
Intel(R) Trace Analyzer and Collector 8.0 Update 3 for Linux* OS
Release Notes

Overview

The 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 binary instrumentation and fail-safe mode. Additionally it can check for MPI programming and system errors. The Intel(R) Trace Analyzer 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. The tool is available on Linux* OS and Microsoft* Windows* OS.

What's New

The Intel(R) Trace Analyzer and Collector 8.0 Update 3 for Linux* OS is an update release which includes the following new features compared to the Intel(R) Trace Analyzer and Collector 8.0 Update 2 (see product documentation for more details):

- Usability improvements
 - o File descriptor virtualization
 - o Experimental scalable tracefile format
 - o Advanced aggregation
 - o Seek and jump function
- Extended interoperability
 - o Intel(R) Composer XE 2011 Update 6 support

The Intel(R) Trace Analyzer and Collector 8.0 Update 2 for Linux* OS is an update release which includes the following new features compared to the Intel(R) Trace Analyzer and Collector 8.0 Update 1 (all new feature details are listed below; other documents are unchanged):

- Usability improvements
 - 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

- Extended interoperability
 - o Intel(R) Composer XE 2011 Update 4 support

The Intel(R) Trace Analyzer and Collector 8.0 Update 1 for Linux* OS is an update release which includes the following new features compared to the Intel(R) Trace Analyzer and Collector 8.0 (see product documentation for more details):

- Higher scalability:
 - o Reducing the time spent in application code through merge separation
 - o A decrease in trace load time due to the introduction of intermediate (summary) data reads during startup
- Greater usability:
 - o Integration of a new installer technology plus the introduction of a new Intel(R) Trace Analyzer FLEXlm* module
- More support:
 - o Intel(R) Composer XE 12.0 Beta

The Intel(R) Trace Analyzer and Collector 8.0 for Linux* OS boasts the following new features compared to previous versions (see product documentation for more details):

- Application Imbalance diagram for simplified application analysis
- Addition of an Ideal Interconnect Simulator (IIS) to understand application balance
- Custom Plug-in Framework (CPF) to simulate application behavior over different interconnects
- 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 and Microsoft* Windows* OS
- 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 (including distributed memory checking)
- ROMIO: extended support of MPI-2 standard parallel file I/O
- Binary instrumentation on the IA32 and Intel(R) 64 architectures
- 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 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 for Linux* OS

Documentation for the Intel(R) Trace Analyzer and Collector can be found at `<installation_directory>/doc`. The `ITA_Reference_Guide.pdf` includes a tutorial introduction for the Intel Trace Analyzer and the `ITC_Reference_Guide.pdf` documents the Intel Trace Collector.

The Intel Trace Analyzer comes with an online help system (html) while the Intel Trace Collector provides man pages on Linux* OS.

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 `ftp://ftp.i kn.intel.com/pub/opensource`.

Installation

Linux* Systems:

To install the Intel Trace Analyzer and Collector, execute 'install.sh'. You will be prompted for an installation directory which defaults to `/opt/intel/itac/8.0.<version#>.<package#>`. You will also be asked to select which components should be installed and which default MPI implementation should be used. It is recommended to use identical install paths on all nodes, through appropriate mounting or creating multiple copies. See the built-in help pages (`--help`) to get more information about the installer.

After installation, read the documentation in '`<installation_directory>/doc`'.

Before using the Intel Trace Analyzer and Collector, you should source `<installation_directory>/bin/itacvars.[c]sh` to set the appropriate environment variables for smooth functioning of the software. Read the user guide for details on how to switch between different MPI implementations.

To invoke the Intel(R) Trace Analyzer execute '`<installation_directory>/bin/traceanalyzer`'.

Microsoft* Windows* Operating Systems:

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 for components to be installed. For your convenience, the installer also offers you to register the Trace Analyzer with trace files created by the Intel Trace Collector (*.stf).

After installation, read

'<installation_directory>/doc/ITC_Reference_Guide.pdf' and
'<installation_directory>/doc/ITA_Reference_Guide.pdf'.

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

You can invoke 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

The Intel Trace Analyzer and Collector uses Macrovision Corporation FLEXIm* 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.

Since the Intel(R) Trace Analyzer uses a time-limited license, the license file must remain in place on the system.

Uninstalling the Intel Trace Analyzer

Linux* Operating Systems:

To uninstall the Intel Trace Analyzer and Collector, run the script
'<installation_directory>/uninstall.sh'.

Microsoft* Windows* Operating Systems:

Uninstalling the Intel Trace Analyzer and Collector is done in the usual way through the Start->Settings->Control Panel->Add or Remove Programs 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

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

Certain versions of ld (for example the ones distributed with Red Hat* Enterprise Linux* 4) have problems linking with the Intel Trace Collector shared libraries. As a workaround you can use the static libraries or specify the following options to ld: "-Wl,--allow-shlib-undefined -Wl,--noinhibit-exec" which will result in a correct binary.

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

If you are working with the Intel(R) MPI Library version 3.x, use the arguments "-L\$VT_ROOT/lib -IVT \$VT_ADD_LIBS" for the compiler wrappers mpicxx and mpiicpc instead of the standard "-trace" option.

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

The Intel Trace Collector for Microsoft* Windows* OS has the following limitations compared to the Version for Linux* OS:

- no distributed memory checking
- itcpin is not supported if the "McAfee Host Intrusion Prevention"* antivirus software is active

See the Reference Guides for details.

System Requirements

Supported Hardware

Systems based on Genuine IA-32 processors:

- A system based on the Intel(R) Pentium(R) 4 processor or higher
- Intel(R) Core(TM) i7 processor recommended
- 1 GB of RAM per core
- 2 GB of RAM per core recommended
- 1 GB of free hard disk space

Systems based on Genuine Intel(R) 64 processors:

- Intel(R) Core(TM) processor family or higher
- Intel(R) Xeon(R) 5500 processor series 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 IA-32 architecture:

Red Hat* Enterprise Linux* 5,
Red Hat* Enterprise Linux* 6,
SuSE* Linux Enterprise Server* 10,
SuSE* Linux Enterprise Server* 11

Systems based on the Intel(R) 64 architecture:

Red Hat* Enterprise Linux* 5,
Red Hat* Enterprise Linux* 6,

Fedora* 15
CentOS* 5.3,
SuSE* Linux Enterprise Server* 10,
SuSE* Linux Enterprise Server* 11,

openSuSE* Linux* 11.1

MPI implementations

Systems based on the IA-32 or Intel(R) 64 architectures:

Intel(R) MPI Library 3.x
Intel(R) MPI Library 4.x

Technical Support

Your feedback is very important to us. To receive technical support, you need to be registered for an Intel(R) Premier Support account on our secure web site. You can use your Intel(R) Premier 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 Support. Direct customer support requests at:

<https://premier.intel.com>

General information on Intel(R) product-support offerings may be obtained at:

<http://www.intel.com/software/products/support>

The Intel(R) Trace Analyzer and Collector home page can be found at:

<http://www.intel.com/go/traceanalyzer>

The Intel(R) Trace Analyzer and Collector support web site,

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

Requests for licenses can be directed to the Registration Center at:
<http://www.intel.com/software/products/registrationcenter>

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

When submitting a support issue to Intel(R) Premier 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, IA-32 or 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 and Collector, Linux*" 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 before submitting source code where access needs to be restricted to certain countries to determine if this request can be accommodated.

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