At a glance

IBM® TXSeries for Multiplatforms V8.1 extends the capabilities for TXSeries for Multiplatforms V7.1 and offers significant new capabilities in the area of platform coverage, operational efficiency, enterprise integration, and serviceability. The main enhancements in TXSeries for Multiplatforms V8.1 are:

- **Enhanced platform coverage**
  - Support for Linux™ on x86 architecture
- **Improved operational efficiency**
  - Real-time monitoring capability with IBM Tivoli® Monitoring infrastructure
  - Simplified administration on UNIX™ platforms by allowing non-root users to perform TXSeries administrative tasks
  - Support for passwords of greater than eight-character length for better alignment with new security policies
  - TRANCLASS feature for improved management of resources
  - Extension to networking support with Internet Protocol version 6
  - Better handling of stored XA passwords to reduce security exposures
  - Improved transaction co-relation capabilities across TXSeries regions
  - Provision of user exit chaining for better customization capability
  - Enhanced Workload Manager with simplified configuration and improved health monitoring
  - WebSphere® Liberty as a backbone for web-based infrastructure in TXSeries for better scalability
- **Enhanced enterprise integration**
  - Improved integration with WebSphere MQ with support for CKTI and CKQC transactions
  - In-bound SOAP support with addition of PL/I as a supported language

In addition, TXSeries serviceability is improved with additional problem determination tools.
Overview

IBM TXSeries for Multiplatforms is a distributed IBM CICS® Online Transaction Processing (OLTP) environment for business-critical, mixed language applications. It is widely used for integrating data and applications between distributed solutions and enterprise systems. It is also used for the deployment of high-performance, distributed, CICS applications written in COBOL, C, C++, Java™, and PL/I languages. TXSeries for Multiplatforms integrates well into a mixed-language, multiplatform, service-oriented architecture (SOA) solution.

This new version of TXSeries for Multiplatforms addresses a number of customer requirements. It delivers features in the areas of enhanced platform coverage, improved operational efficiency, enhanced enterprise integration, and serviceability enhancements. In addition, TXSeries serviceability is improved with additional problem determination tools.

Enhanced platform coverage

TXSeries widens its platform support with the addition of Linux on x86 architecture. Specifically, Red Hat Enterprise Linux and SUSE Linux Enterprise Server is supported. With this support TXSeries brings a mature and proven transactional runtime for running business applications written in COBOL, C, C++, Java, and PL/I to Linux platforms. With a host of features available on TXSeries for Linux it provides an open, robust, scalable, and secure platform for your business applications.

Improved operational efficiency

Several new features have been added to help improve operational efficiency:

- TXSeries now provides real-time monitoring capability using IBM Tivoli Monitoring infrastructure. This feature now enables administrators to monitor entire TXSeries deployment from a single Tivoli Enterprise Portal.
- The Transaction Class (TRANCLASS) feature helps to optimize the usage of CICS resources by providing a facility to classify transactions into multiple groups or transaction classes.
- TXSeries networking infrastructure is enhanced to support IPv6 dual stack. With this, TXSeries can now interoperate with clients and other CICS Systems over IPv4 and IPv6-enabled networks.
- This new release eliminates the restriction of a maximum, eight-character length for passwords. This allows customer compliance with security policies that demand stronger passwords.
- A new transaction tracking facility is provided in this release that helps to track transactions spanning across multiple CICS regions.
- This release extends the user exit functionality to define more than one user program to be associated for a given user exit. This is particularly useful when multiple products would like to extend the same user exit.
- This release brings in a number of enhancements to the Workload Management (WLM) component of TXSeries such as, simplified configuration, statistics, install verification program sample, and improved health monitoring.
- This release simplifies the administration on UNIX platforms by allowing non-root users to perform TXSeries administrative tasks. Prior releases of TXSeries required users to have root privileges to perform administrative tasks. With this release, any user in the cics operating system group can administer a TXSeries system.
- TXSeries for Multiplatforms V8.1 now uses IBM WebSphere Application Server Liberty profile as the backbone for its web-based infrastructure.
Enhanced enterprise integration

This latest version of TXSeries continues to improve enterprise integration with support for the following features:

- Integration with WebSphere Message Queue (MQ) is enhanced with support for CKTI transaction which is a WebSphere MQ trigger monitor that initiates transactions in TXSeries, based on trigger conditions set in WebSphere MQ.
- Support for in-bound web services. Using this feature you can expose applications written in COBOL, C, and PL/I as web services. This enables rapid and straightforward integration of TXSeries applications with other applications in an enterprise SOA environment. Integrating TXSeries applications into an SOA environment enhances the ability to reuse existing application assets and help to keep operational costs low.

Serviceability enhancements

TXSeries for Multiplatforms V8.1 further enhances serviceability with the introduction of capabilities such as 'hang' detection tooling to monitor Stand Alone Remote Procedure Call Daemon (SARPCD)-shared memory usage, API for IP Interconnectivity (IPIC) connection management, and more. These enable administrators to monitor and maintain TXSeries systems in prime health.

New System z® part numbers

New IBM System z software part numbers are provided for TXSeries for Multiplatforms V7.1 and TXSeries for Multiplatforms V8.1.

Key prerequisites

TXSeries for Multiplatforms V8.1 requires one of the following platforms:

- IBM AIX® users: AIX V6.1 TL8 or AIX 7.1 TL2
- Microsoft® Windows® users: Microsoft Windows Server 2008 or Microsoft Windows Server 2012
- Linux users: Red Hat Enterprise Linux V5.9, V6.3 or SUSE Linux Enterprise V11 SP 2
- Solaris users: SUN Solaris 10 or 11.1, that runs on SPARC processors
- HP-UX users: HP-UX 11iV3, that runs on HP Integrity platform

For further details, refer to the Hardware requirements and Software requirements sections.

Planned availability date

- November 29, 2013: Electronic availability
- December 10, 2013: Media availability

Refer to the Availability of national languages section for national language availability.
**Description**

TXSeries for Multiplatforms V8.1 provides a stand-alone, distributed OLTP server with an integrated Structured File System (SFS) for mixed language applications written in enterprise programming languages like COBOL, C, C++, PL/1, and Core Java (J2SE). You can use it to:

- Host business-critical, transactional CICS applications on distributed platforms in stand-alone deployments.
- Integrate between data and applications in distributed solutions and enterprise systems including CICS, IBM IMS™, IBM DB2®, and WebSphere MQ.
- Run and extend CICS applications to the web by using CICS TG and WebSphere Application Server.
- Extend CICS applications as WebServices using the TXSeries in-bound web services capability.
- Reuse existing CICS applications and application programming skill sets in your organization consistent with corporate distributed platform policy.
- Java support (JCICS) assists interoperability with Java applications running outside of TXSeries. CICS Foundation classes (CFC) provide access to CICS facilities as C++ objects.
- Includes enhanced Workload Manager with simplified configuration and improved health monitoring.

TXSeries for Multiplatforms includes two core components:

- Distributed CICS OLTP
- CICS SFS

CICS OLTP supports the base CICS API with the fundamental transactional qualities of atomicity, consistency, isolation, and durability. By providing services that interact with the underlying hardware and software, TXSeries hides the complexity of your IT systems without compromising function. Developers can focus on solving tangible business problems with application logic rather than failure detection, failure recovery, and synchronizing access to shared data.

CICS SFS is a VSAM-emulating, record-oriented file system that can provide indexed, relative, and sequential access to file-based data. It allows developers to store fully recoverable file-based data that can be processed in a batch environment. The CICS SFS files can be shared among TXSeries, CICS TS, and non-CICS applications, such as IMS. This maximizes the ability to interoperate in an enterprise environment.

The design of TXSeries for Multiplatforms facilitates best practices of CICS program design by supporting the separation of the presentation logic, integration logic, business logic, and data access logic elements of an application. This enables COBOL, C, C++, Java, and PL/1 specialists to develop modern, reusable applications that fit into a corporation’s enterprise-wide requirements. Data sources can be included in a single unit of work, providing two-phase commit for data integrity across the network.

TXSeries can be integrated as a component of your SOA, to enable end-to-end, distributed, mixed language solutions through integration with WebSphere. The Java Connector Architecture (JCA) interface provided by CICS TG can connect TXSeries to WebSphere SOA server products, such as WebSphere Application Server, IBM Integration Bus and IBM Business Process Manager Suite. WebSphere MQ can be used to connect TXSeries to IBM Integration Bus, or to any other product that supports native MQSeries® transport.

TXSeries also provides extremely good connectivity with CICS TS on z/OS® through full CICS Intersystem Communication (CICS ISC) support. TXSeries can act as a gateway to CICS TS on z/OS by handling terminal concentration, protocol...
conversion, or intelligent business logic locally. This can increase the performance of CICS TS on z/OS and protect it from client-originated disruption.

Uniquely, TXSeries allows you to scale up to CICS TS on the mainframe if the needs of your business grow.

**Enhanced platform coverage**

TXSeries for Multiplatforms V8.1 brings a mature and proven transactional runtime for running business applications written in COBOL, C, C++, and Java onto Linux X86 architecture platform.

New platforms include:
- Red Hat Enterprise Linux
- SUSE Linux Enterprise

Existing platforms include:
- IBM AIX
- Microsoft Windows
- Solaris
- HP-UX

**Delivers improved operational efficiency**

TXSeries for Multiplatforms V8.1 delivers new features to help improve operational efficiency.

**Real-time monitoring**

TXSeries now provides real-time monitoring capability by using Tivoli Monitoring infrastructure. This feature extends the Tivoli enterprise-wide monitoring capabilities to include TXSeries. It allows you to monitor your entire TXSeries deployment from a single Tivoli Enterprise Portal, such as CICS regions, SFS servers, SARPCD, Peer-to-Peer Communications (PPC) Gateway servers, and Workload Manager components. Many different types of views were created for monitoring, such as log views, status views, and detailed views that help gain visibility at a granular level to better track the functioning of TXSeries deployment.

**TRANCLASS support**

The Transaction Class (TRANCLASS) feature helps you to optimize the usage of CICS resources by providing a facility to classify transactions into multiple groups or transaction classes. By spreading your tasks across a number of transaction classes and controlling the maximum number of tasks that can be dispatched within each transaction class, you can control resource contention between tasks in the system. Previous releases of TXSeries supported this through the TCLASS feature, which had a limitation of a maximum of 10 groups. With TRANCLASS this restriction is eliminated.

**Secured XA password**

This new release provides a mechanism to secure the XA password that is used to connect TXSeries with XA-compliant resource managers. A new utility `cicsxa-passwd` allows you to define the password in a secure manner.

**IPv6 support**

TXSeries networking infrastructure is enhanced to support IPv6 dual stack. With this, TXSeries can now interoperate with clients and other CICS Systems over IPv4 and IPv6-enabled networks.
**Support for longer passwords**

This new release eliminates the restriction of maximum, eight-character length for passwords. This will allow customer compliance with security policies that demand stronger passwords.

**Transaction tracking**

A new transaction tracking facility is delivered in this release that helps to track transactions spanning across multiple CICS regions. With this, the partner and the transaction originator information can be identified using Distributed Program Link (DPL) user exit (UE50).

**Chaining user exit**

TXSeries allows you to extend and customize your CICS system by providing customization points called user exits. This release extends the user exit functionality to define more than one user program to be associated for a given user exit. This is particularly useful when multiple products would like to extend the same user exit.

**Workload Management enhancements**

This release brings the following enhancement to the Workload Management (WLM) component of TXSeries:

- Simplifies configuration with the removal of redundant configuration elements.
- Extends WLM statistics to Tivoli Monitoring.
- Delivers improved health monitoring for effective tracking of Application Owning Regions (AOR).
- Includes provision of Samples and Install Verification Program for WLM.

**Simplified administration**

This release simplifies the administration on UNIX platforms by allowing non-root users to perform TXSeries administrative tasks.

Earlier releases of TXSeries required users to have root privileges to perform administrative tasks. With this release, any user in the `cics` operating system group can administer TXSeries system.

**WebSphere Liberty profile**

The backbone of TXSeries web-based infrastructure is modified to use WebSphere Application Server Liberty profile, and thereby facilitate improved scalability.

**Enhanced enterprise integration**

TXSeries for Multiplatforms V8.1 further improves enterprise integration support with the following features:

- Integration with WebSphere MQ is enhanced with support for two new CICS supplied transactions called CKTI and CKQC. CKTI is a task initiator that initiates transactions in TXSeries when trigger conditions on any of its associated WebSphere MQ queues are met. CKQC is an administration utility that can be used to manage and monitor CKTI.
- In-bound SOAP support feature enables TXSeries applications, written in COBOL, C, and PL/I, to be exposed as web services. This enables rapid and straightforward integration of TXSeries applications with other applications in an enterprise SOA environment. Integrating TXSeries applications into an SOA environment enhances the ability to reuse existing application assets and help to keep operational costs low.
Serviceability enhancements

Serviceability of TXSeries for Multiplatforms V8.1 is improved with the introduction of the following features:

- Introduction of a TXSeries hang detection tool detects suspected hangs and collects the problem determination documents automatically. This also provides a capability to force-purge the transaction after a set period of time.
- Support for CACQ transaction and related APIs acquire, release and check the status of IPIC connections enabling administrators to effectively monitor and manage IPIC connections.
- Enhanced `cipc_dump` tool enables administrators to monitor and collect the CICS IPC and SARPCD artifacts to enable administrators to monitor memory usage and effectively plan system resource.
- Diagnostic information collection utility `dumpcicsthreads` extends to all TXSeries supported platforms.
- New environment files for SFS and PPC gateway servers help architects to further customize individual server environments.
- Enhanced usability of the cicsservice tool enable scenario-based collection of documents, which will reduce the overhead on administrators.
- Enhanced utility cicsservice covers scenario-based collection of documents for scenarios such as a 'hang' situation and abnormal region terminations.

Discontinued support

Unlike earlier releases of TXSeries for Multiplatforms, V8.1 does not support the HP-PARISC platform.

Accessibility by people with disabilities

A US Section 508 Voluntary Product Accessibility Template (VPAT) containing details on accessibility compliance can be requested at


Product positioning

A transaction processing monitor is a key component of a healthy corporate IT system. It manages and augments the transactional processes that keep an organization's revenues flowing. TXSeries for Multiplatforms has, for many years, delivered high-performance transaction services in a robust and extensible environment. It lets you maximize existing COBOL, C, C++, Java, PL/I, and IT assets across Linux on X86, AIX, Microsoft Windows, SUN Solaris, and HP Integrity platforms.

TXSeries for Multiplatforms is a distributed OLTP environment for mixed language applications. It is widely used for reliably and efficiently integrating data and applications between distributed solutions and enterprise systems, and the deployment of CICS applications written in COBOL, C, C++, Java, and PL/I languages.

It delivers higher qualities of service than its competitors and home-grown solutions with significant cost-effectiveness. It also offers unique integration capability for seamless operation with CICS TS.
**Reference information**

For information on CICS Tools V5.1, refer to Software announcement ZP12-0478, dated October 3, 2012.

For information on CICS TG V9.0, refer to Software announcement ZP12-0420, dated October 3, 2012.

For information on CICS TS V5.1, refer to Software announcement ZP12-0422, dated October 3, 2012.

For information on TXSeries for Multiplatforms V7.1, refer to Software announcement ZP09-0043, dated March 17, 2009.

**Availability of national languages**

At availability, the product supports the following national languages:

- German
- English
- Spanish
- French
- Italian
- Japanese
- Korean
- Portuguese(Brazil)
- Simplified Chinese
- Traditional Chinese

**Program number**

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<tr>
<td>5724-B44</td>
<td>8.1.0</td>
<td>IBM TXSeries for Multiplatforms</td>
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**Offering Information**

Product information is available using the Offering Information website

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

Also, visit the Passport Advantage® website

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

**Publications**

The following publications are available for download from the IBM Publications Center:

<table>
<thead>
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<th>Publication</th>
<th>Form number</th>
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<td>SK4T-2703</td>
</tr>
<tr>
<td>Messages and Codes</td>
<td>GC34-2962</td>
</tr>
<tr>
<td>Release Notes</td>
<td>GC34-2963</td>
</tr>
</tbody>
</table>
The TXSeries V8.1 Information Center consists of an IBM User Interface Help System built on Eclipse and the content as a set of document plug-ins.

Advantages of Information Centers are that:

- Content is indexed by Google and other Internet search engines to help locate information more easily.
- Custom searches can be created that include only the information you need for a particular task or job role.

The IBM Publications Center is available at

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 using credit card (in the US) or customer number for 20 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.

### Technical information

#### Specified operating environment

**Hardware requirements**

**AIX users**

Any IBM eServer™ pSeries hardware that is capable of running AIX V6.1 TL8 or AIX 7.1 TL2.

**Linux users**

Any x86-based hardware that is capable of running Red Hat Enterprise Linux V5.9, V6.3, or SUSE Linux Enterprise V11 SP 2

**SUN Solaris users**

Any SUN SPARC hardware that is capable of running SUN Solaris V10 or V11.1

**Microsoft Windows users**

Any x86-based hardware capable of running Microsoft Windows Server 2008 or Microsoft Windows Server 2012

**HP-UX users**

Any HP-UX Integrity compatible hardware that is capable of running HP-UX V11i V3

**Software requirements**

For the most up-to-date information of the specified operating environments for TXSeries V8.1, visit

http://www.ibm.com/software/htp/txseries/support/

TXSeries for Multiplatforms V8.1 is a 32-bit software product and therefore all libraries linked with TXSeries must be 32-bit libraries.

**Operating systems**

- AIX 6.1 TL8 and AIX 7.1 TL2
• Solaris V10 and Solaris V11.1
• Red Hat Enterprise Linux V5.9, V6.3 and SUSE Linux Enterprise V11 SP 2 on X86 architecture
• HP-UX 11i V3 on HP Integrity Platform

**Supported software for AIX**

• CICS TG for Multiplatforms V9
• IBM Communications Server V6.4.0.4
• WebSphere MQ V7.5

**Databases**

• DB2 V9.7, V10.1
• Informix® Dynamic Server V3.7
• Oracle V11.2.0.3
• Sybase Adaptive Server Enterprise V15.7

**Languages**

• XL C/C++ Enterprise Edition V11, V12 for AIX
• COBOL Set for AIX V4.1.1
• PL/I set for AIX V3.1
• Micro Focus Server Express® COBOL V5.1 WP7
• Java 2 Runtime Environment, Standard Edition 7.0, SR5

**Supported software for Linux on X86 architecture**

• Communications Server V6.4.0.4
• CICS TG for Multiplatforms V9
• WebSphere MQ V7.5

**Operating system**

• Red Hat Enterprise Linux V5.9, V6.3
• SUSE Linux Enterprise 11 SP 2

**Databases**

• DB2 V9.7, V10.1
• Informix Dynamic Server V3.7
• Oracle V11.2.0.3
• Sybase Adaptive Server Enterprise V15.7

**Languages**

• GNU C Compiler gcc/g++ V4.1.2
• Micro Focus Server Express COBOL V5.1 WP7
• Java 2 Runtime Environment, Standard Edition 7.0 SR5

**Supported software for SUN Solaris**

• SNAP-IX Data connection V7
• CICS TG for Multiplatforms V9
• WebSphere MQ V7.5
Databases

- DB2 V9.7, V10.1
- Informix Dynamic Server V3.7
- Oracle V11g R2
- Sybase Adaptive Server Enterprise V15.7

Languages

- Sun Studio Compiler Collection V12 update 1
- Oracle Solaris Studio 12.2
- Micro Focus Server Express COBOL V5.1 WP7
- Java 2 Runtime Environment, Standard Edition 7.0 SR5

Supported software for Microsoft Windows Server 2008/Microsoft Windows Server 2012

- Communication Server V6.4.0.4
- CICS TG for Multiplatforms V9
- WebSphere MQ V7.5

Databases

- DB2 V9.7, V10.1
- Oracle V11.2.0.3
- Microsoft SQL Server V2012

Languages

- Micro Focus Net Express COBOL V5.1 WP7
- Java 2 Runtime Environment, Standard Edition 7.0 SR5

Supported software for HP-UX 11i V3 on Integrity Platform

- HP SNAPPlus2 R.7.11.31.100
- CICS TG for Multiplatforms V9
- WebSphere MQ V7.5

Databases

- DB2 V9.7, V10.1
- Informix Dynamic Server V3.7
- Oracle V11.2.0.3
- Sybase Adaptive Server Enterprise V15.7

Languages

- HP C/aC++ A.06.27.03
- Micro Focus Server Express COBOL V5.1 WP7
- Java 2 Runtime Environment, Standard Edition 7.0 SR5

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.
Limitations
None. For additional information, refer to Usage restriction topic in the Terms and conditions section of this announcement, or to the license information document that is available on the IBM Software License Agreement website


IBM Electronic Support
The IBM Support Portal is your gateway to technical support. This includes IBM Electronic Support tools and resources, for software and hardware, to help save time and simplify support. The Electronic Support tools can help you find answers to questions, download fixes, troubleshoot, automate data collection, submit and track problems through the Service Request online tool, and build skills. All these tools are made available through your IBM support agreement, at no additional charge.

Read about the Electronic Support portfolio of tools: http://ibm.com/electronicsupport
Access the IBM Support Portal: http://ibm.com/support
Access the online Service Request tool: http://ibm.com/support/servicerequest

User group requirements
Requirements for TXSeries can be created, viewed, and voted for in the IBM Request For Enhancement (RFE) community. Visit

http://www.ibm.com/developerworks/rfe/

The following RFE requests are addressed by this release:

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<thead>
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<th>Feature name</th>
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<td>Support for passwords greater than 8 character length</td>
<td>30100</td>
</tr>
<tr>
<td>Removal of root user dependency for most admin tasks</td>
<td>28688</td>
</tr>
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<td>Real-time monitoring support with IBM Tivoli Monitoring</td>
<td>28737</td>
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<td>Provision of user exit chaining</td>
<td>28739</td>
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<td>Support for TRANCLASS</td>
<td>28686</td>
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<tr>
<td>Improved handling of Stored XA Passwords</td>
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Planning information

Packaging
The media pack for TXSeries for Multiplatforms V8.1 contains:

- Quick Start Guide CD-ROM (contains Quick Start Guide and Publications)
- Quick Start Guide
- Program CD-ROMs

TXSeries for Multiplatforms V8.1 can be ordered from

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

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

Security, auditability, and control

TXSeries for Multiplatforms V8.1 uses the security and auditability features of the operating system under which it is running.
The customer is responsible for evaluation, selection, and implementation of security features, administrative procedures, and appropriate controls in application systems and communication facilities.

Global Technology Services®

Contact your IBM representative for the list of selected services available in your country, either as standard or customized offerings for the efficient installation, implementation, or integration of this product.

Ordering information

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

Product group: IBM Transaction Server

Product Identifier Description (PID)

TXSeries for Multiplatforms V8.1 (S724-B44)

Product category: Transaction Server

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<td>IBM TXSeries</td>
<td>S724-B44</td>
<td>Processor Day</td>
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For ordering information, consult your IBM representative or authorized IBM Business Partner, or visit


Passport Advantage program licenses

TXSeries for Multiplatforms

<table>
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<th>Part description</th>
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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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<td>Multiplatform Media Pack, Multilingual</td>
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<td>TXSeries Multiplatform</td>
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<td>Multiplatform Media Pack, Multilingual</td>
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</table>
**Cross-platform product for use on System z**

Order the part numbers that follow when the product is used for either the development of code that will be deployed on System z servers or when the product will be communicating or transferring data between a distributed server and a System z server. 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.

<table>
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<td>TXSeries per Processor Value Unit System Z Lic + SW S&amp;S 12 Mo</td>
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<td>TXSeries per Processor Value Unit System Z SW S&amp;S Reinstate 12 Mo</td>
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**On/Off Capacity on Demand (CoD)**

TXSeries Processor Day Per Use-DAY, On Off Capacity on demand Temporary Us ASQN2LL

**Charge metric**

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<td>IBM TXSeries</td>
<td>5724-B44</td>
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</table>

**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 the website below) 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. The PVU table can be found at


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 the web page below). If using Full Capacity licensing, Licensee must obtain PVU entitlements sufficient to cover all activated processor cores* 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


* 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.

Processor Value Unit (PVU) sub-capacity licensing

This software product is eligible for sub-capacity licensing. Customers must accept the terms of the IBM International Passport Advantage Agreement Attachment for Sub-Capacity Licensing Terms (Attachment), and must obtain PVU Proofs of Entitlement (PoEs) for the maximum processor core capacity available to an eligible sub-capacity product when deployed in an eligible virtualization environment. This is also referred to as sub-capacity or virtualization capacity licensing.

Customers must use the IBM License Metric Tool unless they meet the exceptions described in the Attachment.

For information regarding PVU sub-capacity licensing, including terms and IBM License Metric Tool ordering information, visit


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**License Information form number**
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**Limited warranty applies**
Yes

**Limited warranty**

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Volume orders (IVO)
No

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

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Yes. For additional information, refer to the License Information document that is available on the IBM Software License Agreement website


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To be eligible for sub-capacity pricing, the machine on which the eligible products are installed and running must be eligible for sub-capacity pricing terms and conditions. Software pricing, at less than full machine capacity for eligible products, apply when running:

- AIX 5L™ V5.1, or later, on an IBM System p® 690 or equivalent partition-capable operating system and machine
- OS/400® V5R1, or later, running on an IBM System i
- Linux running in an LPAR under AIX 5L V5.1, OS/400 V5R1, or in a partition on an equivalent partition-capable operating system and server

Sub-capacity pricing for eligible products is based on the current program pricing methodology, but the number of processors will be determined based on the sum of processors for all partitions where the program is defined (used). To obtain pricing at less than full machine capacity for eligible products, you are required to:

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- Install available updates to the operating system and eligible products such that license use can be accurately managed.
- Determine if the use of sub-capacity pricing terms results in a reduced requirement for entitlements; you can reallocate the entitlement difference by distributing entitlements across a larger or different set of systems, or reserve them for future growth. There will be no refunds for these freed up entitlements. Subscription, Software Maintenance and support volumes, and entitlements for existing contracts will continue at the same levels as the acquired licenses.

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IT system security involves protecting systems and information through prevention, detection, and response to improper access from within and outside your enterprise. Improper access can result in information being altered destroyed or misappropriated or can result in misuse of your systems to attack others. Without a comprehensive approach to security, no IT system or product should be considered completely secure and no single product or security measure can be completely effective in preventing improper access. IBM systems and products are designed to be part of a comprehensive security approach, which will necessarily involve additional operational procedures, and may require other systems, products, or services to be most effective. IBM does not warrant that systems and products are immune from the malicious or illegal conduct of any party.

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