

---

## 1 Overview

**1.1 Location** `$<APPSDKSamplesInstallPath>\samples\opencv\`

**1.2 How to Run** See the *Getting Started* guide for how to build samples. You first must compile the sample.

Use the command line to change to the directory where the executable is located. The pre-compiled sample executable is at `$<APPSDKSamplesInstallPath>\samples\opencv\bin\x86\` for 32-bit builds, and `$<APPSDKSamplesInstallPath>\samples\opencv\bin\x86_64\` for 64-bit builds.

Type the following command(s).

1. `OpenCV-CLIntro`  
This command runs the program with the default options.

## 2 Introduction

This introductory sample demonstrates how to use OpenCV and OpenCV-CL functions in an OpenCV program. The OpenCL support has been added to the OpenCV library, allowing users to accelerate their OpenCV programs by using OpenCL kernels on an AMD GPU.

## 3 Implementation Details

This example uses image filters to introduce OpenCV-CL. The overloaded “=” operator supports copying from an OpenCV matrix (or CPU) to an OpenCV-CL matrix (or GPU), and vice versa.

To demonstrate Morphology using the `cv::ocl::` functions, the `cv::ocl::erode` and `cv::ocl::dilate` functions are applied on the input image and the results are subtracted using the overloaded “-” operator.

Box Filter and Laplacian Filter can be run on AMD GPUs by using the OpenCV-CL APIs, `cv::ocl::boxFilter` and `cv::ocl::Laplacian` functions. The results are validated by running the same filters on the CPU by using the OpenCV APIs, `cv::boxFilter` and `cv::Laplacian`. The `NORM_INF` of the results obtained by using the OpenCV-CL functions and the OpenCV functions is calculated.

---

**Contact**

Advanced Micro Devices, Inc.  
One AMD Place  
P.O. Box 3453  
Sunnyvale, CA, 94088-3453  
Phone: +1.408.749.4000

For AMD Accelerated Parallel Processing:  
URL: [developer.amd.com/appsdk](http://developer.amd.com/appsdk)  
Developing: [developer.amd.com/](http://developer.amd.com/)  
Support: [developer.amd.com/appsdksupport](http://developer.amd.com/appsdksupport)  
Forum: [developer.amd.com/openclforum](http://developer.amd.com/openclforum)



The contents of this document are provided in connection with Advanced Micro Devices, Inc. ("AMD") products. AMD makes no representations or warranties with respect to the accuracy or completeness of the contents of this publication and reserves the right to make changes to specifications and product descriptions at any time without notice. The information contained herein may be of a preliminary or advance nature and is subject to change without notice. No license, whether express, implied, arising by estoppel or otherwise, to any intellectual property rights is granted by this publication. Except as set forth in AMD's Standard Terms and Conditions of Sale, AMD assumes no liability whatsoever, and disclaims any express or implied warranty, relating to its products including, but not limited to, the implied warranty of merchantability, fitness for a particular purpose, or infringement of any intellectual property right.

AMD's products are not designed, intended, authorized or warranted for use as components in systems intended for surgical implant into the body, or in other applications intended to support or sustain life, or in any other application in which the failure of AMD's product could create a situation where personal injury, death, or severe property or environmental damage may occur. AMD reserves the right to discontinue or make changes to its products at any time without notice.

**Copyright and Trademarks**

© 2013 Advanced Micro Devices, Inc. All rights reserved. AMD, the AMD Arrow logo, ATI, the ATI logo, Radeon, FireStream, and combinations thereof are trademarks of Advanced Micro Devices, Inc. OpenCL and the OpenCL logo are trademarks of Apple Inc. used by permission by Khronos. Other names are for informational purposes only and may be trademarks of their respective owners.