# **Testing CodeXL Frame Analysis**

This document covers the steps necessary to test the CodeXL Frame Analysis component.

Version of CodeXL Tested: <http://bdclin64-gdt-jenkins:8080/view/CodeXL%202.0/job/CodeXL/11229/>

Driver: \\amd.com\swblds\devonly\build\1601281900\16.15\16.15\_BR230356\

Radeon Software Version - 15.11

Radeon Software Edition - Crimson

Graphics Chipset - AMD Radeon R9 200 Series

Memory Size - 2048 MB

Memory Type - GDDR5

Core Clock - 965 MHz

Windows Version - Windows 10 (64 bit)

System Memory - 16 GB

CPU Type - AMD FX(tm)-8350 Eight-Core Processor

## **How we are testing at BDC**

1. We run the games in windowed mode and do local debugging.
2. Make sure that the Steam overlay is turned off in the Steam settings. The GraphicsAnalyzer will not work with the overlay enabled.
3. Turn auto-attach OFF in the project settings as attaching too early can cause the games to crash.
4. Let the game fully load into a rendering scene before attaching the (using the process dialog).

## **How to Test Standalone applications**

1. Start CodeXL and select from the File menu Create a New Project
2. Give the project a title (although CodeXL will change the title on you)
3. Browse to the application folder and select the executable
4. Some applications should be started with command line options, this will be documented with the application list, other just click OK
5. Depending on the application you may also need to edit the project setting to disable the automatic connection to the application. The application list will document this.
6. Click on the red square icon (this is the frame analysis icon)
7. Click on the green triangle (Run Local).
   1. At this point, CodeXL will start the application and after some time you will see a copy of the application view getting updated about once a second.
   2. Make sure the text above the image is indicating some frame rate. This text is an indication of whether there are any frames to capture or not.
8. Click on the Capture icon (either in the toolbar of CodeXL or in the Frame Analysis pane)
   1. After a delay, you should see a copy of the captured frame on the right hand side, while in the middle the images will continue to update.
9. Click on the Stop icon
   1. A new Frame Analysis session folder should appear in the project explorer pane.
10. Expand the session folders till you see Timeline and Image
11. Double click on the Timeline (or right click, select Open timeline)
    1. CodeXL should open a tab with the analysis timeline
    2. Make sure you can navigate the time line, expand or contract the visible time
    3. Make sure there are both CPU and GPU threads displayed
12. Double click on the Image (or right click, select Open image)
    1. CodeXL should open a tab with a copy of the captured frame image

This is the basics for doing the frame analysis capture

## **How to Test Steam, Origin, and Uplay games**

1. Follow steps 1-3 as above, however instead of specifying the target application, specify Steam.exe, Origin.exe, or Uplay.exe executable as the application.
2. You must set the project to NOT automatically connect (project settings)
3. Click on the Frame Analysis icon (red square) – you may not need to do this each time – just sure that you are in FrameAnalyzer mode.
4. Click on the Run Local icon (green triangle)
   1. CodeXL will start the application and display a dialogue for connecting. Do NOT connect at this time
5. Go to Steam (or Origin or Uplay) application and start the game to be tested.
   1. The connect dialog will update with more process
   2. Wait for the game application to be visible before trying to connect
6. You should be able to follow steps 7-12 once you are connected to the game application.

## **Verification points**

When testing Frame Analysis, the following features require verification:

1. The application is runnable – we don’t always get runnable bits for some reason
2. The application can be started by CodeXL
3. CodeXL can connect to the application
   1. Automatic where application supports it
   2. Can manually connect to all applications
4. Capture 3 frames
5. Stop the capture session
6. Open the timeline
7. Navigate the timeline
8. CPU and GPU threads visible
9. Open the image
10. Rerun Frame Analysis
    1. Without exiting CodeXL, close the timeline and image tabs and click on Run Local again
    2. This should produce another session that can be examined just like the previous one
11. Delete Sessions
    1. Known bug: Sessions are not deleted from the server, but removed from CodeXL display. If you re-open the project, the sessions reappear.
12. Import Sessions – just exit CodeXL and start it again
    1. Open the saved frame analysis project. You should see all previous session
    2. Open the timeline from any session
    3. Open the image from any session

We have a spreadsheet for reporting test results done at BDC, the current version is in Perforce at:

//devtools/main/CodeXL/Documents/DX12FrameAnalysisTestResults.xlsx