

Overview

HP-MPI V8.2 (also known as Platform MPI) is a high performance and production quality implementation of the Message-Passing Interface (MPI) standard for HP servers and workstations, for both the Linux and Microsoft® Windows operating systems.

Why use HP-MPI?

- Saves development effort through the use of the same MPI library for multiple architectures with both Linux and Windows
 - Reduces execution-time through the many enhancements for low-latency, high-bandwidth and collective operations
 - 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
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What's New

- Support for Fabric Collective Accelerator 2.x
 - Large Message Interface
 - CPU Affinity and NUMA control
 - Updated Hardware Support to include next generation HP ProLiant servers
 - GPU support including GPU-Direct 2.0 for Nvidia GPUs
 - RDMA over Converged Ethernet (RoCE) support
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At A Glance

- HP-MPI V8.2 (also known as Platform MPI 8.2) is a high performance and production quality implementation of the Message-Passing Interface (MPI) standard for HP servers and workstations, for both the Linux and Microsoft® Windows operating systems. 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 a decade. Users choosing HP-MPI for Linux and Microsoft Windows now have a high performance and production ready MPI implementation on industry standard servers.
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Overview

Models

Licensing and Media Options

HP Message Passing Interface (MPI) No Media 1 Processor Flexible License TC287B

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.

HP Message Passing Interface (MPI) Media Kit TC288A

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

NOTE: HP-MPI 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>



Standard Features

Supports MPI 1.2 and full MPI 2.2 Standard functionality

- Dynamic processes
 - One-sided communications
 - Extended collectives
 - Thread safety
 - Current ROMIO
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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 PSM (Linux)
 - Intra-node communication via shared-memory (Linux, Windows)
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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)
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Reliability

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

- Stdio 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
 - Integrated with Platform LSF
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Standard Features

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 their 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.

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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

HP Cluster Platform 3000 and Cluster Platform 3000SL

HP-MPI is supported on CP3000 systems consisting of HP ProLiant DL160 G6 and/or HP ProLiant DL160se G6 and/or HP ProLiant DL170h G6 and/or DL180 G6 and/or DL180se G6 and/or HP ProLiant DL360 G6 and/or DL360G7 and/or HP ProLiant DL380 G6 and/or HP ProLiant DL380 G7 and/or HP ProLiant DL580 G5 and/or HP ProLiant DL580 G7 and/or HP ProLiant SL160z G6 and/or HP ProLiant SL170z G6 and/or HP ProLiant SL2x170z G6 and/or HP ProLiant SL390s G7 and/or HP ProLiant SE1170s G6 servers. HP-MPI is also supported on blade-based CP3000 systems consisting of HP ProLiant BL460c G6 and/or HP ProLiant BL460c G7 and/or HP ProLiant BL490 G6 and/or HP ProLiant BL490 G7 and/or HP ProLiant BL680c G5 and/or HP ProLiant BL620/680c G7 blade servers and/or HP ProLiant BL2x220c G5 and/or HP ProLiant BL2x220c G6 and/or HP ProLiant BL2x220c G7 and/or HP ProLiant BL260c G5 and/or HP ProLiant BL280c G6 servers with the option of HP ProLiant DL380 G6 utility nodes.

HP Cluster Platform 4000

HP-MPI is supported on CP4000 consisting of HP ProLiant DL165G6 and/or HP ProLiant DL165G7 and/or HP ProLiant DL365G6 and/or HP ProLiant DL385 G7 and/or HP ProLiant DL585G5 and/or HP ProLiant DL585 G6 and/or HP ProLiant DL585 G7 and/or HP ProLiant DL785G6 and/or HP ProLiant SE1175 G6 and/or HP ProLiant SL165 G6 and/or HP ProLiant SL165 G7 servers. HP-MPI is also supported on blade-based CP4000 systems consisting of HP ProLiant BL465c G5 and/or HP ProLiant BL465c G6 and/or HP ProLiant BL465c G7 and/or HP ProLiant BL495c G5 and/or HP ProLiant BL495c



Standard Features

G6 and/or HP ProLiant BL685c G5 and/or HP ProLiant BL685c G6 and/or HP ProLiant BL685c G7 blade servers with the option of HP ProLiant DL385 utility nodes.

Operating Systems

HP-MPI is supported on Red Hat Enterprise Linux (V4, V5, V6), SUSE Linux Enterprise Server (V10, V11) , CentOS (V4, V5) and Microsoft Windows XP/Vista,/Server 2003/Server 2008/HPC Server 2008, Windows 7.

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

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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