
ROCdbgapi Documentation

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Advanced Micro Devices, Inc.

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The AMD Debugger API (ROCdbgapi) is a library that provides support for a debugger and other tools to perform low-level control of the running code and inspection of the running state of AMD commercially available GPU architectures.

The code is open and hosted at <https://github.com/ROCm/ROCdbgapi>

Install

- *Building ROCdbgapi*

The documentation is structured as follows:

Reference

- *ROCdbgapi API specification*
- *Support and limitations*

To contribute to the documentation, refer to [Contributing to ROCm](#).

You can find licensing information on the [Licensing](#) page.

BUILDING ROCDBGAPI

This topic provides information required to build and install ROCdbgapi.

1.1 System requirements

- AMD ROCm-supported platform. See the list of [supported operating systems](#).
- A C++17 compiler such as GCC 7 or Clang 5.
- AMD Code Object Manager Library (ROCcomgr). Install this library (`libamd_comgr.so.1`) using the `comgr` package included in the AMD ROCm release.
- To enable AMD GPU debugging, load the ROCr library. Install this library (`libhsa-runtime64.so.1`) as part of the AMD ROCm release using the `hsa-rocr-dev` package.
- [ROCm CMake](#) module. Install this module using the `rocm-cmake` package included in AMD ROCm.
- Add the given packages according to the OS:

Ubuntu

```
apt install gcc g++ make cmake doxygen graphviz texlive-full
```

RHEL

```
yum install -y gcc gcc-g++ make cmake doxygen graphviz texlive \  
texlive-xtab texlive-multirow texlive-sectsty texlive-tocloft \  
texlive-tabu texlive-adjustbox
```

SLES

```
zypper in gcc gcc-g++ make cmake doxygen graphviz texlive-scheme-medium \  
texlive-hanging texlive-stackengine texlive-tocloft texlive-etoc \  
texlive-tabu
```

Note

For OS-specific issues, see [Troubleshooting](#).

An example command line to build the ROCdbgapi library on Linux:

```
cd rocdbgapi
mkdir build
cd build
cmake -DCMAKE_BUILD_TYPE=Release -DCMAKE_INSTALL_PREFIX=./install ..
make
```

You can specify the path using the CMAKE_INSTALL_PREFIX parameter.

The built ROCdbgapi library is placed in:

- build/include/amd-dbgapi.h
- build/librocm-dbgapi.so*

1.2 Building documentation

An example command line to generate the HTML and PDF library documentation:

```
make doc
```

The generated ROCdbgapi library documentation is placed in:

- doc/html/index.html
- doc/latex/refman.pdf

1.3 Installing ROCdbgapi

To install the ROCdbgapi library and documentation, use:

```
make install
```

The installed ROCdbgapi library and documentation are placed in:

- ../install/include/amd-dbgapi.h
- ../install/lib/librocm-dbgapi.so*
- ../install/share/amd-dbgapi/LICENSE.txt
- ../install/share/amd-dbgapi/README.md
- ../install/share/html/amd-dbgapi/index.html
- ../install/share/doc/amd-dbgapi/amd-dbgapi.pdf

1.4 Running ROCdbgapi

The ROCdbgapi library has an optional runtime dependency on the amdgpu.ids database file, located in /opt/amdgpu/share/libdrm/amdgpu.ids or /usr/share/libdrm/amdgpu.ids.

The libdrm-amdgpu-common ROCm package provides the /opt/amdgpu/share/libdrm/amdgpu.ids database on all distributions.

The following packages provide /usr/share/libdrm/amdgpu.ids:

- SLES: libdrm-amdgpu
- RHEL: libdrm

- Debian and Ubuntu: `libdrm-common`

1.5 Troubleshooting

- ROCdbgapi might become unresponsive in SELinux-enabled distributions. To learn more about this issue, see [installation troubleshooting](#).
- The `doxygen` 1.8.14 installed by RHEL 8.1 has a bug that prevents PDF creation. To avoid this issue, build `doxygen` 1.8.11 from source.

AMD DEBUGGER API

2.1 Modules

2.2 Data Structures

2.2.1 Data Structures

2.2.2 Data Structure Index

2.2.3 Data Fields

Data Fields

Data Fields - Variables

2.3 Files

2.3.1 File List

2.3.2 Globals

All

Globals

Globals

Globals

Globals

Globals

Enumerator

Globals

Globals

Globals

SUPPORT AND LIMITATIONS

Refer to the following sections in the *ROCdbgapi API Specification* documentation for:

- Supported AMD GPU architectures
- Known limitations and restrictions

The ROCdbgapi library is compatible with the following interface versions:

- **AMD GPU driver version**
 - See `KFD_IOCTL_MAJOR_VERSION` and `KFD_IOCTL_MINOR_VERSION` in `src/linux/kfd_ioctl.h`, which conforms to [semver](#).
- **AMD GPU driver debug ioctl version**
 - See `KFD_IOCTL_DBG_MAJOR_VERSION` and `KFD_IOCTL_DBG_MINOR_VERSION` in `src/linux/kfd_ioctl.h`, which conforms to [semver](#).
- **ROCm runtime r_debug ABI version**
 - See `ROCR_RDEBUG_VERSION` in `src/rocr_rdebug.h`.
- **Architectures and firmware versions**
 - See `s_gfxip_lookup_table` in `src/os_driver.cpp`.

LICENSE

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