



# インテル® VTune™ Amplifier XE 2017 for Linux\* リリースノート

インテル コーポレーション

[www.intel.com](http://www.intel.com)

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# インテル® VTune™ Amplifier XE 2017 for Linux\* リリースノート

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## はじめに

インテル® VTune™ Amplifier XE 2017 は、IA-32 またはインテル® 64 アーキテクチャー・ベースのシステムにおけるコード・パフォーマンスの解析を支援する、グラフィカル・ユーザー・インターフェイスを備えた統合パフォーマンス解析およびチューニング環境を提供します。

このドキュメントには、動作環境、問題と制限事項、著作権と商標についての情報が含まれています。

インテル® VTune™ Amplifier XE には、スタンドアロンのグラフィカル・ユーザー・インターフェイス (GUI) とコマンドライン・インターフェイス (CLI) が用意されています。

トレーニング・ビデオ、技術記事、ドキュメントおよびサポートについては、<https://software.intel.com/en-us/intel-vtune-amplifier-xe> (英語) を参照してください。

## 新機能

### インテル® VTune™ Amplifier XE 2017

- インテル® Xeon Phi™ プロセッサ (開発コード名 Knights Landing) およびインテル® Xeon® プロセッサ E5 v4 ファミリー (開発コード名 Broadwell EP) をサポート。全般 (General Exploration)、メモリアクセス (Memory Access) (高帯域解析を含む)、および HPC パフォーマンス特性 (HPC Performance Characterization) 解析を含む。
- ディスク・サブシステム、CPU、PCIe バスの使用状況をモニターし、レイテンシーの長い I/O リクエストおよび I/O と計算操作間のインバランスを識別できるように支援する、ディスク I/O (Disk I/O) 解析。「I/O 待機の解析」チュートリアルでは、サンプルコードを使用してハンズオン演習を行います。
- メモリアクセス解析の拡張:
  - システム DRAM の最大帯域幅の自動検出。このオプションは、利用可能な DRAM 帯域幅の利用状況を理解できるように支援します。
  - 正確にメモリー・オブジェクトを決定できるように支援する、メモリー割り当て API を利用したカスタム・メモリー・アロケーターをサポート
  - 「フォルス・シェアリングの特定」チュートリアルでは、フォルス・シェアリングを含むサンプル・アプリケーションにメモリアクセス解析を実行して、問題を特定および解決するハンズオン演習を行います。
- HPC ワークロード・プロファイルの拡張:
  - アプリケーション・スケーラビリティのパフォーマンス考察 (MPI および OpenMP\* の CPU 使用率と並列効率、基本的なベクトル化メトリックを利用したメモリアクセス効率と FPU 使用率) を調査する HPC パフォーマンス特性解析
  - 任意の MPI ランチャーと自然な構文でノードあたり複数のランクに対するイベントベースのサンプリング収集をサポートするように MPI 解析を拡張。MPI ランチャーオプションで任意のターゲットのコマンドライン設定を拡張。[Copy Command Line to Clipboard (コマンドラインをクリップボードにコピー)] ダイアログボックスを使用して、GUI から MPI 解析のコマンドラインを自動的に生成できるようになりました。
  - 一部の解析設定に、OpenMP\* 領域解析を有効/無効にするオプションを追加。
  - 結果のファイナライズを制御する finalization-mode オプション。ターゲットでファイナライズを実行、遅延、またはスキップできます。遅延ファイナライズ・モードは、シングルスレッド・パフォーマンスがホストよりも低いターゲット・プラットフォームで特に便利です。このモードでは、インテル® VTune™ Amplifier XE は、ホストマシンのファイナライズのバイナリーと一致するバイナリー・チェックサムを計算します。
  - Web ベースの「OpenMP\* および MPI アプリケーションの解析」チュートリアルでは、サンプルのハイブリッド・アプリケーションの非効率なメモリー使用とロード・インバランスを特定するハンズオン演習を行います。
- 言語サポートの拡張:

- Launch Application (アプリケーションの起動) やプロセスにアタッチ (Attach to Process) モードから実行した Basic Hotspots 解析で Python\* アプリケーションをプロファイル
- ハードウェア・イベントベース解析タイプで Go\* アプリケーションをプロファイル
- GPU 解析の拡張:
  - GPU バインドのアプリケーションをターゲットとし、OpenCL\* カーネルとインテル® Media SDK タスクの実行を解析するオプションを提供する GPU hotspot 解析
  - GPU 解析サマリーに、各エンジンの GPU 使用状況を推定し、ストールした/アイドルの実行ユニットを識別して、最も典型的な問題 (低い占有状況や頻繁なサンプラーアクセス) を調査するメトリックのセットを追加
  - 最もホットな GPU コンピューティング・タスク・サマリーから **[Graphics (グラフィックス)]** タブで提供される詳細へのナビゲーション
  - インテル® Media SDK および OpenCL\* プログラムで **[Attach To Process (プロセスにアタッチ)]** ターゲット解析をサポート
  - カーネル・インスタンスごとの OpenCL\* 2.0 共有仮想メモリー (SVM) 使用タイプの検出
- ユーザビリティの拡張:
  - Linux\* の権限レベルの低い Java\* デモンのイベントベース・サンプリングで **[Attach To Process (プロセスにアタッチ)]** ターゲット解析をサポート
  - フィルタリング・オプションでカスタム・ハードウェア・イベントベース・サンプリング解析のイベント選択手法を拡張
  - 現在のホストからアクセスできないシステムのパフォーマンス解析用のコマンドラインを生成する、任意のターゲット GUI 設定
  - グリッドビューおよびパフォーマンス問題識別の UI を拡張
- インテル® VTune™ Amplifier XE の一部としてインテル® Performance Snapshot (プレビュー) の次のツールを利用可能:
  - Application Performance Snapshot ツールは、アプリケーションのパフォーマンスの初見をすばやく提供し、アプリケーションをチューニングするメリットがあるかどうか理解できるように支援します。アプリケーションがハードウェア・プラットフォームをどの程度有効に利用しているか識別し、基本的なパフォーマンス拡張の可能性を示します。
  - Storage Performance Snapshot ツールは、システムのストレージ、CPU、メモリー、ネットワーク使用状況を解析し、インテル® ハードウェアを使用しているシステムにおける基本的なパフォーマンス拡張の可能性を示します。

**注:**

**プレビュー機能**が正式リリースに含まれるかどうかはまだ未定です。皆様からのフィードバックを基に、今後の開発方針が決定されます。プレビュー機能で収集されたデータは、将来のリリースとの互換性が保証されません。プレビュー期間内に [parallel.studio.support@intel.com](mailto:parallel.studio.support@intel.com) までフィードバックをお寄せください。

- Fedora\* 23、Fedora\* 24、Ubuntu\* 15.10、Ubuntu\* 16.04 をサポート。
- Linux\* カーネル 4.4 までをサポート。

## 動作環境

アーキテクチャー名についての説明は、<http://software.intel.com/en-us/articles/intel-architecture-platform-terminology/> (英語) を参照してください。

### プロセッサ要件

- ユーザー・インターフェイスを利用した一般的な操作およびすべてのデータ収集 (ハードウェア・イベントベース・サンプリング解析を除く):
  - インテル® ストリーミング SIMD 拡張命令 2 (インテル® SSE2) 対応の IA-32 またはインテル® 64 アーキテクチャー・ベースのプロセッサ (インテル® Pentium® 4 プロセッサ以上、または互換性のあるインテル以外のプロセッサ) を搭載したコンピューター。
  - 機能を最大限に活用できるよう、マルチコアまたはマルチプロセッサ・システムの使用を推奨します。

- インテル® VTune™ Amplifier XE はアセンブリー・レベルの命令に関する特定の情報を利用するため、プログラムにインテル以外の命令が含まれていると、解析が正しく動作しないことがあります。この場合、インテルの命令のみを含むターゲット実行ファイルで解析を実行します。解析が完了した後は、インテル以外の命令を含むアセンブラー・コードや最適化コンパイラー・オプションを使用できます。
- ハードウェア・イベントベース・サンプリング解析 (EBS):
  - EBS 解析は、オンチップ・パフォーマンス・モニタリング・ユニットを使用するため、収集はインテル® プロセッサが対象となります。EBS 解析は、インテル® Pentium® M プロセッサ、インテル® Core™ マイクロアーキテクチャー以上のプロセッサ (詳細は、下記のリストを参照) をサポートします。
  - インテル® Pentium® 4 プロセッサ・ファミリー (Intel NetBurst® マイクロアーキテクチャー) およびインテル以外のプロセッサではサポートされません。ただし、EBS で収集した結果を、より制限の少ない一般的な操作要件を満たす任意のシステムで解析することは可能です。
  - 次の環境ではオンチップ・パフォーマンス・モニタリング・ユニット (PMU) を仮想化して、仮想マシンで EBS 解析を実行できます。
    - VMware Fusion\* 5 以上
    - KVM (Linux\* カーネル 3.2 および QEMU 1.4 が必要)
    - XEN 4.0 以上 (domU)

イベントベース・サンプリングとスタックを含むサンプリングのデータ収集は、仮想マシンではアーキテクチャー・イベントでのみ動作します。

サポートされるアーキテクチャー・イベントについては、<http://software.intel.com/file/30388/> にある「Performance Monitoring Unit Sharing Guide (パフォーマンス・モニタリング・ユニットの共有ガイド)」(英語、PDF ファイル) を参照してください。

インテル® VTune™ Amplifier XE は仮想環境を検出し、システムが不安定なるのを防ぐため、サンプリング・ドライバーを無効にします。

ハードウェア・イベントベース・サンプリング (EBS) 解析は、Linux\* の Perf\* ツールを利用してドライバーなしのサンプリング収集を実行します。

- サポートするプロセッサのリストは絶えず拡張されています。EBS 解析を実行できるプロセッサの一部を次にリストします。

#### モバイル・プロセッサ

- インテル® Atom™ プロセッサ
- インテル® Core™ i7 モバイル・プロセッサ エクストリーム・エディション (第 2 世代、第 3 世代、第 4 世代、および第 5 世代インテル® Core™ プロセッサを含む)
- インテル® Core™ i7/i5/i3 モバイル・プロセッサ (第 2 世代、第 3 世代、第 4 世代、第 5 世代、および第 6 世代インテル® Core™ プロセッサを含む)
- インテル® Core™2 Extreme モバイル・プロセッサ
- インテル® Core™2 Quad モバイル・プロセッサ
- インテル® Core™2 Duo モバイル・プロセッサ
- インテル® Pentium® モバイル・プロセッサ

#### デスクトップ・プロセッサ

- インテル® Atom™ プロセッサ
- インテル® Core™ i7 デスクトップ・プロセッサ エクストリーム・エディション (第 2 世代、第 3 世代、第 4 世代、および第 5 世代インテル® Core™ プロセッサを含む)
- インテル® Core™ i7/i5/i3 デスクトップ・プロセッサ (第 2 世代、第 3 世代、第 4 世代、第 5 世代、および第 6 世代インテル® Core™ プロセッサを含む)
- インテル® Core™2 Quad デスクトップ・プロセッサ
- インテル® Core™2 Extreme デスクトップ・プロセッサ
- インテル® Core™2 Duo デスクトップ・プロセッサ

## サーバー/ワークステーション・プロセッサ

- インテル® Xeon® プロセッサ E7 ファミリー (v2 および v3 を含む)
- インテル® Xeon® プロセッサ E5 ファミリー (v2 および v3 を含む)
- インテル® Xeon® プロセッサ E3 ファミリー (v2、v3、および v4 を含む)
- インテル® Xeon® プロセッサ D ファミリー
- インテル® Xeon® プロセッサ 7000 系
- インテル® Xeon® プロセッサ 6000 系
- インテル® Xeon® プロセッサ 5000 系
- インテル® Xeon® プロセッサ 3000 系
- インテル® Xeon Phi™ コプロセッサ (開発コード名 Knights Corner)
- インテル® Xeon Phi™ プロセッサ (開発コード名 Knights Landing)
- クアッドコア インテル® Xeon® プロセッサ 7xxx/5xxx/3xxx 番台
- デュアルコア インテル® Xeon® プロセッサ 7xxx/5xxx/3xxx 番台

## システムメモリー要件

2GB RAM 以上

## ディスク空き容量要件

900 MB のディスク空き容量 (すべての機能およびすべてのアーキテクチャー)

## ソフトウェア要件

- サポートするオペレーティング・システム (エンベデッド・エディションはサポートしていません):
  - Red Hat\* Enterprise Linux\* 6、7
  - CentOS\* (上記にリストされている Red Hat\* Enterprise Linux\* バージョンと同等のバージョン)
  - SUSE\* Linux\* Enterprise Server (SLES) 11、12
  - Fedora\* 23、24
- Ubuntu\* 14.04、15.10、16.04
- Debian\* 7.0、8.0

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### 注:

- 32 ビット GUI (グラフィカル・ユーザー・インターフェイス) のサポートは終了しました。インテル® VTune™ Amplifier XE グラフィカル・ユーザー・インターフェイスを使用して収集したプロファイル・データを解析するには、64 ビット・オペレーティング・システムのホストが必要です。コマンドラインでのプロファイルとレポートは、32 ビット・オペレーティング・システムのホストでサポートされます。32 ビット・オペレーティング・システムにインストールするには、コマンドライン・インストーラーを使用してください。
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- サポートするコンパイラー:
  - インテル® C/C++ コンパイラー 11 以上
  - インテル® Fortran コンパイラー 11 以上
  - GNU\* C/C++ コンパイラー 3.4.6 以上
- アプリケーション・コーディング要件
  - サポートするプログラム言語:
    - Fortran
    - C
    - C++

- Java\*
- OpenCL\*
- Python\*
- Go\*
- コンカレンシー (Concurrency) 解析およびロックと待機 (Locks & Waits) 解析は、次のスレッド化手法の構文を解釈できます。
  - インテル® TBB
  - POSIX\* スレッド (Linux\*)
  - OpenMP\*
  - インテルの C/C++ 並列言語拡張

**注:**

- インテル® VTune™ Amplifier XE は、インテル® Fortran コンパイラー・プロフェッショナル・エディション 11.0 以上、インテル® C++ コンパイラー・プロフェッショナル・エディション 11.0 以上、GNU\* C/C++ コンパイラー 4.2 以上でビルドされた OpenMP\* アプリケーションの解析をサポートします。

- サポートする Java\* 環境:
  - Oracle\* JVM 6、7、8 – hotspot およびハードウェア・イベントベース解析タイプ
  - IBM\* J9 – ハードウェア・イベントベース解析タイプのみ
- サポートする OpenCL\* 環境:
  - インテル® SDK for OpenCL\* Applications 2013 (バージョン 2013 以降)
- スタックを含むハードウェア・イベントベース・サンプリング解析の要件:
  - Linux\* カーネル 2.6.32 以上
- ドライバーなしのハードウェア・イベントベース・サンプリング解析:
  - Linux\* カーネル 2.6.32 以上 (/sys/bus/event\_source/devices/cpu/format ファイルシステムで CPU PMU プログラミングの詳細をエクスポートする場合)
- インテル® Xeon Phi™ コプロセッサのプロファイルをサポートするインテル® メニーコア・プラットフォーム・ソフトウェア・スタック (インテル® MPSS) のバージョン:
  - ハードウェア・イベントベース・サンプリング解析: インテル® MPSS 2.1、3.3.x、3.4.x、3.5.x、3.6.x、3.7.x。
  - スタックを含むハードウェア・イベントベース・サンプリング解析: インテル® MPSS 3.3.5、3.4、3.4.1、3.4.2、3.4.3、3.4.4、3.4.5、3.5.2、3.6、3.7。
- PDF を表示するには、Adobe\* Reader\* などの PDF リーダーが必要です。
- インテル® Software Update Manager による製品の自動アップデートを有効にするには、Java\* 1.6 以上を使用してください。

**フローティング・ライセンス・サービスの要件**

インテル® Software License Manager バージョン 2.4 は、インテル® レジストレーション・センターから利用できます (正しいオペレーティング・システムとプラットフォームを選択してください; フローティング・ライセンス・ユーザーのみ、このリンクにアクセスできます)。

詳細は、<https://software.intel.com/en-us/articles/intel-software-license-manager-getting-started-tutorial> (英語) を参照してください。

## テクニカルサポート

インストール時に製品の登録を行わなかった場合は、インテル® ソフトウェア開発製品レジストレーション・センターで登録してください。登録を行うことで、サポートサービス期間中 (通常は 1 年間)、製品アップデートと新しいバージョンの入手を含む無償テクニカルサポートが提供されます。

テクニカルサポート、製品のアップデート、ユーザーフォーラム、FAQ、ヒント、およびその他のサポート情報は、<http://www.intel.com/software/products/support/> (英語) を参照してください。

### 注:

代理店がテクニカルサポートを提供している場合は、インテルではなく代理店にお問い合わせください。

## インストールの注意事項

オンラインの『インストール・ガイド』 (<https://software.intel.com/en-us/Intel-VTune-Amplifier-XE-Install-Guide-Linux> (英語)) も参照してください。

## 問題と制限事項

### 実行時間が次の命令に関連付けられる (200108041)

多くの時間を消費している実行領域のデータを収集するため、インテル® VTune™ Amplifier XE はターゲットスレッドの実行に割り込み、消費された時間をコンテキスト IP アドレスに関連付けます。

この収集メカニズムでは、実際に多くの時間を消費した命令ではなく、その後の命令の IP アドレスがキャプチャーされます。このため、[Assembly (アセンブリー)] ビューで、実行時間が実際の命令ではなく、次の命令 (場合によっては後の命令) のものとして誤って表示されます。まれに、ソースでも実行時間が誤って関連付けられ、実際のホット行の後のソース行のものとして表示されることがあります。

インラインモードが**オン**で、hotspot にインライン展開された複数の小さな関数が含まれる場合、次の命令は別の関数のインライン展開されたコードであるため、実行時間が間違った関数に関連付けられてしまいます。

### 大量のメモリーチャンクを割り当てるアプリケーションがインテル® VTune™ Amplifier XE で動作しない (200083850)

32 ビット・アプリケーションがヒープで (2GB に近い) 大量のメモリーチャンクを割り当てると、単独では動作しても、インテル® VTune™ Amplifier XE で起動に失敗することがあります。これは、インテル® VTune™ Amplifier XE がアプリケーションをプロファイルするときに追加のメモリーが必要になるためです。この問題を回避するには、より大きなアドレス空間を使用してください (例えば、プロジェクトを 64 ビットに変換します)。

### 特定のインテル® Core™ i7 プロセッサ・ベースのシステムでディープスリープ状態が有効なときにハードウェア・イベントベース解析を行うとシステムがクラッシュする (200149603)

C-ステートが有効な一部のインテル® Core™ i7 プロセッサ (開発コード名 Nehalem) ベースのシステムでサンプリングを行うと、既知のハードウェアの問題 (<http://download.intel.com/design/processor/specupdt/320836.pdf> (英語)) のエラータ AAJ134 を参照) により、システムがハングアップすることがあります。この問題を回避するには、インテル® VTune™ Amplifier XE でサンプリングを行う前に、"Cn(ACPI Cn) report to OS" BIOS オプションを無効にしてください。

### 「Instruction Set Reference (命令セット・リファレンス)」ドキュメントで適切な命令の説明箇所が表示されない (200091200)

アセンブリー命令のリファレンス情報は、あらゆる PDF ビューアーで表示することができますが、ドキュメント内の適切なページを表示するには、Adobe® Reader\* が必要です。この機能を正しく動作させるために、最新バージョンの Adobe® Reader\* をインストールすることを推奨します。



## インテル® VTune™ Amplifier XE はデバッガーで起動したアプリケーションのプロファイルをサポートしない (200092508)

デバッガーで起動したアプリケーションを解析すると、基本 hotspot (Basic Hotspots)、コンカレンシー (Concurrency)、ロックと待機 (Locks & Waits)、メモリアクセス (Memory Access) とオブジェクト・トラック、ディスク I/O (Disk I/O) 解析タイプで正しくない結果が提供されます。インテル® VTune™ Amplifier XE は、プロファイルするアプリケーションにデバッガーがアタッチされているかどうか検出しません。インテル® VTune™ Amplifier XE でプロファイルするアプリケーションにデバッグツールがアタッチされていないことを確認してください。

## [Timeline (タイムライン)] ペインにコンカレンシー (Concurrency)、ロックと待機 (Locks & Waits) 解析の一時停止領域のコンカレンシーおよびスレッド状態が正しく表示されない (200204715)

データ収集が一時停止された時間に対応する領域については、[Timeline (タイムライン)] ペインにコンカレンシーおよびスレッド状態データが正しく表示されないことがあります。結果を解析する際、一時停止領域のタイムライン・データは無視してください。

## IBM\* J9\* JVM を使用したとき Java\* コードに 1 つのスタックフレームしか表示されない (200227950)

現在、Java\* のスタックの巻き戻し機能は IBM\* J9\* JVM ではサポートされていません。

## TerminateProcess() で終了したプロセスの結果が収集されない (200108689)

別のプロセスにより TerminateProcess() で終了されたプロセスのプロファイル結果は表示されません。別の方法でプロセスを終了してください。

## バージョン 13.0 よりも古いインテル® コンパイラーで -ipo オプションを使用しない (200260765)

バージョン 13.0 よりも古いインテル® コンパイラーでインライン展開された関数のパフォーマンス・データを取得するには、-ipo オプションではなく -inline-debug-info オプションを使用します。現在、このコンパイラー・オプションを指定すると、インラインのデバッグ情報の生成が無効になります。Microsoft® Visual Studio® IDE に統合されたインテル® コンパイラーは、リリース構成で (デフォルトで) -ipo を使用することに注意してください。

## Oracle\* JDK 6u25 x64 で Java\* ソース行が正しく表示されない (200167001)

インテル® VTune™ Amplifier XE から Java\* ソースコードにドリルダウンしたときに、ソース行が正しく表示されないことがあります。この問題は、Oracle\* JDK 6u25 x64 でビルドされた Java\* アプリケーションで発生します。これは JDK の問題です。Oracle のデータベースで JDK-7051767 および JDK-7047624 を参照してください。

## 結果がリモート・ネットワーク・ディレクトリーにある場合、結果のファイナライズに時間がかかる (200169322)

この問題は、ネットワーク・アクセスが遅いことが原因です。パフォーマンスを向上するには、結果をローカル・ディレクトリーに格納してください。

## ret 命令がない関数からコールスタックを巻き戻せない (200263851)

解析したアプリケーションに ret 命令 (exit() の呼び出し) がない関数が含まれる場合、呼び出し元より上にコールスタックを巻き戻せません (スタックフレームは表示されません)。

## インテル® VTune™ Amplifier XE をプロセスにアタッチするのに時間がかかる (200276420)

データ収集を開始する前にターゲット・アプリケーションが完了し、インテル® VTune™ Amplifier XE がエラーをレポートしている可能性があります。必要に応じて、テスト・アプリケーションの実行時間を長くしてください。

## "status" コマンドはハードウェア・イベントベース解析タイプではサポートされない (200281661)

コマンドライン・オプション "\$ ampxe-cl -command status" は、ユーザーモード・サンプリングとトレースベースの解析タイプでのみサポートされます。EBS 解析タイプではサポートされません。

## Sandy Bridge (開発コード名) マイクロアーキテクチャー・ベースのシステムでハードウェア・イベントベース解析を行うと予期しない動作が引き起こされる (200285401)

Sandy Bridge (開発コード名) マイクロアーキテクチャー・ベースのシステムでハードウェア・イベントベースのサンプリングを行うと、既知のハードウェアの問題

(<http://www.intel.com/content/dam/www/public/us/en/documents/specification-updates/2nd-gen-core-family-mobile-specification-update.pdf> (英語) のエラッタ BK105 を参照) により、予期しない動作を引き起こすことがあります。この問題を回避するには、エラッタに対応した BIOS が提供されない限り、これらのシステムで全般 (General Exploration) 解析や precise イベントを含むカスタム・ハードウェア・イベントベース (Custom Hardware event-based) 解析を実行しないことを推奨します。

## インテル® Xeon® プロセッサ E5-xxxx 製品ファミリーで使用するタイマーソースをインテル® VTune™ Amplifier XE が正しく検出しない (200287361)

ユーザーモード・サンプリングとトレースベースの解析 (hotspot、コンカレンシー、ロックと待機) で、コマンドラインまたはデバッグウィンドウに次のメッセージが表示されることがあります。

Warning: Cannot load data file ``<path>\data.0\18385-18389.0.trace`' (SampleCallback: timestamps aren't ascended!) (警告: データファイル ``<path>\data.0\18385-18389.0.trace`' を読み込めません。 (SampleCallback: タイムスタンプが昇順ではありません!))

この問題を回避するには、`-run-pass- thru` オプションを使用してコマンドラインから結果を収集します。

```
amplxe-cl -collect hotspots -run-pass-thru=-timestamp=sys -- <application>
```

## 128 を超えるイベントを同時に収集するとハードウェア・イベントベース解析タイプが動作しない (200293868)

解析設定で PMU イベントの数を 128 以下にしてください。

## 結果を比較する前に結果を閉じる必要がある (200236090)

インテル® VTune™ Amplifier XE で、同じ結果を 2 つ開くことはできません。この制限により、すでに開かれている結果を ([Compare (比較)] ボタンを使用して) 比較することはできません。比較する前に、結果を閉じてください。

## コレクターがアクティブでないときに ITT API タスク/フレームが終了するとタスク/フレームが結果に表示されない (200331811)

収集が一時停止した後、または detach/stop コマンドを実行した後に ITT タスク/フレーム終了通知が発生した場合、タスク/フレームは結果に表示されません。

## アプリケーションをインテル® VTune™ Amplifier XE で実行するとスタック・オーバーフロー例外が発生する (200249394)

スレッドスタックで大量のメモリーチャンクを割り当てるアプリケーションは、単独で実行すると問題が発生しないのに、インテル® VTune™ Amplifier XE で実行するとスタック・オーバーフロー例外が発生して実行に失敗することがあります。これは、インテル® VTune™ Amplifier XE ではアプリケーションのスレッドスタックにプロファイル用の追加領域が必要になるためです。この問題を回避するには、より大きなスレッドスタック領域を使用してください。

## SELinux (Security-enhanced Linux\*) はサポートされない (200155374)

SELinux (Security-enhanced Linux\*) は現在サポートされていないため、インテル® VTune™ Amplifier XE をインストールするには、無効にするか、permissive モードに設定する必要があります。SELinux が有効な場合、インストール時に次のエラーメッセージが表示されます。"Your system is protected with Security-enhanced Linux (SELinux). We currently support only "Permissive" mode, which is not found on the system. To rectify this issue, you may either disable SELinux by - setting the line "SELINUX=disabled" in your /etc/sysconfig/selinux file - adding "selinux=0" kernel argument in lilo.conf or grub.conf files or make SELinux mode adjustment by - setting the line "SELINUX=permissive" in your /etc/sysconfig/selinux file or ask your system administrator to make SELinux mode adjustment. You may need to reboot your system after changing the system parameters.

SELinux については、<http://www.nsa.gov/> (英語) を参照してください。

## Ubuntu\* でインテル® VTune™ Amplifier XE のユーザーモード収集が実行に失敗する (200197563)

インテル® VTune™ Amplifier XE は、Ubuntu\* 上で Hotspots、コンカレンシー (Concurrency)、ロックと待機 (Locks & Waits) 解析のデータ収集に失敗することがあります。収集を開始すると、出力に次のメッセージが表示されます: "Failed to start profiling because the scope of ptrace() system call application is limited. To enable profiling, please set /proc/sys/kernel/yama/ptrace\_scope to 0. See the Release Notes for instructions on enabling it permanently. (ptrace() システムコールの範囲が制限されているため、プロファイルを開始できません。プロファイルを有効にするには、/proc/sys/kernel/yama/ptrace\_scope を 0 に設定してください。)"

現在のセッションでこの問題を回避するには、/proc/sys/kernel/yama/ptrace\_scope sysctl ファイルの内容を 0 に設定します。

この変更を恒久的なものにするには、root 権限で /etc/sysctl.d/10-pttrace.conf ファイルの kernel.yama.ptrace\_scope 値を 0 に設定し、システムを再起動します。

## Linux\* futex を使用した場合にコンカレンシー (Concurrency) 解析で正しくない待機時間データが提供される (200163557)

条件によっては、インテル® VTune™ Amplifier XE は Linux\* futex ベースのカスタム同期構造を検出しません。このような構造はシステム・ライブラリーでも使用されることがあります。コンカレンシー (Concurrency) 解析で正しい待機時間が得られるようにするには、コードで syscall(SYS\_futex, ...) API を使用してください。

## インテル® VTune™ Amplifier XE を実行すると KVM ゲスト仮想マシンがクラッシュする (200384245)

KVM のバージョンによっては、ホストマシンでイベントベース・サンプリング解析を実行すると、KVM ゲスト仮想マシンがカーネルパニックになります。この問題は、precise イベントが使用される場合のみ発生します (例えば、全般 (General Exploration) 解析タイプ)。KVM を新しいバージョンにアップグレードし、この問題を修正するパッチを適用してください。

## Ubuntu\* ではインテル® VTune™ Amplifier XE の GUI でスクロールバーが表示されない (200534347)

オーバーレイ・スクロールバー・スタイルの Ubuntu\* 12.04 以上では、インテル® VTune™ Amplifier XE の GUI でスクロールバーが表示されません。スクロールバーを表示するには、amplxe-gui を実行する前に次のコマンドを実行してスクロールバー・スタイルを変更します。

- Ubuntu\* 12.x:  
gsettings set org.gnome.desktop.interface ubuntu-overlay-scrollbars false
- Ubuntu\* 13.x 以上:  
gsettings set com.canonical.desktop.interface scrollbar-mode normal

## ユーティリティーを使用して再マップしたバイナリーのシンボルが解決しない (200244405)

hugetlbfs は、実行ファイルのセグメントを一時ファイルシステムまたは無名メモリー領域に再マップします。インテル® VTune™ Amplifier XE は、これらのセグメントをオリジナルの実行ファイルにマップできません。

この問題を回避するには、オリジナルの実行ファイルの名前を hugetlb で表示される名前 (つまり、インテル® VTune™ Amplifier XE の結果に表示されるモジュール名) に変更します。

my\_exe (オリジナル実行ファイル) -> my\_exe\_32\_2 (プロセス間で共有する hugetlb ファイルシステムのファイル名)

my\_exe (オリジナル実行ファイル) -> libhugetlbfs.tmp.<random hash> (無名マップのメモリー領域名)

## ほかの PMU ベースのツールとハードウェア・イベントベースのサンプリング収集の同時実行はサポートされない (200166101)

サンプリング・ドライバーは PMU リソースを排他的に使用します。複数の PMU ベースのツールを実行すると、正しくない結果になったり、システムが不安定になります。

## hotspot、コンカレンシー (Concurrency)、ロックと待機 (Locks & Waits) 解析タイプが libpthread.so.0 ライブラリーに依存しない実行ファイルで動作しない (200208975)

現在、libpthread.so.0 ライブラリーに依存しない実行形式のターゲット・アプリケーションのプロファイルには制限があります。プログラムイメージが libpthread.so.0 に依存しないアプリケーションのプロファイルで、libpthread.so.0 に依存する共有ライブラリーを dlopen()-s でロードすると、"Link libpthread.so to the application statically and restart profiling (libpthread.so をアプリケーションに静的にリンクし、再度プロファイルを実行してください)" メッセージが表示されます。この場合、コレクターはプログラム実行とモジュールのロード/アンロードを追跡できないため、正しい収集結果が得られません。この問題を回避するには、収集を実行する前に "LD\_PRELOAD=libpthread.so.0" を設定します。

## ラージページで構成された Linux\* システムでは結果の表示が非常に遅くなる (200215471)

この問題を回避するには、システムに hugectl ユーティリティーと libhugetlbfs ライブラリーがあることを確認し、次のコマンドでインテル® VTune™ Amplifier XE を開始します。

```
hugectrl --heap <amplxe install dir>/bin32/amplxe-gui
```

```
LD_PRELOAD=libhugetlbfs.so <amplxe install dir>/bin64/amplxe-gui
```

## 一部の Linux\* ブラウザーでヘルプの目次が正しく表示されない (200272063)

特定の HTML ブラウザーでインテル® VTune™ Amplifier XE ドキュメントを表示すると、目次タブの幅が狭くなり、トピックタイトルの一部が表示されません。この問題を解決するには、次の操作を行います。

- キーワード (または検索) ボタンをクリックします。
- 目次ボタンをクリックします。

## ユーザーモード・サンプリングとトレース収集のサンプリング間隔を短くすると CPU 利用状況データが正しくなくなる (200296537)

ユーザーモード解析テクノロジーは OS タイマーに基づいています。OS タイマーのティックはカーネルのコンパイル時に設定された HZ 値より速くできません。サンプリング間隔を HZ 値未満にしないでください。

## インテル® Xeon Phi™ プロセッサーで COI/SCIF アプリケーションのプロファイルを行うとユーザーモード・サンプリングとトレース収集でエラーが発生する (200234639)

ユーザーモード・サンプリングとトレース収集で COI バッファエラーになる場合は、代わりにハードウェア・イベントベース解析を使用してください。

## エラー "No CONFIG\_PERF\_EVENTS=y kernel support configured" が表示されて収集に失敗する (200372350)

Linux\* でドライバーなしの EBS 収集を行うと、カーネル構成を設定している場合でも、エラー "No CONFIG\_PERF\_EVENTS=y kernel support configured (CONFIG\_PERF\_EVENTS=y カーネルサポートが構成されていません)" が表示され収集に失敗することがあります。これは、カーネルバージョン 4.1 で解決した既知の Linux\* カーネルの問題です。回避策として、<http://halobates.de/ivb-allow-mem-load-uops> で簡単なパッチが提供されています。

## ターゲット・アプリケーションを Ctrl+C で終了すると、ITT API でマークしたユーザータスク、イベント、フレームが表示されない (200304207)

別の方法でアプリケーションを停止するか、インテル® VTune™ Amplifier XE の "stop" コマンドを使用してください。

## Xen\* 仮想マシン上にインストールするとき、サポートしていない CPU であるというメッセージが表示されインストール・スクリプトが終了する (200294340)

CPU モデルのチェックをスキップするには、インストール・スクリプトのコマンドラインに --ignore-cpu オプションを追加します。

```
./install.sh --ignore-cpu
```

## 一部の Linux\* システムで GUI からインテル® VTune™ Amplifier XE のヘルプが表示されない (200377881)

一部の Linux\* システム (Wind River\* Linux\* など) では、Web ブラウザーを開くデフォルトの方法が動作しません。インテル® VTune™ Amplifier XE のヘルプを表示するには、インテル® VTune™ Amplifier XE を開始する前に、環境変数 'BROWSER' に Web ブラウザーのパスを設定してください。

次に例を示します。

```
>export BROWSER=/usr/bin/firefox
```

## インテル® VTune™ Amplifier XE のユーザー API はスタティック・バイナリーをサポートしていない (200279211)

ITT および JIT API をソフトウェア・ベースのコレクター (hotspot、コンカレンシー、ロックと待機) で使用するには、アプリケーションを動的にリンクする必要があります。動的にリンクしないと、ITT および JIT API 通知が結果に含まれません。

## インテル® Xeon Phi™ コプロセッサ (開発コード名 Knights Corner) におけるインテル® VTune™ Amplifier XE のデータ収集はターゲットユニットからのハードウェア・イベントベースのサンプリング収集に制限される (200179057)

データ収集中に関数のコールスタックに関する情報は記録されません。結果の Groups に部分的な呼び出しチェーンが表示されるため、これを実際の呼び出しスタック情報と勘違いされることがあるかもしれませんが、これはデバッグ・シンボル・テーブルのインライン展開された関数情報によるものなので、無視してかまいません。

## インテル® Xeon Phi™ コプロセッサの電源管理設定により予想よりも少ないデータがレポートされる (200343917)

インテル® Xeon Phi™ コプロセッサ上のアプリケーションのプロファイルで予想よりも少ないデータが表示されることがあります。例えば、一部の CPU の収集データや、一部の期間の収集データのみ結果に含まれることがあります。この問題は、インテル® Xeon Phi™ コプロセッサ 5110P では発生しません。この問題は、システム電源管理の相互運用性によって引き起こされます。

この問題を回避するには、インテル® Xeon Phi™ コプロセッサの電源管理を無効にします。

1. 設定ファイル /etc/mpss/mic0.conf (このファイルが存在しない場合は /etc/sysconfig/mic/mic0.conf) の内容を、PowerManagement "cpufreq\_on;corec6\_on;pc3\_on;pc6\_on" から PowerManagement "cpufreq\_on;corec6\_off;pc3\_off;pc6\_off" に変更します。

2. 次のコマンドを実行します。

```
sudo service micras stop  
sudo service mpss unload  
sudo micctrl --resetconfig  
sudo service mpss start
```

3. インテル® VTune™ Amplifier XE で再度プロファイルを実行します。

## Attributions (英語)

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The following are licenses for third party software that was used to develop the Intel® VTune™ Amplifier XE for Linux\* OS. These licenses are listed due to attribution requirements in these license agreements. For the avoidance of doubt, the Intel VTune Amplifier is solely governed by the terms and conditions of the End User License Agreement for Intel® Software Development Product that accompanies the Intel VTune Amplifier.

### Xulrunner

Modified source code and instructions for building the Xulrunner package shipped as a part of the Intel® VTune Amplifier are available at the following link:

<https://software.intel.com/en-us/articles/xulrunner-for-intel-vtune-amplifier-xe>

### Mozilla Public License

Version 2.0

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## **node-xml2js**

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