
The AMD APP SDK 2.9.1 installer is delivered as a self-extracting installer for 32-bit and 64-bit systems in both Windows and Linux.

1 Overview

The AMD APP SDK is provided to the developer community to accelerate the programming in a heterogeneous environment. The package consists of samples that serve as examples for a wide class of developers on different facets of heterogeneous programming.

The AMD APP SDK package contains the runtime for CPU hardware only. The GPU runtime is included in the Catalyst driver.

The AMD APP SDK installer installs the following components on your system:

1. AMD APP SDK CPU Runtime.
2. AMD APP SDK Developer components. This includes:
 - the OpenCL™ compiler
 - pointers to the latest versions of the developer documentation, including to the AMD Math Libraries.
3. AMD APP SDK Samples. This includes:
 - sample applications
 - sample documentation.

The AMD APP SDK Developer component includes the following folders:

- `bin` - This includes tools for compiling OpenCL applications, as well as the OpenCL dynamic library for running them.
- `lib` - This contains the base OpenCL CPU runtime library to which the applications link on Windows systems.
- `include` - This contains the header files for the OpenCL runtime.
- `docs` - This contains developer documentation for the AMD APP SDK. Additional developer documentation is available online at: <http://developer.amd.com/tools-and-sdks/opencl-zone/opencl-tools-sdks/amd-accelerated-parallel-processing-app-sdk/documentation/amd-app-documentation/>.

The AMD APP SDK Samples component includes the following:

- A `samples` folder containing sample applications for OpenCL, C++ AMP, Bolt, Aparapi, and OpenCV. It also contains prebuilt binaries of the samples under the corresponding sample category directory. For example: OpenCL sample prebuilt binaries are under `openccl/bin/x86_64/`.
- `<<APP SDK Installation Path>>/bin` folder containing dynamic libraries required for running APP SDK samples.
- `<<APP SDK Installation Path>>/include/SDKUtil` folder containing header files that contain the utility functions used by the SDK samples.

The AMD APP SDK installer adds the variable `AMDAPPSDKROOT` to your environment. This points to the location where CPU run-time files are installed. The sample applications are installed to the path specified during the installation or to the default path. The installer also adds the locations of the OpenCL dynamic libraries to the system `PATH` variable on Windows and to `LD_LIBRARY_PATH` on Linux so that applications know where to find it.

2 Prerequisites

To install and run the AMD APP SDK v2.9.1, ensure the following:

- You have installed the latest version of the AMD Catalyst™ driver on your system to take advantage of the AMD GPU's capabilities with OpenCL™. The samples can be run without the Catalyst driver, in which case they will rely on the CPU runtime.
- Bolt and OpenCV samples require precompiled binaries and require the Environment variable path to be set. For details about the setup for BOLT and OpenCV, see the AMD APP SDK Getting Started Guide.
- On Windows, you require:
 - Administrative privileges
 - One of the following: Windows 8.1, Windows 8, or Windows 7
 - For running the pre-built samples, the Microsoft Visual Studio 2012 redistributable must be installed.
 - Optionally (for building the Microsoft Visual Studio projects): Microsoft Visual Studio 2010, Microsoft Visual Studio 2012, or Microsoft Visual Studio 2013.
 - To build Bolt samples, you require Microsoft Visual Studio 2010 or Microsoft Visual Studio 2012.
 - DirectX samples require the installation of the Microsoft DirectX SDK (June 2010). The SDK can be downloaded from <http://www.microsoft.com/en-us/download/details.aspx?id=6812>
 - C++AMP samples require Microsoft Visual Studio 2012 or higher.

3 Installing the SDK

3.1 On Windows Systems

Starting with APP SDK 2.9, multiple versions of APP SDK releases can co-exist on Windows. Installing a new version does not require uninstalling the previous version.

The only caveat, however, is that the `AMDAPPSDKROOT` environment variable will point to the OpenCL runtime binaries of the latest release installed. If samples from the previous releases are to be used, they must be compiled and validated to build correctly with the latest runtimes. If issues occur, developers can point `AMDAPPSDKROOT` to the earlier version of the OpenCL runtime in order to compile and run samples from previous releases.

1. Choose the AMD APP SDK executable appropriate for your system, and double-click it.
 - Based on the type of installer, for 32-bit Windows 8.1 and Windows 7 SP1 systems, choose
 - Standalone Installer:** `AMD-APP-SDK-v2.9-1.x.y-Windows-32.exe`.
 - Offline Unified Installer:** `AMD-UnifiedSDKInstaller-v1.0-1.x-windows-FULL-x32.exe`
 - Web Unified Installer:** `AMD-UnifiedSDKInstaller-v1.0-1.x-windows-WEB-x32.exe`
 - Based on the type of installer, for 64-bit Windows 8.1 and Windows 7 SP1 systems, choose
 - Standalone Installer:** `AMD-APP-SDK-v2.9-1.x.y-Windows-64.exe`.
 - Offline Unified Installer:** `AMD-UnifiedSDKInstaller-v1.0-1.x-windows-FULL-x64.exe`
 - Web Unified Installer:** `AMD-UnifiedSDKInstaller-v1.0-1.x-windows-WEB-x64.exe`

The InstallShield Wizard screen appears. Click "Next". The End User License Agreement appears. Click Accept and Click "Next".

2. The screen lets you choose the type of installation. Complete installation installs the following components:
 - AMD APP SDK 2.9.1 CPU Runtime
 - AMD APP SDK 2.9.1 Developer components
 - AMD APP SDK 2.9.1 Samples

CPU Runtime and Developer packages are installed to the default location (`AMDAPPSDKROOT`) and Samples are installed to the default ("C:\Users*<user-name>*\AMD APP SDK\2.9-1") location.

Custom installation installs the CPU Runtime and Developer packages and lets you select the type of samples to install.

If you select Custom, continue with Step 3. If you select Complete, skip to Step 4.

3. In the Custom installation wizard, developers can either select all the samples or pick and select a specific category of samples such as OpenCL, Bolt, C++AMP, APARAPI and/or OpenCV-CL samples. Select the component(s) you want to install, and click Next.

4. Click "install" and a progress bar appears, followed by a confirmation screen that the installation is complete. Click Finish to complete the installation.

`clinfo.exe` is copied under `C:\windows\system32\`.

Manually Setting Environment Variables

If your environment variables become corrupted, ensure the proper settings for the following.

The `AMDAPPSDKROOT` variable must be set to:

```
C:\Program Files\AMD APP SDK\2.9-1 (for 32-bit systems)
C:\Program Files (x86)\AMD APP SDK\2.9-1 (for 64-bit systems)
```

If the default configuration was not used, modify the value to the location specified during the installation.

The path variable must include:

```
$(AMDAPPSDKROOT)\bin\x86 (for 32-bit systems)
$(AMDAPPSDKROOT)\bin\x86_64 (for 64-bit systems)
```

3.2 On Linux Systems

On Linux systems, new APP SDK installation requires uninstalling any previous version of the APP SDK. On Linux systems, the co-existence of SDK releases is not currently supported.

Starting with AMD APP SDK 2.9.1, on Linux systems, APP SDK can be installed in root mode as well as in non-root mode.

3.2.1 Installing in Root mode

1. Untar the SDK to a location of your choice.

For 32-bit systems, unzip the `.tar.bz2` file by entering:

```
tar -xvjf AMD-APP-SDK-linux-v2.9-1.x.y_x86.tar.bz2
```

For 64-bit systems, unzip the `.tar.bz2` file by entering:

```
tar -xvjf AMD-APP-SDK-linux-v2.9-1.x.y_x64.tar.bz2
```

2. Run `sudo ./AMD-APP-SDK-v2.9-1.x.y-linux64.sh` for 64-bit systems.

Run `sudo ./AMD-APP-SDK-v2.9-1.x.y-linux32.sh` for 32-bit systems.

3. Installation succeeds and completes the following:

- a. Sets and exports `AMDAPPSDKROOT` to the APP SDK installation path via `/etc/profile.d/AMDAPPSDK.sh`.
- b. If Catalyst is is not installed:
 - Registers the OpenCL Installable Client Driver (ICD) via `/etc/OpenCL/vendors`.
 - Sets and exports `LD_LIBRARY_PATH` to the OpenCL library path via `/etc/profile.d/AMDAPPSDK.sh`.

These changes are reflected to all the users.

- c. Installs the Linux APP SDK sample files and binaries by default under `/opt/AMDAPPSDK-2.9-1/`.
 - d. Installs the Linux APP SDK CPU runtime files under `/opt/AMDAPPSDK-2.9-1/lib`.
4. To change or update the environment variables:
 - i. Open `/etc/profile.d/amdappsdk.sh`, and then verify and update the `AMDAPPSDKROOT` and `LD_LIBRARY_PATH` settings.
 - ii. Verify and update `/etc/ld.so.conf.d/amdapp_x86.conf` and `/etc/ld.so.conf.d/amdapp_x86_64.conf`.

The installation log file is created under the `$HOME/AMDAPPSDK-2.9-1/` directory.

3.2.2 Installing in non-Root mode

1. Untar the SDK to a location of your choice.
For 32-bit systems, unzip the .tar.bz2 file by entering:

```
tar -xvjf AMD-APP-SDK-linux-v2.9-1.x.y_x86.tar.bz2
```


For 64-bit systems, unzip the .tar.bz2 file by entering:

```
tar -xvjf AMD-APP-SDK-linux-v2.9-1.x.y_x64.tar.bz2
```
2. Run `./AMD-APP-SDK-v2.9-1.x.y-linux64.sh` for 64-bit systems.
Run `./AMD-APP-SDK-v2.9-1.x.y-linux32.sh` for 32-bit systems.
3. Select a path to install the AMD APP SDK into or continue with the default path.
4. Installation succeeds and completes the following:
 - a. Sets and exports `AMDAPPSDKROOT` to the APP SDK installation path via `$HOME/.bashrc`.
 - b. If Catalyst is not installed:
 - Registers the OpenCL Installable Client Driver (ICD) under `<APPSDKInstallationPath>/etc/`.
 - Sets and exports `LD_LIBRARY_PATH` to the OpenCL library path via `$HOME/.bashrc`.
 - c. Installs the Linux APP SDK sample files and binaries under the installation path selected.
 - d. Installs the Linux APP SDK CPU runtime files.
5. To change or update the environment variables, open `$HOME/.bashrc`. Verify and update the `AMDAPPSDKROOT` and `LD_LIBRARY_PATH` settings.

The installation log file is created under the `$HOME/AMDAPPSDK-2.9-1/` directory.

4 Modifying and Uninstalling APP SDK Components

4.1 On Windows Systems

Starting with APP SDK 2.9, the installer allows you to modify or repair an already-installed APP SDK samples package.

4.1.1 Modify or Repair APP SDK samples

- Step 1. On the Windows Start menu, go to "Control Panel" ->"Programs and Features".
- Step 2. For the standalone installer, select "AMD APP SDK 2.9-1", and click Uninstall.
For the unified installer, select "AMD Unified Install Manager 1.0-1", and click Uninstall.
- Step 3. Select the Modify option and click Next.
- Step 4. Add and/or remove components as needed.
- Step 5. Click Next and complete the installation.

The steps for repairing samples are similar to the steps mentioned above. In Step 3, select the Repair option instead of the Modify option.

4.1.2 Uninstall APP SDK samples

This action will remove the CPU Runtime, Developer packages, and Sample packages.

- Step 1. On the Windows Start menu, go to "Control Panel" ->"Programs and Features".
- Step 2. For the standalone installer, select "AMD APP SDK 2.9-1", and click Uninstall.
For the unified installer, select "AMD Unified Install Manager 1.0-1", and click Uninstall.
- Step 3. Select the Uninstall option and click Next.
- Step 4. Complete the uninstall steps.

Note: To uninstall any previous AMD APP SDK version, follow the steps outlined in the AMD APP SDK Installation Notes guide corresponding to that AMD APP SDK version.

4.2 On Linux Systems

1. Delete the directory pointed to by the `AMDAPPSDKROOT` environment variable.
2. If installed with non-root mode:
 - i. Delete the `AMDAPPSDKROOT` and `OPENCL_VENDOR_PATH` environment variables from the `.bashrc` file in the home directory.
 - ii. Delete the entry for the OpenCL library path set in the `LD_LIBRARY_PATH` environment variable from the `.bashrc` file in the home directory.
 - iii. Remove the soft link for `clinfo` present in the `/home/<user>/bin` folder.

3. If installed with Root mode:
 - i. Delete the `amd*` files from the directories in `/etc/profile.d/` and `/etc/ld.so.conf.d/`.
 - ii. If the Catalyst driver is not installed:
Delete `amdocl32.so/amdocl64` from `/etc/OpenCL/vendors`.
Remove the soft link for `clinfo` present in the `/usr/bin` folder.

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