

Intel® MPI Library 3.2 for Windows*

Release Notes

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Overview

The Intel® MPI Library for Windows* OS is a multi-fabric message passing library based on ANL* MPICH2* and OSU* MVAPICH2*.

The Intel® MPI Library for Windows* OS implements the Message Passing Interface, version 2 (MPI-2) specification.

To receive technical support and updates, you need to register your Intel® Software Product. See section [Technical Support](#).

Product Contents

The Intel® MPI Library Runtime Environment (RTO) contains the tools you need to run programs including SMPD services and supporting utilities, dynamic libraries, and documentation.

The Intel® MPI Library Development Kit (SDK) includes all of the Runtime Environment components plus include files and modules, interface libraries, debug libraries and test codes.

Related Products and Services

Information on Intel® software development products is available at <http://www.intel.com/software/products>.

Some of the related products include:

- The Intel® Software College provides training for developers on leading-edge software development technologies. Training consists of online and instructor-led courses covering all Intel® architectures, platforms, tools, and technologies.

What's New

The Intel® MPI Library 3.2 for Windows* OS is a new release of the Intel® MPI Library for Windows* OS.

This release includes the following new features compared to the Intel® MPI Library 3.1 for Windows* OS (see product documentation for details):

- Performance enhancements

- Automatic application-specific performance tuning through the mpitune utility
- Simplified selection of IPOIB for sock and ssm communication through the I_MPI_NETMASK variable
- Faster RDMA and RDSSM wait mode through I_MPI_RDMA_WRITE_IMM variable
- Further optimized Alltoall, Alltoallv, Allreduce, Gather, Scatter, and Bcast collective operations
- Greater scalability for the sock and ssm devices
- Usability improvements
 - Advanced shared memory segment size control
 - Loadable 3rd party process manager libraries
- Extended interoperability
 - Intel® Compiler 11.0 support
 - Microsoft* Windows* HPC Server 2008 support
 - Microsoft* Windows Vista* support
 - DAPL* 2.0 support

System Requirements

The following sections describe supported hardware and software

Supported Hardware

Systems based on the IA-32 architecture:

- Pentium® 4 processor
- Intel® Xeon® processor recommended
- 4 GB of RAM recommended
- 1 GB of free hard disk space

Systems based on the Intel® 64 architecture:

- Intel® Xeon® processor
- Intel® Core™ 2 Duo processor family recommended
- 4 GB of RAM (8 GB of RAM recommended)
- 1 GB of free hard disk space

Supported Software

Operating Systems:

- Systems based on the IA-32 architecture:
 - Microsoft* Windows XP*
 - Microsoft* Windows Vista*
- Systems based on the Intel® 64 architecture:
 - Microsoft* Windows Compute Cluster Server 2003*
 - Microsoft* Windows Server 2003*
 - Microsoft* Windows XP Professional x64 Edition*
 - Microsoft* Windows Vista*
 - Microsoft* Windows* HPC Server 2008 support

- Microsoft* Windows* Server 2008 support

(SDK only) Compilers:

- Intel® C++ Compiler 9.1 for Windows* and higher
- Intel® Fortran Compiler 9.1 for Windows* and higher
- Microsoft* Visual Studio 2005*
- Microsoft* Visual Studio 2008*
- Microsoft* Visual C++* Compilers

Batch Systems:

- Microsoft* Compute Cluster Pack 2003 job scheduler
- Altair* PBS Pro* 9.2 and higher

Recommended InfiniBand Software:

- Windows* OpenFabrics* (WinOF*) 2.0 or higher

SUPPORTED LANGUAGES

- For Intel® Compilers: C, C++, Fortran 77, Fortran 90

Installation Notes

Launch the installer and follow the instructions. See *Intel® MPI Library for Windows* OS Installation Guide* for details.

Special Features and Known Issues

- The Intel® MPI Library pins processes automatically. Use the I_MPI_PIN and related environment variables to control process pinning. See the *Intel® MPI Library for Windows* OS Reference Manual* for details.
- The Intel® MPI Library enhances message-passing performance on DAPL*-based interconnects by maintaining a cache of virtual-to-physical address translations in the MPI DAPL* data transfer path. To disable the translation cache completely, set the environment variable I_MPI_RDMA_TRANSLATION_CACHE to "disable"
- The following MPI-2 features are not supported by the Intel® MPI Library for Windows* OS:
 - Process spawning and attachment
 - Passive target one-sided communication when the target process does not call any MPI functions
 - User-defined data representations
- (SDK only) The nmake utility does not work correctly if path to the Intel® MPI Library compiler drivers contain spaces. For instance, "C:\Program Files (x86)\Intel\MPI\3.2\bin\". Copy the Intel® MPI Library compiler drivers to another location to avoid this issue
- An MPI application inherits the current working directory of the mpiexec command at the time of its invocation. Use the -gwdir or -wdir options to override this
- Intel® MKL 10.0 may create multiple threads depending on various conditions.

Follow these rules to correctly use Intel® MKL:

- Use thread safe version of the Intel® MPI Library in conjunction with Intel® MKL
- Set the OMP_NUM_THREADS environment variable to 1 to run application linked against non thread safe version of the Intel® MPI Library
- Follow these rules to launch the Intel MPI Library application using the MPICH2* environment:
 - Use the -port mpiexec option to specify the MPICH2* SMPD* port number
 - Set the I_MPI_SMPD_VERSION_CHECK environment variable to disable
- Some operating systems have a limitation on a number of concurrent connections. This limitation may cause job failure with the following error message "No more connections can be made to this remote computer at this time because there are already as many connections as the computer can accept". Decrease the auto disconnect time to reduce the probability of this issue.

From the command line do the following:

```
net config server /autodisconnect:time_before_autodisconnect
```

The default value of the auto disconnect time is usually set to 15 minutes.

- Use the mpiexec -mapall option if your application is located or accesses any network drive mapped to your local system

Documentation

The *Intel® MPI Library for Windows* OS Getting Started Guide*, found in Getting_Started.pdf, contains information on the following subjects:

- First steps using the Intel® MPI Library
- Troubleshooting outlines first-aid troubleshooting actions

The *Intel® MPI Library for Windows* OS Reference Manual*, found in Reference_Manual.pdf, contains information on the following subjects:

- Command Reference describes commands, options, and environment variables
- Tuning Reference describes environment variables that influence library behavior and performance

The *Intel® MPI Library for Windows* OS Installation Guide*, found in Installation_Guide.htm, contains information on the following subjects:

- Obtaining, installing, and uninstalling the Intel® MPI Library
- Getting technical support

Notation Conventions

Release Notes and user guide documentation use the notation conventions listed in the following table:

Style	Definition

This type style	indicates an element of syntax, a reserved word, a keyword, a file name, or part of a program example (text appears in lowercase unless UPPERCASE is required)
This type style	indicates what you type as input
<i>This type style</i>	indicates an argument on a command line or an option's argument
[items]	indicates that the items enclosed in brackets are optional
{ item item }	indicates a set of choices from which you must select one
... (ellipses)	indicates that an argument can be repeated several times

Technical Support

Your feedback is very important to us. To receive technical support for the tools provided in this product and technical information including FAQ's and product updates, you need to register for an Intel® Premier Support account at the [Registration Center](#).

NOTE: Registering for support varies for release product or pre-release products (alpha, beta, etc) - only released products have support web pages on <http://support.intel.com/>.

To register for an account, please visit the Intel® Registration Center web site at <http://www.intel.com/software/products/registrationcenter/index.htm>. If you have forgotten your password, please email a request to: quad.support@intel.com. Please do not email your technical issue to this email address.

The product support web site, <http://www.intel.com/software/products/support/mpi>, provides top technical issues, frequently asked questions, product documentation, and product errata.

There is [HPC and Intel® Cluster Tools Forum](#) for HPC experts and enthusiasts to share their knowledge, resources, and insights for the advancement of HPC solutions, cluster solutions, and the computing architectures that implement them.

Submitting Issues

Before submitting a support issue, see the *Intel® MPI Library for Windows* OS Getting Started Guide* for details on post-install testing to ensure that basic facilities are working.

When submitting a support issue to Intel® Premier Support, please provide specific details of your problem, including:

- The Intel® MPI Library package name and version information
- Host architecture
- Compiler(s) and versions
- Operating system(s) and versions
- Specifics on how to reproduce problems. Include makefiles, command lines, small test cases, and build instructions.
Use /test sources as test cases, when possible.

You can obtain version information for the Intel® MPI Library package in the file `mpisupport.txt`.

Steps to submit an issue

1. Go to <https://premier.intel.com/>
2. Log in to the site. Note that your username and password are case-sensitive.
3. Click on the "Submit Issue" link in the left navigation bar.
4. Choose "Development Environment" from the "Product Type" drop-down list.
5. If this is a software or license-related issue, choose "Intel® MPI Library, Windows" from the "Product Name" drop-down list.
6. Enter your question and complete the fields in the windows that follow to successfully submit the issue.

NOTE: Please notify your support representative prior to submitting source code where access needs to be restricted to certain countries to determine if this request can be accommodated.

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