



IBM LoadLeveler for Linux on x86 Architecture V5.1 delivers improved serviceability and job launch performance

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Overview

LoadLeveler® for Linux™ on x86 Architecture V5.1, available for System x® ordering, schedules applications to clusters of select IBM® System x servers. Loadleveler supports load balancing for interactive parallel operating environment sessions and focuses on parallel job scheduling and scalability running on the RHEL 6 or SLES 11 operating system.

With LoadLeveler for Linux on x86 Architecture, you can get:

- Improvements in scheduling and job launch performance in large scale clusters
- Improved serviceability, logging, and analysis
- "Scale-out" support on System x servers
- Enhancements to advance reservation

LoadLeveler can:

- Help you maximize your hardware investment
- Schedule jobs better by managing resources
- Offer single point of control for job management
- Schedule thousands of jobs on hundreds of server nodes

Licenses for offerings in this announcement include one year or three years of Software Subscription and Support. Software Subscription and Support renewals for all features are aligned through Passport Advantage® Express® or Passport Advantage, reducing the administrative burden of keeping your Subscription and Support up to date.

If a new release of a given offering in this announcement is made generally available in Passport Advantage after the announcement of the offering in System x ordering systems, you may elect to take delivery of any release generally available for that offering during the product registration process.

Eligible software products, offered and selected during the ordering process with each hardware system, are enabled for electronic download for the system unit for which the product was ordered. Optionally, software and license-only orders can be created for these products based on existing supported hardware system units in the business environment. Offerings included in this announcement are available exclusively by electronic download.

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

Key prerequisites

- IBM System x servers
- SUSE Linux Enterprise Server (SLES) 11 SP1
- Red Hat Enterprise Linux (RHEL) 6.2

Planned availability date

March 16, 2012

Description

LoadLeveler for Linux on x86 Architecture Version 5.1 is a job management tool designed to allow users to run more jobs in less time by matching processing needs with the available resources. LoadLeveler for Linux schedules jobs and provides functions for building, submitting, and processing jobs quickly and efficiently in a dynamic environment.

Batch jobs can be submitted, either serial or parallel, to run in the background and require no input from the user. LoadLeveler scheduling algorithms use the availability of consumable resources to determine the machine or machines on which a job will run.

With LoadLeveler V5

Large-scale cluster options are delivered to make commands more usable in large clusters and are designed to improve scheduling and job launch performance.

Commands are provided to improve serviceability, logging, and analysis:

- Debugging commands provide consolidated information for tracing, and options for determining locking problems.
- LoadLeveler information can be consolidated with end-to-end system management for event analysis using an open source offering from IBM called Toolkit for Event Analysis and Logging.
- The default size of logs is increased and timestamps include microseconds.

"Scale-out" support on System x servers allows exploitation of IBM PE Runtime using InfiniBand User Space.

Advance reservation includes a reservation type and keyword for flexible resources and user options, and reservations can specify floating consumable resources.

Functional benefits

LoadLeveler supports a rich set of configuration keywords. For sites using both xCAT and LoadLeveler, the LoadLeveler configuration data can be stored in the same MySQL database that xCAT configures. An option is provided to check the validity of configuration data in files or databases.

Among keyword and command enhancements is the capability for configuring groups of machines with common characteristics. After the configuration data specified by the administrator is read from the configuration files or database, it is stored in shared memory for quick access by LoadLeveler daemons and processes.

LoadLeveler is packaged with separate install images for the resource manager and job scheduler. Each software package has its own set of externals such as commands and APIs. A user has the option of installing just the LoadLeveler resource manager, which is also packaged with the IBM PE Runtime Edition product, or installing both the LoadLeveler resource manager and scheduler.

A well-defined API is created and made available in the LoadLeveler resource manager, to allow a robust and efficient interaction with any scheduler.

In making use of this API, your scheduling software could provide scheduling functions in a similar way as the LoadLeveler scheduler does, while taking advantage of the specific features provided in the LoadLeveler resource manager.

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

IBM LoadLeveler for Linux on x86 Architecture is capable as of March 16, 2012, 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. A US Section 508 Voluntary Product Accessibility Template (VPAT) can be requested on the following website

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

Product positioning

LoadLeveler for Linux on x86 Architecture provides an excellent framework for managing both serial and parallel batch workload in a single cluster as well as multicluster environments. Jobs can be submitted within the same LoadLeveler cluster or across multiple clusters on a grid. LoadLeveler supports load balancing for interactive parallel operating environment sessions and provides various advanced job scheduling functions in a large-scale parallel computing environment.

Program number

Program number	VRM	Program name
5641-LL1	5.1.0	LoadLeveler for Linux on x86 Architecture with 1-year SW S&S
5641-LL3	5.1.0	LoadLeveler for Linux on x86 Architecture with 3-year SW S&S

Product identification number

5641-LL1
5641-LL3

Business Partner information

If you are a Direct Reseller - System Reseller acquiring products from IBM, you may link directly to Business Partner information for this announcement. A PartnerWorld® ID and password are required (use IBM ID).

<https://www.ibm.com/partnerworld/mem/sla.jsp?num=212-023>

Additional information

Order handling

To allow for ease of order submission, the offerings in this announcement can be configured in conjunction with eligible System x hardware, software, and license-only configurations that can be created for this product based on existing supported System x hardware system units in a given business environment.

Orders placed for the eligible offerings in this announcement will be routed and fulfilled through Passport Advantage Express. Invoicing for the initial license orders will occur through the System x order management systems. Subscription and Support renewals will be managed through Passport Advantage.

Passport Advantage allows you to have a common anniversary date for Software Subscription and Support renewals. The anniversary date, established at the order ship date for the initial product acquisition, will remain unchanged while your Passport Advantage Agreement remains in effect.

New software purchases initially include 12 or 36 full months of Subscription and Support coverage. Subscription and Support in the second year (the first year of renewal) can be prorated to be coterminous with your common anniversary date but managed and invoiced through Passport Advantage. Thereafter, all Software Subscription and Support will renew at the common anniversary date and include 12 full months of Subscription and Support.

Offering Information

Product information is available via the Offering Information website

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

Publications

No hardcopy publications are shipped with this program.

The following publications are available from the web:

- IBM LoadLeveler for Linux: Installation Guide (SC23-6789)
- IBM LoadLeveler: Using and Administering (SC23-6792)
- IBM LoadLeveler: Diagnosis and Messages Guide (SC23-6793)
- IBM LoadLeveler: Command and API Reference (SC23-6794)
- IBM LoadLeveler: Resource Manager (SC23-6790)

To access the above LoadLeveler documentation, refer to the IBM Cluster Information Center website. This website contains the most recent LoadLeveler documentation in PDF and HTML formats and is located at

<http://publib.boulder.ibm.com/infocenter/clresctr/vxrx/index.jsp>

The IBM Publications Center

<http://www.ibm.com/e-business/linkweb/publications/servlet/pbi.wss>

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 US) or customer number for 50 countries. A large number of publications are available online in various file formats, and they can all be downloaded by all countries, free of charge.

Technical information

Specified operating environment

Hardware requirements

- IBM System x iDataPlex®
- IBM Intelligent Cluster™
- Select IBM System x servers

Software requirements

Operating system, one of these:

- SUSE Linux Enterprise Server (SLES) 11, SP 1
- Red Hat Enterprise Linux (RHEL) 6.2

To run parallel operating environment jobs, IBM PE Runtime Edition for Linux on x86 Architecture V1.2 is required.

If using the database configuration option, Extreme Cloud Administrative Toolkit (xCAT) V2.6 using a MySQL database is required.

Note: Running parallel jobs with OpenMPI and Intel™ MPI are also supported.

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.

Companion products

The following products would compliment this product:

IBM PE Runtime Edition for Linux on x86 Architecture V1.2 (5641-PR1)
Extreme Cloud Administrative Toolkit (xCAT)
IBM GPFS™ for Linux on x86 Architecture V3.4 (5641-A07)
System x options
IBM System x servers

Planning information

Installability

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 (Software Maintenance) 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 (also referred to as Software Maintenance) with each program license acquired. The initial period of Software Subscription and Support (Software Maintenance) can be extended by the purchase of a renewal option, if available.

Packaging

For software products in this announcement, physical media and hardcopy documentation are not included in the deliverable package. The software code is delivered only via electronic download.

After receipt of an order, the Business Partner or end-user customer will be required to register and accept Passport Advantage or Passport Advantage Express terms and conditions. The product includes the license and one or three years of Software Subscription and Support.

Your Proof of Entitlement for this program is a copy of a paid sales receipt, purchase order, invoice, or other sales record from IBM or its authorized reseller from whom you acquired the program, provided that it states the license charge unit (the characteristics of intended use of the program; for example, number of processors, number of users) and quantity acquired.

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 LoadLeveler for Linux on x86 Architecture uses the security and auditability features of the system in which it is installed.

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/>

Ordering information

Charge metric

Program name	Part number or PID number	Charge metric
IBM LoadLeveler for Linux on x86 Architecture	5641-LL1	Per install - small, medium, or large server with 1-year S&S
IBM LoadLeveler for Linux on x86 Architecture	5641-LL3	Per install - small, medium, or large server with 3-year S&S

Install

Install is a unit of measure by which the program can be licensed. An install is an installed copy of the program on a physical or virtual disk made available to be executed on a computer. Licensee must obtain an entitlement for each install of the program.

New Licensees

Orders for new licenses will be accepted now. Electronic download ability begins on March 16, 2012.

Basic Licenses

To order the programs described in this announcement, specify the type model number, order type description, supply feature, and quantity of desired licenses for the appropriate one-time charge (OTC) features listed in the tables below. After receipt of your order, you will be requested to register through Passport Advantage Express to allow for entitlement for support and notification of upgrades. Upon registration completion you will be provided with a Web site for the electronic download. The one-time charge for the product includes the license and one or three years of Software Subscription and Support (S&S).

Single entity offering (SEO) numbers in the table below can be ordered through ibm.com. The SEO numbers in the table below are equivalent to the type model number, description, supply feature, and OTC billing feature numbers as designated in the table. After receipt of your order, you will be requested to register through Passport Advantage Express to allow for entitlement for support and notification of upgrades. Upon registration completion, you will be provided with a Web site for the electronic download. The one-time charge for the product includes the license and one or three years of Software Subscription and Support.

Program number and feature description	Supply feature number	OTC billing feature number	SEO number
5641-LL1 LoadLeveler for Linux on x86 Arch V5.1, Small 1-2 Sockets per Install with 1-year SW S&S	5809	0316	00D4813
5641-LL1 LoadLeveler for Linux on x86 Arch V5.1, Medium 3-4 Sockets per Install with 1-year SW S&S	5809	0315	00D4814
5641-LL1 LoadLeveler for Linux on x86 Arch V5.1, Large 5+ Sockets per Install with 1-year SW S&S	5809	0314	00D4815
5641-LL3 LoadLeveler for Linux on x86 Arch V5.1, Small 1-2 Sockets per Install with 3-year SW S&S	5809	0306	00D4816
5641-LL3 LoadLeveler for Linux on x86 Arch V5.1, Medium 3-4 Sockets per Install with 3-year SW S&S	5809	0305	00D4817

5641-LL3 LoadLeveler for Linux 5809 0307 00D4818
on x86 Arch V5.1, Large 5+
Sockets per Install with 3-year
SW S&S

Customization options

Select the appropriate feature numbers to customize your order with delivery options desired. These features can be specified on the initial or MES orders.

Expedite shipments

Feature	Description
3445	Expedite

Expedite shipments will be processed to receive 72-hour delivery from the time IBM Software Delivery and Fulfillment (SDF) receives the order.

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 International Passport Advantage Express Agreement.

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.

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

Agreement for Acquisition of Software Maintenance

These programs are licensed under the IBM Program License Agreement (IPLA). IBM includes one or three years of Software Subscription and Support (also referred to as Software Maintenance) with the initial license acquisition of each program acquired.

License Information form number

L-RHAN-8EQH2U

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 three 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 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.

Volume orders (IVO)

No

Passport Advantage applies

Yes, and through the Passport Advantage website at

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

Software Subscription and Support applies

Yes. All distributed software licenses include Software Subscription and Support (also referred to as Software Maintenance) for a period of 12 months from the date of acquisition, providing a streamlined way to acquire IBM software and assure technical support coverage for all licenses. Extending coverage for a total of three years from date of acquisition may be elected.

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, every day of the year. For additional details, consult your *IBM Software Support Handbook* at

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For more information about the Passport Advantage Agreement, visit the Passport Advantage website at

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System i Software Maintenance applies

No

Variable charges apply

No

Educational allowance available

Yes. A 15% education allowance applies to qualified education institution customers.

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The Electronic Services news page is a single Internet entry point that replaces the multiple entry points traditionally used to access IBM Internet services and support. The news page enables you to gain easier access to IBM resources for assistance in resolving technical problems.

The Electronic Service Agent™ is no-additional-charge software that resides on your server. It monitors events and transmits system inventory information to IBM on a periodic, client-defined timetable. The Electronic Service Agent automatically reports hardware problems to IBM. Early knowledge about potential problems enables IBM to deliver proactive service that may result in higher system availability and performance. In addition, information collected through the Service Agent is made available to IBM service support representatives when they help answer your questions or diagnose problems. Installation and use of IBM Electronic Service Agent for problem reporting enables IBM to provide better support and service for your IBM server.

To learn how Electronic Services can work for you, visit

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

Prices

Information on charges is available at

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

Choose the option entitled Purchase/upgrade tools.

Program name: LoadLeveler for Linux on x86 Architecture

Program number and feature description	OTC billing feature number	SEO number
5641-LL1 LoadLeveler for Linux on x86 Arch V5.1, Small 1-2 Sockets per Install with 1-year SW S&S	0316	00D4813
5641-LL1 LoadLeveler for Linux on x86 Arch V5.1, Medium 3-4 Sockets per Install with 1-year SW S&S	0315	00D4814

5641-LL1	LoadLeveler for Linux on x86 Arch V5.1, Large 5+ Sockets per Install with 1-year SW S&S	0314	00D4815
5641-LL3	LoadLeveler for Linux on x86 Arch V5.1, Small 1-2 Sockets per Install with 3-year SW S&S	0306	00D4816
5641-LL3	LoadLeveler for Linux on x86 Arch V5.1, Medium 3-4 Sockets per Install with 3-year SW S&S	0305	00D4817
5641-LL3	LoadLeveler for Linux on x86 Arch V5.1, Large 5+ Sockets per Install with 3-year SW S&S	0307	00D4818

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[ENUS-212-023-List_prices_2012_03_13.PDF](#)

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Markham, Ontario
Canada
L3R 2Z1

Reference: YE001

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Note: Shipments will begin after the planned availability date.

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