CodeXL 2.6 GA Release Notes

Contents

Thank you for using CodeXL. We appreciate any feedback you have! Please use the CodeXL Issues Page to provide your feedback.

You can also check out the Getting Started guide and the latest CodeXL blog at GPUOpen.com

This version contains:

- For 64-bit Windows® platforms
    - o CodeXL Standalone application
    - o CodeXL Remote Agent
- For 64-bit Linux® platforms
    - o CodeXL Standalone application
    - o CodeXL Remote Agent

New in this version

CodeXL v2.6 adds the following major features on top of the CodeXL v2.5 feature set:

- Updated the static analysis backend to use RGA 2.0.1 – see https://github.com/GPUOpen-Tools/RGA/releases
- Updated the GPU profiler backend to use RCP 5.5 – see https://github.com/GPUOpen-Tools/RCP/releases
- Removal of components which have been replaced by new standalone tools:
  - Frame Analysis – use https://github.com/GPUOpen-Tools/Radeon-GPUProfiler
  - CPU and Power Profiling – use https://developer.amd.com/amd-uprof/

- Removal of OpenCL™ kernel debugging
- Removal of Visual Studio Extension

System Requirements

CodeXL contains a host of development features with varying system requirements:

- **GPU Profiling**
  - An AMD GPU (Radeon HD 7700 series or newer, desktop or mobile version) or APU is required.
  - Radeon Software Crimson ReLive Edition 18.8.1 (driver 18.30) is the recommended driver on Windows, and the latest amdgpu-pro (driver 18.30) on Linux.
  - Earlier HW configurations (Radeon HD 5000/6000 series) are no longer supported by Radeon Software Crimson Edition and CodeXL 2.x. For these configurations please install CodeXL 1.9 (available here) and the AMD Catalyst driver release 13.11 or later. Catalyst 15.9.1 (driver 15.201) is the recommended version.
- **ROCm/HSA Profiling**
  - Supported on the ROCm stack, version 1.8. See the below link for supported hardware configurations:
    - https://rocm.github.io/hardware.html
  - Follow the installation instructions at the following link to install ROCm:
    - https://rocm.github.io/install.html
  - Should a new version of the ROCm become available, the version of the profiler included in CodeXL may need to be updated to be compatible with that version. If/when a new runtime is published to GitHub, we will also publish new HSA Profiler binaries on GitHub (https://github.com/GPUOpen-Tools/RCP). There will be instructions included in this repository describing what steps may need to be taken to use a new profiler build with an existing CodeXL build.
- For **GPU API-Level Debugging**, a working OpenCL/OpenGL® configuration is required (AMD or other).
- **Static Analysis**
  - OpenCL/DirectX® 11 kernel/shader analysis requires a working AMD OpenCL/DirectX 11 configuration

- o OpenGL shader analysis on Windows requires Catalyst 15.9. (driver 15.20) or later
- o For Vega support, Radeon Vega Frontier Edition 17.6 (Driver Packaging Version 17.20) or later is required

Supported platforms:

- Windows platforms
  - o Windows 7 64-bit and 10 64-bit.
    - Windows 7 requires installation of Microsoft update KB2999226
      https://support.microsoft.com/en-us/kb/2999226
- Linux platforms
  - o Red Hat EL 7 64-bit
  - o Ubuntu 18.04 or 16.04 64-bit

Getting the latest Radeon™ Software release

Radeon software packages can be found here:

http://support.amd.com/us/gpudownload/Pages/index.aspx

Fixed Issues

The following are the major fixes that were not part of the v2.5 release and are new to this version:

- Crash in CodeXL when profiling on a locale that uses a character other than a comma as a list separator.
  - o https://github.com/GPUOpen-Tools/CodeXL/issues/213
  - o https://github.com/GPUOpen-Tools/CodeXL/issues/187
  - o https://github.com/GPUOpen-Tools/CodeXL/issues/179
- On Linux, newly-created projects have incorrect profiling output directories after successfully running a profiler session on another project.
  - o https://github.com/GPUOpen-Tools/CodeXL/issues/178
- Remote GPU Profiling fails.
  - o https://github.com/GPUOpen-Tools/CodeXL/issues/147
  - o https://github.com/GPUOpen-Tools/CodeXL/issues/128
  - o https://github.com/GPUOpen-Tools/CodeXL/issues/127
- OpenCL information in the System Information dialog is missing in various Linux configurations.
  - o https://github.com/GPUOpen-Tools/CodeXL/issues/209
- Build-time, install-time and run-time errors on recent Linux distros
  - o https://github.com/GPUOpen-Tools/CodeXL/issues/129
  - o https://github.com/GPUOpen-Tools/CodeXL/issues/161
  - o https://github.com/GPUOpen-Tools/CodeXL/issues/183
  - o https://github.com/GPUOpen-Tools/CodeXL/issues/189
  - o https://github.com/GPUOpen-Tools/CodeXL/issues/206
  - o https://github.com/GPUOpen-Tools/CodeXL/issues/207
  - o https://github.com/GPUOpen-Tools/CodeXL/issues/215

- o https://github.com/GPUOpen-Tools/CodeXL/issues/217
- Problem retrieving GPU Performance Counters on recent hardware
    - o https://github.com/GPUOpen-Tools/CodeXL/issues/114
- Incorrect Kernel Occupancy data shown
    - o https://github.com/GPUOpen-Tools/CodeXL/issues/104
- Undefined behavior in TraceView causes a segfault
    - o https://github.com/GPUOpen-Tools/CodeXL/issues/60
- Export to CSV functionality from Application Trace table results in an incorrectly-formatted .csv file (4130)
- Incorrect driver information shown in Help|About on Linux (3972).

Known Issues

CodeXL is built against and includes the binaries for Qt version 5.9.5. If you build CodeXL yourself and try to build against Qt version 5.9.6, the main MDI window area in CodeXL will not be scaled correctly. It is recommended that you use Qt version 5.9.5 when building CodeXL.	

When collecting OpenCL performance counters on Linux, the current user must have write access to
 	
`/sys/class/drm/card<N>/device/power_dpm_force_performance_level`
 	
where \<N\> is the index of the card in question. By default, this file is only modifiable by root, so CodeXL would have to be run as root in order for it to modify this file. It is possible to modify the permissions for the file instead so that it can be written by unprivileged users. The following command will achieve this. Note, however, that changing the permissions on a system file like this could circumvent security. Also, on multi-GPU systems, you may have to replace "card0" with the appropriate card number. Permissions on this file may be reset when rebooting the system:
`sudo chmod ugo+w`
`/sys/class/drm/card0/device/power_dpm_force_performance_level`	

On some Linux systems, the Teapot sample will crash when closed.	4140
On Ubuntu 18.04, when hitting an OpenCL API breakpoint, the CodeXL UI may take a long time to respond.	4134
On Linux machines that have gfx900 (Vega) or gfx804 (Lexa) GPUs installed, OpenCL compilation fails.	
OpenGL static analysis does not support Vega as a target GPU.	
OpenGL static analysis will not function on Linux machines that have a Vega GPU installed.	
On Linux machines, the OpenCL compilation does not support Vega (gfx9xx) devices.	
On Linux machines, Vulkan Rendering Pipeline compilation fails for gfx900 (Vega), due to a compiler crash.	

When opening a project in CodeXL 2.5 that was originally created in CodeXL 2.4 on a system with a Vega GPU, a GPU Performance Counter session may not collect all available performance counters even though the Project Settings UI shows that all counters are selected. The workaround in this case is to manually unselect and re-select a counter in the UI.	4029
Menu items are present but not visible after minimization and restore of CodeXL in Ubuntu system using Unity theme. Workaround: Use Unity 2D theme instead of Unity theme.	353082
If CodeXL is installed in path that includes non-ASCII Unicode characters, profiling does not work.	365118.
Performing 2 GPU Profiling sessions concurrently - Timeline Application Trace and Performance Counters - on a Red Hat Linux System may cause a system hang after several minutes.	259, 68176
GPU Profiler does not display any hsa_*_get_info calls in host thread calls list if they are callbacks encompassed by hsa_iterate_agents calls.	980
Unable to launch GPU profiler - cannot allocate memory error on starting profiling after running 2 or 3 GPU Profiler timeline trace sessions for 2-3 min.	1347
CodeXL throws segmentation fault while launching on Linux through SSH.	1533
GPU debugger backend crashes when we close the Teapot window on I+A system.	2201
On Linux, GPU Profiling Performance Counters of an OpenGL application may cause a system hang after a few seconds.	68152
Collecting GPU Profiler performance counters on the integrated GPU on an APU while another 3D app is running outside CodeXL can lead to a display hang.	68176
For huge source files (like sqlite3.c), CodeXL source view does not show the complete source code - View seems to limit to 64K lines	3541

Support

Please use our CodeXL Issues Page for bug reports, support and feature requests.