

Intel® Graphics Performance Analyzers (Intel® GPA) Release Notes – 2020.2 Archive

Introduction

Intel® Graphics Performance Analyzers (Intel® GPA) provides tools for graphics analysis and optimizations for making games and other graphics-intensive applications run even faster. The tools support the platforms based on the latest generations of Intel® Core™ and Intel Atom® processor families, for applications developed for Windows*, Ubuntu*, or macOS*.

Intel® GPA provides a common and integrated user interface for collecting performance data. Using it, you can quickly see performance opportunities in your application, saving time and getting products to market faster.

For detailed information and assistance in using the product, refer to the following online resources:

- [Home Page](#): view detailed information about the tool, including links to training and support resources, as well as videos on the product to help you get started quickly.
- [Get Started Guide](#): get the main features overview and learn how to start using the tools on different host systems.
- [Training and Documentation](#): learn at your level with Getting Started guides, videos and tutorials.
- [User Guide for Windows* Host](#): get details on how to analyze Windows* and Android* applications from a Windows system.
- [User Guide for macOS* Host](#): get details on how to analyze Android or macOS applications from a macOS system.
- [User Guide for Ubuntu* Host](#): get details on how to analyze Android or Ubuntu applications from an Ubuntu system.
- [Support Forum](#): report issues and get help with using Intel® GPA.

What's New

New Features for Analyzing All Graphics APIs

Graphics Monitor

- Configure the sampling interval for Intel graphics metrics for both trace captures and stream captures
- Support for an extended set of Intel graphics metrics. Switch between different metrics sets and configure the exact set of metrics to be collected in Graphics Monitor
- "Auto-detect Launched Applications" feature in Stream capture mode
- System Trace Capture triggers for Windows and Ubuntu

Graphics Frame Analyzer

- Initial support for Compute and Copy queues in Multi-Frame View
- Improved performance and UX of the Shader Binding pane
- Stable run-to-run metric measurements on 3rd party GPUs
- "1x1 Scissor Rect", "Simple Pixel Shader", and "Highlighting" experiments in "Multi-Frame Profiling View (DirectX12 Tech Preview)" mode
- Added an ability to create new custom regions containing previously created regions
- Python API: debug names for resources are now exposed
- Python API: reduced memory footprint for resource data extraction

Graphics Trace Analyzer

- All registered XML-based Events-Tracing-for-Windows providers are supported
- Consolidated track for multi-layered Flip queues
- Ability to open trace folders from the Windows context menu

New Features for Intel® GPA Framework

- Support for Vulkan 1.2 (SDK 1.2.135) workloads
- Enabled graceful handling when out of disk space. The HUD now displays a notification. Serialization to the disk is halted to prevent the application from crashing.
- "Scissor Rect" and "2x2 Texture" experiments now available for DirectX12 workloads

- Ability to view CreateInfo parameters for resources now available for Vulkan and D3D12 workloads.
- Ability to view metadata information for SwapChains (Vulkan and D3D12) and Render Passes (Vulkan).

Known Issues and Limitations

For GPA Framework

- User input for keyframes and deferred stream capture may not be registered in certain applications. Please use time-interval keyframes and capture layer parameters for deferred stream capture.
- When using the AMD* RX Vega card to capture a stream on a Hades Canyon machine the argument "--page-tracker-mode 2" must be added to any ./gpa-injector command in order to properly capture the stream. Note that this does not apply to the iGFX card.

For DirectX Applications

- Parallel Execution View is not supported on Skull Canyon platforms.
- For Universal Windows Applications, real-time GPU metrics are not available in the Heads-Up Display and System Analyzer.
- Applications that are dynamically linked to Microsoft Visual C++ Runtime Library, Version 14.0 or higher cannot be launched on Windows 7 platforms with Auto-Detect Launched Applications Mode enabled. You can start the application directly from Graphics Monitor or the command line.
- To collect stable metrics on third party graphics solutions, enable Developer Mode in Microsoft Windows* OS settings.
- Few DirectX 11 applications that create a temporary D3D11Device may crash if started from Graphics Monitor. To resolve this issue, please enable the System-wide Time-based GPU Metrics option in the Metrics tab of the Graphics Monitor options.
- In rare cases, a DirectX 12 frame opened on 11th generation Intel® Core processors may display an incorrect value for the DirectX 12 PS Invocation metric for events that are preceded by a SetPipelineState call.
- Frame Analyzer does not display the DirectX 12 Pipeline Statistics metrics for frames that contain ClearState or SetProtectedResourceSession calls.
- In rare cases, a DirectX 12 frame opened on 11th generation Intel® Core processors may display an incorrect value for the EU Thread Occupancy metric for Dispatch events.

For Vulkan Applications

- To profile Vulkan titles, make sure to download the latest [Vulkan runtimes](#) and [SDK](#).
- To enable Ubuntu support, please read the [enabling instructions](#) to view metrics on Ubuntu platforms.
- Vulkan applications that run on multi-GPU machines and explicitly enumerate graphics adapters to render on the non-default adapter may produce stream files that cannot be analyzed in the Profiling View of Graphics Frame Analyzer. Please only keep one GPU active in Windows Device Manager to resolve the issue.
- Graphics Frame Analyzer may show incorrect content of swap chain images if the application does not use intermediate render targets and renders directly into the swap chain image.

For Metal Applications

- To run and profile applications from Steam*, manually download and update to the latest 64-bit version of Steam
- 32-bit applications are not supported for profiling
- Playback of the Metal stream files captured with earlier Intel® GPA versions is not supported. Old Metal stream files can be converted to the new stream format using the following steps:

1. Open Terminal and change the directory to

```
2. cd  
  
/Applications/Intel/FrameAnalyzer.app/Contents/Resources/  
metal.
```

3. Capture a new stream of the old player running the .gpa_stream file that you want to convert by the following command:

```
./gen2/gpa-injector ./gpa-playback --layer capture --  
<path-to-old-.gpa_stream-file
```

4. The newly converted stream is automatically added to ~/Documents/GPA/ and is displayed in the Graphics Frame Analyzer open file dialog.
- macOS users who are running OS X* El Capitan or newer must disable System Integrity Protection (SIP) in order to profile Steam* applications. If SIP is enabled on your

machine, a message will appear at the top of Graphics Monitor directing you to disable it. If you would prefer not to disable SIP but need to profile a Steam* application, use the following process:

1. Launch and sign into Steam
2. Locate the executable of the desired application and copy the location, it typically looks something like this:

```
/Users/YOUR_USER_NAME/Library/Application\  
Support/Steam/steamapps/common/YOUR_APPLICATION_BINARY
```

3. Launch Graphics Monitor
4. Paste the location of desired application in the first input box and hit start
5. GPA will now be injected into the executable, allowing for live profiling and Trace/Frame Capture