IBM TXSeries for Multiplatforms V8.2 delivers improvements to performance and application development

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At a glance

IBM® TXSeries™ for Multiplatforms V8.2 extends the capabilities of the previous release of TXSeries by offering significant new capabilities in these areas:

- Performance
- Application development
- Serviceability

For ordering, contact your IBM representative, an IBM Business Partner, or IBM Americas Call Centers at 800-IBM-CALL (Reference: YE001).

Overview

IBM TXSeries for Multiplatforms is distributed transaction processing middleware for C, C++, COBOL, Java™, and PL/I applications in a cloud environment, as well as in traditional data centers. TXSeries offers a reliable, scalable, and highly available platform to develop, deploy, and host mission-critical applications. It also integrates well into a mixed-language, multiplatform, service-oriented architecture (SOA) solution.

TXSeries for Multiplatforms V8.2 provides enhancements to both performance and application development.

Improved performance

The performance of TXSeries for Multiplatforms V8.2 is improved in all areas. For example:

- Up to five times improvement in response time, and up to 50% reduction in memory footprint while processing large data, using channels and containers over IP interconnectivity (IPIC) protocol.
- Up to 40% improvement in transaction response time for CICS® applications written using Micro Focus COBOL.
- Improvement in transaction throughput and multifold reduction in memory footprint for CICS applications written in Java by leveraging shared class caching in JVM.
- Up to 40% improvement in performance for batch applications accessing VSAM files in Structured File Server (SFS).

- Overall improvement in transaction throughput compared to previous releases of TXSeries.

These performance improvements may vary, subject to application, system configuration, and operating environment.

Enhanced application development

- TXSeries for Multiplatforms V8.2 introduces support for COBOL-IT, for Linux™ on x86 architecture.
- This release of TXSeries extends Micro Focus COBOL support to include Visual COBOL.
- IBM COBOL application developers can now simultaneously debug their online CICS Applications.
- With TXSeries for Multiplatforms V8.2, Temporary Storage Queue (TSQ) names can now be up to 16 characters.
- Enhanced IP Sockets interface to support COBOL.
- Support for External Call Interface (EXCI) facility.
- Support for concurrent TCP/IP Listener programs with the implementation of the CSKL transaction.

In addition, as part of serviceability enhancements, the *showProcInfo* utility is improved to collect process stack traces in less time.

Key prerequisites

TXSeries for Multiplatforms V8.2 requires one of the following platforms:

- IBM AIX® V6.1 TL8 or AIX 7.1 TL2
- Red Hat Enterprise Linux (RHEL) V5.9, V6.3, Ubuntu 14.04, or SUSE Linux Enterprise Server (SLES) 11 SP 2

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

Planned availability date

- March 13, 2015: Electronic availability
- March 31, 2015: Media availability

Description

TXSeries for Multiplatforms V8.2 enables 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). Your organization can perform the following tasks:

- 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, IMS™, DB2®, and WebSphere® MQ.
- Run and extend CICS applications to the web by using CICS TG and WebSphere Application Server.
- Extend CICS applications as web services 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.

- Use Java support (JCICS) assists interoperability with Java applications running outside of TXSeries. CICS Foundation classes (CFC) enable access to CICS facilities as C++ objects.
- Simplify configuration and improve health monitoring using the enhanced Workload Manager.

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 deliver indexed, relative, and sequential access to file-based data. It enables 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, integration, business, and data access logic elements of an application. This enables COBOL, C, C++, Java, and PL/I 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 provides seamless 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 enables you to scale up to CICS TS on the mainframe if the needs of your business grow.

Accessibility by people with disabilities

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

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

Section 508 of the US Rehabilitation Act

TXSeries for Multiplatforms V8.2 is capable, as of March 31, 2015, when used in accordance with associated IBM 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

A transaction processing monitor is a key component of an IT system. It manages and augments the transactional processes that keep an organization's revenues flowing. TXSeries for Multiplatforms is a distributed transaction processing middleware for C, C++, COBOL, Java, and PL/I. It executes in cloud as well as in traditional data centers, and provides a reliable, scalable, and highly available platform to develop, deploy, and host mission-critical applications. TXSeries for Multiplatforms integrates well into a mixed-language, multiplatform, service-oriented architecture (SOA) solution.

TXSeries for Multiplatforms has, for over two decades, delivered high-performance transaction services in a robust and extensible environment. It delivers higher qualities of service than its competitors and home-grown solutions with significant cost-effectiveness. It also offers a unique integration capability for seamless operation with CICS TS.

Statement of general direction

IBM makes the following statement of general direction:

- IBM intends in the future to deliver a 64-bit release of TXSeries for Multiplatforms.
- IBM intends that a future release of TXSeries for Multiplatforms will support Linux on IBM Power Systems™.
- IBM intends that a follow-on release of TXSeries for Multiplatforms V8.2 will support Microsoft™ Windows™ and HP-UX Itanium™ platforms.

IBM's statements regarding its plans, directions, and intent are subject to change or withdrawal without notice at IBM's sole discretion. Information regarding potential future products is intended to outline our general product direction and it should not be relied on in making a purchasing decision. The information mentioned regarding potential future products is not a commitment, promise, or legal obligation to deliver any material, code, or functionality. Information about potential future products may not be incorporated into any contract. The development, release, and timing of any future features or functionality described for our products remain at our sole discretion.

Reference information

For information on CICS Tools V5.2, refer to 214-153, dated April 7, 2014.

For information on CICS TG V9.1, refer to 214-263, dated July 1, 2014.

For information on CICS TS V5.2, refer to 214-107, dated April 7, 2014.

For information on TXSeries for Multiplatforms V8.1, refer to 213-462, dated October 8, 2013.

Program number

```
Program          Program
number     VRM   name

5724-B44  8.2.0  IBM TXSeries for Multiplatforms
```

Offering Information

Product information is available via the Offering Information website

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

Also, visit the Passport Advantage® website

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

Publications

TXSeries product documentation is provided in two ways:

- Online, through IBM Knowledge Center
- Downloadable in a web browser, using a Knowledge Center plug-in

Online information in IBM Knowledge Center

Online documentation for TXSeries is now hosted in IBM Knowledge Center.
IBM Knowledge Center provides information for over 2,500 IBM products. The
information that was previously provided in product Information Centers is in IBM
Knowledge Center. IBM Knowledge Center provides integrated tools for finding,
filtering, customizing, saving, and sharing information.

Benefits include:

- Consolidation: IBM Knowledge Center is one place to go to find information about
  all IBM products.
- Consistency: There were differences in the presentation and function of
  Information Centers between products. IBM Knowledge Center provides the same
  set of functions for all product information.
- Customization: Customers can use IBM Knowledge Center filtering capabilities to
  select the information that is most relevant to them, and build that information
  into customized collections for viewing online or in PDF. IBM updates to the
  information are automatically reflected in such collections.

For more information about the features of IBM Knowledge Center, see the welcome
page, at

http://www.ibm.com/support/knowledgecenter/

For TXSeries V8.2 product documentation in Knowledge Center, visit

http://www.ibm.com/support/knowledgecenter/SSAL2T_8.2.0/
com.ibm.cics.tx.doc/ic-homepage .html

Downloadable Knowledge Center plug-in

Online documentation for TXSeries is provided for download to a customer's
environment in the form of a Knowledge Center plug-in. The information content
is a set of document plug-ins. All documentation for TXSeries V8.2 is provided in
a single, downloadable, Knowledge Center, making it simple to obtain. To obtain a
relevant Knowledge Center, visit the IBM Publications Center, at

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

PDF manuals

A subset of TXSeries V8.2 documentation is provided for download in PDF format.
The PDF documents are listed below and are available for download from the IBM
Publications Center. Visit

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                              Form
Publication                   number

Knowledge Center              SK4T-2712
Messages and Codes            GC34-7329
Release Notes                 GC34-7328
```

Other TXSeries publications

For information on IBM Redbooks®, visit

http://www.redbooks.ibm.com/

For information on IBM Redpapers™, visit

http://www.redbooks.ibm.com/Redbooks.nsf/redpapers/

Services

Software Services

IBM Software Services has the breadth, depth, and reach to manage your services needs. You can leverage the deep technical skills of our lab-based, software services team and the business consulting, project management, and infrastructure expertise of our IBM Global Services team. Also, we extend our IBM Software Services reach through IBM Business Partners to provide an extensive portfolio of capabilities. Together, we provide the global reach, intellectual capital, industry insight, and technology leadership to support a wide range of critical business needs.

To learn more about IBM Software Services or to contact a Software Services sales specialist, visit

http://www.ibm.com/software/sw-services/

Technical information

Specified operating environment

Hardware requirements

AIX users

Any IBM System p® hardware that is capable of running AIX V6.1 TL9 or AIX 7.1 TL3.

Linux users

Any x86-based hardware that is capable of running Red Hat Enterprise Linux V5.9, V6.4, SUSE Linux Enterprise V11 SP 3, or Ubuntu 14.04.

Software requirements

For the most up-to-date information of the specified operating environments for TXSeries V8.2, visit

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

TXSeries for Multiplatforms V8.2 is a 32-bit software product and therefore all libraries linked with TXSeries must be 32-bit libraries.

Operating systems

- AIX 6.1 TL9 and AIX 7.1 TL3
- RHEL V5.9, V6.4, SLES 11 SP3, and Ubuntu 14.04 on x86 architecture

Supported software for AIX

- CICS TG for Multiplatforms V9
- IBM Communications Server V7.0.0.1
- WebSphere MQ V7.5.0.3, WebSphere MQ V8.0.0.1 IFIX 1

Databases

- DB2 V9.7 FP5, DB2 V10.1, DB2 V10.5
- Informix® Dynamic Server V4.10 UC2®
- Oracle V11.2.0.3, Oracle V12.1
- Sybase Adaptive Server Enterprise V15.7, V16

Language runtimes

- 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
- Micro Focus Visual COBOL V2.2
- Java 2 Runtime Environment, Standard Edition 7.0, SR5

Supported software for Linux on x86 architecture

- Communications Server V7.0.0.1
- CICS TG for Multiplatforms V9
- WebSphere MQ V7.5.0.3, WebSphere MQ V8.0.0.1 IFIX 1

Operating system

- Red Hat Enterprise Linux V5.9, V6.4
- SUSE Linux Enterprise 11 SP 3
- Ubuntu 14.04

Databases

- DB2 V9.7 FP5, DB2 V10.1, DB2 V10.5
- Informix Dynamic Server V4.10 UC2
- Oracle V11.2.0.3
- Sybase Adaptive Server Enterprise V15.7, V16

Language runtimes

- GNU C Compiler gcc/g++ V4.1.2
- Micro Focus Server Express COBOL V5.1 WP7
- Micro Focus Visual COBOL V2.2
- COBOL-IT Compiler Suite Enterprise Edition V3.7.40
- 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 the license information document that is available on the IBM Software License Agreement website

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

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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Feature name                                            RFE number

Support Cobol-IT on Linux                               42077
Support Visual COBOL with TXSeries on AIX               45899
Enable parallel debug in IBM COBOL for AIX and TXSeries 29199
Support 16-character TSQ names                          57657
```

Planning information

Packaging

The media pack for TXSeries for Multiplatforms V8.2 contains:

- Quick Start Guide DVD
- Program CD-ROMs

TXSeries for Multiplatforms V8.2 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 V8.2 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.

Ordering information

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

```
Product group: IBM Transaction Server

  Product Identifier Description    (PID)

  TXSeries for Multiplatforms V8.2  (5724-B44)


Product category: Transaction Server
```

Licensed function title	Product group	Product category
IBM TXSeries	5724-B44	Sub-capacity Processor Value Unit (PVU)
IBM TXSeries	5724-B44	PVU
IBM TXSeries	5724-B44	Processor Day

Passport Advantage program licenses

TXSeries for Multiplatforms

Part description	Part number
TXSeries Per Processor Value Unit Annual SW S&S Rnwl	E025BLL
TXSeries Per Processor Value Unit Lic + SW S&S 12 Mo	D55VCLL
TXSeries Per Processor Value Unit SW S&S Reinstate 12 Mo	D55VDLL

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.

Entitled maintenance offerings description	Media packs description	Part number
TXSeries Multiplatform Value Unit	TX Series V7.1 Multiplatform Media Pack, Multilingual	BA0VFML

```
TXSeries Multiplatform        TX Series V8.1              BA16ZML
                              Multiplatform Media Pack,
                              Multilingual

TXSeries Multiplatform        TX Series V8.2              BA19EML
                              Multiplatform Media Pack,
                              Multilingual
```

Cross-platform product for use on IBM z Systems

Order the part numbers that follow when the product will be communicating or transferring data between a distributed server and a z Systems 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.

```
                                                 Part
Program name/Description                         number

TXSeries per Processor Value Unit System Z Annual
 SW S&S Rnwl                                      E0IL8LL

TXSeries per Processor Value Unit System Z Lic +
 SW S&S 12 Mo                                     D11WGLL

TXSeries per Processor Value Unit System Z SW S&S
 Reinstate 12 Mo                                  D11WHLL
```

Charge metric

```
Program name   PID number   Charge unit description

IBM TXSeries   5724-B44     SubCapacity Processor Value Unit (PVU)
IBM TXSeries   5724-B44     Processor Value Unit (PVU)
IBM TXSeries   5724-B44     Processor Day
```

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

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

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[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_sp ecific_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.

On/Off Capacity on Demand (CoD)

Part description	Part number
TXSeries Processor Day Per Use-DAY, On Off Capacity on demand Temporary Use	ASQN2LL

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

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

Terms and conditions

The information provided in this announcement letter is for reference and convenience purposes only. The terms and conditions that govern any transaction with IBM are contained in the applicable contract documents such as the IBM International Program License Agreement, IBM International Passport Advantage Agreement, and the IBM Agreement for Acquisition of Software Maintenance.

This product is only available via Passport Advantage.

Licensing

IBM International Program License Agreement including the License Information document and Proof of Entitlement (PoE) govern your use of the program. PoEs

are required for all authorized use. Part number products only, offered outside of Passport Advantage, where applicable, are license only and do not include Software Maintenance.

This software license includes Software Subscription and Support (also referred to as Software Maintenance).

This program is licensed under the IBM Program License Agreement (IPLA) and the associated Agreement for Acquisition of Software Maintenance, which provide for support with ongoing access to releases and versions of the program. IBM includes one year of Software Subscription and Support (also referred to as Software Maintenance) with the initial license acquisition of each program acquired. The initial period of Software Subscription and Support (also referred to as Software Maintenance) can be extended by the purchase of a renewal option, if available. This program has a one-time license charge for use of the program and an annual renewable charge for the enhanced support that includes telephone assistance (voice support for defects during normal business hours), as well as access to updates, releases, and versions of the program as long as support is in effect.

License Information number

License Information number: L-JRON-9RAJS4

The program's License Information will be available for review on the IBM Software License Agreement website

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

Limited warranty applies

Yes

Limited warranty

IBM warrants that when the program is used in the specified operating environment, it will conform to its specifications. The warranty applies only to the unmodified portion of the program. IBM does not warrant uninterrupted or error-free operation of the program or that IBM will correct all program defects. You are responsible for the results obtained from the use of the program.

IBM provides you with access to IBM databases containing information on known program defects, defect corrections, restrictions, and bypasses at no additional charge. For further information, consult the IBM Software Support Handbook found at

http://www.ibm.com/support/handbook

IBM will maintain this information for at least one year after the original licensee acquires the program (warranty period).

Program technical support

Technical support of a program product version or release will be available for a minimum of five years from the general availability date, as long as your Software Subscription and Support (also referred to as Software Maintenance) is in effect. This technical support allows you to obtain assistance (via telephone or electronic means) from IBM for product-specific, task-oriented questions regarding the installation and operation of the program product. Software Subscription and Support (Software Maintenance) also provides you with access to updates (modifications or fixes), releases, and versions of the program. You will be notified, via announcement letter, of discontinuance of support with 12 months' notice. If you require additional technical support from IBM, including an extension of support

beyond the discontinuance date, contact your IBM representative or IBM Business Partner. This extension may be available for a fee.

Money-back guarantee

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.

For clarification, note that (1) for programs acquired under the IBM International Passport Advantage offering, this term applies only to your first acquisition of the program and (2) for programs acquired under any of IBM's On/Off Capacity on Demand (On/Off CoD) software offerings, this term does not apply since these offerings apply to programs already acquired and in use by you.

Other terms

Volume orders (IVO)

No

IBM International Passport Advantage Agreement

Passport Advantage applies

Yes, and through the Passport Advantage website at

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

Usage restriction

Yes

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

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

Software Subscription and Support applies

Yes. Software Subscription and Support (also referred to as Software Maintenance) is included with licenses purchased through Passport Advantage and Passport Advantage Express. Product upgrades and Technical Support are provided by the Software Subscription and Support offering as described in the Agreements. Product upgrades provide the latest versions and releases to entitled software and Technical Support provides voice and electronic access to IBM support organizations, worldwide.

IBM includes one year of Software Subscription and Support with each program license acquired. The initial period of Software Subscription and Support can be extended by the purchase of a renewal option, if available.

While your Software Subscription and Support is in effect, IBM provides you assistance for your routine, short duration installation and usage (how-to) questions, and code-related questions. IBM provides assistance via telephone and, if available, electronic access, only to your information systems (IS) technical support personnel during the normal business hours (published prime shift hours) of your IBM support center. (This assistance is not available to your end users.) IBM provides Severity 1 assistance 24 hours a day, 7 days a week. For additional details, consult your IBM Software Support Handbook at

http://www.ibm.com/support/handbook

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

For additional information about the International Passport Advantage Agreement and the IBM International Passport Advantage Express Agreement, visit the Passport Advantage website at

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

System i® Software Maintenance applies

No

Variable charges apply

No

Educational allowance available

Not applicable

Sub-capacity pricing terms and conditions

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:

- Install and use, when available, IBM's license use management program, which installs with eligible IBM programs.
- 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.

On/Off Capacity on Demand (CoD)

To be eligible for On/Off CoD pricing, you must be enabled for temporary capacity on the corresponding hardware, and the required contract, Amendment for iSeries® and pSeries Temporary Capacity On Demand - Software (Z125-6907), must be signed prior to use.

Statement of good security practices

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.

IBM Electronic Services

Electronic Service Agent™ and the IBM Electronic Support web portal are dedicated to providing fast, exceptional support to IBM Systems customers. The IBM Electronic Service Agent tool is a no-additional-charge tool that proactively monitors and reports hardware events, such as system errors, performance issues, and inventory. The Electronic Service Agent tool can help you stay focused on your company's strategic business initiatives, save time, and spend less effort managing day-to-day IT maintenance issues. Servers enabled with this tool can be monitored remotely around the clock by IBM Support, all at no additional cost to you.

Now integrated into the base operating system of AIX V5.3, AIX V6.1, and AIX V7.1, Electronic Service Agent is designed to automatically and electronically report system failures and utilization issues to IBM, which can result in faster problem resolution and increased availability. System configuration and inventory information collected by the Electronic Service Agent tool also can be viewed on the secure Electronic Support web portal, and used to improve problem determination and resolution by you and the IBM support team. To access the tool main menu, simply type smitty esa_main, and select Configure Electronic Service Agent. In addition, ESA now includes a powerful web user interface, giving the administrator easy access to status, tool settings, problem information, and filters. For more information and documentation on how to configure and use Electronic Service Agent, refer to

http://www.ibm.com/support/electronic

The IBM Electronic Support portal is a single Internet entry point that replaces the multiple entry points traditionally used to access IBM Internet services and support. This portal enables you to gain easier access to IBM resources for assistance in resolving technical problems. The My Systems and Premium Search functions make it even easier for Electronic Service Agent tool-enabled customers to track system inventory and find pertinent fixes.

Benefits

Increased uptime: The Electronic Service Agent tool is designed to enhance the Warranty or Maintenance Agreement by providing faster hardware error reporting and uploading system information to IBM Support. This can translate to less wasted time monitoring the symptoms, diagnosing the error, and manually calling IBM Support to open a problem record. Its 24x7 monitoring and reporting mean no more dependence on human intervention or off-hours customer personnel when errors are encountered in the middle of the night.

Security: The Electronic Service Agent tool is designed to be secure in monitoring, reporting, and storing the data at IBM. The Electronic Service Agent tool is designed to securely transmit either via the Internet (HTTPS or VPN) or modem to provide customers a single point of exit from their site. Communication is one way.

Activating Electronic Service Agent does not enable IBM to call into a customer's system.

For additional information, please refer to IBM Electronic Service Agent

   http://www.ibm.com/support/esa/

More accurate reporting: Because system information and error logs are automatically uploaded to the IBM Support center in conjunction with the service request, you are not required to find and send system information, decreasing the risk of misreported or misdiagnosed errors. Once inside IBM, problem error data is run through a data knowledge management system and knowledge articles are appended to the problem record.

Customized support: Using the IBM ID entered during activation, you can view system and support information in the My Systems and Premium Search sections of the Electronic Support website at

   http://www.ibm.com/support/electronic

My Systems provides valuable reports of installed hardware and software using information collected from the systems by Electronic Service Agent. Reports are available for any system associated with your IBM ID. Premium Search combines the function of search and the value of Electronic Service Agent information, providing advanced search of the technical support knowledgebase. Using Premium Search and the Electronic Service Agent information that has been collected from your system, you are able to see search results that apply specifically to your systems.

For more information on how to utilize the power of IBM Electronic Services, contact your IBM Systems Services Representative, or visit

   http://www.ibm.com/support/electronic

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