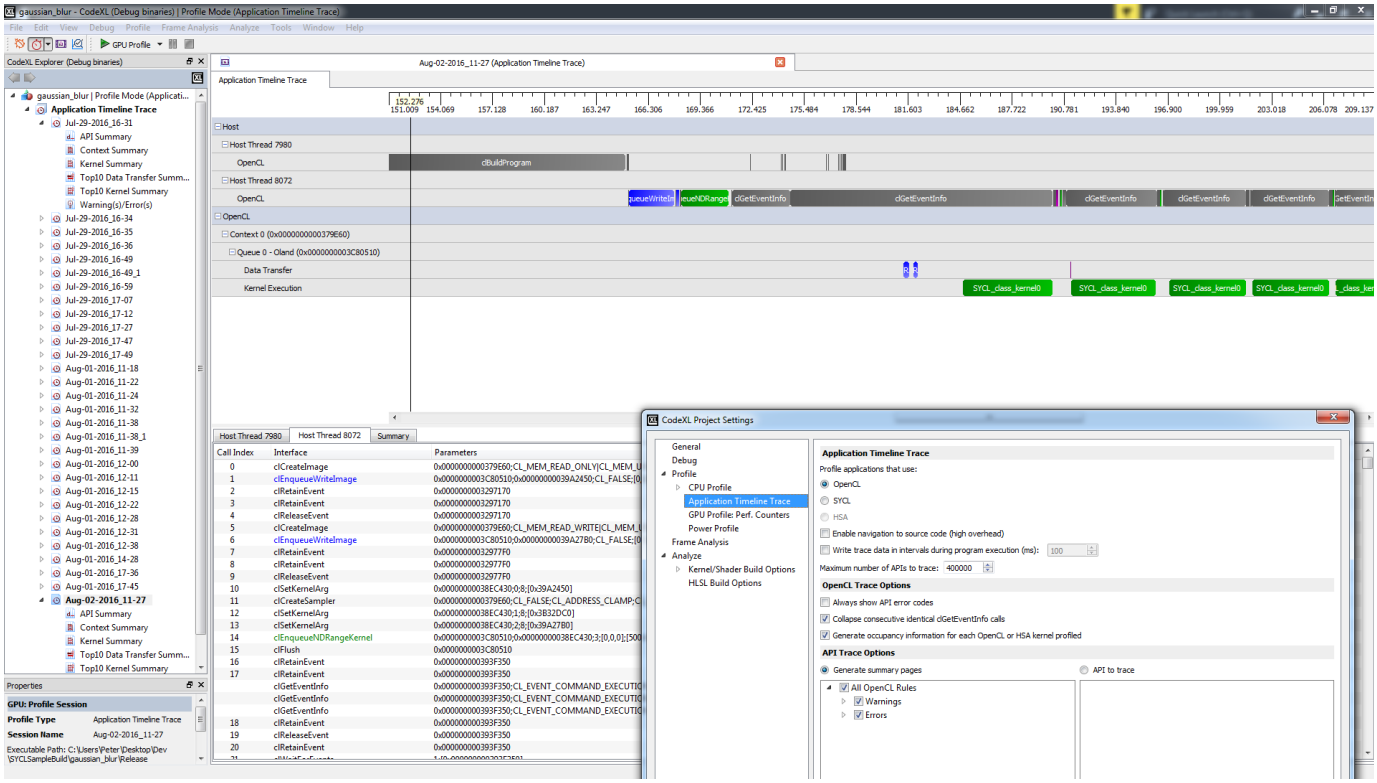
CodeXL - Adding SYCL backend option to project settings

The API we choose to use for tracing is set in project settings Profile Application Timeline Trace using radio buttons. For SYCL, we want to profile using both the OpenCL and SYCL trace agents. We decided to add one radio button called SYCL for choosing both SYCL and OpenCL. We could however separate these out so the user could choose only SYCL, or perhaps another combination of APIs using checkboxes instead.

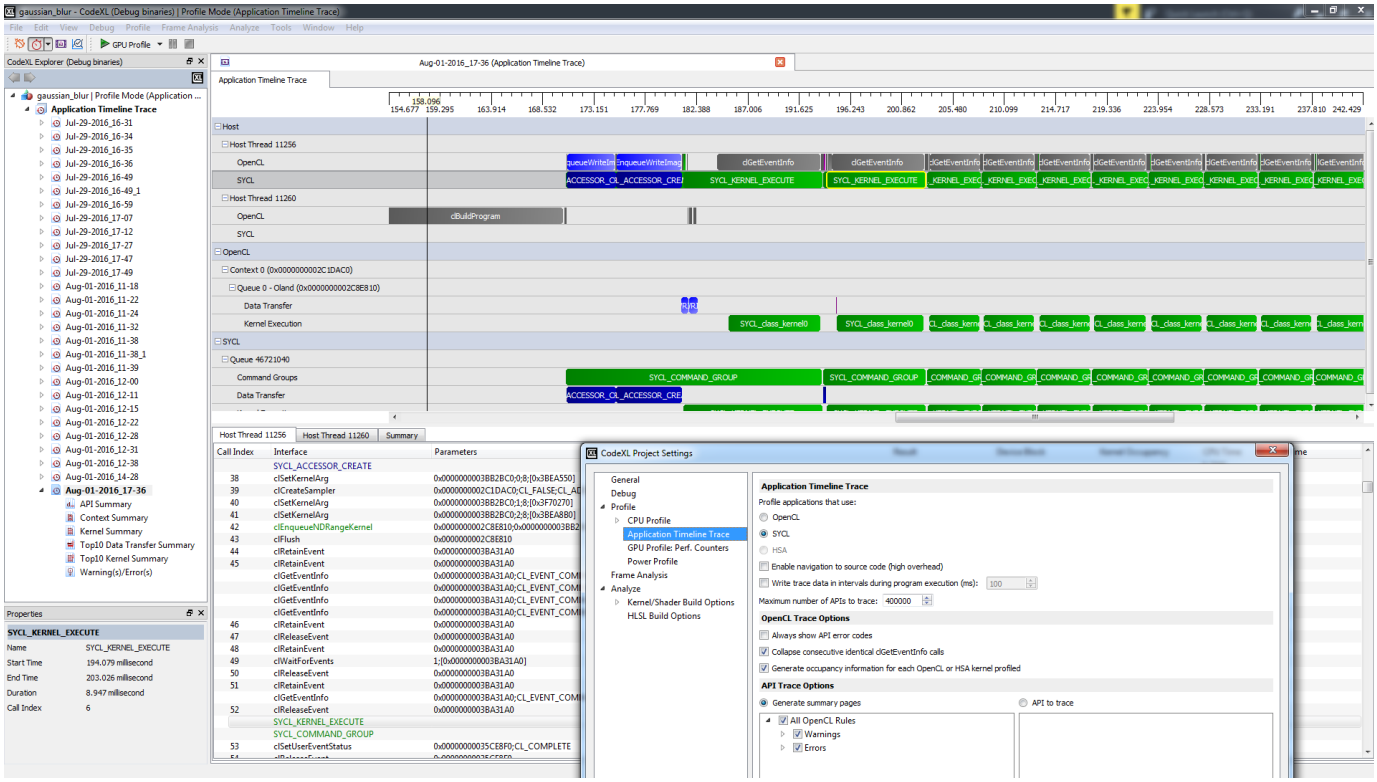
To add the radio button we must modify the OpenCLTraceOptions class in OpenCLTraceSettingPage.h as follows:

1. add a SYCL QRadioButton member alongside the OpenCL and HSA radio buttons
2. initialize button in OpenCLTraceOptions::Initialize()
3. add button to QButtonGroup* pGroup and to pMainLayout (using addWidget) in Initialize()
4. connect button to click event using:
   `rc = connect(m_pSYCLRadioButton, SIGNAL(clicked()), this, SLOT(OnAPITypeRadioButtonToggled()));`
5. connect In RestoreCurrentSettings(), SaveCurrentSettings() and OnAPITypeRadioButtonToggled() if button is selected, set APIToTrace to APIToTrace_SYCL which is defined alongside APIToTrace_HSA and APIToTrace_OPENCL

This now gives us our new radio button in the settings menu below:



If we toggle this on, it will link up with our SYCL backend and display both the OpenCL and SYCL traces:


gaussian_blur - CodeXL (Debug binaries) | Profile Mode (Application Timeline Trace)
CodeXL Explorer (Debug binaries)
Application Timeline Trace
Aug-01-2016_17-36 (Application Timeline Trace)
Host
Host Thread 11256
OpenCL
SYCL
Host Thread 11260
clBuildProgram
Context 0 (0x0000000002C1DAC0)
Queue 0 - Oland (0x0000000002C8E810)
Data Transfer
Kernel Execution
Queue 46721040
Command Groups
SYCL_COMMAND_GROUP
SYCL_KERNEL_EXECUTE
Properties
Name
Start Time
End Time
Duration
Call Index
Call Index
Interface
Parameters
SYCL_ACCESSOR_CREATE
clSetKernelArg
clCreateSampler
clEnqueueNDRangeKernel
clFlush
clRetainEvent
clGetEventInfo
clWaitForEvents
clReleaseEvent
SYCL_KERNEL_EXECUTE
SYCL_COMMAND_GROUP
clSetUserEventStatus
CodeXL Project Settings
General
Debug
Profile
CPU Profile
Application Timeline Trace
GPU Profile: Perf. Counters
Power Profile
Frame Analysis
Analyze
Kernel/Shader Build Options
HLSL Build Options
Application Timeline Trace
Profile applications that use:
OpenCL
SYCL
HSA
Enable navigation to source code (high overhead)
Write trace data in intervals during program execution (ms):
Maximum number of APIs to trace:
OpenCL Trace Options
Always show API error codes
Collapse consecutive identical clGetEventInfo calls
Generate occupancy information for each OpenCL or HSA kernel profiled
API Trace Options
Generate summary pages
API to trace
All OpenCL Rules
Warnings
Errors