

Overview

HP HPC Linux Value Pack

HP HPC Linux Value Pack V4.1 (HPC-LVP) is a specially-priced software bundle that is specifically designed for the development, use, and management of high performance applications running on HP servers and workstations. HPC-LVP includes Platform LSF, software, which delivers a robust set of workload management capabilities for distributed computing environments. HPC-LVP also includes a web-based interface, workload monitoring and reporting, a simplified application integration process, and the HP MPI parallelization library.

Why use HP HPC Linux Value Pack?

Platform LSF Workload Management

- Powerful, comprehensive, policy driven workload management
- Topology and resource aware, including GPU scheduling
- Rich job and system information for ease of use and management
- Comprehensive workload accounting and reporting
- MPI integration for quickly launching MPI tasks, precisely tracking MPI job resource usage, and reliable MPI job management.
- High performance, throughput and utilization
- Highly available and secure
- Worldwide HP support

HP- MPI

- Reduces development effort through the use of the same MPI library for multiple architectures on both Linux and Windows
- Optimizes performance without compromising portability or flexibility.
- Support for NVIDIA GPUDirect with CUDA drivers.
- Supports a wide range of Operating Systems, interconnects and workload managers, including support for interconnect protocols such as RoCE, RDMA, and OFED.
- Provides the quality and robustness that come from over a decade of production usage by HP customers
- Full compliance with the MPI 1.2 and MPI 2.2 standards.
- Worldwide HP support

User Job Portal based on Platform Application Center

- Web-based interface for workload administration, submission and management
- Integrated application support with scripting guidelines and job submission templates (standard templates for most commonly used commercial applications and a template builder for all other applications)
- A powerful interface builder to easily assemble standard web components into its easy-to-use application interfaces
- Comprehensive workload monitoring and reporting for easy troubleshooting

What's New

- Adds latest technologies from Platform LSF, HP-MPI and Platform Application Center, which includes the latest design in web-based interfaces, robust workload management and workload monitoring
- Integrated with HP Insight CMU, including Platform LSF job monitoring and management
- Updated Hardware Support to include next generation HP ProLiant servers
- Support the latest Linux distributions.

At A Glance

Platform LSF Workload Management

- Platform LSF is a very popular and powerful workload manager, ideal for demanding, distributed high performance computing environments. It includes a rich set of policies for scheduling and prioritizing jobs based on combinations of static and dynamic system attributes. An extremely reliable, and richly configurable network-based queuing system provides maximum flexibility and central administration of all work in the cluster while ensuring that all work submitted to the cluster runs to completion. The software also includes comprehensive job management such as tracking and control.
- The MPI integration framework supports both PAM and blaunch, which manage large MPI job running across thousands of nodes.
- Full compatibility with HP Insight CMU for simplified job management

HP-MPI Library

- A high performance and production quality implementation of the Message-Passing Interface standard for HP servers and workstations, for both the Linux and Microsoft® Windows operating systems.
- A tight integration with the workload management capabilities in Platform LSF allows task level resource tracking for MPI jobs.
- HP-MPI uses enhancements whenever appropriate to provide low latency and high bandwidth point-to-point and collective communication routines. It supports multi-protocol execution of MPI applications on clusters of shared-memory servers so that applications can take advantage of the shared memory for intra-node communications.

- HP- MPI supports multiple interconnects and enables the customer to build a single executable that transparently takes advantage of the supported high performance interconnects. This greatly reduces the efforts of customers and Independent Software Vendors (ISVs) to make their applications available on the latest and greatest interconnect technologies on Linux, and Microsoft Windows.
- HP customers have been benefiting from HP-MPI on HP-UX and Linux clusters for over a decade. Users choosing HP-MPI now have a high performance and production ready MPI implementation that is the same across Linux and Microsoft Windows Operating Systems.

Models

Licensing and Media Options

HP HPC Linux Value Pack

HP High Performance Computing Linux Value Pack 1 Processor Flexible License for ProLiant Servers

TC293B

NOTE: This part number can be used to purchase multiple licenses with a single activation key. Each license is for one socket (a.k.a. processor). Customer will receive a printed end user license agreement and license entitlement certificate via physical shipment. The license entitlement certificate must be redeemed online in order to obtain a license key.

NOTE: Only one certificate is shipped for multiple-quantity licenses.

NOTE: This is a perpetual license.

NOTE: Public sector pricing is available by request to HP Product Management.

HP High Performance Computing Linux Value Pack Media Kit for ProLiant Servers

TC294A

NOTE: This part number can be used to purchase media including software and documentation, which will be delivered to the customer.

NOTE: HP HPC Linux Value Pack software can also be downloaded from the [HP Software Depot](#) website.

Software Product Services A variety of service options are available from HP. For more information, contact your local HP account representative or distributor. Information is also available from: <http://www.hp.com/hps/software>

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Standard Features

HP HPC Linux Value Pack - Comprehensive Set of Workload Management Features

- User friendly, topology aware job scheduling
- Robust workload monitoring and reporting
- GPU and Co-processor-aware scheduling
- Fairshare
- Job preemption
- Advanced reservation
- Resource reservation
- Deadline constraint scheduling
- Core-aware scheduling
- Flexible resource limit control
- Flexible resource requirement definition
- Dynamic run-time estimation
- Cluster topology awareness

HP HPC Linux Value Pack - Ease of Use Features

- Web-based interface for access anywhere
- Application-centric job submission interfaces including scripting guidelines and out of box job submission templates for most commonly used commercial applications, as well as customizable templates for integrating other applications

HP HPC Linux Value Pack - Web-based Interface

- Job submission, monitoring and control
- File upload / download
- SSL support for secure access
- Resource & performance monitoring
- Monitor clusters, queues, hosts, projects, users & jobs
- Event based alerts
- Status summaries
- Trending information

HP HPC Linux Value Pack - Insight CMU Integration

- Monitor LSF job states on per node or per cluster basis, job states including number of pending jobs, running jobs, exit jobs, done jobs and suspend jobs
- Start, stop and monitor LSF daemons.

HP-MPI - Supports MPI 1.2 and full MPI 2.2 Standard functionality

- Dynamic processes
- One-sided communications
- Extended collectives
- Thread safety
- Current ROMIO

HP-MPI - Supports multiple interconnects

- Shared Memory (Linux, Windows)
- TCP/IP (Linux) Support for interconnect protocols such as RoCE, RDMA, and OFED.
- InfiniBand
 - SDR, DDR, QDR, ConnectX, ConnectX2
 - Open Fabrics Enterprise Distribution OFED 1.0, 1.1, 1.2, 1.3, 1.4, 1.5 (Linux), WinOF 2.0.x, 2.1, 3.0.0 (Windows)
 - uDAPL Standard 1.1, 1.2, 2.0 (Linux)
 - Fabric Collective Accelerator (FCA) 2.0
- Support for NVIDIA GPUDirect with CUDA drivers.
- Myrinet® GM-2 (Linux) & MX (Linux, Windows)
- QLogic PSMLinux)
- Intra-node communication via shared-memory (Linux, Windows)

HP-MPI - Debugging and profiling tools

- Diagnostic library that provides message signature analysis, object space corruption detection, multiple buffer-write detection.
- Dynamic Multi-Parallel Processing Environment (MPE) support
- Dynamic Library interface providing run-time enablement of 3rd party MPI profile libraries

- Light weight profiling tools that provide important run-time statistics to help users to understand communication patterns and message-passing usages.
- Supports DDT, TotalView and Intel Trace Collector (Linux)

HP- MPI - Reliability

- Large automated test suite
- Tested with selected ISV apps prior to general release

HP- MPI - Other features

- Studio processing
- Signal propagation (Linux)
- Large Message Interface (support for messages > 2GB)
- CPU Affinity and NUMA control
- High Availability features
- Process accounting
- Auto-double FORTRAN extension
- Application cleanup
- Available with both archive and shared libraries

Warranty

Except as provided in the applicable software end-user license or program license agreement, or if otherwise provided under local law, software products, including any software products, freeware (as defined below) or the operating system preinstalled by hp are provided "as is" and with all faults, and hp hereby disclaims all other warranties and conditions, either express, implied, or statutory, including, but not limited to, warranties of title and non- infringement, any implied warranties, duties or conditions of merchantability, of fitness for a particular purpose, and of lack of viruses. Some states/jurisdictions do not allow exclusion of implied warranties or limitations on the duration of implied warranties, so the above disclaimer may not apply to you in its entirety. To the maximum extent permitted by applicable law, in no event shall hp or its suppliers be liable for any special, incidental, indirect, or consequential damages whatsoever (including, but not limited to, damages for loss of profits or confidential or other information, for business interruption, for personal injury, for loss of privacy arising out of or in any way related to the use of or inability to use the software product, even if hp or any supplier has been advised of the possibility of such damages and even if the remedy fails of its essential purpose. Some states/jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

HP's only warranty obligations with respect to software distributed by HP under the HP brand name are set forth in the applicable end-user license or program license agreement provided with that software. If the removable media on which HP distributes the software proves to be defective in materials or workmanship within ninety (90) days of purchase, your sole remedy shall be to return the removable media to HP for replacement. For blank tape removable media, please refer to the following website: <http://h20000.www2.hp.com/bizsupport/TechSupport/Document.jsp?objectID=lp50101>

It is your responsibility to contact non-HP manufacturers or suppliers for their warranty support.

NOTE: HP provides third-party products, software, and services that are not HP Branded "AS IS" without warranties of any kind, although the original manufacturers or third party suppliers of such products, software and services may provide their own warranties.

Complementary Products

- HP Cluster Management Utility

Hardware Support

HPC-LVP is supported on HP ProLiant DL-series, BL-series and SL-series servers, as well as the HP WS460c Workstation Blade, the ProLiant ML370 G6 and the ProLiant ML350p Gen8 server.

Each server can be connected to the others with a valid system interconnect that could be Gigabit, 10 Gigabit Ethernet or InfiniBand.

All SATA/MDL/SSD/SAS hard disk drives configurations are supported, provided that those drives are supported by the servers.

Operating Systems

- Linux® on x64 architectures including RHEL 2.1, 3, 4, 5.x, 6.x. SUSE Linux Enterprise Server including SLES 8, 9, 10, 11 and generic Linux distributions using 2.6 or greater kernels with glibc

- 2.3 (Debian, CentOS, Ubuntu, Scientific Linux and others).
- Linux on ia64 systems including RHEL 4,5, SLES 9,10,11 and generic Linux distributions using 2.6 kernels and glibc 2.3 and later.
- Microsoft Windows® on x32 & x64 platforms including Windows 7, Windows Vista, Windows XP, Windows Server 2003 & 2008 standard & enterprise editions, Windows HPC server 2008

Other product information Additional product materials are available from the HP-MPI web pages at: <http://www.hp.com/go/mpi>

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Related Options

Service and Support Offerings (HP Care Pack Services)	HP 1 year 9x5 HPC Linux Value Pack 1 Processor Flexible License Software Support	U0L71E
	HP 1 year 24x7 HPC Linux Value Pack 1 Processor Flexible License Software Support	U0L72E
	HP 3 year 9x5 HPC Linux Value Pack 1 Processor Flexible License Software Support	U0L73E
	HP 3 year 24x7 HPC Linux Value Pack 1 Processor Flexible License Software Support	U0L74E

Environment-friendly Products and Approach	End-of-life Management and Recycling	Hewlett-Packard offers end-of-life HP product return, trade-in, and recycling programs in many geographic areas. For trade-in information, please go to: http://www.hp.com/go/green. To recycle your product, please go to: http://www.hp.com/go/green or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner. The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: http://www.hp.com/go/green. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.
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