



# Additional Definitions for the OpenMP API Specification

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# 1 OpenMP Context Definitions

This chapter describes additional values for OpenMP contexts that compliant implementations must support, as stated in Section “OpenMP Context” of the OpenMP specification. The following definitions are required since OpenMP 5.1.

## 1.1 Additional *kind-name* Values

Table 1.1 describes the *kind-name* values that can be used in the **kind** trait of the OpenMP context in addition to the **host** and **nohost** values.

**TABLE 1.1:** Additional *kind-name* values

<i>kind-name</i>	Description
<b>cpu</b>	A parallel device optimized for general computation
<b>gpu</b>	A massively parallel throughput device
<b>fpga</b>	A reconfigurable computational device

## 1.2 Supported *vendor-name* Values

Table 1.2 describes the *vendor-name* values that can be used in the **vendor** trait in the OpenMP context and their correspondence to the represented organization.

**TABLE 1.2:** Additional *vendor-name* values

id	<i>vendor-name</i>	Organization
0	<b>unknown</b>	Any other than those listed below
1	<b>amd</b>	Advanced Micro Devices, Inc.
2	<b>arm</b>	Arm Limited

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<i>id</i>	<i>vendor-name</i>	<b>Organization</b>
3	<b>bsc</b>	Barcelona Supercomputing Center
4	<b>fujitsu</b>	Fujitsu Limited
5	<b>gnu</b>	GNU Project
6	<b>hpe</b> or <b>cray</b>	Hewlett Packard Enterprise
7	<b>ibm</b>	IBM Corporation
8	<b>intel</b>	Intel Corporation
9	<b>llvm</b>	LLVM Foundation
10	<b>nec</b>	NEC Corporation
11	<b>nvidia</b>	NVIDIA Corporation
12	<b>ti</b>	Texas Instruments

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# 2 OpenMP Interoperability Definitions

## 2.1 Foreign Runtime Environment Values

This chapter accompanies the “OpenMP Foreign Runtime Identifiers” section of the OpenMP specification. The following definition exist since OpenMP 5.1, except for “hsa” that was added for OpenMP 6.0.

Table 2.1 and Table 2.2 describe the *foreign-runtime-id* values that can be used in the **interop** directive.

**TABLE 2.1:** Interop foreign runtime ids, names to be used as string literals for same, and their associated concrete data types for **targetsync** and **device\_context** properties

<i>foreign-runtime-ids</i>		data types	
id	name	<b>targetsync</b>	<b>device_context</b>
1	cuda	<b>cudaStream_t</b>	N/A
2	cuda_driver	<b>CUstream</b>	<b>CUcontext</b>
3	opencl	<b>cl_queue</b>	<b>cl_context</b>
4	sycl	<b>cl::sycl::queue</b>	<b>cl::sycl::context</b>
5	hip	<b>hipStream_t</b>	<b>hipCtx_t</b>
6	level_zero	<b>ze_command_queue_handle_t</b>	<b>ze_context_handle_t</b>
7	hsa	<b>hsa_queue_t *</b>	N/A

**TABLE 2.2:** Interop foreign runtime ids, names to be used as string literals for same, and their associated concrete data types for device and platform properties

<i>foreign-runtime-ids</i>		data types	
id	name	<b>device</b>	<b>platform</b>
1	cuda	<b>int</b>	N/A
2	cuda_driver	<b>CUdevice</b>	N/A

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<i>foreign-runtime-ids</i>		data types	
id	name	device	platform
3	opencl	<b>cl_device</b>	<b>cl_platform</b>
4	sycl	<b>cl::sycl::device</b>	<b>cl::sycl::platform</b>
5	hip	<b>hipDevice_t</b>	N/A
6	level_zero	<b>ze_device_handle_t</b>	<b>ze_driver_handle_t</b>
7	hsa	<b>hsa_agent_t *</b>	N/A

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