

Intel® Graphics Performance Analyzers (Intel® GPA) 2018 R2 Release Notes

By [Giselle G.](#), published on June 27, 2018

Thank you for choosing the Intel® Graphics Performance Analyzers (Intel® GPA), available as a standalone product and as part of Intel® System Studio.

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Introduction

Intel® GPA provides tools for graphics analysis and optimizations for making games and other graphicsintensive 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*, Android*, 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

Intel® GPA 2018 R2 offers the following new features:

New Features for Analyzing All Graphics APIs

System Analyzer

- View all available Intel® GPU metrics in System View on Windows* Platforms, with an ability to switch between these counter sets using the Ctrl+M hotkey

Graphics Frame Analyzer

- Search for and pin interesting metrics to the top of the metrics table
- Copy resource names in the Resource Viewer using CTRL+C

All Tools

- Dark Mode color scheme has been modified for improved usability

New Features for analyzing OpenGL* applications

New Platforms

- Support for macOS High Sierra (10.13.4) has been added for this release including support
 - for:
 - Real-time metrics in System Analyzer

Per-region/per-event metrics in Graphics Frame Analyzer

Graphics Monitor

- OpenGL applications downloaded from Apple AppStore can be launched through Graphics Monitor or Graphics Frame Analyzer launch dialog without Sandbox removal
- User-configurable frame delimiters have been added, these delimiters: SwapBuffer, MakeCurrent context, Clear, Flush, Finish or BlitFramebuffer can be used individually or in combination

System Analyzer HUD

- Updated Heads-up display for OpenGL applications on Windows, Ubuntu, and macOS platforms

New Features for analyzing Microsoft DirectX* applications

New Platforms

- Metrics for AMD* Radeon RX Vega M (in the new Intel® NUC KIT NUC8I7HVK) are available in System Analyzer and Graphics Frame Analyzer for DirectX 11 and DirectX 12 applications

Graphics Monitor

- Graphics applications launched in “Auto-detect launched applications” mode are automatically added to recent applications list

Graphics Frame Analyzer

- Any DirectX* 11 shader resource view (SRV) can now be replaced with a simple 2x2 texture or clamped to a selected MIP map level independently from other input textures
- Shader DXBC and ISA code update whenever a shader is modified
- Support for DirectX 12 Unreal Engine 4.19 applications running on multi-GPU systems has been added
- Multi-sampled render targets (including depth and stencil textures) are now viewable in DirectX 12 frames
- Pixel History for DirectX 11 supports rendering to layers and mip levels, and respects applied experiments
- View the per-target, post-transformation geometry for a range of selected draw calls in DirectX 11 frames

New Features for analyzing Android* Open GLES applications

System Analyzer

- An ability to view and profile any Android process has been added to the System Analyzer settings

New Features for analyzing macOS* Metal applications

Graphics Frame Analyzer for Metal

- Additional title support
- Modified the Stream file format to improve performance and stability
- Stream files play back instantly within Graphics Frame Analyzer

System Requirements and Supported Platforms

The minimum system requirements are:

- **Host Processor:** Intel® Core™ Processor
- **Target Processor:** See the list of supported Windows* and Android* devices below
- **System Memory:** 8GB RAM
- **Video Memory:** 512MB RAM
- **Minimum display resolution for client system:** 1280x1024
- **Disk Space:** 300MB for minimal product installation

The table below shows platforms and applications supported by Intel® GPA 2018 R2

Target System (the system where your game runs)	Host System (your development system where you run the analysis)	Target Application (types of supported applications running on the target system)
Windows* 7 SP1/8.1/10	Windows* 7 SP1/8.1/10	Microsoft* DirectX* 9/9Ex, 10.0/10.1, 11.0/11.1/11.2/11.3
Windows* 10	Windows* 10	Microsoft* DirectX* 12, 12.1
Google* Android* 4.1, 4.2, 4.3, 4.4, 5.x, 6.0	Windows* 7 SP1/8.1/10 or macOS* 10.11, 10.12 or Ubuntu* 16.04	OpenGL* ES 1.0, 1.1, 2.0, 3.0, 3.1, 3.2
Ubuntu* 16.04	Ubuntu* 16.04	OpenGL* 3.2, 3.3, 4.0, 4.1 Core Profile
macOS* 10.12 and 10.13	macOS* 10.12 and 10.13	OpenGL* 3.2, 3.3, 4.0, 4.1 Core Profile and Metal* 1 and 2

Intel® GPA does not support the following Windows* configurations: All server editions, Windows* 8 RT, or Windows* 7 starter kit.

Supported Windows* Graphics Devices

Intel® GPA supports the following graphics devices as targets for analyzing Windows* workloads. All these targets have enhanced metric support:

Target	Processor
Intel® UHD Graphics 630	8th generation Intel® Core™ processor
Intel® UHD Graphics 630	7th generation Intel® Core™ processor
Intel® UHD Graphics 620	7th generation Intel® Core™ processor
Intel® HD Graphics 620	7th generation Intel® Core™ processor
Intel® HD Graphics 615	7th generation Intel® Core™ m processor
Intel® HD Graphics 530	6th generation Intel® Core™ processor
Intel® HD Graphics 515	6th generation Intel® Core™ m processor
Iris® graphics 6100	5th generation Intel® Core™ processor
Intel® HD Graphics 5500 and 6000	5th generation Intel® Core™ processor
Intel® HD Graphics 5300	5th generation Intel® Core™ m processor family
Iris® Pro graphics 5200	4th generation Intel® Core™ processor
Iris® graphics 5100	4th generation Intel® Core™ processor

Intel® HD Graphics 4200, 4400, 4600,
and 5000

4th generation Intel® Core™ processor

Although the tools may appear to work with other graphics devices, these devices are unsupported. Some features and metrics may not be available on unsupported platforms. If you run into an issue when using the tools with any supported configuration, please report this issue through the [Support Forum](#).

Driver Requirements for Intel® HD Graphics

When running Intel® GPA on platforms with supported Intel® HD Graphics, the tools require the latest graphics drivers for proper operation. You may download and install the latest graphics drivers from <http://downloadcenter.intel.com/>.

Intel® GPA inspects your current driver version and notifies you if your driver is out-of-date.

Supported Devices Android devices

Intel® GPA supports both Intel® and ARM*-based Android devices, with known limitations, for further information see [this article](#).

Installation Notes

Installing Intel® GPA

Download the Intel® GPA installer from the [Intel® GPA Home Page](#).

Installing Intel® GPA on Windows* Target and Host Systems

To install the tools on Windows*, download the *.msi package from the [Intel® GPA Home Page](#) and run the installer file.

The following prerequisites should be installed before you run the installer:

- Microsoft .NET 4.0 (via redirection to an external web site for download and installation)

If you use the product in a host/target configuration, install Intel® GPA on both systems. For more information on the host/target configuration, refer to [Best Practices](#).

For details on how to set up an Android* device for analysis with Intel® GPA, see [Configuring Target and Analysis Systems](#).

Installing Intel® GPA on Ubuntu* Host System

To install Intel® GPA on Ubuntu*, download the .sh file from the [Intel® GPA Home Page](#) and run the installer script.

It is not necessary to explicitly install Intel® GPA on the Android* target device since the tools automatically install the necessary files on the target device when you run System Analyzer. For details on how to set up an Android* device for analysis with Intel® GPA, see [Configuring Target and Analysis Systems](#).

Installing Intel® GPA on macOS* Host System

To install the tools on macOS*, download from the [Intel® GPA Home Page](#) and run the .pkg installer.

It is not necessary to explicitly install Intel® GPA on the Android* target device because the tools automatically install the necessary files on the target device when you run the System Analyzer. For details on how to set up an Android* device for analysis with Intel® GPA, see [Configuring Target and Analysis Systems](#).

Technical Support and Troubleshooting

For technical support, including answers to questions not addressed in the installed product, visit the [Support Forum](#).

Troubleshooting Android* Connection Problems

If the target device does not appear when the `adb devices` command is executed on the client system, do the following:

1. Disconnect the device
2. Execute `$ adb kill-server`
3. Reconnect the device
4. Run `$ adb devices`

If these steps do not work, try restarting the system and running `$adb devices` again. Consult product documentation for your device to see if a custom USB driver needs to be installed.

Known Issues and Limitations

- Full Intel GPA metrics are not supported on macOS* 10.13.4 for Skylake-based and Kaby Lakebased Mac Pro systems. For full metric support, please do not upgrade to macOS* 10.13.4.
- Metrics in the System Analyzer's system view are inaccurate for Intel® Graphics Driver for Windows* Version 15.65.4.4944. You can use Intel® Graphics Driver for Windows* Version 15.60.2.4901 instead.

- 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
/Applications/Intel/FrameAnalyzer.app/Contents/Resources/metal.
2. Capture a new stream of the old player running the .gpa_stream file that you want to convert by the following command:

```
1 | ./gen2/gpa-capture ./gpa-playback --layer capture -- <path-to-old-.gp
```

3. The newly converted stream is automatically added to ~/Documents/GPA/ and is displayed in the Graphics Frame Analyzer open file dialog.

- Intel® Graphics Performance Analyzers Sample (gpasample.exe) cannot be launched with Global Injection Mode enabled on Windows* 7 platforms

- 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:

```
1 | /Users/YOUR_USER_NAME/Library/Application\ Support/Steam/steamapps/co
```

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

*Other names and brands may be claimed as the property of others.

** Disclaimer: Intel disclaims all liability regarding rooting of devices. Users should consult the applicable laws and regulations and proceed with caution. Rooting may or may not void any warranty applicable to your devices.

For more complete information about compiler optimizations, see our [Optimization Notice](#).
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