



IBM SmartCloud Provisioning V2.1 lets you automate and optimize workloads

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At a glance

IBM SmartCloud™ Provisioning V2.1 brings technologies from IBM SmartCloud Provisioning V1.2 and IBM® Workload Deployer V3.1 together and:

- Provides extensible Platform as a Service capabilities
- Delivers scalable and elastic cloud application and middleware deployments
- Offers production-ready infrastructure as a service capabilities

For ordering, contact Your IBM representative or an IBM Business Partner.
For more information contact the Americas Call Centers at
800-IBM-CALL (426-2255).

Reference: YE001

Overview

More organizations are turning to cloud computing, an approach that can help improve IT service delivery and increase utilization of resources while helping to reduce operating expenses.

IBM SmartCloud Provisioning V2.1 is a low-touch, highly scalable cloud solution that offers rapid deployment, automated administration, fault tolerance, and advanced image lifecycle management across heterogeneous hypervisors. It can also extend the private cloud infrastructure with platform capabilities to deploy scalable and elastic cloud middleware and applications.

With this low-cost solution, IT organizations can implement the specific type of cloud environment they need and start taking immediate advantage of the increased flexibility and performance that cloud computing offers. IBM SmartCloud Provisioning V2.1 can help accelerate the delivery of computing resources, and, in turn, enable companies to respond faster to market opportunities.

IBM SmartCloud Provisioning V2.1 is a cloud-based platform that allows companies to quickly become cloud enabled. It allows for the standardization of IT processes for new levels of operational efficiency, and it serves as a foundation for advanced cloud capabilities that can include end-to-end service management.

IBM SmartCloud Provisioning V2.1 can help:

- Increase time-to-value with rapid scalable deployment designed to meet business growth with fast, parallel provisioning of hundreds of virtual machines

- Improve performance with a reliable, nonstop cloud capable of automatically tolerating and recovering from software and hardware failures
- Save IT costs by automating operations and enabling self-service requests
- Reduce complexity through ease of implementation and use, as well as simplified cloud administration
- Control image sprawl, image drift, security vulnerability, and reduce business risk through rich analytics, image versioning, and federated image library features
- Transform the process of creating virtual images and virtual deployment patterns through use of a graphical tool with image construction and composition tools
- Reduce time-to-market through pattern-based design and deployment of business applications in minutes
- Gain visibility into cloud health with rapid deployment of middleware topologies
- Respond to changing business needs with dynamic, policy-based management of elastic and scalable workloads
- Extend infrastructure investments by enabling third-party software deployment and custom pattern creation to "build once" and deploy across private and public clouds
- Increase flexibility and cost savings through expanded hypervisor support for Microsoft™ HyperV, Kernel-based Virtual Machine (KVM), PowerVM® , VMware, and Xen

Key prerequisites

Refer to the [Hardware requirements](#) and [Software requirements](#) sections.

Planned availability date

- August 10, 2012: Electronic download
- August 31, 2012: Physical delivery

Description

IBM SmartCloud Provisioning V2.1 capabilities

Virtual systems

Virtual systems, previously known as topology patterns, are customizable patterns of IBM middleware packaged as Hypervisor Edition images or third-party applications. This style of pattern is used by describing what the middleware looks like in a bottoms-up approach.

IBM Workload Plugin Development Kit

IBM Workload Plugin Development Kit contains detailed documentation to create custom plugins to extend virtual application patterns or create whole new patterns. Custom plugins can provide an added layer of flexibility when using third-party software.

WebSphere® Application Server Hypervisor Edition Intelligent Management Pack

The use of WebSphere Application Server Hypervisor Edition Intelligent Management Pack provides support for automated elasticity of environments. When WebSphere Application Server Hypervisor Edition is deployed with Intelligent Management Pack enabled, WebSphere Application Server Hypervisor Edition Intelligent Management Pack can call back to SmartCloud Provisioning and request additional resources to be made available. This is done using the same dynamic workload management technology that allows the Intelligent Management Pack to allocate additional Java™ Virtual Machines (JVMs) to an application within a dynamic cluster.

Relocation of virtual machine workloads

IBM SmartCloud Provisioning can actuate virtual machine mobility capability (on hypervisor platforms where it is supported) in order to achieve a more efficient allocation of resource to workloads.

Image library

The image library helps the IT administrator reduce the cost to manage virtual images in the data center and limit unnecessary proliferation of virtual images. The image library provides a single point of control of all virtual images in your data center, providing a single interface where the administrator can:

- List a consolidated inventory of images from an heterogeneous set of image stores across multiple data centers
- Store copies of images in a reference repository for safekeeping, versioning, and comparison
- Inspect content of images, down to the product or file level
- Perform comparisons among images, for example, to determine drift from previous configurations
- Search the inventory for a specific image, based on image content and characteristics
- Replicate images between operational repositories using the reference repository (accomplished via check-out/check-in function)

Image Construction and Composition Tool

Image Construction and Composition Tool transforms the complex and time-consuming process of creating virtual images into a graphical composition of base elements such as operating systems, software packages, and configuration parameters. The Image Construction and Composition Tool allows image builders to build images without requiring in-depth knowledge of operating system or software installation, and provides the ability to create virtual images, as well as complex virtual images with large software bundles.

With the Image Construction and Composition Tool, the image builder can:

- Create a custom base operating system image with requisite activation capabilities
- Automate the installation and configuration of software onto a base image
- Generate virtual images ready to be consumed for different cloud providers and deployment technologies
- Deliver Open Virtualization Format (OVF) support, maintain optional OVF metadata, provide user interface extension to support OVF and parameter presentation to the end user

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

Product positioning

The IBM SmartCloud foundation provides a comprehensive set of technologies that can enable organizations to deploy and manage infrastructure and Platform as a Service. It enables organizations to build and scale private cloud environments with enhanced time-to-market, integration, and management. IBM SmartCloud Provisioning helps to enable cloud agility and fault tolerance across mixed vendor environments through ultra scalable, heterogeneous image provisioning, and lifecycle management capabilities. It provides breath and openness allowing it

to be expandable to enterprise-scale advanced orchestration and rich workflow automation.

Program number

Program number	VRM	Program name
5725-C88	2.1	IBM SmartCloud Provisioning

Education support

Comprehensive education for IBM Tivoli® products is offered through Worldwide Tivoli Education Delivery Services. A wide range of training options are available, including classes led by instructors, learning on demand, on-site training, and blended learning solutions.

For additional information, visit

<http://www-306.ibm.com/software/tivoli/education/>

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

IBM SmartCloud Provisioning for Cloud Quick Start Guide will be delivered on the Quick Start CD in PDF and HTML format.

At general availability, IBM SmartCloud Provisioning Installation and User's Guide (English) may be downloaded from

<http://www.ibm.com/software/tivoli/library>

The IBM Publications Center

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

The Publications Center is a worldwide central repository for IBM product publications and marketing material with a catalog of 70,000 items. Extensive search facilities are provided. Payment options for orders are via credit card (in the U.S.) or customer number for 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.

Specified operating environment

Hardware requirements

The following are minimum required values for memory and disk space for IBM SmartCloud Provisioning V2.1.

IBM SmartCloud Provisioning V2.1 requires the following:

- Linux™ on x86_64 for PXE server
 - Number of processors: 1
 - Memory: 4 GB
 - Disk: 50 GB
- Linux on x86_64 with VT capacity for compute node
 - Number of processors: 1
 - Memory: 8 GB
 - Disk: 100 GB
- Two Linux on x86_64 with VT capacity for storage nodes
 - Number of processors: 1
 - Memory: 8 GB
 - Disk: 200 GB
- Linux for Image Construction and Composition Tool (It can run on physical or virtual machines.)
 - Number of processors: 1 (2 is recommended.)
 - Memory: greater or equal to 1 GB (greater or equal to 2 GB if two CPUs)
 - Disk: 60 GB
- Linux on x86_64 for Virtual Image Library (It can run on physical or virtual machines.)
 - Number of processors: 2
 - Memory: 4 GB
 - Disk: 200 GB
- Linux on x86_64 for Workload Deployer (It can run on physical or virtual machines.)
 - Number of processors: 2
 - Memory: 4 GB
 - Disk: 200 GB
- Linux on x86_64 with VT capacity for ISO Appliance Installation
 - Number of processors: 1
 - Memory: 4 GB
 - Disk: 200 GB
- IBM Power Systems™ server running VMControl V2.3.1.2, or V2.4.1 hypervisor
- x86 server supported by VMware ESXi V4.0, or V4.1 or vSphere 5.0, KVM, Xen 4.1, Hyper-v

On August 3, 2012, you can obtain the most current and up-to-date hardware requirements at

<http://pic.dhe.ibm.com/infocenter/tivihelp/v48r1/index.jsp>

Software requirements

The following operating systems are supported by IBM SmartCloud Provisioning V2.1.

Required

- Pre-boot eXecution Environment (PXE) Server/Compute Node/Storage Node: Red Hat Enterprise Linux (RHEL) 6.0 or 6.1 or 6.2 (64 bit)

Optional

- IBM Virtual Image Library: Red Hat Enterprise Linux (RHEL) 6.0 or 6.1 or 6.2 (64 bit)
- IBM Image Construction and Composition Tool: Red Hat Enterprise Linux (RHEL) 6.0 or 6.1 or 6.2 (32 bit and 64 bit)
- VMware ESXi V4.0 or V4.1 or vSphere 5.0
- PowerVM VMControl V2.3.1.2 or V2.4.1 hypervisor with these detailed specifications:

All of the following:

- Services contract for IBM Implementation Services for Power Systems AIX® V6.1 and IBM Migration Services for Power Systems AIX V6.1. For more information, refer to Services Announcement [608-040](#), dated June 24, 2008 .
- AIX V6.1 (5765-G62) license is required with:
 - IBM Network Installation Manager Server V6.1
 - IBM System Director V6.2.1.1
- IBM Systems Director VMControl™ Image Manager V2.3.1.2 or V2.4.1
- IBM Systems Director for Power Systems V6.2.1.1
- IBM Hardware Management Console (7042-CR5 or 7042-CR6) with firmware V7.3.3, or later (dedicated)

One of the following machines:

- IBM Power Systems POWER5 with firmware SF240_382, or later
- IBM Power Systems PO ER6t with firmware EL340_095, or later
- IBM Power Systems PO ER7t with firmware AL720_066, or later

On August 3, 2012, you can obtain the most current and up-to-date software requirements at

<http://pic.dhe.ibm.com/infocenter/tivihelp/v48r1/index.jsp>

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.

Planning information

Direct customer support

For technical support or assistance, contact your IBM representative or visit

<http://www.ibm.com/support>

Packaging

IBM SmartCloud Provisioning V2.1 is distributed with:

- International Program License Agreement (Z125-3301)

- License Information document
- CDs and DVDs
- Publications (refer to the [Publications](#) section)

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

IBM SmartCloud Provisioning V2.1 uses the security and auditability features of the operating system software. The customer is responsible for evaluation, selection, and implementation of security features, administrative procedures, and appropriate controls in application systems and communication facilities.

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/>

Licensing metric definitions and pricing examples

Licensing metric definitions

Client Device

Client Device is a unit of measure by which the program can be licensed. A Client Device is a single user computing device or special purpose sensor or telemetry device that requests the execution of or receives for execution a set of commands, procedures, or applications from or provides data to another computer system that is typically referred to as a server or is otherwise managed by the server. Multiple Client Devices may share access to a common server. A Client Device may have some processing capability or be programmable to allow a user to do work. Examples include, but are not limited to actuators, appliances, automated teller machines, automatic meter readers, cash registers, disk drives, desktop computers, kiosks, notebook computers, personal digital assistant, point-of-sale terminals, sensors, smart meters, tape drives, and technical workstations. Licensee must obtain entitlements for every Client Device which runs, provides data to, uses services provided by, or otherwise accesses the program and for every other computer or server on which the program is installed.

Resource Value Unit (RVU)

RVU is a unit of measure by which the program can be licensed. RVU Proofs of Entitlement (PoEs) are based on the number of units of a specific resource used or managed by the program. Licensee must obtain entitlements for this program sufficient to cover the resources managed by the program. Licensee must obtain sufficient entitlements for the number of RVUs required for licensee's environment for the specific resources as specified in the resource table found in the program's announcement and/or License Information document. RVU entitlements are specific

to the program and the type of resource and may not be exchanged, interchanged, or aggregated with RVU entitlements of another program or resource.

Standby or backup systems

For programs running or resident on backup machines, IBM defines three types of situations: cold, warm and hot. In cold and warm situations, a separate entitlement for the copy on the backup machine is normally not required and typically no additional charge applies. In a hot backup situation, the customer needs to acquire other licenses or entitlements sufficient for that server. All programs running in backup mode must be solely under the customer's control, even if running at another enterprise's location.

As a practice, the following are definitions and allowable actions concerning the copy of the program used for backup purposes.

Cold: A copy of the program may reside, for backup purposes, on a machine as long as the program is not started. There is no additional charge for this copy.

Warm: A copy of the program may reside for backup purposes on a machine and is started, but is idling, and is not doing any work of any kind. There is no additional charge for this copy.

Hot: A copy of the program may reside for backup purposes on a machine, is started, and is doing work. The customer must acquire a license or entitlement(s) for this copy and there will generally be an additional charge.

Doing work includes, for example, production, development, program maintenance, and testing. It also could include other activities such as mirroring of transactions, updating of files, synchronization of programs, data, or other resources (for example, active linking with another machine, program, database or other resource, and so on), or any activity or configurations that would allow an active hot switch or other synchronized switch-over between programs, databases, or other resources to occur.

In the case of a program or system configuration that is designed to support a high availability environment by using various techniques (for example, duplexing, mirroring of files, or transactions, maintaining a heartbeat, active linking with another machine, program, database, or other resource), the program is considered to be doing work in the hot situation and a license or entitlement must be purchased.

Product and licensing websites

A complete list of IBM Tivoli products is available at

<http://www.ibm.com/software/tivoli>

IBM Tivoli product licensing documents are available at

<http://www.ibm.com/software/tivoli/products/licensing.html>

Passport Advantage

Through the Passport Advantage Agreement, you may receive discounted pricing based on their total volume of eligible products, across all IBM brands, acquired worldwide. The volume is measured by determining the total Passport Advantage points value of the applicable acquisitions. Passport Advantage points are only used for calculating the Entitled Passport Advantage discount.

To determine the required IBM Tivoli product configuration under Passport Advantage, the IBM Tivoli Enhanced Value-Based Pricing Model applies. The customer's environment is evaluated on a per-product basis.

Use the following two-step process to determine the total Passport Advantage points value:

1. Analyze your environment to determine the number of charge units for a product. The quantity of each product's part numbers to be ordered is determined by that analysis.
2. Order the Passport Advantage part numbers. A Passport Advantage point value, which is the same worldwide for a specific part number regardless of where the order is placed, is assigned to each IBM Tivoli product part number. The Passport Advantage point value for the applicable part number, multiplied by the quantity for that part number, will determine the Passport Advantage points for that IBM Tivoli product part number. The sum of these Passport Advantage points determines the Passport Advantage point value of the applicable IBM Tivoli product authorizations which then may be aggregated with the point value of other applicable Passport Advantage product acquisitions to determine the total Passport Advantage points value.

The discounted pricing available through Passport Advantage is expressed in the form of Suggested Volume Prices (SVPs), which vary depending on the SVP level. Each SVP level is assigned a minimum total Passport Advantage point value, which must be achieved, in order to qualify for that SVP level.

Media packs and documentation packs do not carry Passport Advantage points and are not eligible for SVP discounting.

For additional information on Passport Advantage , refer to the following

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

The following Passport Advantage part number categories may be orderable:

- License and Software Maintenance 12 Months - This is the product authorization with maintenance to the first anniversary date.
- Annual Software Maintenance Renewal - This is the maintenance renewal for one anniversary that applies when a customer renews their existing coverage period prior to the anniversary date at which it expires.
- Software Maintenance Reinstatement 12 months - This is for customers who have allowed their Software Maintenance to expire, and later wish to reinstate their Software Maintenance.
- Media packs - These are the physical media, such as CD-ROMs, that deliver the product's code.
- Documentation packs - These contain printed documentation such as the User's Guide and Release Notes .

Pricing example

The resource for the purpose of the RVU calculation is Activated Processor Cores managed by the program. 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. 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 (see webpage below). If using full capacity licensing, each Activated Processor Core in the physical hardware environment managed by the program must be counted, except for those servers from which the program permanently no longer manages. If using virtualization capacity licensing, the Virtualization Capacity License Counting Rules that defines how many Activated Processor Cores must be counted, is located at

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

The RVU table for Activated Processor Cores on RVUs is below:

Tier	From quantity	To quantity	Factor
1	0	2,500	1.00

2	2,501	10,000	0.80
3	10,001	50,000	0.60
4	50,001	150,000	0.40
5	150,001	-	0.20

Pricing example 1

A customer wishes to license for the servers in the following core environment:

Distributed servers

- 20 One Processor, Single Core servers
- 65 One Processor, Dual Core servers
- 12 Two Processor, Dual Core servers
- 10 Two Processor, Quad Core servers
- One Eight Processor, Dual Core server with two virtual or logical partitions
- One Four Processor, Quad Core server

The customer wants to manage the applicable distributed server environment:

Systems managed	Quantity in customer environment	Activated Processor Cores to be licensed
One Processor, Single Core	20	20
One Processor, Dual Core	65	130
Two Processors, Dual Core	12	48
Two Processors, Quad Core	10	80
Eight Processors, Dual Core (2 logical partitions)	1	16
Four Processors, Quad Core	1	16
Total processors to be licensed		310

Based on the 310 Activated Processor Cores, the customer would require 310 RVUs.

Pricing example 2

A customer wishes to license in the following core environment:

- Servers with 45,000 Activated Processor Cores

The following calculation is used to determine the number of RVUs required to license the 45,000 Activated Processor Cores in the server environment.

Tier	Quantity of Activated Processor Cores	RVUs
1	2,500	2,500
2	7,500	6,000
3	35,000	21,000
Total		29,500

- The first tier based on the RVU table is used to calculate the first 2,500 Activated Processor Cores at a factor of 1 per core or in the case above 2,500 RVUs (2,500 x 1).

- The second tier is used to calculate the Activated Processor Cores from 2,501 to 10,000 at a .8 factor or $7,500 \times .8 = 6,000$.
- The third tier is used for those Activated Processor Cores between 10,001 and 50,000.
- In the example, 35,000 of the Activated Processor Cores reside in tier 3 or $35,000 \times .6 = 21,000$.
- Adding the RVUs together for each tier, the customer requires 29,500 RVUs to license the 45,000 Activated Processor Cores.

Ordering information

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

Product group: Tivoli IT Service Management
 Product: IBM SmartCloud Provisioning (5725-C88)

Product category: IBM SmartCloud Provisioning

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.

Media packs description	Part number
IBM SmartCloud Provisioning V2.1.0 for Red Hat Linux Multilingual Media Pack	BJ112ML

Current licensees

Current licensees of IBM SmartCloud Provisioning V1.2 can order the new media pack for V2.1.

New licensees

Orders for new licenses will be accepted now.

Shipment will begin on the planned availability date.

Basic license

Ordering information for Passport Advantage

Passport Advantage allows you to have a common anniversary date for Software Maintenance renewals, which can simplify management and budgeting for eligible new versions and releases (and related technical support) for your covered products. The anniversary date, established at the start of your Passport Advantage Agreement, will remain unchanged while your Passport Advantage Agreement remains in effect. New software purchases will initially include twelve full months of Software Maintenance. Software Maintenance in the second year (the first year of renewal) can be prorated to be coterminous with your common anniversary date. Thereafter, all Software Maintenance will renew at the common anniversary date for twelve full months of maintenance.

Refer to the IBM International Passport Advantage Agreement and to the *IBM Software Support Handbook* for specific terms relating to, and a more complete description of, technical support provided through Software Maintenance.

The quantity to be specified for the Passport Advantage part numbers in the following table is per required number of Resource Value Units. To order for Passport Advantage , specify the desired part number and quantity.

The following license part numbers for IBM SmartCloud Provisioning were previously announced.

Product name: IBM SmartCloud Provisioning V2.1

Product number: 5725-C88

Part number	Part description
D0IFCLL	IBM SmartCloud Provisioning RVU Lic + SW S&S 12 Mo
E0BNPLL	IBM SmartCloud Provisioning RVU Annual SW S&S Rnw1
D0IFDLL	IBM SmartCloud Provisioning RVU SW S&S Reinstate 12 Mo
D0IFELL	IBM SmartCloud Provisioning FTL RVU Initl FT Lic+S&S 12 Mo
E0BNQLL	IBM SmartCloud Provisioning FTL RVU Subsq FT Lic+S&S 12 Mo

To order a media pack for Passport Advantage , specify the part number in the desired quantity from the following table:

IBM SmartCloud Provisioning V2.1

Description	Part number
IBM SmartCloud Provisioning V2.1.0 for Red Hat Linux Multilingual Media Pack	BJ112ML

IBM SmartCloud Provisioning V2.1 is also available, via web download, from Passport Advantage .

Subscription and Support

Subscription and Support must be ordered to receive voice technical support via telephone during normal business hours, and future releases and versions, at no additional charge. The capacity of Subscription and Support (for example, Value Units or number of processors) must be the same as the capacity ordered for the product licenses.

To order, specify the Subscription and Support program product number and the appropriate license or charge option.

IBM is also providing Subscription and Support for these products, via a separately purchased offering, under the terms of the IBM International Agreement for Acquisition of Support Maintenance (IAASM). This offering:

- Includes and extends the support services provided in the base support to include technical support via telephone during normal business hours.
- Entitles customers to future releases and versions, at no additional charge. Note that the customer is not entitled to new products.

When Subscription and Support is ordered, the charges will automatically renew annually unless cancelled by the customer.

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 . It is not available as shrinkwrap.

Licensing

IBM International Program License Agreement including the License Information document and 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.

These programs are 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. These programs have 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 form number

L-CMAO-8ULB5H.

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. Usage is limited to the quantity of Resource Value Units licensed.

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>

IBM Operational Support Services - SoftwareXcel

No

System i Software Maintenance applies

No

Variable charges apply

No

Educational allowance available

Not applicable.

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