IBM WebSphere eXtended Transaction Runtime V2.1 delivers a modern, tightly integrated managed environment for hosting COBOL and C business applications within IBM WebSphere Application Server on AIX

Table of contents

At a glance

IBM® WebSphere® eXtended Transaction Runtime (WXTR) V2.1 delivers:

- Tightly integrated and managed transactional environment to host Java™ Enterprise Edition (Java EE) and modern COBOL/C applications
- Data management services to handle data stored in the DB2® and Oracle database from the modern COBOL/C applications
- Unified system administration with IBM WebSphere Application Server
- Integration with IBM WebSphere Application Server Network Deployment version to provide scalability and availability
- Integration with IBM Rational® application development tools for developing and debugging mixed language applications

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Overview

IBM WebSphere eXtended Transaction Runtime (WXTR), is a distributed online transaction processing environment to host modern COBOL and C applications in combination with WebSphere Application Server (WAS) on AIX®. It enables you to modernize and extend your mission-critical business applications written in COBOL and C into a Java Enterprise Edition (Java EE) environment and realize the benefits of a tightly integrated managed environment. WXTR provides native runtime connectivity between Java EE and COBOL/C applications, significantly easing integration required for composite applications in an enterprise environment. Through tight integration with the system management capability of WebSphere Application Server, it is possible to achieve easy deployment, administration, and optimization of services, significantly increasing administration efficiency for managing mixed language transactional applications, unlike other competitor environments.

The latest version, WXTR V2.1, offers significant enhancements by extending the coverage of languages and resource managers supported and providing improvements in integration with WAS through support for global transactions,

security context propagation, and support for clustered deployments using WebSphere Application Server Network Deployment (WAS ND). WXTR V2.1, extends the language coverage to additionally support applications written in C along with capability already available for supporting COBOL applications. It also extends resource manager coverage to include Oracle database in addition to IBM DB2. Additionally, further enhancements have been made to the Oracle Tuxedo application modernization feature pack, allowing clients to revitalize existing Tuxedo style applications written in C and COBOL, and unlock the value of these assets by extending them to use Java EE technologies with WAS. Version 2.1 also simplifies the core infrastructure requirements by enabling non-root user administration and supporting coexistence of multiple versions and instances on the same machine. All these enhancements provide flexibility and choice to clients wishing to modernize their traditional language applications around a WAS-centric application-serving infrastructure.

Many clients have invested much time and effort in the development of business logic in COBOL and C applications to unlock the value of those applications and extend them by using Java EE. By establishing WXTR as a core component of an enterprise IT architecture, alongside WebSphere Application Server, your organization can have a highly responsive, tightly integrated composite application-serving infrastructure for modern COBOL, C, and Java workloads. This can give you the capability to effectively optimize and modernize your COBOL and C assets while capitalizing on enterprise-wide skills to consolidate IT infrastructure around WebSphere Application Server as the core hosting server in a distributed environment.

WXTR provides an increased deployment choice for clients wishing to progressively modernize their COBOL and C assets while standardizing infrastructure around WebSphere Application Server. This approach complements the premier offerings from IBM for modern application hosting on z/OS® through products such as CICS® Transaction Server (CICS TS) V4 and WebSphere Application Server for z/OS, with WXTR providing a subset of capabilities to those found on System z® for clients requiring an IBM AIX, Power-based solution.

Significantly enhanced integration with WebSphere Application Server

WXTR Version 2.1 delivers significant enhancements in integrations with WAS. Key enhancements include:

Enhanced transactional integrity

Global transactions with complete two-phase commit are now supported across mixed language workloads deployed within WAS and WXTR. Transactions can thus span between Java workloads within WAS and C/COBOL applications deployed on WXTR. A global two-phase commit transaction helps ensure that data integrity is maintained when updating multiple resource managers in a distributed transaction. This capability helps ensure that the entire transaction can commit successfully, or if some error condition occurs, be entirely returned to the pre-transaction state. With global two-phase commit you can physically distribute a composite transaction across WebSphere Application Server and WXTR workloads, giving you maximum flexibility without compromising on data integrity. This significantly reduces integration complexity for mixed language workloads and improves developer productivity and efficiency.

Security

Security context can now be propagated across applications deployed on WAS and WXTR. This reduces the additional authentication and authorization overheads that would have otherwise been required to manage security across mixed language applications through additional calls to the security provider from each component. The propagated security context from WAS can be used for authorization within the COBOL and C assets deployed in WXTR. This improves security quality of composite applications thereby reducing application complexity.

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Support for distributed deployment of WXTR with WAS ND

- **Creating a distributed topology:** The latest version provides support for Dmgr, Custom and Standalone server profile types in WAS ND. The profile augmentation tool can be used to configure WXTR and a distributed topology can be created using the supported profiles as building blocks.
- **Clustering support with WAS ND:** The latest version also supports clustered deployment using WAS ND. With this, applications can leverage the clustering capabilities of WAS ND to enhance scalability and availability features of their applications.
- **Workload management using clustering:** Horizontal and vertical clusters of WXTR instances could be created and workload can be distributed across the cluster members using edge components such as proxy server or http web server plug-ins.
- **Centralized administration of distributed topology:** WXTR V2.1 provides support for deployment manager profile. This allows unified administration of WebSphere Application Server and WXTR resources from a centralized location using Dmgr through various channels including Dmgr console and command-line utilities.

WXTR Version 2.1 supports non-root user management of WAS and WXTR. It also allows multiple versions of WXTR to be installed on the same machine. Additionally, Version 2.1 implements better synchronization with WAS resulting in improved availability. In the event of any abnormal terminations, WXTR will be automatically restarted recovering in-doubt transactions.

Extended language and Resource manager support

WXTR Version 2.1, delivers major enhancements in language and resource manager coverage by additionally supporting C language and Oracle database. Mission-critical business applications written in C can be deployed and administered within WAS using WXTR. This is in addition to the support for COBOL language applications. Additionally, resource manager coverage has been expanded to include support for Oracle database along with DB2 which was supported in version 1.0.

Simplified and easier deployment of COBOL runtime

WXTR Version 2.1, comes bundled with IBM COBOL V4.1.1.3 runtime library components. This allows for easily deployment of precompiled COBOL applications without having to necessarily install COBOL runtime separately.

Modernization of Oracle Tuxedo applications written in C and COBOL

The Feature Pack released in December 2011, extended the core value proposition of application modernization of WXTR to enable modernization of Oracle Tuxedo applications written in COBOL. Version 2.1 extends this capability to support Oracle Tuxedo applications written in C. This enables you to modernize and revitalize your Tuxedo style applications and unlock their value by extending them to use Java EE technologies. It simplifies the process of migrating Tuxedo applications onto WebSphere Application Server (WAS), complementing similar functionality provided by IBM WebSphere Application Server Migration Toolkit to migrate Oracle WebLogic applications to WAS.

This version provides two broad sets of capabilities:

Runtime environment: The runtime environment runs Tuxedo applications unchanged within WebSphere Application Server, thus modernizing them in context. The run time provides a mapping of functionality between Tuxedo and WXTR, thus simplifying application migration.

Migration Assist tooling: These tools aid in simplifying the entire process of migration, spanning from profiling applications, identifying sections that might need changes to manage optimal functional mapping to building and deploying the applications on the runtime environment.

Key prerequisites

- AIX V6.1 TL6 or AIX V7.1 TL1 SP1
- IBM WebSphere Application Server V7.0.0.19 or 8.0.0.1
- IBM WebSphere Application Server V7 Feature Pack for Service Component Architecture 1.0.1.11
- IBM DB2 V9.7
- IBM COBOL for AIX V4.1.1.3

Planned availability date

June 15, 2012: Electronic availability

July 17, 2012: Media availability

Description

IBM WebSphere eXtended Transaction Runtime (WXTR) V2.1 delivers the capability to create and host business applications written in modern COBOL/C and extend into a Java Enterprise Edition (EE) environment.

Key functions include:

Tightly integrated managed environment to host Java EE and modern COBOL/C applications

WXTR provides an execution environment to host modern COBOL/C business applications within the WebSphere Application Server supporting interoperability between Java EE and COBOL/C workloads. It enables developers to focus on business logic rather than on how to interoperate between Java EE and COBOL/C assets, failure detection, recovery, and access to data.

WXTR provides the standard interfaces to invoke COBOL/C applications from Java. Java applications can connect through standard connection interfaces Java connector architecture (JCA) or service component architecture (SCA) and invoke COBOL/C applications. SCA bindings can be used by SCA component clients. By leveraging the CICS/IMS Data Binding feature in IBM Rational Application Developer, JAVA EE applications can exchange mixed type data with COBOL/C applications in WXTR.

WXTR propagates COBOL/C RTS (Runtime System) and application errors as Java exceptions back to Java EE applications for further processing.

Data management services

WXTR provides support for CICS data management facilities such as files and queues stored in a DB2 database. WXTR runtime allows VSAM style access to the data stored in DB2. Additionally, Version 2.1 supports Oracle database as a resource manager.

Unified system administration with IBM WebSphere Application Server

WXTR provides a common administration facility for managing both COBOL/C and Java EE assets within the WebSphere Application Server administration console, reducing the learning curve for administration personnel and allowing them to easily and efficiently deploy, administer, and optimize services. Administrators can view and modify the WXTR service properties through the WXTR service panel in the WebSphere Application Server administration console. WXTR runtime services can also be configured using WebSphere administration scripts. It also supports nonroot

users to perform preconfigured set of administrative tasks without necessitating root user privileges.

Modern application development support using IBM Rational Development tools

IBM Rational Developer for Power Systems™, along with WXTR, provides a modern application development experience across Java EE and COBOL/C applications. It enables developers to perform operations such as develop, deploy, and debug applications within a single integrated development environment (IDE), improving productivity. Application developers can step in to a COBOL/C program from a Java EE application and inspect the COBOL/C program. Similarly, data exchange between COBOL/C and Java EE applications can be achieved using the CICS/IMS Java Data Binding feature provided by IBM Rational Application Developer tools.

Section 508 of the US Rehabilitation Act

WebSphere eXtended Transaction Runtime is capable as of July 17, 2012 , 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. A US Section 508 Voluntary Product Accessibility Template (VPAT), containing details on the products accessibility compliance, can be requested on the following website

http://www.ibm.com/able/product_accessibility/index.html

Product positioning

Many clients running non-IBM transaction processing products have invested much time and effort in the development of business logic in COBOL/C based applications and are looking to unlock the value of those applications and extend them using Java EE as they adopt enterprise modernization initiatives. It is often prohibitively expensive to recreate existing COBOL/C assets in Java and hence there is a significant risk to the business and to the enterprise in modernizing using this approach. This approach also poses significant challenges on managing existing COBOL/C skill sets within the organization. By establishing WXTR as a core component of your enterprise IT architecture, alongside WebSphere Application Server, you can effectively retain existing COBOL/C assets and skill sets while simultaneously adopting Java EE platforms for newer workloads. The tight integration between WXTR and WebSphere Application Server simplifies integration infrastructure requirements and enhances development and administration efficiency.

Program number

Program number	VRM	Program name
5725-C89	2.1.0	IBM WebSphere eXtended Transaction Runtime

Offering Information

Product information is available through the Offering Information website

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

Also, visit the Passport Advantage® website

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

Publications

No publications are shipped with this product.

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Technical information

Specified operating environment

Hardware requirements

IBM AIX users

Any IBM System p® hardware capable of running IBM AIX V6.1 or V7.1.

Required disk space on all supported platforms

```
Description                      AIX

WebSphere eXtended Transaction   400 MB
 Runtime bundle
Maximum space required           500 MB
```

Software requirements

WXTR consists of 32-bit processes. All libraries linked with WXTR (including those running in a 64-bit kernel) must be 32 bit.

Operating systems

- IBM AIX V6.1 TL6, AIX V7.1 TL1 SP1

Supported software for IBM AIX

- IBM Rational Installation Manager V1.4.3
- IBM WebSphere Application Server V7.0.0.19 and V8.0.0.1
- IBM WebSphere Application Server V7 Feature Pack for Service Component Architecture 1.0.1.11
- Application Development Tools
  - IBM Rational Developer for Power Systems Software[TM] V8.0.4
  - IBM Rational Application Developer for WebSphere Software V8.0.3
- Databases
  - IBM DB2 V9.7
  - Oracle 11.2.0.1
- Languages
  - IBM COBOL for AIX V4.1.1.3
  - IBM XLC 10.1.0.13 and 11.1.0.8

The program's specifications and specified operating environment information may be found in documentation accompanying the program, if available, such as a readme file, or other information published by IBM, such as an announcement letter. Documentation and other program content may be supplied only in the English language.

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Packaging

The media pack for **WebSphere eXtended Transaction Runtime** contains:

- WebSphere eXtended Transaction Runtime V1.0 for AIX CD-ROM

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

Licensed function title	Product group	Product category
IBM WebSphere eXtended Transaction Runtime	IBM Transaction Server	Transaction Server

Program Name	PID Number	Charge Unit Description
IBM WebSphere eXtended Transaction Runtime	5725-C89	Per Processor Value Unit (PVU)
IBM WebSphere eXtended Transaction Runtime	5725-C89	Per Processor Value Unit for zEnterprise BladeCenter Extension

Charge metrics definitions

Processor Value Unit (PVU)

PVU is a unit of measure by which the program can be licensed. The number of PVU entitlements required is based on the processor technology (defined within the PVU table by processor value, brand, type and model number at

http://www.ibm.com/software/lotus/passportadvantage/
pvu_licensing_for_customers.html

and the number of processors made available to the program. IBM continues to define a processor, for the purpose of PVU-based licensing, to be each processor core on a chip. A dual-core processor chip, for example, has two processor cores.

Licensee can deploy the program using either full capacity licensing or virtualization capacity (sub-capacity) licensing according to the Passport Advantage Sub-Capacity Licensing Terms (refer to web page below). If using full capacity licensing, licensee must obtain PVU entitlements sufficient to cover all activated processor cores[1] in the physical hardware environment made available to or managed by the program, except for those servers from which the program has been permanently removed. If using virtualization capacity licensing, licensee must obtain entitlements sufficient to cover all activated processor cores made available to or managed by the program, as defined according to the Virtualization Capacity License Counting Rules at

http://www.ibm.com/software/lotus/passportadvantage/
Counting_Software_licenses_using_specific_virtualization_technologies.html

[1] An activated processor core is a processor core that is available for use in a physical or virtual server, regardless of whether the capacity of the processor core can be or is limited through virtualization technologies, operating system commands, BIOS settings, or similar restrictions.

Notes:

- Some programs may require licenses for the program **and** what is being managed. In that case, the following applies: In addition to the entitlements required for the program directly, licensee must obtain PVU entitlements for this program sufficient to cover the processor cores managed by the program.
- Some programs may be licensed on a managed basis only. In that case, the following applies. Instead of the entitlements required for the program directly, licensee must obtain PVU entitlements for this program sufficient to cover the processor cores managed by the program.
- A few programs on an exception basis may be licensed on a referenced basis. In that case, the following applies. Rather than obtaining entitlements for the activated processor cores available to the program, licensee must obtain PVU entitlements for this program sufficient to cover the environment made available to the referenced program as if the program itself were executing everywhere the referenced program was executing, independent of the basis on which the referenced program is licensed.

Passport Advantage program licenses

WebSphere eXtended Transaction Runtime

```
Part description                                      Part
                                                      number


IBM WebSphere eXtended Transaction Runtime
WS eXtended Trans Runtime Per Processor Value Unit     E0BN0LL
  (PVU) Annual SW S&S Rnwl
WS eXtended Trans Runtime Per Processor Value Unit     D0IDHLL
  (PVU) Lic + SW S&S 12 Mo
WS eXtended Trans Runtime Per Processor Value Unit     D0IDILL
  (PVU) SW S&S Reinstate
```

Passport Advantage supply

```
Program name/description                              Part
                                                      number


WS eXtended Trans Runtime V2.1.0
WS eXtended Trans Runtime AIX 6 V2.1.0 Mass Market     BA14HNA
  Product CD ROM Digital
```

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.

WS eXtended Trans Runtime V2.1.0

```
Entitled maintenance       Media packs description    Part
offerings description                                 number


IBM WebSphere eXtended      WS eXtended Trans Runtime  BA14HNA
  Transaction Runtime         AIX 6 V2.1.0 Mass Market
  Processor Value Unit        Product CD ROM Digital
IBM WebSphere eXtended      WS eXtended Trans Runtime  BA14HNA
  Transaction Runtime for     AIX 6 V2.1.0 Mass Market
  zEnterprise™ BladeCenter®    Product CD ROM Digital
  Extension per processor
  Value Unit
```

Cross-platform products

Cross-platform products for use on System z

Order the part numbers that follow when the product is deployed on zEnterprise
BladeCenter Extension. Otherwise order from the other set of part numbers in
this announcement. This set of part numbers provides the identical supply and
authorization as the other set in this announcement

WebSphere eXtended Transaction Runtime

```
Part description                                      Part
                                                      number


IBM WebSphere eXtended Transaction Runtime
WebSphere eXtended TR zEnterprise BladeCent Ex PVU     E0DL7LL
  Annual SW S&S Rnwl
WebSphere eXtended TR zEnterprise BladeCent Ex PVU Lic D0P3DLL
  + SW S&S 12 Mo
WebSphere eXtended TR zEnterprise BladeCent Ex PVU SW  D0P3ELL
  S&S Reinstate 12 Mo
```

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License Information form number

Program name	Program number	Form number
WebSphere eXtended Transaction Runtime	5725-C89	L-ACRR-8S7JGN

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   http://www.ibm.com/software/sla/sladb.nsf

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Yes

Limited warranty

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For clarification, note that if for any reason you are dissatisfied with the program and you are the original licensee, you may obtain a refund of the amount you paid for it, if within 30 days of your invoice date you return the program and its PoE to the party from whom you obtained it. If you downloaded the program, you may contact the party from whom you acquired it for instructions on how to obtain the refund.

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Volume orders (IVO)

No

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Educational allowance available

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