

Intel® VTune™ Amplifier XE 2015 Release Notes for Windows* OS

Installation Guide and Release Notes
2015

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You can find the latest Release Notes versions [online](#).

1 Performance Profiling with Intel VTune Amplifier XE

Please visit our [web site](#) for training videos, technical articles, documentation and support.

2 What's New

Intel® VTune™ Amplifier XE 2015 Update 2

- TSX Hotspots analysis providing Precise Clockticks data for the Intel microarchitecture code name Haswell
- Bandwidth analysis improvements including:
 - Support for the 5th Generation Intel® Core™ processors (code name: Broadwell) and Intel microarchitecture code name Silvermont
 - QPI Bandwidth data analysis for server platforms
 - Total, Read and Write Bandwidth timeline areas merged into single area
 - Grouping by package for the CPU Time timeline area
- GPU analysis improvements including:
 - GPU Architecture Diagram tab added to the Timeline pane to facilitate interpretation of the OpenCL™ application analysis data and easily match the GPU hardware metrics with the corresponding architecture blocks

- Compute extended counter set support for GPU analysis on the 5th Generation Intel® Core™ processors (code name: Broadwell)
- Compute basic counter set replacing the Global/local accesses set for GPU analysis

Intel® VTune™ Amplifier XE 2015 Update 1

- Support for Intel(R) Xeon(R) processor E5 v3 family based on the Intel microarchitecture code name Haswell-E, including General Exploration, Bandwidth and TSX Exploration analysis
- Support for the Intel microarchitecture code name Broadwell, including General Exploration analysis
- Spin and Overhead Time metrics classified by reasons for OpenMP* analysis [3]
- Direct access to the source analysis for an OpenMP parallel region when using the /OpenMP Region/.. grouping in the grid
- Showing OpenMP application serial time in grid that reacts on time filtering

Intel® VTune™ Amplifier XE 2015 Initial Release

- Improved OpenMP region analysis provides performance metrics for each parallel region, serial time and potential tuning gain for parallel regions. It allows detecting common performance bottlenecks, such as load imbalance, granularity or synchronization issues.
- Improved Intel Xeon Phi coprocessor analysis workflow is more user-friendly with new Target system configuration options. Stack collection is enabled for Intel Xeon Phi™ coprocessor analysis types.
- Graphical interface for remote data collection provides clear workflow for configuring and running analysis on remote Linux* systems via SSH. Target tab in Project Properties allows to get a list of processes running on the remote Linux* system, to specify a path to the VTune Amplifier installed on a remote machine and a path to a remote temporary directory used for storing performance results.
- GPU OpenCL™ kernel analysis extended with memory transfers, visualization of OpenCL API and computing queue and new SIMD Width metric.

- OS X* host support for performing automated remote collection on other platforms and viewing collected results.
- New analysis type “TSX Exploration” for 4th generation Intel® Core™ processors based on the Intel microarchitecture code name Haswell can detect inefficiency in using Intel® TSX instructions with possible reasons.
- Usability improvements:
 - General Exploration and Bandwidth analysis types are not CPU specific now. So the same command line can be applied to different microarchitectures.
 - User can create a custom grouping level in grid views
 - Summary window with hyperlinks for Top Hotspots and performance metrics navigating to the Bottom-up grid view
 - Grouping options in Timeline pane
- Support for importing *.perf files with the event-based sampling data collected by the Linux Perf tool
- An option to limit the call stack size (in system pages) and minimize collection overhead for custom hardware event-based sampling analysis results
- Support for external data collection launched from the VTune Amplifier to integrate additional custom counters into result. It is also possible to import a csv file with the externally collected data into an existing VTune Amplifier result.

3 System Requirements

For an explanation of architecture names, see <http://software.intel.com/en-us/articles/intel-architecture-platform-terminology/>

Processor Requirements

- For general operations with user interface and all data collection except Hardware event-based sampling analysis
 - A PC based on an IA-32 or Intel® 64 architecture processor supporting the Intel® Streaming SIMD Extensions 2 (Intel® SSE2) instructions (Intel® Pentium® 4 processor or later, or compatible non-Intel processor).
 - For the best experience, a multi-core or multi-processor system is recommended.
 - Because the VTune Amplifier XE requires specific knowledge of assembly-level instructions, its analysis may not operate correctly if a program contains non-Intel instructions. In this case, run the analysis with a target executable that contains

only Intel® instructions. After you finish using the VTune Amplifier XE, you can use the assembler code or optimizing compiler options that provide the non-Intel instructions.

- For Hardware event-based sampling analysis (EBS)
 - EBS analysis makes use of the on-chip Performance Monitoring Unit (PMU) and requires a genuine Intel processor for collection. EBS analysis is supported on Intel® Pentium® M, Intel® Core™ microarchitecture and newer processors (for more precise details, see the list below).
 - EBS analysis is not supported on the Intel Pentium 4 processor family (Intel® NetBurst® MicroArchitecture) and non-Intel processors.
 - However, the results collected with EBS can be analyzed using any system meeting the less restrictive general operation requirements.
 - EBS analysis within a virtual machine is supported only in VMware Fusion* 5 virtual environment. EBS is not supported within other virtual machine environments.
- The list of supported processors is constantly being extended. Here is a partial list of processors where the EBS analysis is enabled:

Mobile Processors

Intel® Atom™ Processor

Intel® Core™ i7 Mobile Processor Extreme Edition (including 2nd, 3rd and 4th Generation Intel® Core™ processors)

Intel® Core™ i7, i5, i3 Mobile Processors (including 2nd, 3rd and 4th Generation Intel® Core™ processors)

Intel® Core™2 Extreme Mobile Processor

Intel® Core™2 Quad Mobile Processor

Intel® Core™2 Duo Mobile Processor

Intel® Pentium® Mobile Processor

Desktop Processors

Intel® Atom™ Processor

Intel® Core™ i7 Desktop Processor Extreme Edition (including 2nd, 3rd and 4th Generation Intel® Core™ processors)

Intel® Core™ i7, i5, i3 Desktop Processors (including 2nd, 3rd and 4th Generation Intel® Core™ processors)

Intel® Core™2 Quad Desktop Processor

Intel® Core™2 Extreme Desktop Processor

Intel® Core™2 Duo Desktop Processor

Server and Workstation Processors

Intel® Xeon® processors E7 family

Intel® Xeon® processor E5 family

Intel® Xeon® processors E3-1200 family
Intel® Xeon® processors 65xx/75xx series
Intel® Xeon® processors 36xx/56xx series
Intel® Xeon® processors 35xx/55xx series
Intel® Xeon® processors 34xx series
Quad-Core Intel® Xeon® processors 7xxx, 5xxx, and 3xxx series
Dual-Core Intel® Xeon® processors 7xxx, 5xxx, and 3xxx series

System Memory Requirements

- At least 2 GB of RAM

Disk Space Requirements

- 650 MB free disk space required for all product features and all architectures

Software Requirements

- Supported operational systems (embedded editions not supported):
 - Microsoft* Windows* 7 and SP1
 - Microsoft* Windows* Server 2008
 - Microsoft Windows* 8 and 8.1 (including Windows Store applications [1])
 - Microsoft* Windows Server 2012*
- Supported compilers:
 - Intel® C/C++ Compiler 11 and higher
 - Intel® Fortran Compiler 11 and higher
 - Intel® Parallel Composer
 - Microsoft* Visual Studio* C/C++ Compiler
 - Cygwin (tested Cygwin 1.7.17 with GCC 4.5.3)
 - MinGW (tested MinGW with GCC 4.6.2)
- Supported Microsoft Visual Studio versions:
 - Microsoft* Visual Studio* 2010 and SP1
 - Microsoft* Visual Studio* 2012
 - Microsoft* Visual Studio* 2013 RC
 - **NOTE: Support for Microsoft Visual Studio 2010* is deprecated** - In a future major release of the Intel VTune Amplifier XE, support for use with Microsoft Visual Studio 2010* will be removed. Intel recommends that customers migrate to Microsoft Visual Studio 2012* at their earliest convenience.
- Application coding requirements
 - Supported programming languages:
 - Fortran
 - C
 - C++
 - C# [2]
 - Java*

- OpenCL*
 - Concurrency and Locks and Waits analysis types interpret the use of constructs from the following threading methodologies:
 - Intel® Threading Building Blocks
 - Win32* Threads on Windows*
 - OpenMP* [3]
 - Intel's C/C++ Parallel Language Extensions
- Supported Java* environments:
 - Oracle* JVM 6 and 7 – Hotspots and Hardware event-based analysis types
 - IBM* J9 – Hardware event-based analysis types only
- Supported OpenCL* environments:
 - Intel® SDK for OpenCL Applications 2013 for Windows* OSs

To view PDF documents, use a PDF reader, such as Adobe Reader*.

Notes:

1. VTune Amplifier XE supports analysis of Windows Store applications on Microsoft Windows 8* via the Attach to Process or Profile System modes. Launch Application mode is not supported. Supported analysis types are Basic Hotspots and hardware event-based sampling analysis, including stack collection. Concurrency and Locks and Waits analysis types are not supported.

2. VTune Amplifier fully supports .NET* versions 3.5 and below. There are limitations for .NET 4.0 and higher: analysis types “Locks and Waits” and “Concurrency” can’t detect synchronization primitives from Task Parallel Library classes and algorithms in the System.Threading.Tasks namespace. For more details about .NET profiling, refer to [this article](#).

3. VTune Amplifier XE supports analysis of applications built with Intel® Fortran Compiler Professional Edition version 11.0 or higher, Intel® C++ Compiler Professional Edition version 11.0 or higher, GNU* C/C++ Compiler 4.2 or higher, or Microsoft* Visual Studio* C/C++ Compiler.

4 Technical Support

If you did not register your product during installation, please do so at the [Intel® Software Development Products Registration Center](#). Registration entitles you to free technical support, product updates and upgrades for the duration of the support term.

For information about how to find Technical Support, Product Updates, User Forums, FAQs, tips and tricks, and other support information, please visit <http://www.intel.com/software/products/support/>

Note: If your distributor provides technical support for this product, please contact them for support rather than Intel.

5 Installation Notes

If you are installing the product for the first time, please be sure to have the product serial number available so you can type it in during installation. A valid license is required for installation and use.

The installation of the VTune Amplifier XE removes any earlier installed version of the VTune Amplifier XE.

The product is a self-extracting executable archive with one IA-32 package you can install on either a 32-bit or 64-bit system.

To begin installation, double click the `VTune_Amplifier_XE_2015_setup.exe` file as a user with *Administrative* privileges. This installs the full package (includes GUI front-end for using the VTune Amplifier XE as well as Microsoft* Visual Studio integration). Activation is required.

Activation

It is required to activate the product to finish installation. There are several methods for product activation:

- Activation using serial number. Internet connection is required;
- Activation using license file;
- Activation using license server.

You can also evaluate the product for 31 days.

Installing Collectors on Remote Systems

You can install the command line data collection features of the product on remote systems to reduce overhead and simply collect data remotely. Data collection on a remote system does not require a license; however, viewing of the data cannot be done on the remote system unless a license is present.

The results of any data collection that is run on the remote system must then be copied to the system where the regular install was done for analysis, viewing, and reporting.

To do this:

1. Unpack the product web image manually using the command:

```
VTune_Amplifier_XE_2015_setup.exe --extract-only --silent --  
extract-folder C:\temp\VTune_Amplifier_XE_2015_unpacked
```

Use any convenient path for the `--extract-folder` option.

In case the `--extract-folder` option is omitted, the default location for the extracted image would be:

```
"C:\Program Files (x86)  
\Intel\Download\VTune_Amplifier_XE_2015_setup" for 64-bit and  
"C:\Program Files  
\Intel\Download\VTune_Amplifier_XE_2015_setup" for 32-bit OS.
```

2. Copy the folder containing the installation files for the collectors and command line tools to the remote machine. With the example shown above, the location of this folder would be `C:\temp\VTune_Amplifier_XE_2015_unpacked\Installs\ps_he_cli.*`
3. Run the `Amplifier_XE.msi` with *Administrative* privileges and follow the instructions. No activation will be required.
4. On a 64-bit remote machine, from the VTune Amplifier XE installation location, run and install `msvcrt_x86.msi` and `msvcrt_x64.msi` (requires *Administrative* privileges).
5. On a 32-bit remote machine, from the VTune Amplifier XE installation location, run and install `msvcrt_x86.msi` (requires *Administrative* privileges).

Default Installation Folders

The default top-level installation folder for this product is:

```
C:\Program Files (x86)\Intel\VTune Amplifier XE 2015\
```

If you are installing on a system with a non-English language version of Windows, the name of the `Program Files` folder may be different. On Intel® 64 architecture systems, the folder name is `Program Files (X86)` or the equivalent.

This product installs into an arrangement of folders shown in the list below. Not all folders will be present in a given installation.

- `C:\Program Files\Intel\VTune Amplifier XE 2015\
 - o bin32
 - o bin64*
 - o config
 - o documentation
 - o include`

- o lib32
- o lib64*
- o message
- o resource
- o samples
- o sepdk
- o sdk

(*) bin64 and lib64 are available for Intel® 64 architecture install package

Changing, Updating and Removing the Product

If you want to add or remove components from an installation, open the Control Panel and select the Add or Remove Programs applet, select **Intel® VTune™ Amplifier XE 2015** and click **Change**. To remove the product, select **Remove** instead of **Change**.

When installing an updated version of the product, you do not need to remove the older version. Installation program will remove the old version automatically.

Note: If the SEP driver uninstallation failed during the normal uninstall process, open a Command Prompt window and execute the following commands with Administrative privileges to manually remove the SEP driver from the system:

```
cd %windir%\system32\drivers
dir sep*.sys
net stop sep3_15      # unload SEP3 driver from kernel
del sep3_15.sys      # delete SEP3 driver from filesystem
net stop vtss        # unload VTSS driver from kernel
del vtss.sys         # delete VTSS driver from filesystem
net stop sepdal      # unload PAX driver from kernel
del sepdal.sys       # delete PAX driver from filesystem
```

Intel® Software Manager

Intel® Software Manager is a utility that allows users to:

- Download and install updates for your Intel® Software Development Products.
- Manage subscription status of installed software.
- Activate serial numbers.
- Find out about the latest news for Intel Software Development Products.

- Intel® Software Manager requires an Internet connection to connect to a remote server for information and updates.

Intel Software Manager installs with Intel Software Development Products on Windows*, Linux*, and OS X* operating systems.

To obtain more information about Intel Software Manager, please refer to the <https://registrationcenter-ssl.intel.com/Docs/ism.htm> web-page.

Known Installation and Configuration Issues

- If you encounter problems using F1 Help for the VTune Amplifier XE windows and dialog boxes on Microsoft Visual Studio* 2008 systems: Choose **Tools > Options > Help > Online > Try local first, then online**.
- When installing the VTune Amplifier XE for the first time on a Microsoft Visual Studio* 2010 system, you may be asked to initialize the Local Store for documentation. Follow **Help Library Manager** installation wizard instructions to register and install the VTune Amplifier XE Help documentation. You do not need to re-register the VTune Amplifier XE Help documentation when you install future VTune Amplifier XE updates. For more information, see <http://msdn.microsoft.com/en-us/library/dd264831.aspx>.

If you encounter problems viewing the VTune Amplifier XE (local) help: Choose **Help > Manage Help Settings > Settings**, and check **I want to use local help**.

- By default, Microsoft Visual Studio* 2012 sets the **Launch in Help Browser** option to display documentation for integrated products. To view the VTune Amplifier XE (local) help documentation: Choose **Help > > Intel VTune Amplifier XE > Intel VTune Amplifier XE Help** (or use context-sensitive help). If you still encounter problems viewing the help, Choose **Help > Set Help Preferences > Launch in Help Viewer**.

6 Issues and Limitations

Known Issues and Limitations

Profiling .NET and Windows Store* applications

For full list of requirements, limitations and tips about profiling .NET and Windows Store applications using VTune™ Amplifier, refer to [this article](#).

- **Running time is attributed to the next instruction** (200108041)
 - To collect the data about time-consuming running regions of the target, the VTune™ Amplifier XE interrupts executing target threads and attributes the time to the context IP address.

- Due to the collection mechanism, the captured IP address points to an instruction AFTER the one that is actually consuming most of the time. This leads to the running time being attributed to the next instruction (or, rarely to one of the subsequent instructions) in the Assembly view. In rare cases, this can also lead to wrong attribution of running time in the source - the time may be erroneously attributed to the source line AFTER the actual hot line.
 - In case the inline mode is ON and the program has small functions inlined at the hotspots, this can cause the running time to be attributed to a wrong function since the next instruction can belong to a different function in tightly inlined code.
- **Thread stack size limitation (200108571)**
 - The VTune™ Amplifier XE may crash with the following error message: Error: failed to create a sampling thread: not enough storage is available to process this command. This happens when the profiled application has big reserved and committed thread stack size (/STACK:reserve[,commit] command line switch of link.exe). The suggested workaround is reducing the reserved/committed thread stack size to profile the target.
- **Results not collected for processes terminated with TerminateProcess() (200108689)**
 - No results are displayed for any process being profiled that is terminated by a different process calling TerminateProcess(). Instead, a different method should be used to terminate the process.
- **Incorrect timing results when running on a 32-bit virtual machine (200137061)**
 - VTune Amplifier XE may fail to collect correct timing data when running on a virtual machine with problematic virtualization of time stamp counters. In this case the VTune Amplifier XE throws a warning message:
 - "Warning: Cannot load data file '<path_to_a_trace_file>.trace' (syncAcquiredHandler: timestamps aren't ascended!)"
- **An application that allocates massive chunks of memory may fail to work under VTune Amplifier XE (200083850)**
 - If a 32-bit application allocates massive chunks of memory (close to 2 GB) in the heap, it may fail to launch under the VTune Amplifier XE while running fine on its own. This happens because the VTune Amplifier XE requires additional memory when profiling an application. The workaround could be in using larger address space (for example, converting the project to 64-bit).
- **Results lost when console application under profile is closed using system Close button [x] (200084121)**
 - Sometimes, if profiling is started on a console application and the app is closed by pressing the system Close button [x] in the console's caption bar, Parallel Amplifier will not save any results. The workaround is to use the "Stop" button of Parallel Amplifier to close the application and stop data collection.
- **.NET modules loaded dynamically via Reflection API are displayed as "unknown" hotspots (200088121)**

- If dynamic .NET modules (e.g. loaded via Assembly.LoadFrom) are used in target application, VTune Amplifier will show them as "unknown" functions and modules in hotspots list.
- **Hardware event-based analysis may crash certain Intel® Core™ i7 processor-based systems when deep sleep states are enabled** (200149603)
 - On some Intel® Core™ i7 processor-based (code named Nehalem) systems with C-states enabled, sampling may cause system hanging due to a known hardware issue (see errata AAJ134 in <http://download.intel.com/design/processor/specupdt/320836.pdf>). To avoid this, disable the "Cn(ACPI Cn) report to OS" BIOS option before sampling with the VTune Amplifier XE analyzer on Intel Core i7 processor-based systems.
- **Link to instruction guide: instruction set reference document is not positioned on description of proper instruction.** (200091200)
 - The reference information for assembly instructions can be opened in any PDF viewer, but only Adobe Acrobat Reader* supports positioning the instruction reference document on the required page. To ensure correct functionality of this feature, you are recommended to install the latest available version of Adobe Acrobat Reader.
- **Uninstalling limitation: pin.exe stays running after detaching.** (200092295)
 - The VTune™ Amplifier XE cannot be uninstalled after attaching to the target to be profiled until running the target is over. The cause is that pin.exe keeps working after detaching from the target and exits only after the profiled application/process execution finishes.
- **VTune™ Amplifier XE does not support profiling an application launched under debugger** (200092508)
 - The Hotspot, Concurrency or Lock and Waits analysis types provide incorrect results when analyzing an application launched under a debugger. VTune Amplifier XE does not detect whether a debugger is attached to a profiled application. Make sure that no debugging tools are attached to the application that is profiled with the VTune Amplifier XE.
- **Second attach to the same application should print an error and exit immediately.** (200092650)
 - The VTune™ Amplifier XE allows running the analysis while the previous one is in progress but does not store any data for the second analysis run.
- **Intel® Compiler only produces first level of inlines. The nested inlines are not emitted into the debug information.** (200164310)
 - Intel® Compiler currently generates debug information only for the first level of inline functions. So, you cannot see performance data attributed to functions inlined to other inline functions. Instead, this performance data are attributed to corresponding functions inlined to regular (not inline) functions. This may also cause wrong source line attribution of performance data in the source view.

- **Timeline pane displays incorrect concurrency and thread states for a paused region in the Concurrency and Locks and Waits analyses.** (200204715)
 - Concurrency and thread state data may be incorrect in the Timeline pane for a region corresponding to the time when data collection was paused. Ignore the timeline data in a paused region during result analysis.
- **Java source line may be shown incorrectly for Oracle JDK 6u25 x64** (200167001)
 - Drilling down to Java source code from VTune Amplifier XE results may show incorrect source line. The issue occurs with Java applications built with Oracle JDK 6u25 x64. This is the JDK problem, refer to issues JDK-7051767 and JDK-7047624 in Oracle bug database.
- **Result finalization may be slow if results are located in a remote network directory** (200169322)
 - The problem is caused by slow network access. To improve performance use local directory for result storage.
- **VTune™ Amplifier XE does not resolve symbols correctly on Windows XP SP1 operating system** (200216358)
 - When VTune™ Amplifier XE is ran on Windows XP Service Pack 1 operating system, a problem may be observed that symbols are not resolved correctly but instead are shown as "[foo.dll]" names. This happens because VTune™ Amplifier XE uses Microsoft DIA library version which requires Service Pack 2 to be installed. Please install the service pack to resolve the issue.
- **Information collected via ITT API is not available when attaching to a process.** (200172007)
 - When collecting statistics data using ITT API injected into a source code, like Frame Analysis or JIT-profiling, attaching to a process will not bring expected results. Use the VTune Amplifier XE analysis to start an application instead of attaching to a process.
- **Limited support of machines with more than 32 logical CPUs** (200172671)
 - User mode sampling and tracing based analysis types (Hotspots, Concurrency, Locks and Waits) do not support profiling on Windows based system with more than 32 logical CPUs. Collection will run but data opening will fail with assert.
- **Only one stack frame is shown in Java code if IBM* J9* JVM is used** (200227950)
 - Currently Java stack unwinding is not supported for IBM* J9* JVM.
- **VTune Amplifier XE can show [unknown stack frame(s)] as a hotspot in EBS analyses in Windows* 2008 R2** (200173627)
 - Workaround is to start VTune Amplifier XE under the explicit "Run as administrator" option, even if current user has administrator credentials.
- **Attachment as Administrator to a process that launched by the 'System' user fails** (200259643)

- You may use a utility from <http://technet.microsoft.com/en-us/sysinternals/bb897553> to profile a system service (e.g. w3wp.exe-based code) from the command line using amplxe-cl.exe that is located in <product_install_dir>/bin32. Do the following:
 - 1. Configure the w3wp service to run with the permissions you use to log in: Open IIS Manager, right-click an application pool you are using and set "Process model:Identity" to the account under which w3wp needs to be run.
 - 2. Run the w3wp service and make sure you run it with proper credentials and remember its PID.
 - 3. Start data collection:
 - psexec -i 0 /path/to/amplxe-cl.exe -c=hotspots -r /path/for/your/data_dir --target-pid=PID
 - 4. Run your workload.
 - 5. Stop data collection:
 - psexec -i 0 /path/to/amplxe-cl.exe -command detach -r /path/for/your/data_dir
 - 6. Open /path/for/your/data_dir in GUI:
 - <product_install_dir>/bin32/amplxe-gui /path/to/your/data_dir
- **Do not use -ipo option since it causes the inline debug information to switch off.** (200260765)
 - If using the Intel® compiler to get performance data on inline functions, use the additional option "/debug:inline-debug-info", but avoid using the /Qipo option. Currently this option disables generating the inline debug information in the compiler. Note that the Intel compiler integrated into the Microsoft Visual Studio* IDE uses the /Qipo by default in the Release configuration.
- **Intel® Compiler 13.0 and earlier doesn't support function split ranges in debug info which may lead to wrong performance data attribution in case function ranges are overlapped (e.g. performance data attributed to one function, but should have been split by two).** (200260768)
 - In some cases the Intel® Compiler 13.0 and earlier generates imprecise debug information about ranges of inline functions. This may lead to wrong performance data attribution when the Inline mode is turned on, for example: instead of two functions performance data is attributed just to one of them.
- **Call stack can't be unwound via no return functions** (200263851)
 - If analyzed application contains functions without ret instruction, e.g. calling exit(), unwinding call stack to its caller and higher may fail (no stack frames shown).
- **Attaching the VTune Amplifier XE to a process may take some time** (200276420)
 - Your target application may complete before the data collection starts, so the VTune Amplifier XE may report an error. Increase the duration of your test application if necessary.
- **Command "status" is not supported for hardware event-based analysis types** (200281661)

- Command line option "\$ amplxe-cl -command status" is currently supported only for user mode sampling and tracing based analysis types, but not for EBS analysis types.
- **Limited event description for Intel® Xeon® processor E5-XXXX and the 2nd Generation Intel® Core™ processor family desktop processors.** (200285238)
 - Developers can find more details on events by checking the Intel® 64 and IA-32 Architectures Software Developer's Manual <http://download.intel.com/products/processor/manual/325462.pdf>, Tables 19-3, 19-4 and 19-5.
- **Hardware event-based analysis may cause unpredictable system behavior on processors based on Intel® microarchitecture code named Sandy Bridge** (200285401)
 - On processors based on Intel microarchitecture code named Sandy Bridge, hardware event-based sampling may cause unpredictable system behavior due to a known hardware issue (see erratum BK105 in <http://www.intel.com/content/dam/www/public/us/en/documents/specification-updates/2nd-gen-core-family-mobile-specification-update.pdf>). To avoid this, you are not recommended to run General Exploration, Client Analysis, Cycles and Uops, Loop Analysis or Custom Hardware event-based analysis with precise events on these systems unless a BIOS workaround for the erratum is provided.
- **Installing VTSS++ driver on the system where SEP and VTSS++ drivers have been already registered may fail** (200292274)
 - Running the following command may cause an error:
 - >amplxe-sepreg.exe -i
 - Installing and starting sepdrv3_8...OK
 - Installing and starting sepdal...OK
 - Installing and starting VTSS++ driver...FAILED
 - This can happen due to insufficiency of available memory. Rebooting the system helps to get resources cleaned so registration after reboot should work.
- **Hardware event-based analysis doesn't work if more than 128 events are gathered simultaneously** (200293868)
 - Decrease number of PMU events in analysis settings to resolve it.
- **Results should be closed before comparing them** (200236090)
 - VTune Amplifier XE doesn't support opening same result twice. Due to that limitation it is not possible to compare (via "Compare" button) results if one of them is already opened. You should close results first then compare them.
- **Limited support of Windows Store* applications** (200299329)
 - VTune Amplifier XE supports attaching to Windows Store* applications, but not launching them. Only hardware event-based analysis types are supported.
- **Microsoft* Visual Studio* 2012 help may be displayed incorrectly** (200300692)

- On Microsoft* Windows Server 2012* systems, if you have problems viewing Microsoft* Visual Studio* 2012 help, check the settings for Internet Explorer in Tools > Internet Options > Security. To allow correct display of help, in the Internet zone enable MIME Sniffing and Active scripting.
- **VTune Amplifier XE analysis may fail on machine with Verdasys Digital Guardian* software installed.** (200237470)
 - User mode sampling and tracing based analysis types (Hotspots, Concurrency, Locks and Waits) run from GUI may fail if Verdasys Digital Guardian* software is installed on the machine. However it is still possible to run collection from command line.
 - Alternatively EBS collection with stacks can be used, either from GUI or command line.
- **Analyzed application may crash during analysis if "Symantec Endpoint Protection Application and Device Control" software is installed** (200237601)
 - The issue may occur with user mode sampling and tracing based analysis types (Hotspots, Concurrency, and Locks and Waits). Ways to overcome the problem:
 - 1. If user mode sampling and tracing based analysis is needed exclude the analyzed application from the list of monitored applications of "Symantec Endpoint Protection Application and Device Control" software.
 - 2. Use "Lightweight hotspots" with "Collect stacks" option turned on instead.
- **ITT API task or frame is not shown in results if its end occurs when collector is inactive** (200331811)
 - When ITT task or frame end notification occurs after collection was paused, or detach or stop command issued, the frame or task is not displayed in the result.
- **Documentation can't be opened in Microsoft Internet Explorer* 10 on Windows Server* 2012** (200340007)
 - To correct the problem modify security settings in Microsoft Internet Explorer* 10. From Tools > Internet Options > Security, add "about:internet" to the list of trusted sites.
- **Child process analysis doesn't work for EBS analysis types if process is run from script using "start" command** (200342928)
 - If a process is started from a batch file by "start" command, it doesn't have original command interpreter as a parent process. So the new process can't be identified as a child and not profiled. This is true for all Hardware event-based analyses. Possible workarounds:
 - - Use user mode sampling and tracing based analysis types instead
 - - Use "call" command in a batch file instead of "start"
 - - Use "attach to process" collection mode to connect directly to the process of interest
- **Collection of some GPU analysis metrics should be enabled in BIOS for 3rd Generation Intel® Core™ processors** (200342983)

- Some systems disable collection of extended metrics such as L3 misses, memory accesses, sampler busyness, SLM accesses, etc. in the BIOS. On some systems, but not all, they can be enabled by changing a bios option. The presence or absence of the option and its name are BIOS vendor specific. Look for something like an “Intel(R) Graphics Performance Analyzers” option in your BIOS and set it to “Enabled “. Note that this option is BIOS vendor specific, may not always be present and may be named differently. Check the BIOS options on your system for details.
- **VTune Amplifier doesn’t resolve symbols for .NET applications using NGEN (200248497)**
 - Symbol resolution is not supported for .NET applications built using Native Image Generator (NGEN) if results are collected using Event Based Sampling analysis types. You can find details how to resolve it in “Windows Store Applications Analysis” topic of VTune help document.
- **An application may experience the stack overflow exception when running under the VTune Amplifier (200249394)**
 - An application allocating massive chunks of memory on a thread stack may experience the stack overflow exception and fail when running under the VTune Amplifier, while running flawlessly on its own. This happens because the VTune Amplifier requires additional space on an application thread stack for profiling needs. To work around this problem, consider using larger thread stack space.
- **Results may contain process name cut on the 14th character (200401361)**
 - VTune may cut long process name on the 14th character in results collected with EBS analysis types with stacks. E.g. the result should contain "find_hotspots.exe", but it contains only "find_hotspots.". This is operating system limitation.

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Changes to standard library modules:

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A brief summary of changes made to Python 2.5.2 source:

- On Windows*, the code of import, zipimport, and execfile was modified to handle directories containing Unicode characters.

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version 1.2.3, July 18th, 2005

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pci.ids

```
#
# List of PCI ID's
#
# Version: 2014.11.23
# Date: 2014-11-23 03:15:02
#
# Maintained by Martin Mares <mj@ucw.cz> and other volunteers from the
# PCI ID Project at http://pci-ids.ucw.cz/.
#
```

```
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