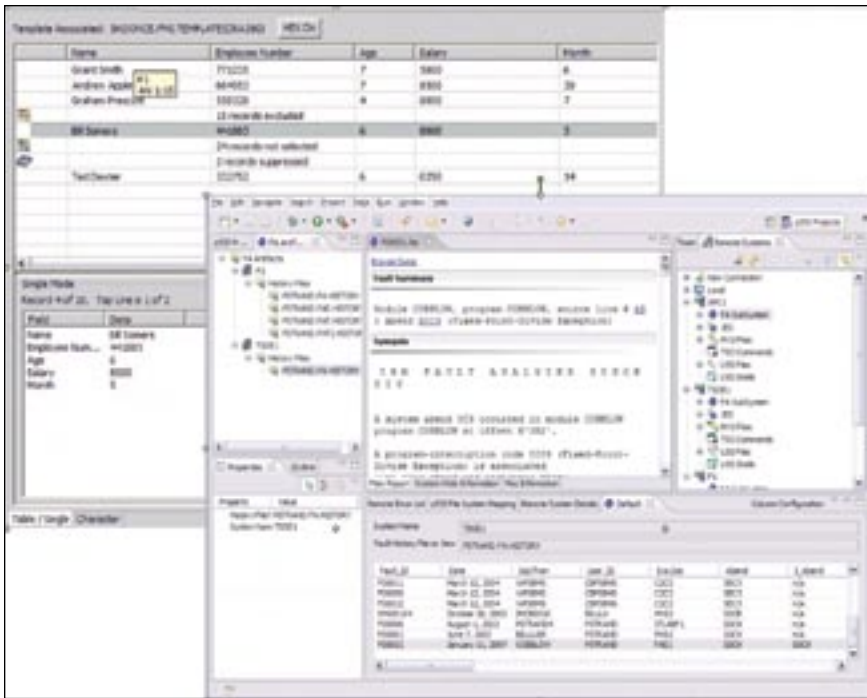
JavaServer Pages (JSP) with business logic implemented with different technologies, such as Web services, Java EE Connector Architecture (JCA) adapters, COBOL, PL/I and C/C++. This capability enables individuals with a variety of skill sets to contribute to the construction of sophisticated Web, traditional and composite applications.

Develop, maintain and reuse traditional application processes

You can continue to leverage your traditional applications and processes as part of your SOA—and still meet your quality-of-service requirements. Rational Developer for System z provides an interactive workstation-based environment to help develop, maintain and reuse COBOL, PL/I, C/C++, CICS, IMS and batch applications for traditional processing or for inclusion in an SOA.

With the version 7.1 release of Rational Developer for System z, IBM offers several new key features and capabilities, including:

- An enhanced COBOL outline view including filtering capabilities.
- An extensible template-driven COBOL program generation framework to create COBOL program skeletons including comments, divisions and code based on intended usage, including basic mapping support (BMS) screens, CICS applications and your own extensions.



Rational Developer for System z software provides integration with the IBM File Manager and Fault Analyzer tools, allowing developers to more productively test and resolve application problems.

- Support for IBM DB2®, Version 9 applications and stored procedures.
- Content assist and syntax check for new IBM CICS Transaction Server (TS), Version 3.2 syntax.
- Secure Sockets Layer (SSL) support for job submission and monitoring.
- IBM File Manager integration, which enables access to Keyed Sequence Data Set (KSDS) files from the Rational Developer for System z workbench, including:
 - Data set browsing and updating capabilities.
 - Template-driven display of Virtual Storage Access Method (VSAM), Partitioned Data Set (PDS) member and sequential file data.
 - Support for large data-set display and edit.
- IBM Fault Analyzer integration, which allows users to browse fault analyzer ABEND reports on CICS, IMS, batch, Java, WebSphere and other run times; view dump selections relating to ABENDs; and annotate reports to share comments with other users who browse the same reports.
- New menu manager enhancements to dynamically insert parameters into job control language (JCL).
- Simplified configuration of host servers.
- Additional Interactive System Productivity Facility (ISPF) commands and keyboard access available through an editor.

- Next Generation Development Tooling (NGDT) for COBOL technology preview, which speeds application development using enhanced COBOL editors, pattern-based code generation and Unified Modeling Language (UML) to source skeleton gene.
- Enhanced support for managing IBM z/OS® projects with IBM Rational ClearCase® software, which allows you to manage local workstation projects and associate them with a specific host for remote development and testing; retrieve and move resources stored in the local project, allowing synchronization between host and workstation; and perform a remote syntax check on local projects associated with the host.

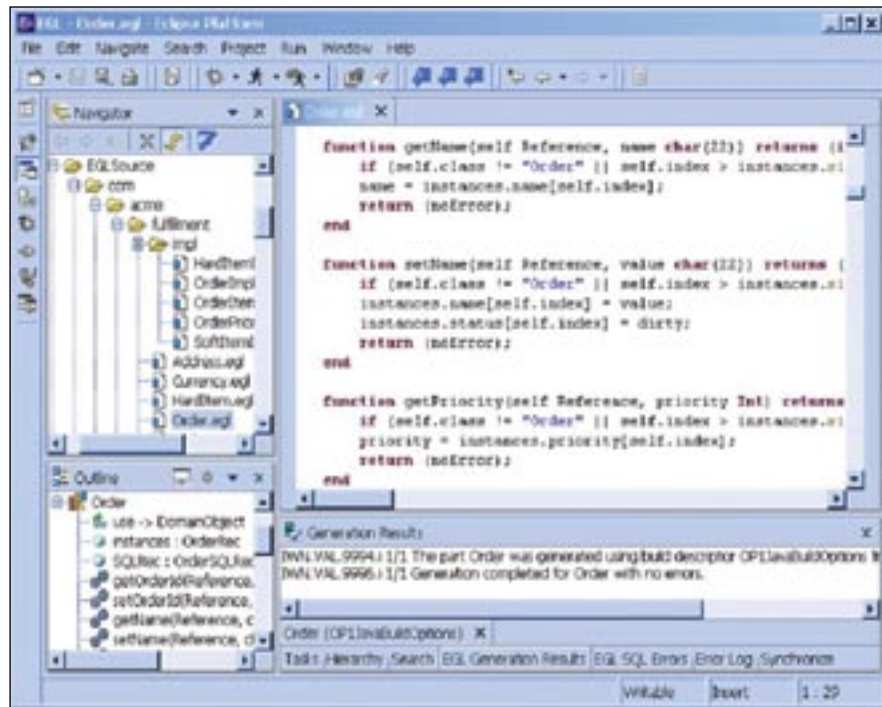
The preceding new and enhanced features of Rational Developer for System z are in addition to an already comprehensive set, which includes:

- C and C++ support for developing, editing, assisting with content, remotely checking syntax and building z/OS applications.
- Local syntax check that supports remote z/OS artifacts and includes dependency identification of copy books with the added capability to manage copy books across projects, as well and IBM CICS Transaction Server for z/OS, Version 3 application programming interface (API) support.

- *PL/I and COBOL Microsoft® Windows® compilers that synchronize processing with mainframe-based compiles.*
- *IBM TXSeries® for Windows software supporting IBM CICS TS for z/OS software that helps simplify local CICS Windows technology-based development.*
- *Simplified ISPF function access through IBM WebSphere Host Access Transformation Services (HATS) software to support developer access through automated rich-client interfaces.*
- *An IBM Software Configuration and Library Manager (SCLM) developer plug-in that provides support for long names, RSE integration, as well as local and remote syntax-check support for SCLM projects.*
- *Stored-procedure build and debug support for IBM DB2 COBOL and PL/I technology.*

Visually define Web application interfaces and workflow

A comprehensive view of the Web application flow can help ease maintenance requirements and promote a greater understanding of unfamiliar application construction and components. To help support the JSF and Struts frameworks, Rational Developer for System z includes both a user-interface-oriented development



As an Eclipse plug-in, Rational Business Developer Extension provides Rational Developer for System z users with increased capabilities and function via a familiar interface.

paradigm and a Web diagram editor that maps applications to help you quickly recognize the flow, structure and components of JSF and Struts technology-based Web applications.

Architects, analysts and developers can easily access wizards and a point-and-click design tool throughout the development process to help quickly generate JSP and Java syntax. As a result, team members can separate responsibilities and improve productivity and focus.

Build Java EE, core and composite applications using IBM EGL

IBM Rational Enterprise Generation Language (EGL) technology combines an easy-to-consume language with links to the popular JSF framework supporting rapid application development for procedural language developers. The platform-neutral, high-level EGL syntax shields developers from the intricacies of coding to low-level language and run-time programming interfaces.

EGL applications can be deployed to run as Java programs under an application server, such as IBM WebSphere Application Server, or as COBOL programs to be run in System z, CICS, IMS and batch environments. The EGL capability is available in the IBM Rational Business Developer Extension offering, a separate, easy-to-install product.

Enhance development capabilities with leading-edge servlet, JSP and EJB tools

Suppose you have existing applications that you want to keep and important data residing in existing systems. You need advanced tools to build Web applications that include business logic to preserve investments and reduce development time. With Rational Developer for System z, you can define JSP components and servlets, and map entity beans to databases. And you can generate Enterprise JavaBeans (EJB) components and access transaction-processing systems to better use your investments and help lower the cost of retooling, integrating and updating existing applications.

Rational Developer for System z offers a fully supported EJB development environment to create and test applications for rapid deployment to application servers. To provide a robust unit-test environment, Rational Developer for System z integrates tightly with other WebSphere software and enables easy deployment to WebSphere Application Server. A robust query engine supports deployed code by creating structured query language (SQL) strings to be generated into persistent classes. Rational Developer for System z also provides tools to help create, edit and validate enterprise archive files and editors to format deployment descriptors.

Building Web services quickly with a robust XML toolset

Web services speak a common language with shared definitions to discover each other's resources, connect dynamically and conduct transactions in real time with minimal human input. Rational Developer for System z provides tools to help you rapidly develop Web services in distributed and z/OS environments. Individually or combined, these standards-based applications can be accessed through XML to perform complex transactions with minimal programming.

Rational Developer for System z includes enterprise service tools that offer an enhanced user interface that increases usability and helps simplify the overall service-flow development process. The tools also provide an integrated perspective that assists developers in the creation of:

- *CICS Web services, using a new or existing CICS application as an application component.*
- *IBM IMS SOAP [Simple Object Access Protocol] Gateway Web services that use new or existing IMS applications as an application component.*
- *Web services—that are not specific to certain run times—from a new or existing application.*
- *COBOL CICS applications that access a z/OS DB2 database using the IBM System z database application generator tool.*
- *Comprehensive Web services that collect and process data from multiple sources, including CICS nonterminal and terminal applications and Web services.*

Enterprise service tools provide projects that enable you to transform an existing CICS application to a Web service or to integrate an existing CICS application into a Web service. The service-flow-specific project can also be driven by IBM WebSphere MQ messages and IBM CICS Transaction Gateway software.

To run the service-flow project, you must have the CICS service-flow feature installed, which in turn requires CICS TS, Version 3.1 or 3.2 software. Certain functionality, such as channel and container access, requires the 3.2 version of service-flow run time. The CICS service-flow feature provides components that extend CICS TS by providing noninvasive adapters that use CICS interfaces to invoke the CICS terminal-oriented transactions and communications area (COMMAREA) programs and channel programs required by the Web service generated from the service-flow project.

CICS application assets orchestrated by the service flow do not have to be altered to support the CICS business-service flow, enabling you to quickly reuse existing assets while helping to minimize the risk of the new implementation. If required, the CICS business service can handle state data related to the business service between multiple invocations of the CICS application interfaces.

Web service support for a broad range of platforms

Rational Developer for System z also facilitates Web services development tasks to help you build and deploy Web services-enabled applications for your business goals across a broad range of software and hardware platforms. These Web services enable you to:

- *Use an explorer to discover, browse, invoke and publish Web Services Description Language (WSDL) in a Universal Description, Discovery and Integration (UDDI) registry.*
- *Create Web services from existing artifacts, such as Java beans, EJB components, URLs that take and return data, IBM DB2 XML Extender calls, DB2 stored procedures and SQL queries.*

- *Wrap existing artifacts as SOAP, HTTP GET and POST method-accessible services and describe them in WSDL.*
- *Create Web services, Web services clients and test environments, and deploy them into WebSphere Application Server.*
- *Use the WSDL editor, a graphical tool, to edit WSDL files and embedded XML schemas.*

Rational Developer for System z includes a comprehensive XML toolset to help you build document type definitions (DTDs), create XML schemas and files, and integrate relational data with Web services. You can quickly and easily transform and combine IBM Enterprise COBOL code into XML-based applications to redeploy them as Web services that conform to UDDI, SOAP and WSDL standards.

Specialized z/OS system-based Web services support enable you to map XML schema files, WSDL files, DTDs and other XML documents to and from COBOL data structures, as well as generate the underlying transformers, and perform high-speed parsing in the IBM Enterprise COBOL language environment. Specific options

support deployment to various z/OS run times, including specialized support for the CICS Web services and IMS SOAP Gateway features.

New enhancements to SOA and Web service support include:

- *Support for IBM CICS, Version 3.2 Web service run time.*
- *Support for WDSL 2.0 and SOAP 1.2 standards.*
- *Tools for IBM IMS, Version 10 outbound Web service call-out code generation.*
- *PL/I support in Web service wizards for generating Web services from existing PL/I programs for CICS, IMS and batch processing.*
- *Improved meet-in-the-middle development scenario tooling wizards to link Web service specifications with existing CICS, IMS and batch applications.*
- *Improved bottom-up development scenario tooling, which enables more flexible Web service creation based on existing programs.*

- *New IBM CICS WSBind file viewer for browsing existing/generated CICS Web service configurations.*
- *Web service testing and generation tools that tolerate custom XML name spaces defined as part of the service input or output specification.*

Test and debug during run time on local or remote servers

With the Rational Developer for System z unit-test environment, you can configure local or remote servers to perform cross-platform interactive testing and debugging live in WebSphere, CICS, IMS and DB2 transactional environments, and in z/OS batch environments. The testing and debugging process begins early in application development, with a break-point and monitor-testing capability available in the visual-assembly environment. This capability enables each aspect of the flow and the associated connections to perform as required.

Rational Developer for System z software includes a validation framework to identify errors on the fly—helping programmers save time by enabling

them to immediately identify and correct errors. Troubleshooting options include traditional debugging in composite environments, and distributed code profiling and unit testing in Java EE environments. Rational Developer for System z enables you to edit, test, check syntax and compile the source code locally, and then recompile the source, build a load module, and test and debug it on a remote z/OS system. You can also take advantage of remote debugging capabilities through the product's integration with IBM Debug Tool and IBM Debug Tool Utilities and Advanced Functions software.

Deploy composite application patterns as Web interfaces

The new System z application pattern generator feature is designed to support the generation of composite application patterns deployed as Web interfaces linked with data access and business processing delivered through COBOL-generated CICS services. This support is implemented

through JSF technology–based Web processing, session management and controller functions that interface with create, read, update and delete (CRUD) and browse processing delivered through COBOL-generated CICS services. System z application pattern generator enables CRUD COBOL back-end processing and JSF front-end processing to be generated from UML and database schemas. Also, transformations can be defined and customized, with popular transformations, such as CRUD and view controller.

Leverage technology previews to gain insight

Take advantage of technology previews to gain insight into IBM plans and directions. All information is provided “as-is” and without warranty or condition of any kind. Clients wishing to participate in the technology preview should visit the Rational Developer for System z Web site at: ibm.com/software/awdtools/devzseries/support.

- **Application analyzer technology preview.** *Allows for indexing and searching COBOL and PL/I programs and data elements held in enterprise repositories or on local systems; performs impact analysis on data elements to determine how changes will affect other pieces of code; and displays graphical representations of resources used by programs, such as DB2 tables and CICS and IMS transactions. This component is for workstation and single-user usage only.*
- **NGDT for COBOL technology preview.** *Provides a suite of tools to speed application development, maintenance and transformation. Enhanced editors bring more ways of viewing and writing code; using UML diagrams to generate COBOL assets allows high-level skeleton code to be created quickly; and pattern-based development creates complete program logic to allow developers to focus on other tasks.*
- **Application deployment manager technology preview.** *Provides new wizards to facilitate easily deploying Web services to the CICS run time.*
- **Citrix support technology preview.** *For a geographically distributed development team or teams working with sensitive data, IBM Rational Developer for System z provides the option of installing on a Citrix server to provide more secure remote access to better protect your data with a single installation of the product.*

A comprehensive integrated development environment

Rational Developer for System z supports a broad range of developers with added flexibility and the ability to integrate with existing applications. It offers an integrated development environment (IDE) with advanced, easy-to-use tools and features to help developers rapidly design, code and deploy complex composite and traditional applications.

IBM Rational Developer for System z, Version 7.1 software at a glance

Hardware requirements

- Processor: 800MHz Intel® Pentium® III or higher
- Memory: 1G RAM or higher
- Disk space: 2GB of disk space is required to install the product. Additional disk space is required for the resources that you develop.
 - Disk space requirements can be reduced depending on the features you install.
 - Additional disk space is required if you download the electronic image to install the product.
 - Additional disk space is required if you use FAT32 instead of NTFS.
 - An additional 650MB of disk space is required in the TEMP directory.
- Display: 1024 x 768 display minimum using 256 colors (higher is recommended)
- Other hardware: Microsoft mouse or compatible pointing device

Software requirements

Additional details about these prerequisites can be found in the installation guide.

- One of the following operating systems:
 - Microsoft Windows XP Professional, Service Pack (SP) 2 or later
 - Microsoft Windows Server 2003 Standard, SP1 or later
 - Microsoft Windows Server 2003 Enterprise, SP1 or later
 - Microsoft Windows Vista Business*
 - Microsoft Windows Vista Enterprise*
 - Microsoft Windows Vista Ultimate*
- No service level required

Note: The above-listed operating systems support all of the national languages that are supported by Rational Developer. Rational Developer was developed for use with an Eclipse IDE of version 3.2.2 or greater that uses at least version 1.5 of the IBM Java Development Kit (JDK). You may only extend an existing Eclipse IDE that meets these requirements.

- Rational Developer for System z requires either Rational Application Developer 7.0.0.3 or Rational Software Architect 7.0.0.3 be installed. Rational Application Developer is included on the Rational Developer for System z media, and the installation wizard guides you through the simultaneous installation of both.

Note: If you already have Rational Developer or Rational Software Architect installed on your system, you will need to update to version 7.0.0.3 prior to installing. Please see the installation guide for additional information about the features that are required for the installation.

- TCP/IP installed and configured
- One of the following Web browsers (to view readme files and the installation guide):
 - Microsoft Internet Explorer 6.0 with SP1
 - Mozilla 1.6 or 1.7 plus all available maintenance
 - Firefox 1.0 or 1.5 plus all available maintenance
- Adobe® Flash Player, Version 6.0 Release 65 or later with all available maintenance (to view multimedia user assistance, such as tours, tutorials and show-me servlets)
- Adobe Reader Version 7.0 or later with all available maintenance (to view product documentation PDFs)
- To support applications with embedded CICS statements, TXSeries for Multiplatforms Version 6.1, with the appropriate PTF
- To support applications with embedded CICS statements, DB2 Enterprise Server Edition V9.1 for Windows
- User privilege requirements:
 - Your user ID must not contain double-byte characters.
 - You must have a user ID belonging to the administrators group.

Note: To enable users who do not have Administrator privileges to work with Developer for System z and Rational Application Developer on a Windows Vista system, do not install inside the Program Files directory (C:\Program Files\). Developer for System z is compatible with Vista but does not take full advantage of the new capabilities within Vista. You must install using an Administrator ID when installing Developer for System z Microsoft Vista operating systems.

Note: For more details about Rational Developer for System z software requirements, such as the required components and PTFs for the programs listed here, refer to the soft-copy publication *Prerequisites for Rational Developer for System z* (SC31-6352).

Host prerequisites

More detailed information about the following host prerequisites and corequisites can be found in the host planning guide.

- IBM z/OS, Version 1.7 or later
- One of the following IBM REXX™ levels installed on the host:
 - IBM REXX/370 Library, Version 1.4
 - IBM REXX/370 Alternate Library 1.4

Corequisites

Note: The following products and other stated software are required to support specific features of Rational Developer for System z. The workstation client can be successfully installed without these corequisites; however, a stated corequisite must be installed and operational at run time for the corresponding feature to work as designed.

For applications using RSE server:

- IBM Software Developer Kit (SDK) for z/OS Java 2 Technology Edition, Version 1.4 or 1.5

To compile C and C++ programs developed or edited within Rational Developer for System z:

- IBM z/OS C/C++, Version 1.7

To compile COBOL programs developed or edited within Rational Developer for System z (one of the following):

- IBM Enterprise COBOL for z/OS, Version 3.4

To compile PL/I programs developed or edited within Rational Developer for System z (one of the following):

- IBM Enterprise PL/I for z/OS, Version 3.4 or later

To compile High-Level Assembler programs developed or edited within Rational Developer for System z:

- IBM High-Level Assembler/MVS and VM and VSE, Version 1.7

To support remote debugging of COBOL, PL/I, C/C++ and High-Level Assembler programs from Rational Developer for System z (one of the following):

- IBM Debug Tool for z/OS, Version 6.1, 7.1 or 8.1 with all available maintenance
- IBM Debug Tool Utilities and Advanced Functions for z/OS, Version 6.1, 7.1 or 8.1 with all available maintenance

Note: Debug Tool Utilities and Advanced Function is a superset of Debug Tool. Either will support the remote debugging and must be purchased separately.

To support applications with embedded CICS statements (one of the following):

- IBM CICS Transaction Server for z/OS, Version 2.2, 2.3 or later
- IBM CICS Transaction Server for z/OS, Version 3.1 with appropriate PTFs
- IBM CICS Transaction Server for z/OS, Version 3.2

Note: CICS TS, Version 3.2 is required to support new features of the enterprise service tools, such as the new mapping and run-time levels of WSBIND files and WSBIND files generated with or from SOAP 1.2 and WSDL 2.0 based services.

To support applications using IMS database and data communications (one of the following):

- IBM IMS/ESA®, Version 8.1 or later
- IBM IMS/ESA, Version 9.1 or later

To support IBM DB2 for z/OS or OS/390® (one of the following):

- DB2, Version 7.1 or later with appropriate PTFs
- DB2, Version 8.1
- DB2, Version 9.1

To support File Manager Integration:

- IBM File Manager, Version 8.1

To support Fault Analyzer integration:

- IBM Fault Analyzer, Version 7.1 or later with appropriate PTFs



For more information

To learn more about IBM Rational Developer for System z software, contact your IBM representative or IBM Business Partner, or visit:

ibm.com/software/awdtools/devzseries

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