

MENU



Getting Started in Linux with Intel® SDK for OpenCL™ Applications

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Translate



This article is a step by step guide to quickly get started developing using Intel® SDK for OpenCL™ Applications with the Linux SRB5 driver package. The OpenCL driver is a prerequisite for using the GPU capabilities of Intel® Computer Vision SDK or Intel® Deep Learning Deployment Toolkit.

1. Install the driver
2. Install the SDK
3. Set up Eclipse

For SRB4.1 instructions, please see <https://software.intel.com/en-us/articles/sdk-for-opencl-gsg-srb41>.
(<https://software.intel.com/en-us/articles/sdk-for-opencl-gsg-srb41>)

Step 1: Install the driver

[This script \(/file/555660/download Edit\)](#) covers the steps needed to install the SRB5 driver package in Ubuntu 14.04, Ubuntu 16.04, CentOS 7.2, and CentOS 7.3.

To use

```
1 $ mv install_OCL_driver.sh.txt install_OCL_driver.sh
2 $ chmod 755 install_OCL_driver.sh
3 $ sudo su
4 $ ./install_OCL_driver.sh install
```

The script automates downloading the driver package, installing prerequisites and user-mode components, patching the 4.7 kernel, and building it.

Experimental: [this version of the script \(/file/593325/download\)](#) has an option to skip the kernel patch/rebuild step. For newer kernels, such as the 4.8 default kernel for Ubuntu 16.04, nearly all of OpenCL passes basic smoke tests.

You can check your progress with the [System Analyzer Utility \(https://software.intel.com/en-us/articles/mss-sys-analyzer-linux\)](https://software.intel.com/en-us/articles/mss-sys-analyzer-linux). If successful, you should see smoke test results looking like this at the bottom of the the system analyzer output:

Component Smoke Tests:

[OK] OpenCL check:platform:Intel(R) OpenCL GPU OK CPU OK

Experimental installation without kernel patch or rebuild:

If using Ubuntu 16.04 with the default 4.8 kernel you may be able to skip the kernel patch and rebuild steps. This configuration works fairly well but several features (i.e. OpenCL 2.x device-side enqueue and shared virtual memory, VTune GPU support) require patches. Install without patches has been "smoke

test" validated to check that it is viable to suggest **for experimental use only**, but it is not fully supported or certified.

Step 2: Install the SDK

[This script \(/file/555661/download\)](#) will set up all prerequisites for successful SDK install for Ubuntu.

```
1 $ mv install_SDK_prereq_ubuntu.sh_.txt install_SDK_prereq_ubuntu.sh
2 $ sudo su
3 $ ./install_SDK_prereq_ubuntu.sh
```

After this, run the SDK installer.

Here is a kernel to test the SDK install:

```
1 __kernel void simpleAdd(
2     __global int *pA,
3     __global int *pB,
4     __global int *pC)
5 {
6     const int id = get_global_id(0);
7     pC[id] = pA[id] + pB[id];
8 }
```

Check that the command line compiler ioc64 is installed with

```
01 $ ioc64 -input=simpleAdd.cl -asm
02
03 (expected output)
04 No command specified, using 'build' as default
05 OpenCL Intel(R) Graphics device was found!
06 Device name: Intel(R) HD Graphics
07 Device version: OpenCL 2.0
08 Device vendor: Intel(R) Corporation
```

```
09 Device profile: FULL_PROFILE
10 fcl build 1 succeeded.
11 bcl build succeeded.
12
13 simpleAdd info:
14     Maximum work-group size: 256
15     Compiler work-group size: (0, 0, 0)
16     Local memory size: 0
17     Preferred multiple of work-group size: 32
18     Minimum amount of private memory: 0
19
20 Build succeeded!
```

Step 3: Set up Eclipse

Intel SDK for OpenCL applications works with Eclipse [Mars \(http://www.eclipse.org/mars/\)](http://www.eclipse.org/mars/) and [Neon \(http://www.eclipse.org/neon/\)](http://www.eclipse.org/neon/).

After installing, copy the CodeBuilder*.jar file from the SDK eclipse-plugin folder to the Eclipse dropins folder.

```
1 $ cd eclipse/dropins
2 $ find /opt/intel -name 'CodeBuilder*.jar' -exec cp {} . \;
```

Start Eclipse. Code-Builder options should be available in the main menu.

For more complete information about compiler optimizations, see our [Optimization Notice \(/en-us/articles/optimization-notice#opt-en\)](#).

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