

What's New

Intel GPA 2019 R4 includes functional and security updates. Users should update to the latest version.

Intel GPA 2019 R4 offers the following new features:

New Features for Analyzing All Graphics APIs

Graphics Monitor

- The ability to view, open, and delete any frame, stream, or trace file directly from Graphics Monitor
- Customize the hotkey used to trigger the start/stop of a stream capture and keyframe creation

Graphics Frame Analyzer

- Preview stream files in the Open File window
- Group GPU events by custom regions both in the API Log and Bar Chart
- Added Multiframe View improvements:
 - Smaller default track size
 - Added navigation tree for metric tracks
 - Improved the functionality of reordering metric tracks
 - Improved range selection
- Fixed the intermediate shader code in Python Plugins

Graphics Trace Analyzer

- Collect system-wide time-based GPU metrics together with the metrics used for building the Parallel Event Execution track.
- Additional improvements:
 - Range selection
 - Summary table

New Features for Analyzing Microsoft DirectX* 11 Applications

Graphics Trace Analyzer

- GPU frame track for analyzing DirectX 11 applications.

New Features for Analyzing Microsoft DirectX 12 Applications

Graphics Monitor

- Trigger the start/stop of a stream capture for DirectX 12 applications using a hotkey

New Features for Intel® GPA Framework

- New forward compatible stream file format. Streams taken from Intel(R) GPA Framework 2019.4 release and on, will always be replayable with future gpa-player releases.
- Added support for capturing D3D12 streams from an arbitrary moment during the application run. This mode can be enabled with the capture layer parameter "deferred=<1/true>".
- Added support for user-configurable and programmable action mapping system for more flexible user control over capture and playback.
- Added asynchronous screenshot support for D3D12 and ability to specify output format (JPG, BMP, PNG) to screenshot layer.
- Added ability to filter stream events by queue.
- Added new Callable::Argument() function to allow for requesting output parameters from callables.
- Added support for side-by-side installations of multiple versions of the Intel(R) GPA Framework.
- Improved feature set of D3D12 stream analysis including:
 - Added ability to extract D3D12 metadata (information associated with the resource) via MetadataExtractor such as buffers, textures, pipelines, shaders, etc.
 - Added ability to extract texture resource data from render targets, resolves, clears, copies and barriers.
 - Added support for metric collection via MetricsExtractor.
- Improved resource data and metadata extraction. New improved interfaces and a compatibility layer have been added to help ease the transition from previous interfaces.
- Improved status reporting of capture events in HUD layer as well as ability to issue custom HUD message events from user created layers.
- Misc. bug fixes affecting capture, playback and stream analysis of several titles.

Known Issues and Limitations

For Vulkan Applications

- 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.
- Metrics will not show up in Graphics Frame Analyzer for apps created in Unity that use the Vulkan renderer.
- To profile Vulkan titles, make sure to download the latest [Vulkan runtimes](#) and [SDK](#).
- Support for Ubuntu, read the [enabling instructions](#) to view metrics on Ubuntu platforms

For Metal Applications

- macOS 10.15.2 is not supported at this time, do not update to macOS 10.15.2 if you would like to continue using Intel® GPA to profile Metal apps on your macOS system.
- 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
- For full metric support, please upgrade to macOS 10.14.
- 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

```
cd /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:

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

3. 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

For DirectX Applications

- Parallel Event Execution Track in Graphics Trace Analyzer is not supported on Skull Canyon platforms.
- Real-time GPU metrics are not available for Universal Windows Applications in the Heads-Up Display and System Analyzer.
- Time-based metrics may have a few ranges with no data in Graphics Trace Analyzer
- CPU Load percentage metric values in System Analyzer may be slightly above 100% on 11th generation Intel® Core processors
- Applications, dynamically linked to Microsoft Visual C++ Runtime Library, Version 14.0 or higher, cannot be launched with Auto-Detect Launched Applications Mode enabled on Windows 7 platforms. You can start the application directly from Graphics Monitor or start a command line and launch the target application from it.
- To collect stable metrics on third party graphics, enable Developer Mode in the Windows Settings.
- GEN Assembly is not available in DirectX 11 applications frames on graphics driver 25.20.100.6519 and 25.20.100.6577. To analyze GEN Assembly, update your graphics driver to 25.20.100.6618.
- Real-time GPU metrics are not available for Universal Windows Applications in the Heads-up Display and System Analyzer