
Intel(R) Trace Analyzer and Collector 2017 Update 3 for Windows* OS
Release Notes

Overview

Intel(R) Trace Collector is a low-overhead tracing library that performs event-based tracing in applications. You can analyze the collected trace data for performance hotspots and bottlenecks. The product is completely thread safe and integrates with C/C++, FORTRAN and multithreaded processes with and without MPI. It supports fail-safe mode. Additionally it can check for MPI programming and system errors. Intel(R) Trace Analyzer (ITA) provides a convenient way to monitor application activities gathered by the Intel Trace Collector through graphical displays. You can view the desired level of detail, quickly identify performance hotspots and bottlenecks, and analyze their causes.

Bundled together, the Intel(R) Trace Analyzer and Collector provide optimized analysis and visualization capabilities. Together they offer fast graphical rendering of complex profiling data and they easily scale up to hundreds of processes.

Intel(R) Trace Analyzer is available on Linux* OS, Microsoft* Windows* OS and macOS*. Intel(R) Trace Collector is available on Linux* OS and Microsoft* Windows* OS.

What's New

Below is a list of changes for each Intel(R) Trace Analyzer and Collector release. For more details, refer to the product documentation.

Intel(R) Trace Analyzer and Collector 2017 Update 3:

- o Bug fixes.

Intel(R) Trace Analyzer and Collector 2017 Update 2:

- o Enhancements of function color selection on timelines.
- o For changes in MPI Performance Snapshot (MPS), see the What's New section of the MPS User's Guide.

Intel(R) Trace Analyzer and Collector 2017 Update 1:

- o Introduced mouse wheel zooming support for timelines.
- o Deprecated support for the ITF format.
- o For changes in MPI Performance Snapshot (MPS), see the What's New section of the MPS User's Guide.

Intel(R) Trace Analyzer and Collector 2017:

- o Introduced a new API function VT_registerprefixed.
- o Custom plug-in framework is now removed.
- o All product samples are moved online to:
<https://software.intel.com/en-us/product-code-samples>
- o Bug fixes.
- o For changes in MPI Performance Snapshot (MPS), see the What's New section of the MPS User's Guide.

Intel(R) Trace Analyzer and Collector 9.1 Update 2:

- o Introduced an interoperability feature with Intel(R) Advisor XE

See the Intel Trace Analyzer User and Reference Guide for details.

- o For changes in MPI Performance Snapshot (MPS), see the What's New section of the MPS User's Guide.

Intel(R) Trace Analyzer and Collector 9.1 Update 1:

- o Changes in the named-user licensing scheme. See 'Installing the License' below for details.
- o Minor improvements and bug-fixes.

Intel(R) Trace Analyzer and Collector 9.1:

- o Installation directory structure changes. See README for details.
- o Minor improvements and bug-fixes.

Intel(R) Trace Analyzer and Collector 9.0 Update 3:

- o Support for OpenMP* regions
- o A few bug-fixes

Intel(R) Trace Analyzer and Collector 9.0 Update 2:

- o Introduced an interoperability feature with Intel(R) VTune(TM) Amplifier XE. See the Intel Trace Analyzer User and Reference Guide for details.
- o Introduced Intel(R) Trace Analyzer for OS X*.
- o A few bug-fixes

Intel(R) Trace Analyzer and Collector 9.0 Update 1:

- o Updated directory structure: added symbolic links. See README.txt for more details.
- o Changed settings for non-default installation path. If you choose to install Intel(R) Trace Analyzer and Collector to a non-default path, itac/<version>.<package> will be appended to the selected installation path. Use symbolic links to this path if you need a specific pathname.
- o A few bug-fixes

Intel(R) Trace Analyzer and Collector 9.0:

- o MPI-3 support
- o New mpirun keys
- o Experimental TIME-WINDOWS support
- o Performance Assistant
- o Summary Page
- o Visual appearance enhancement
- o Contextual assistance for main dialogs
- o New tutorials
- o IA-32 architecture support has been dropped
- o itcpin support has been dropped

Intel(R) Trace Analyzer and Collector 8.1 Update 4:

- o Improved raw data compression
- o New online documentation format
- o A few bug-fixes

Intel(R) Trace Analyzer and Collector 8.1 Update 3:

- o New Trace Map
- o All timeline settings in the Preferences dialog box
- o Context-sensitive help
- o A few bug-fixes

Intel(R) Trace Analyzer and Collector 8.1 Update 2:

- o New toolbar
- o Event Timeline settings in the Preferences dialog
- o New icons in the menu

- o A few bug-fixes

Intel(R) Trace Analyzer and Collector 8.1 Update 1:

- o Welcome Page functionality
- o New Preferences dialog
- o Added cache creation progress bar
- o Visual appearance enhancement
- o Improved stability
- o MPI_Pcontrol support

Intel(R) Trace Analyzer and Collector 8.1:

- o New interactive help system with support for non-ASCII installation path
- o Intel(R) Composer XE 2013 support

Intel(R) Trace Analyzer and Collector 8.0 Update 3:

- o File descriptor virtualization
- o Secure Dynamic Link Libraries* (DLL) loading
- o Experimental scalable tracefile format
- o Advanced aggregation
- o Seek and jump function
- o Intel(R) Composer XE 2011 Update 6 support

The Intel(R) Trace Analyzer and Collector 8.0 Update 2:

- o Secure DLL Loading mode. See more details in the Special Features and Known Issues topic
- o Intel Trace Analyzer and Collector executables are signed
- o Improved MPI correctness checking trace file creation
- o Fixes to the cache creation process in CLI mode
- o Fixes to the trace merging function
- o Intel(R) Composer XE 2011 Update 4 support

The Intel(R) Trace Analyzer and Collector 8.0 Update 1:

- o Reducing the time spent in application code through merge separation
- o Decrease in trace load time due to the introduction of intermediate (summary) data reads during startup
- o New Installer technology integration plus the introduction of a new Intel(R) Trace Analyzer FLEXlm* module
- o Intel(R) Compiler XE 12 Beta support

The Intel(R) Trace Analyzer and Collector 8.0:

- o Application Imbalance diagram for simplified application analysis
- o Addition of an Ideal Interconnect Simulator (IIS) to understand application balance
- o Custom Plug-in Framework (CPF) to simulate application behavior over different interconnects
- o Intel(R) Trace Analyzer Projects to save working environment

Key Features

This release of the Intel(R) Trace Analyzer and Collector supports the following major features:

- Advanced GUI: user-friendly interface, high-level scalability, support of structured trace file (STF) trace data, runs on Linux* OS, Microsoft* Windows* OS and macOS*
- Aggregating and Filtering: detailed views of runtime behavior grouped by functions or processes
- MPI Communicator: display of communication metrics for an arbitrary

- time interval for MPI
- Fail-Safe Tracing: improved functionality on prematurely terminated applications with deadlock detection
- Intel(R) MPI Library Interface: support of tracing on internal MPI states, support of MPI-IO
- Correctness checking: check for MPI and system errors at run-time
- ROMIO: extended support of MPI-2 standard parallel file I/O
- Comparison feature: compare two trace files and/or two regions (in one or two trace files)
- Counter Timeline: analyze counter data collected through provided Performance Application Programming Interface (PAPI) and OS modules or through manual use of the Intel Trace Collector API
- Integrated online help and a separate command line interface for the Intel Trace Analyzer

Product Contents

This Product package contains the following components:

The Intel(R) Trace Analyzer and Collector

Documentation for the Intel(R) Trace Analyzer and Collector can be found at <installation_directory>\itac\doc. The ITA_User_and_Reference_Guide.pdf includes information about the Intel Trace Analyzer and the ITC_User_and_Reference_Guide.pdf documents the Intel Trace Collector.

NOTES: Adobe Acrobat Reader* or another pdf reader such as Xpdf* is required to view the product documentation.

Third-party sources of the components of the Intel Trace Analyzer and Collector, for example those released under GPL, may be downloaded from <http://software.intel.com/en-us/articles/intel-cluster-tools-open-source-downloads>.

Installation

To install the Intel(R) Trace Analyzer and Collector, double-click the installer file setup.exe and follow the instructions given during the installation. You will be asked for the location of your license file and which components should be installed. For your convenience, the installer also offers you to register the Trace Analyzer with the trace file extension created by the Intel Trace Collector (*.stf).

After installation, read
'<installation_directory>\itac\doc\ITC_User_and_Reference_Guide.pdf' and
'<installation_directory>\itac\doc\ITA_User_and_Reference_Guide.pdf'.

Before using the Intel Trace Collector, you should source
<installation_directory>\itac\bin\itacvars.bat to set the appropriate environment variables for smooth functioning of the software.

You can invoke the Intel Trace Analyzer through its entry in the Start Menu, by double-clicking '<installation_directory>\bin\traceanalyzer.exe', or by executing it from a command shell. If you have registered, double-clicking

tracefiles (*.stf) opens them with the Intel Trace Analyzer.

Installing the License

Intel Trace Analyzer and Collector uses Macrovision Corporation FLEXlm* electronic licensing technology. License management is transparent to you. During the installation you will be prompted for a valid license, which is required to successfully complete the installation of the Intel Trace Analyzer and Collector. On Linux* OS, the provided scripts itacvars.sh or itacvars.csh ensures that the path of your license file is contained in the environment variable INTEL_LICENSE_FILE.

Keep the license file on the system because the Intel(R) Trace Analyzer uses a time-limited license.

Starting from the 9.1 Update 1 release the 'named-user' license provisions in the Intel software EULA (available as 'itacEULA.txt' in <install_dir>/itac) changed to only allow the software to be installed on up to three systems, tracked by the system host ID. In order to install on another system after you have reached this limit, you will need to release an old system host ID from the registration system.

Uninstalling Intel Trace Analyzer and Collector

Uninstalling the Intel Trace Analyzer is done in the usual way through the Control Panel -> 'Add or Remove Programs' ('Uninstall a Program' on Windows* 8) menu selection. Choose the Intel Trace Analyzer and Collector and select 'Remove'.

Note: Uninstalling the Intel Trace Analyzer and Collector will remove the software components while keeping the license file and other files in <installation_directory> which may have been created by you. It may also not reset its entry in the INTEL_LICENSE_FILE environment variable.

The Intel Trace Analyzer and Collector software and licenses can coexist with previous versions.

Special Features and Known Issues

With the TIME-WINDOWS option, the time interval of the resulting trace file may be different from the time interval specified in the configuration file.

Static Intel(R) Trace Collector libraries require Intel(R) MPI Library version 5.0 or higher.

If on Misrosoft* Windows Server* 2012 you find that you cannot display help or documentation from within Microsoft* Internet Explorer* 10, correcting a security setting for Microsoft Internet Explorer usually corrects the problem. From Tools > Internet Options > Security, add "about:internet" to the list of trusted sites. Optionally, you can remove "about:internet" from the list of trusted sites after you are finished viewing the documentation.

Tracing of the MPI application, which calls the MPI_Comm_spawn function, is not supported by the current version of the Intel Trace Collector.

The Intel Trace Analyzer and Collector for Windows* OS provides enhanced

security options. Use HKEY_LOCAL_MACHINE\Software\Intel\ITAC registry key to define the following registry entries:

- SecureDynamicLibraryLoading enables the dynamic library loading enhanced security mode. Set the value to enable|yes|on|1. This option is disabled by default.
- VT_MPI_DLL and VT_FMPI_DLL specify the MPI library path to be used in the dynamic library loading enhanced security mode.
- SecurePath specifies additional secure paths to be used in the dynamic library loading enhanced security mode: paths must be separated with semicolon (';'). This option is useful when static tracing library VT*.lib is linked into the executable.

NOTE: the VT_MPI_DLL and VT_FMPI_DLL environment variables have no effect in the dynamic library loading enhanced security mode. See the Intel(R) Trace Analyzer and Collector for Windows* OS User and Reference Guide for more details on these variables.

The Intel Trace Analyzer may get into an undefined state if too many files are opened at the same time.

In some cases symbols information may appear incorrectly in the Intel Trace Analyzer if you discarded symbols information from object files.

MPI Correctness Checking is available for the Intel(R) MPI Library only.

Microsoft* Internet Explorer* internet browser version 7.0 may crash on Japanese localized version of the Microsoft* Windows Server* OS 2008 on the attempt to display the Intel Trace Analyzer html documentation. Please use newer versions.

The Intel Trace Collector for Windows* OS has does not support distributed memory checking.

Generation of a command line for Intel(R) VTune(TM) Amplifier XE and Intel(R) Advisor XE (as part of the corresponding interoperability feature) is currently not supported for trace files generated on Windows* OS.

See the User and Reference Guides for details.

System Requirements

Supported Hardware

- Systems based on Genuine Intel(R) 64 processors:
 - Intel(R) Core(TM) processor family or higher
 - Intel(R) Xeon(R) processors recommended
 - 1 GB of RAM per core
 - 2 GB of RAM per core recommended
 - 1 GB of free hard disk space

Supported Software

Operating Systems

- Systems based on the Intel(R) 64 architecture:
 - Microsoft* Windows* Server 2008
 - Microsoft* Windows* Server 2008 R2
 - Microsoft* Windows* Server 2012

Microsoft* Windows* Server 2012 R2
Microsoft* Windows* Server 2016
Microsoft* Windows 7*
Microsoft* Windows 8*
Microsoft* Windows 8.1*
Microsoft* Windows 10*

MPI implementations

Intel(R) MPI Library 4.x
Intel(R) MPI Library 5.x
Intel(R) MPI Library 2017

Compilers

Intel(R) C++, Fortran Compiler 15.0 or newer

Technical Support

Your feedback is very important to us. To receive technical support, you need to be registered for an Intel(R) Premier Customer Support account on our secure web site. You can use your Intel(R) Premier Customer Support account for the Intel(R) Trace Analyzer and Collector to file issues/comments and recommendations for the product.

This package is supported through Intel(R) Premier Customer Support.
Direct customer support requests at:
<https://premier.intel.com>

General information on the Intel(R) Software Development Products support offerings may be obtained at:
<http://www.intel.com/software/products/support>

Intel(R) Trace Analyzer and Collector home page can be found at:
<http://www.intel.com/go/traceanalyzer>

Intel(R) Trace Analyzer and Collector support web site,
<http://software.intel.com/en-us/intel-trace-analyzer>
provides top technical issues, frequently asked questions, product documentation, and product errata.

Requests for licenses can be directed to the Intel(R) Software Development Products Registration Center at:
<http://www.intel.com/software/products/registrationcenter>

Before submitting a support issue, see the Intel(R) Trace Analyzer and Collector for Windows* OS Getting Started Page for details on post-install testing to ensure that basic facilities are working.

When submitting a support issue to the Intel(R) Premier Customer Support, please provide specific details of your problem, including:

- The Intel(R) Trace Analyzer and Collector package name and version information
- Host architecture (for example, Intel(R) 64 architecture)
- Compiler(s) and versions
- Operating system(s) and versions
- Specifics on how to reproduce the problem. Include makefiles,

command lines, small test cases, and build instructions.

You can obtain version information for the Intel(R) Trace Analyzer and Collector package in the file itacsupport.txt.

Submitting Issues

- Go to <https://premier.intel.com>
- Log in to the site. Note that your username and password are case-sensitive.
- Click on the "Submit Issue" link in the left navigation bar.
- Choose "Development Environment (tools,SDV,EAP)" from the "Product Type" drop-down list. If this is a software or license-related issue, choose the "Intel(R) Trace Analyzer & Collector, Windows*" option from the "Product Name" drop-down list.
- Enter your question and complete the fields in the windows that follow to successfully submit the issue.

Note: 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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