IBM WebSphere Studio Enterprise Developer V5.1.2 — Simplifying the development of Java, COBOL, and PL/I mixed workload applications

Overview
IBM WebSphere® Studio Enterprise Developer V5.1.2 includes major enhancements to make Web, traditional, and integrated development faster and developer communities more productive. This release supports new industry standards that simplify the development of rich Web user interfaces and business logic. It includes high productivity tools for business-oriented developers, new to Java™, that integrates IBM @server zSeries® processing via Web services. WebSphere Studio Enterprise Developer speeds Java 2 Enterprise Edition (J2EE) development and is a comprehensive development environment for visually designing, constructing, testing, and deploying Web services, and J2EE applications linking to traditional zSeries assets. It simplifies Java, COBOL, PL/I, and Enterprise Generation Language (EGL) development with Rapid Application Development (RAD) tools, templates, and wizards.

What’s new in V5.1.2
- Build dynamic Web user interfaces with code generation to standards-based frameworks including Struts and JavaServer Faces (JSF) MVC frameworks
- Visually design and develop rich user interfaces using drag-and-drop reusable components and visual Page Designer
- Build data-driven Web pages with point-and-click database connectivity
- Write business logic and build data-driven Web applications using 4GL skills and EGL procedural language
- Begin converting to EGL from VisualAge® Generator V4.5
- Purchase EGL for COBOL Extension feature separately
- Build rich client user interfaces with performance and maintenance characteristics of thin clients using JSF extensions
- Develop and test applications locally with single user CICS® Transaction Server for Windows™ V5 API and runtime support
- Has basic J2EE Connector Architecture (JCA) connectors support for CICS ECI, CICS EPI, IMS™, and HOD upgraded for CICS Transaction Gateway V5.1
- Enhanced Job Monitor
- DB2® Stored Procedure support
- Provides batch interface to XML and Web Service Tooling for COBOL
- Provides batch generation of Web Services Description Language (WSDL) for COBOL applications
- Provides greater flexibility thru the use of JCL Procs and user-specified variables
- Provides complete Complex OCCURS DEPENDING ON (ODO) support for XML Enablement

Key prerequisites
Refer to the Software requirements and Hardware requirements sections.

Planned availability dates
- October 12, 2004: Electronic software delivery
- October 19, 2004: Media and documentation

At a glance
With IBM WebSphere Studio Enterprise Developer, you can:
- Accelerate the development of dynamic Web, Java, J2EE, COBOL, PL/I, EGL, and Web services applications
- Deploy to runtimes including WebSphere, CICS, IMS, Batch, and DB2 via Stored Procedures
- Leverage existing skills and shorten the learning curve for Web development with drag-and-drop, UI components, and point-and-click database connectivity
- Integrate your business applications with interoperable Web services and JCA connectivity
- Adapt and extend the development environment with a wide range of plug-ins
- Create and test portlets in a visual environment
- Visualize and graphically edit code through the UML Visual Editor
- Detect performance issues early with performance profiling and trace tools
- Generate enterprise COBOL adapters for CICS and IMS Web service-based applications

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**Enterprise Generation Language (EGL):** WebSphere Studio Enterprise Developer V5.1.2 includes a new implementation of EGL, a high-level procedural language (familiar to SQL, COBOL, RPG, Informix™ 4GL developers) that developers, unfamiliar with Java, can use to quickly build data-driven Web applications and business logic. Developers can write and debug their applications in EGL, and WebSphere Studio Enterprise Developer generates the Java code for them. Used in conjunction with JavaServer Faces (JSF), EGL allows developers to build dynamic Web applications without having to learn the Java language. This new capability opens up Java development to a new class of developers that apply their business domain expertise and use their skills as procedural developers to build dynamic Web applications.

EGL is a development environment and programming language that lets you write full-function applications quickly, freeing you to focus on the business problem your code is addressing rather than on software technologies. You can use similar I/O statements to access different types of external data stores, for example, whether those data stores are files, relational databases, or message queues. The details of Java and J2EE are hidden from you too, so you can deliver enterprise data to browsers even if you have minimal experience with Web technologies.

After you code an EGL program, you generate it to create Java source (or COBOL source with the optional, new EGL for COBOL Extension feature described below); then EGL prepares the output to produce executable objects. EGL also can provide these services:

- Places the source on a deployment platform outside of the development platform
- Prepares the source on the deployment platform
- Sends status information from the deployment platform to the development platform, so you can check the results

EGL even produces output that facilitates the final deployment of the executable objects.

An EGL program written for one target platform can be converted easily for use on another. The benefit is that you can code in response to current platform requirements, and many details of any future migration are handled for you. EGL also can produce multiple parts of an application system from the same source.

A conversion utility is also provided enabling batch conversion of VisualAge Generator V4.5 TUI applications to the new EGL language syntax.

**Enterprise Generation Language for COBOL Extension:** Application processes built in EGL can be deployed to Series-1 CICS environments through the EGL for COBOL Extension feature, which can be purchased separately. EGL generation to the COBOL language enables deployment of server-based EGL components to CICS environments. Connectivity is provided through JCA. Application patterns or environments supported include:

- Terminal user interface (TUI) applications accessing DB2, VSAM, MQ, and CICS data stores deployed to CICS Transaction Server
- JSF UI components integrated with CICS services

You gain two additional benefits when your deployment target is CICS:

- First, you can avoid the complexities that would be in effect if you were using a third-generation language to code a CICS pseudo-conversational program. You write logic as if the user were having a conversation with a program that is always in memory, despite the fact that at run time, your code is repeatedly brought into memory and taken out of memory during the program’s interaction with the user.
- Second, you can avoid having to configure a CICS connector when you want an EGL-generated CICS program to interact with Java code that runs in a Web application server.

**CICS Transaction Server for Windows:**

CICS Transaction Server (CICS TS) for Windows V5.0 is an advanced transaction processing solution for the Microsoft™ Windows 2000 and Windows NT™ platforms. CICS TS for Windows provides a comprehensive CICS API on a code base that is simple to install and is sparing in its use of resources. CICS TS for Windows can be an ideal environment for local development of CICS applications. CICS TS for Windows is provided in WebSphere Studio Enterprise Developer for development use only. Specific functions include:

- Integrated Performance Analyzer function
- Programming language support for COBOL, C, C++, and PL/I (WSEd includes COBOL and PL/I local compilers)
- Support for the master terminal (CEMT) function for management of CICS resources
- Interfaces for external security manager, external file manager, and resource definition
- Support for dynamic resource installation (CEDA)
- Support for Multi-Region Operation (MRO)
- Support for Front End Programming Interface (FEPI) LU0
- National Language support, with messages, screens, and help text in multiple languages

**Support for DB2 stored procedures:** A stored procedure is a compiled program, stored on a DB2 local or remote server, that can execute SQL statements. A separate client application uses a SQL CALL statement to invoke the stored procedure. The new support in V5.1.2 is designed to assist you in developing DB2 z/OS® stored procedures in COBOL or PL/I. It will enable you to:

- Create new stored procedures using a wizard
- Build and register stored procedures on a z/OS system
- Run stored procedures on a z/OS system
- Debug stored procedures on a z/OS system
- View result sets, messages, and parameters in the Output view
- Drop stored procedures from the database

**Job Monitor enhancements:** The user can now customize the maximum number of lines of job output that the Job Monitor will retrieve from the host for a given job. Other enhancements in the Job Monitor include line count and the ability to add, remove, and modify job filter directly from the Job Monitor View. The Job Monitor server can be configured to only allow the jobs owned by a user to be viewable through the Job Monitor View.

**Batch Interface to XML and Web Services Tooling for COBOL:** A single XML enablement command line batch tool is provided that produces all artifacts, including both COBOL and WSDL adapters. This batch tool can be
invoked by an automated build environment (such as ANT).

Complimentary product offerings: Also included in the WebSphere Studio Enterprise Developer V5.1.2 media packages are a number of complimentary product offerings. Below is a list of the included offerings with references to the respective announcement letters:

- WebSphere Host Access Transformation Services (HATS) Toolkit, V5.0
  Software Announcement 203-293, dated October 28, 2003
  HATS transforms the screens of a host application into Web pages that are part of a WebSphere application running on a Web server. End users access the pages from their Web browsers and use the pages to send and receive data from the host application. HATS has two components:
  - HATS Toolkit runs on a client. Using HATS Toolkit, the application developer creates a Web application in which host screens are transformed into Web pages. HATS Toolkit runs in the WebSphere Studio Workbench and appears as a perspective in WebSphere Studio Enterprise Developer.
  - The HATS run-time code runs inside one or more HATS applications deployed on WebSphere Application Server. It sends data back and forth between the user and an application on the host. End users interact with the HATS application through their Web browsers.

  The complimentary copy of HATS Toolkit, included with WebSphere Studio Enterprise Developer, is for development use only. At deployment, user-based licenses must be independently acquired. Refer to the HATS announcement for more information on acquiring HATS licenses.

- WebSphere Application Server V5.1
  Software Announcement 203-319, dated November 25, 2003

- CICS Transaction Gateway V5.1
  Software Announcement 204-031, dated March 9, 2004
  The complimentary copy of CICS Transaction Gateway, included with WebSphere Studio Enterprise Developer, is for development use only. At deployment, processor-based licenses must be independently acquired. Refer to the CICS Transaction Gateway announcement for more information on acquiring CICS Transaction Gateway licenses.

- DB2 Universal Database® Developers Edition, V8.1 with Fixpak 3
  Software Announcement 202-214, dated September 17, 2002

Java Native Interface (JNI) Debug Utilities Preview
IBM announces the technical preview of JNI Debug Utilities. The JNI Debug Utilities will enable debugging across a JNI method call on Windows and z/OS platforms. Customers who want to participate in the technical preview to gain early experience with this support should visit the IBM WebSphere Studio Enterprise Developer Web site at

http://www.ibm.com/software/awdtools/studioenterprisedev/support

This Web site provides you with detailed information about availability dates, terms and conditions, and JNI debugging limitations.

Section 508 of the U.S. Rehabilitation Act

WebSphere Studio Enterprise Developer is capable as of October 19, 2004, when used in accordance with IBM’s associated documentation, of satisfying the applicable requirements of Section 508 of the Rehabilitation Act, provided that any assistive technology used with the product properly interoperates with it.

Product positioning

IBM WebSphere Studio is available in several configurations, each designed for a specific need.

WebSphere Studio Homepage Builder is an entry-level Web authoring tool. You can create and publish Web sites with ease by using the intuitive WYSIWYG user interface, easy-to-use wizards, templates, and support for JavaScript, Dynamic HTML, and CSS.

WebSphere Studio Site Developer is the on-ramp to the WebSphere Studio experience. This robust, easy-to-use development environment helps you to create, build, and maintain dynamic Web sites, applications, and Web services.

WebSphere Studio Application Developer is the core application development environment from IBM. It helps to optimize and simplify J2EE and Web services application development with best practices, templates, code generation, and the most comprehensive development environment in its class.

WebSphere Studio Application Developer Integration Edition is the complex application development and integration environment. It is the “build to integrate” solution for accelerated development and integration of complex applications.

WebSphere Studio Enterprise Developer is the Web and traditional development environment for the enterprise. It brings the power of J2EE, rapid application development, and team support to diverse enterprise application development organizations.

Reference information

Refer to:

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The e-business logo, WebSphere, zSeries, VisualAge, CICS, DB2, z/OS, and DB2 Universal Database are registered trademarks of International Business Machines Corporation in the United States or other countries or both.

Windows, Microsoft, and Windows NT are trademarks of Microsoft Corporation.

Java is a trademark of Sun Microsystems, Inc. Other company, product, and service names may be trademarks or service marks of others.
# Education support

WebSphere® Training and Technical Enablement delivers a comprehensive portfolio of education services to help customers successfully deploy and integrate IBM’s WebSphere Application and Integration middleware products to their maximum potential.

Education is a key component to ensuring software success. The WebSphere Training and Technical Enablement team is committed to providing the highest quality education available to help your company prosper in today’s competitive marketplace. We take pride in our ability to deliver successful education programs that provide your people with the skills necessary to make your business profitable using IBM software.

The WebSphere Training and Technical Enablement team works closely with IBM product developers and IBM services organizations to ensure that the courses we offer provide the most up-to-the-minute technical and product information. Our courses place an emphasis on the advanced knowledge and insight that only these sources can provide. We draw from a deep pool of IBM technical experience in the development of our courses, and pass that knowledge on to our students.

For more information about WebSphere Training and Technical Enablement, refer to the Web site


The following educational offerings are available:

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<tr>
<th>Course title</th>
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<td>Introduction to Developing OO</td>
<td>JA321</td>
<td>Classroom</td>
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<tr>
<td>Applications with Java for Procedural Developers</td>
<td>JA341</td>
<td>Classroom</td>
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<td>Development and Test OO Applications with Java Application Developer</td>
<td>SW744, SW232</td>
<td>Self-study</td>
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<td>File Manager</td>
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<td>Intro to Java with WebSphere Studio</td>
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<td>IBM WebSphere Host Access Transformation Services Introduction Web Services Best Practices</td>
<td>SW912</td>
<td>Classroom</td>
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<tr>
<td>Introduction to XML and Related Technologies Application Monitor</td>
<td>SW748, SW337</td>
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<td>WSWB1</td>
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<tr>
<td>The Developer’s Guide to Eclipse</td>
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<td>Advanced HATS</td>
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<td>Programming with Java Connecting the Enterprise Service-Oriented Architecture</td>
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<td>Developing Web Services with WebSphere Studio V5.1 Using EGL in WebSphere Studio Connecting CICS to WebSphere Application server via CICS Transaction Gateway Web Services Dev. Using WebSphere Studio Application Developer V5.1 Using Struts for Web Application Development Intro to WebSphere Studio Application Developer and Web Services Workload Simulator</td>
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<td>CICS® Application Programming Debug Tool</td>
<td>SW746</td>
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<tr>
<td>Process Choreographer</td>
<td>SW511</td>
<td>Classroom</td>
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IBM Global Services, IT Education Services, provides education to support many IBM offerings. Descriptions of courses for IT professionals and managers are on the IBM Learning Services Web sites


Refer to the IBM IT Education Services Web site for information on course locations and availability dates.

Call IBM IT Education Services at 800-IBM-TEACH (426-8322) for catalogs, schedules, and enrollments.

Consulting and services

IBM has a number of services offerings available for WebSphere Studio Enterprise Developer and will customize offerings to meet the needs of individual customers. Consulting expertise is available for mentoring, implementation, migration, architecture and design services, development, deployment, and education.

For more information on these available services, refer to

http://www.ibm.com/services/learning/

Offering information

Product information is available via the Offering Information Web site

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

Also, visit the Passport Advantage® Web site

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

Publications

No publications are shipped with this product.

The IBM Publications Center

http://www.ibm.com/shop/publications/order

The Publications Center is a worldwide central repository for IBM product publications and marketing material with a catalog of 70,000 items. Extensive search facilities are provided. Payment options for orders are via credit card (in the U.S.) or customer number for 50 countries. A large number of publications are available online in various file formats, and they can all be downloaded by all countries free of charge.
other examples, you must install a recent version of DB2 UDB (at least DB2 UDB V7.2 with Fixpak 7), which is shipped for optional installation with WebSphere Studio Enterprise Developer.

- Host connectivity to the DB2 subsystem on z/OS® requires DB2 Connect®. DB2 Connect is available as a separately orderable product or as a feature of DB2 Universal Database® Enterpise Server Edition.
  - If you are only interested in establishing remote connectivity for use with DB2 Stored Procedure development and deployment, you can use the separate DB2 Connect product.
  - If you are interested in establishing remote connectivity and local COBOL development, including build and syntax check, you need a DB2 edition that includes the header/include files such as DB2 UDB Enterprise Edition Version 8.1 with Fixpak 6 or Personal Edition Version 8.1 with Fixpak 6.

Prerequisites for the optional Enterprise Developer for z/OS

- One of the following host operating systems:
  - z/OS V1.3, or later (5694-A01)

The following products and other stated software are required to support specific features of Enterprise Developer. The workstation client can be successfully installed without these requisites, however, a stated requisite must be installed and operational at run time for the corresponding feature to work as designed.

- COBOL compiler — one of the following must be installed on the host to compile COBOL programs developed within Enterprise Developer:
  - IBM COBOL for OS/390® and VM V2.1 (5648-A25)
  - IBM Enterprise COBOL for z/OS V3.1, or later (5655-G53)

- PL/I compiler — one of the following must be installed on the host to compile PL/I programs developed within Enterprise Developer:
  - IBM PL/I for MVS™ and VM V1.1 (5688-235)
  - IBM VisualAge® PL/I for OS/390 V2.2 (5655-B22)
  - IBM Enterprise PL/I for z/OS V3.1, or later (5655-H31)

- Debug tool — one of the following must be installed on the host to support remote debugging of COBOL and PL/I programs from Enterprise Developer:
  - IBM Debug Tool for z/OS and OS/390 V3.1 (5655-H32)
  - IBM Debug Tool for z/OS V4.1 (5655-L24)

- CICS Transaction Server — one of the following must be installed on the host to support applications with embedded CICS statements:
  - IBM CICS Transaction Server V1.3, or later (5655-I47)
  - IBM CICS Transaction Server for z/OS V2.2 (5697-E93)

- IMS/ESA® — one of the following must be installed on the host to support applications using IMS database and data communications:
  - IMS/ESA V7.1, or later (5655-B01)

- DB2 UDB — one of the following must be installed on the host to support DB2 UDB for z/OS or OS/390:
  - DB2 UDB V6.1, or later (5645-DB2)
  - DB2 UDB V7.1, or later (5675-DB2)

- Software Configuration and Library Manager (SCLM) — one of the following must be installed on the host to support access to SCLM:
  - REXX/370 Library, or Alternate Library, V1.3 (5695-014)

- IBM HTTP Server — one of the following must be installed and configured on the host in order for you to send files to the host and receive files from the host:
  - IBM HTTP Server for OS/390 V5.3 (5647-A01)
  - IBM HTTP Server for z/OS V5.3 (5694-A01)

- Unicode support — Unicode support is required for the XML enablement feature of Enterprise Developer. Unicode support is part of z/OS V1.2, or later.

- Microsoft Loopback Adapter — You must install and configure the Microsoft Loopback Adapter on your workstation in order to use the z/OS application development tools feature of Enterprise Developer.

Prerequisites for the optional CICS TS for Windows

- One of the following workstation operating systems:
  - Microsoft Windows 2000 Professional or Server or Advanced Server with Service Pack 2, or later
  - Microsoft Windows NT™ Workstation or Server V4.0 with Service Pack 6a, or later

Prerequisites for the optional EGL for COBOL Extension feature

- One of the following:
  - Enterprise Developer Server for z/OS V5.0 (5655-I57)
  - VisualAge Generator Server for MVS V1.2 (5648-B02)

Prerequisites for included complimentary offerings

Also included in the WebSphere Studio Enterprise Developer media package are a number of complimentary product offerings. For a list of the included offerings, refer to Complimentary product offerings in the Description section. For software requirements for the complimentary products, refer to the separate complimentary product offerings’ announcement letters listed in the Description section.

Planning information

Installability: Software Maintenance, previously referred to as Software Subscription and Technical Support, is included in the Passport Advantage Agreement. Installation and technical support is provided by the Software Maintenance offering of the IBM International Passport Advantage Agreement. This fee service enhances customer productivity, with voice and electronic access into IBM support organizations.

Packaging: The WebSphere Studio Enterprise Developer Passport Advantage media package is distributed with basic machine-readable material on CDs.
Security, auditability, and control

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

Ordering information

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

Product information

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<th>Product category</th>
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<td>IBM WebSphere</td>
<td>WebSphere Tools</td>
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<td>Enterprise Generation Language for COBOL Extension</td>
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IBM WebSphere Studio Enterprise Developer has the following charge structure: Users

IBM Enterprise Generation Language for COBOL Extension has the following charge structure: Users

Passport Advantage program licenses

WebSphere Studio Enterprise Developer

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Passport Advantage supply

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<th>Program name/ description</th>
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- WSED V5.1.2 (not including VisualAge offerings) (BA0D2ML) contains:
  - WSED V5.1.2
  - The complimentary products listed in the [Complimentary product offerings](#) section
  - Enterprise Generation Language for COBOL Extension
- WSED V5.1.2 (including VisualAge offerings) (BA0D1ML) contains:
  - The contents of BA0D2ML, plus VisualAge Generator Developer, V4.5.3

Passport Advantage customer: Media pack entitlement details

Customers with active maintenance or subscription for the products listed are entitled to receive the corresponding media pack.
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<tr>
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**Entitled maintenance offerings description**

**Media packs description**

**Part number**

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**Cross-platform product for use on zSeries**

Order the part numbers that follow when there is an intention to acquire this cross-platform product for deployment on the zSeries/S/390® platform. This set of part numbers provides the identical supply and authorization as the other set in this announcement. The distinction is to identify the planned deployment platform.

<table>
<thead>
<tr>
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Withdrawal of previous Passport Advantage part numbers: IBM will withdraw from marketing the following parts licensed under the IBM International Program License Agreement on the dates specified.

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<th>Program name</th>
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<td>5724-B67</td>
<td>WEBSPHERE STUDIO ENTERPRISE DEVELOPER (GA) V5.0 ML MEDIA PACK WSED V5.1.1 (including VisualAge offerings) Windows CD-ROM Digit</td>
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<td>(not including VisualAge offerings) Windows CD-ROM Digit</td>
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**License information form number**

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<td>WebSphere Studio Enterprise Developer</td>
<td>5724-B67</td>
<td>L-BPAL-5YY2GA</td>
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</table>

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