

# AMD ROCm<sup>TM</sup>

# HIP-Supported CUDA API Reference Guide

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# Chapter 1 HIP-Supported CUDA API

This reference guide consists of CUDA APIs supported in HIP and covers the Driver API, Runtime API, cuComplex API, Device API, and APIs for the following supported libraries:

- cuBLAS
- cuRAND
- cuFFT
- cuSPARSE
- cuDNN

#### Note:

- Deprecated APIs are identified and marked in the **D** column.
- Experimental APIs are identified and marked in the **E** column.

For details about HIP APIs, see the HIP API Guide at

https://github.com/RadeonOpenCompute/ROCm/blob/master/AMD-HIP-API-4.5.pdf

## 1.1 CUDA Driver API Supported by HIP

### 1.1.1 CUDA Driver Data Types

CUDA	D	HIP	D	E
CUDA_ARRAY3D_CUBEMAP		hipArrayCubemap		
CUDA_ARRAY3D_DESCRIPTOR		HIP_ARRAY3D_DESCR		
CVID A ARRAYAR DECORPORA		IPTOR		
CUDA_ARRAY3D_DESCRIPTOR_st		HIP_ARRAY3D_DESCR IPTOR		
CUDA_ARRAY3D_DESCRIPTOR_v2		HIP_ARRAY3D_DESCR		
		IPTOR		
CUDA_ARRAY3D_LAYERED		hipArrayLayered		
CUDA_ARRAY3D_SURFACE_LDST		hipArraySurfaceLoadStor e		
CUDA_ARRAY3D_TEXTURE_GATHER		hipArrayTextureGather		
CUDA_ARRAY_DESCRIPTOR		HIP_ARRAY_DESCRIP		
		TOR		
CUDA_ARRAY_DESCRIPTOR_st		HIP_ARRAY_DESCRIP TOR		
CUDA_ARRAY_DESCRIPTOR_v1		HIP_ARRAY_DESCRIP		
		TOR		
CUDA_ARRAY_DESCRIPTOR_v1_st		HIP_ARRAY_DESCRIP TOR		
CUDA_ARRAY_DESCRIPTOR_v2		HIP_ARRAY_DESCRIP TOR		
CUDA_COOPERATIVE_LAUNCH_MULTI		hipCooperativeLaunchMu		
_DEVICE_NO_POST_LAUNCH_SYNC		ltiDeviceNoPostSync		
CUDA_COOPERATIVE_LAUNCH_MULTI		hipCooperativeLaunchMu		
_DEVICE_NO_PRE_LAUNCH_SYNC		ltiDeviceNoPreSync		
CUDA_ERROR_ALREADY_ACQUIRED		hipErrorAlreadyAcquired		
CUDA_ERROR_ALREADY_MAPPED		hipErrorAlreadyMapped		
CUDA_ERROR_ARRAY_IS_MAPPED		hipErrorArrayIsMapped		
CUDA_ERROR_ASSERT		hipErrorAssert		
CUDA_ERROR_CAPTURED_EVENT		hipErrorCapturedEvent		
CUDA_ERROR_CONTEXT_ALREADY_CU RRENT	+	hipErrorContextAlreadyC urrent		
CUDA_ERROR_CONTEXT_ALREADY_IN USE		hipErrorContextAlreadyIn Use		
CUDA_ERROR_CONTEXT_IS_DESTROYE D		hipErrorContextIsDestroy ed		
CUDA_ERROR_COOPERATIVE_LAUNCH		hipErrorCooperativeLaun		
TOO_LARGE CUDA_ERROR_DEINITIALIZED		chTooLarge hipErrorDeinitialized		
CUDA_ERROR_DEINITIALIZED  CUDA ERROR ECC UNCORRECTABLE		hipErrorECCNotCorrecta		
		ble		
CUDA_ERROR_FILE_NOT_FOUND		hipErrorFileNotFound		
CUDA_ERROR_HOST_MEMORY_ALREA DY_REGISTERED		hipErrorHostMemoryAlre adyRegistered		

CUDA	D	HIP	D	E
CUDA_ERROR_HOST_MEMORY_NOT_R		hipErrorHostMemoryNot		
EGISTERED		Registered		
CUDA_ERROR_INVALID_CONTEXT		hipErrorIllegalAddress		
CUDA_ERROR_INVALID_CONTEXT		hipErrorInvalidContext		
CUDA_ERROR_INVALID_DEVICE		hipErrorInvalidDevice		
CUDA_ERROR_INVALID_GRAPHICS_CO NTEXT		hipErrorInvalidGraphicsC ontext		
CUDA_ERROR_INVALID_HANDLE		hipErrorInvalidHandle		
CUDA_ERROR_INVALID_IMAGE		hipErrorInvalidImage		
CUDA_ERROR_INVALID_PTX		hipErrorInvalidKernelFile		
CUDA_ERROR_INVALID_SOURCE		hipErrorInvalidSource		
CUDA_ERROR_INVALID_VALUE		hipErrorInvalidValue		
CUDA_ERROR_LAUNCH_FAILED		hipErrorLaunchFailure		
CUDA_ERROR_LAUNCH_OUT_OF_RESO		hipErrorLaunchOutOfRes		
URCES		ources		
CUDA_ERROR_LAUNCH_TIMEOUT		hipErrorLaunchTimeOut		
CUDA_ERROR_MAP_FAILED		hipErrorMapFailed		
CUDA_ERROR_NOT_FOUND		hipErrorNotFound		
CUDA_ERROR_NOT_INITIALIZED		hipErrorNotInitialized		
CUDA_ERROR_NOT_MAPPED		hipErrorNotMapped		
CUDA_ERROR_NOT_MAPPED_AS_ARRA Y		hipErrorNotMappedAsArr ay		
CUDA_ERROR_NOT_MAPPED_AS_POINT		hipErrorNotMappedAsPoi		
ER		nter		
CUDA_ERROR_NOT_READY		hipErrorNotReady		
CUDA_ERROR_NOT_SUPPORTED		hipErrorNotSupported		
CUDA_ERROR_NO_BINARY_FOR_GPU		hipErrorNoBinaryForGpu		
CUDA_ERROR_NO_DEVICE		hipErrorNoDevice		
CUDA_ERROR_OPERATING_SYSTEM		hipErrorOperatingSystem		
CUDA_ERROR_OUT_OF_MEMORY		hipErrorOutOfMemory		
CUDA_ERROR_PEER_ACCESS_ALREAD Y_ENABLED		hipErrorPeerAccessAlread yEnabled		
CUDA_ERROR_PEER_ACCESS_NOT_ENA BLED		hipErrorPeerAccessNotEn abled		
CUDA_ERROR_PEER_ACCESS_UNSUPPO RTED		hipErrorPeerAccessUnsup ported		
CUDA_ERROR_PRIMARY_CONTEXT_AC TIVE		hipErrorSetOnActiveProc		
CUDA_ERROR_PROFILER_ALREADY_ST ARTED	+	hipErrorProfilerAlreadySt arted		
CUDA_ERROR_PROFILER_ALREADY_ST OPPED	+	hipErrorProfilerAlreadySt opped		
CUDA_ERROR_PROFILER_DISABLED		hipErrorProfilerDisabled		
CUDA_ERROR_PROFILER_NOT_INITIALI ZED	+	hipErrorProfilerNotInitiali zed		
CUDA_ERROR_SHARED_OBJECT_INIT_F AILED		hipErrorSharedObjectInit Failed		

CUDA	D	HIP	D	E
CUDA_ERROR_SHARED_OBJECT_SYMB		hipErrorSharedObjectSym		
OL_NOT_FOUND		bolNotFound		
CUDA_ERROR_STREAM_CAPTURE_IMP		hipErrorStreamCaptureIm		
LICIT		plicit		
CUDA_ERROR_STREAM_CAPTURE_INV		hipErrorStreamCaptureInv		
ALIDATED		alidated		
CUDA_ERROR_STREAM_CAPTURE_ISOL		hipErrorStreamCaptureIso		
ATION		lation		
CUDA_ERROR_STREAM_CAPTURE_MER		hipErrorStreamCaptureMe		
GE		rge		
CUDA_ERROR_STREAM_CAPTURE_UNJ		hipErrorStreamCaptureUn		
OINED		joined		
CUDA_ERROR_STREAM_CAPTURE_UN		hipErrorStreamCaptureUn		
MATCHED		matched		
CUDA_ERROR_STREAM_CAPTURE_UNS		hipErrorStreamCaptureUn		
UPPORTED		supported		
CUDA_ERROR_STREAM_CAPTURE_WR		hipErrorStreamCaptureWr		
ONG_THREAD		ongThread		
CUDA_ERROR_UNKNOWN		hipErrorUnknown		
CUDA_ERROR_UNMAP_FAILED		hipErrorUnmapFailed		
CUDA_ERROR_UNSUPPORTED_LIMIT		hipErrorUnsupportedLimi		
		t		
CUDA_EXTERNAL_MEMORY_BUFFER_		hipExternalMemoryBuffer		
DESC		Desc		
CUDA_EXTERNAL_MEMORY_BUFFER_		hipExternalMemoryBuffer		
DESC_st		Desc_st		
CUDA_EXTERNAL_MEMORY_BUFFER_		hipExternalMemoryBuffer		
DESC_v1		Desc		
CUDA_EXTERNAL_MEMORY_HANDLE_		hipExternalMemoryHandl		
DESC		eDesc		
CUDA_EXTERNAL_MEMORY_HANDLE_		hipExternalMemoryHandl		
DESC_st		eDesc_st		
CUDA_EXTERNAL_MEMORY_HANDLE_		hipExternalMemoryHandl		
DESC_v1		eDesc		
CUDA_EXTERNAL_SEMAPHORE_HAND		hipExternalSemaphoreHa		
LE_DESC		ndleDesc		
CUDA_EXTERNAL_SEMAPHORE_HAND		hipExternalSemaphoreHa		
LE_DESC_st		ndleDesc_st		
CUDA_EXTERNAL_SEMAPHORE_HAND		hipExternalSemaphoreHa		
LE_DESC_v1		ndleDesc		
CUDA_EXTERNAL_SEMAPHORE_SIGNA		hipExternalSemaphoreSig		
L_PARAMS		nalParams		
CUDA_EXTERNAL_SEMAPHORE_SIGNA		hipExternalSemaphoreSig		
L_PARAMS_st		nalParams_st		
CUDA_EXTERNAL_SEMAPHORE_SIGNA		hipExternalSemaphoreSig		
L_PARAMS_v1		nalParams		
CUDA_EXTERNAL_SEMAPHORE_WAIT_		hipExternalSemaphoreWa		
PARAMS		itParams		
CUDA_EXTERNAL_SEMAPHORE_WAIT_		hipExternalSemaphoreWa		
PARAMS_st		itParams_st		
CUDA_EXTERNAL_SEMAPHORE_WAIT_		hipExternalSemaphoreWa		
PARAMS_v1		itParams		

CUDA	D	HIP	D	E
CUDA_HOST_NODE_PARAMS		hipHostNodeParams		
CUDA_HOST_NODE_PARAMS_st		hipHostNodeParams		
CUDA_HOST_NODE_PARAMS_v1		hipHostNodeParams		
CUDA_KERNEL_NODE_PARAMS		hipKernelNodeParams		
CUDA_KERNEL_NODE_PARAMS_st		hipKernelNodeParams		
CUDA_KERNEL_NODE_PARAMS_v1		hipKernelNodeParams		
CUDA_MEMCPY2D		hip_Memcpy2D		
CUDA_MEMCPY2D_st		hip_Memcpy2D		
CUDA_MEMCPY2D_v1		hip_Memcpy2D		
CUDA_MEMCPY2D_v1_st		hip_Memcpy2D		
CUDA_MEMCPY2D_v2		hip_Memcpy2D		
CUDA_MEMCPY3D		HIP_MEMCPY3D		
CUDA_MEMCPY3D_st		HIP_MEMCPY3D		
CUDA_MEMCPY3D_v1		HIP_MEMCPY3D		
CUDA_MEMCPY3D_v1_st		HIP_MEMCPY3D		
CUDA_MEMCPY3D_v2		HIP_MEMCPY3D		
CUDA_RESOURCE_DESC		HIP_RESOURCE_DESC		
CUDA_RESOURCE_DESC_st		HIP_RESOURCE_DESC _st		
CUDA_RESOURCE_DESC_v1		HIP_RESOURCE_DESC		
CUDA_RESOURCE_VIEW_DESC		HIP_RESOURCE_VIEW DESC		
CUDA_RESOURCE_VIEW_DESC_st		HIP_RESOURCE_VIEW _DESC_st		
CUDA_RESOURCE_VIEW_DESC_v1		HIP_RESOURCE_VIEW DESC		
CUDA_SUCCESS		hipSuccess		
CUDA_TEXTURE_DESC		HIP_TEXTURE_DESC		
CUDA_TEXTURE_DESC_st		HIP_TEXTURE_DESC_s t		
CUDA_TEXTURE_DESC_v1		HIP_TEXTURE_DESC		
CUDA_VERSION		HIP_VERSION		
CU_AD_FORMAT_FLOAT		HIP_AD_FORMAT_FLO AT		
CU_AD_FORMAT_HALF		HIP_AD_FORMAT_HA LF		
CU_AD_FORMAT_SIGNED_INT16		HIP_AD_FORMAT_SIG NED_INT16		
CU_AD_FORMAT_SIGNED_INT32		HIP_AD_FORMAT_SIG NED_INT32		
CU_AD_FORMAT_SIGNED_INT8		HIP_AD_FORMAT_SIG NED_INT8		
CU_AD_FORMAT_UNSIGNED_INT16		HIP_AD_FORMAT_UNS IGNED_INT16		
CU_AD_FORMAT_UNSIGNED_INT32		HIP_AD_FORMAT_UNS IGNED_INT32		

CUDA	D	HIP	D	E
CU_AD_FORMAT_UNSIGNED_INT8		HIP_AD_FORMAT_UNS IGNED_INT8		
CU_COMPUTEMODE_DEFAULT		hipComputeModeDefault		
CU_COMPUTEMODE_EXCLUSIVE		hipComputeModeExclusi ve		
CU_COMPUTEMODE_EXCLUSIVE_PROC ESS		hipComputeModeExclusi veProcess		
CU_COMPUTEMODE_PROHIBITED		hipComputeModeProhibit ed		
CU_CTX_BLOCKING_SYNC	+	hipDeviceScheduleBlocki ngSync		
CU_CTX_LMEM_RESIZE_TO_MAX		hipDeviceLmemResizeTo Max		
CU_CTX_MAP_HOST		hipDeviceMapHost		
CU_CTX_SCHED_AUTO		hipDeviceScheduleAuto		
CU_CTX_SCHED_BLOCKING_SYNC		hipDeviceScheduleBlocki ngSync		
CU_CTX_SCHED_MASK		hipDeviceScheduleMask		
CU_CTX_SCHED_SPIN		hipDeviceScheduleSpin		
CU_CTX_SCHED_YIELD		hipDeviceScheduleYield		
CU_DEVICE_ATTRIBUTE_ASYNC_ENGI NE_COUNT		hipDeviceAttributeAsync EngineCount		
CU_DEVICE_ATTRIBUTE_CAN_MAP_HO ST_MEMORY		hipDeviceAttributeCanMa pHostMemory		
CU_DEVICE_ATTRIBUTE_CAN_USE_HO ST_POINTER_FOR_REGISTERED_MEM		hipDeviceAttributeCanUs eHostPointerForRegistere dMem		
CU_DEVICE_ATTRIBUTE_CAN_USE_STR EAM_WAIT_VALUE_NOR		hipDeviceAttributeCanUs eStreamWaitValue		
CU_DEVICE_ATTRIBUTE_CLOCK_RATE		hipDeviceAttributeClock Rate		
CU_DEVICE_ATTRIBUTE_COMPUTE_CA PABILITY_MAJOR		hipDeviceAttributeCompu teCapabilityMajor		
CU_DEVICE_ATTRIBUTE_COMPUTE_CA PABILITY_MINOR		hipDeviceAttributeCompu teCapabilityMinor		
CU_DEVICE_ATTRIBUTE_COMPUTE_MO DE		hipDeviceAttributeCompu teMode		
CU_DEVICE_ATTRIBUTE_COMPUTE_PR EEMPTION_SUPPORTED		hipDeviceAttributeCompu tePreemptionSupported		
CU_DEVICE_ATTRIBUTE_CONCURRENT _KERNELS		hipDeviceAttributeConcur rentKernels		
CU_DEVICE_ATTRIBUTE_CONCURRENT _MANAGED_ACCESS		hipDeviceAttributeConcur rentManagedAccess		
CU_DEVICE_ATTRIBUTE_COOPERATIV E_LAUNCH		hipDeviceAttributeCooper ativeLaunch		
CU_DEVICE_ATTRIBUTE_COOPERATIV E_MULTI_DEVICE_LAUNCH		hipDeviceAttributeCooper ativeMultiDeviceLaunch		

CUDA	D	HIP	D	E
CU_DEVICE_ATTRIBUTE_DIRECT_MAN AGED_MEM_ACCESS_FROM_HOST		hipDeviceAttributeDirect ManagedMemAccessFro mHost		
CU_DEVICE_ATTRIBUTE_ECC_ENABLE D		hipDeviceAttributeEccEn abled		
CU_DEVICE_ATTRIBUTE_GLOBAL_L1_C ACHE_SUPPORTED		hipDeviceAttributeGlobal L1CacheSupported		
CU_DEVICE_ATTRIBUTE_GLOBAL_ME MORY_BUS_WIDTH		hipDeviceAttributeMemor yBusWidth		
CU_DEVICE_ATTRIBUTE_GPU_OVERLA P	+	hipDeviceAttributeAsync EngineCount		
CU_DEVICE_ATTRIBUTE_HOST_NATIVE _ATOMIC_SUPPORTED		hipDeviceAttributeHostN ativeAtomicSupported		
CU_DEVICE_ATTRIBUTE_INTEGRATED		hipDeviceAttributeIntegra ted		
CU_DEVICE_ATTRIBUTE_KERNEL_EXE C_TIMEOUT		hipDeviceAttributeKernel ExecTimeout		
CU_DEVICE_ATTRIBUTE_L2_CACHE_SI ZE		hipDeviceAttributeL2Cac heSize		
CU_DEVICE_ATTRIBUTE_LOCAL_L1_CA CHE_SUPPORTED		hipDeviceAttributeLocalL 1CacheSupported		
CU_DEVICE_ATTRIBUTE_MANAGED_M EMORY		hipDeviceAttributeManag edMemory		
CU_DEVICE_ATTRIBUTE_MAXIMUM_S URFACE1D_LAYERED_WIDTH		hipDeviceAttributeMaxSu rface1DLayered		
CU_DEVICE_ATTRIBUTE_MAXIMUM_S URFACE1D_WIDTH		hipDeviceAttributeMaxSu rface1D		
CU_DEVICE_ATTRIBUTE_MAXIMUM_S URFACE2D_HEIGHT		hipDeviceAttributeMaxSu rface2D		
CU_DEVICE_ATTRIBUTE_MAXIMUM_S URFACE2D_LAYERED_HEIGHT		hipDeviceAttributeMaxSu rface2DLayered		
CU_DEVICE_ATTRIBUTE_MAXIMUM_S URFACE2D_LAYERED_WIDTH		hipDeviceAttributeMaxSu rface2DLayered		
CU_DEVICE_ATTRIBUTE_MAXIMUM_S URFACE2D_WIDTH		hipDeviceAttributeMaxSu rface2D		
CU_DEVICE_ATTRIBUTE_MAXIMUM_S URFACE3D_DEPTH		hipDeviceAttributeMaxSu rface3D		
CU_DEVICE_ATTRIBUTE_MAXIMUM_S URFACE3D_HEIGHT		hipDeviceAttributeMaxSu rface3D		
CU_DEVICE_ATTRIBUTE_MAXIMUM_S URFACE3D_WIDTH		hipDeviceAttributeMaxSu rface3D		
CU_DEVICE_ATTRIBUTE_MAXIMUM_S URFACECUBEMAP_LAYERED_WIDTH		hipDeviceAttributeMaxSu rfaceCubemapLayered		
CU_DEVICE_ATTRIBUTE_MAXIMUM_S URFACECUBEMAP_WIDTH		hipDeviceAttributeMaxSu rfaceCubemap		

CUDA	D	HIP	D	E
CU_DEVICE_ATTRIBUTE_MAXIMUM_TE XTURE1D_LAYERED_WIDTH		hipDeviceAttributeMaxTe xture1DLayered		
CU_DEVICE_ATTRIBUTE_MAXIMUM_TE XTURE1D_LINEAR_WIDTH	+	hipDeviceAttributeMaxTe xture1DLinear		
CU_DEVICE_ATTRIBUTE_MAXIMUM_TE XTURE1D_MIPMAPPED_WIDTH		hipDeviceAttributeMaxTe xture1DMipmap		
CU_DEVICE_ATTRIBUTE_MAXIMUM_TE XTURE1D_WIDTH		hipDeviceAttributeMaxTe xture1DWidth		
CU_DEVICE_ATTRIBUTE_MAXIMUM_TE XTURE2D_ARRAY_HEIGHT	+	hipDeviceAttributeMaxTe xture2DLayered		
CU_DEVICE_ATTRIBUTE_MAXIMUM_TE XTURE2D_ARRAY_WIDTH	+	hipDeviceAttributeMaxTe xture2DLayered		
CU_DEVICE_ATTRIBUTE_MAXIMUM_TE XTURE2D_GATHER_HEIGHT		hipDeviceAttributeMaxTe xture2DGather		
CU_DEVICE_ATTRIBUTE_MAXIMUM_TE XTURE2D_GATHER_WIDTH		hipDeviceAttributeMaxTe xture2DGather		
CU_DEVICE_ATTRIBUTE_MAXIMUM_TE XTURE2D_HEIGHT		hipDeviceAttributeMaxTe xture2DHeight		
CU_DEVICE_ATTRIBUTE_MAXIMUM_TE XTURE2D_LAYERED_HEIGHT		hipDeviceAttributeMaxTe xture2DLayered		
CU_DEVICE_ATTRIBUTE_MAXIMUM_TE XTURE2D_LAYERED_WIDTH		hipDeviceAttributeMaxTe xture2DLayered		
CU_DEVICE_ATTRIBUTE_MAXIMUM_TE XTURE2D_LINEAR_HEIGHT		hipDeviceAttributeMaxTe xture2DLinear		
CU_DEVICE_ATTRIBUTE_MAXIMUM_TE XTURE2D_LINEAR_PITCH		hipDeviceAttributeMaxTe xture2DLinear		
CU_DEVICE_ATTRIBUTE_MAXIMUM_TE XTURE2D_LINEAR_WIDTH		hipDeviceAttributeMaxTe xture2DLinear		
CU_DEVICE_ATTRIBUTE_MAXIMUM_TE XTURE2D_MIPMAPPED_HEIGHT		hipDeviceAttributeMaxTe xture2DMipmap		
CU_DEVICE_ATTRIBUTE_MAXIMUM_TE XTURE2D_MIPMAPPED_WIDTH		hipDeviceAttributeMaxTe xture2DMipmap		
CU_DEVICE_ATTRIBUTE_MAXIMUM_TE XTURE2D_WIDTH		hipDeviceAttributeMaxTe xture2DWidth		
CU_DEVICE_ATTRIBUTE_MAXIMUM_TE XTURE3D_DEPTH		hipDeviceAttributeMaxTe xture3DDepth		
CU_DEVICE_ATTRIBUTE_MAXIMUM_TE XTURE3D_DEPTH_ALTERNATE		hipDeviceAttributeMaxTe xture3DAlt		
CU_DEVICE_ATTRIBUTE_MAXIMUM_TE XTURE3D_HEIGHT		hipDeviceAttributeMaxTe xture3DHeight		
CU_DEVICE_ATTRIBUTE_MAXIMUM_TE XTURE3D_HEIGHT_ALTERNATE		hipDeviceAttributeMaxTe xture3DAlt		

CUDA	D	HIP	D	E
CU_DEVICE_ATTRIBUTE_MAXIMUM_TE XTURE3D_WIDTH		hipDeviceAttributeMaxTe xture3DWidth		
CU_DEVICE_ATTRIBUTE_MAXIMUM_TE XTURE3D_WIDTH_ALTERNATE		hipDeviceAttributeMaxTe xture3DAlt		
CU_DEVICE_ATTRIBUTE_MAXIMUM_TE XTURECUBEMAP_LAYERED_WIDTH		hipDeviceAttributeMaxTe xtureCubemapLayered		
CU_DEVICE_ATTRIBUTE_MAXIMUM_TE XTURECUBEMAP_WIDTH		hipDeviceAttributeMaxTe xtureCubemap		
CU_DEVICE_ATTRIBUTE_MAX_BLOCKS _PER_MULTIPROCESSOR		hipDeviceAttributeMaxBl ocksPerMultiprocessor		
CU_DEVICE_ATTRIBUTE_MAX_BLOCK_ DIM_X		hipDeviceAttributeMaxBl ockDimX		
CU_DEVICE_ATTRIBUTE_MAX_BLOCK_ DIM_Y		hipDeviceAttributeMaxBl ockDimY		
CU_DEVICE_ATTRIBUTE_MAX_BLOCK_DIM_Z		hipDeviceAttributeMaxBl ockDimZ		
CU_DEVICE_ATTRIBUTE_MAX_GRID_DI M_X		hipDeviceAttributeMaxGr idDimX		
CU_DEVICE_ATTRIBUTE_MAX_GRID_DI M_Y CU_DEVICE_ATTRIBUTE_MAX_GRID_DI		hipDeviceAttributeMaxGr idDimY hipDeviceAttributeMaxGr		
M_Z CU_DEVICE_ATTRIBUTE_MAX_PITCH		idDimZ hipDeviceAttributeMaxPit		
		ch		
CU_DEVICE_ATTRIBUTE_MAX_REGIST ERS_PER_BLOCK		hipDeviceAttributeMaxRe gistersPerBlock		
CU_DEVICE_ATTRIBUTE_MAX_REGIST ERS_PER_MULTIPROCESSOR		hipDeviceAttributeMaxRe gistersPerMultiprocessor		
CU_DEVICE_ATTRIBUTE_MAX_SHARED _MEMORY_PER_BLOCK		hipDeviceAttributeMaxSh aredMemoryPerBlock		
CU_DEVICE_ATTRIBUTE_MAX_SHARED _MEMORY_PER_BLOCK_OPTIN		hipDeviceAttributeShared MemPerBlockOptin		
CU_DEVICE_ATTRIBUTE_MAX_SHARED _MEMORY_PER_MULTIPROCESSOR		hipDeviceAttributeMaxSh aredMemoryPerMultiproc essor		
CU_DEVICE_ATTRIBUTE_MAX_THREAD S_PER_BLOCK		hipDeviceAttributeMaxTh readsPerBlock		
CU_DEVICE_ATTRIBUTE_MAX_THREAD S_PER_MULTIPROCESSOR		hipDeviceAttributeMaxTh readsPerMultiProcessor		
CU_DEVICE_ATTRIBUTE_MEMORY_CL OCK_RATE		hipDeviceAttributeMemor yClockRate		
CU_DEVICE_ATTRIBUTE_MULTIPROCE SSOR_COUNT		hipDeviceAttributeMultip rocessorCount		
CU_DEVICE_ATTRIBUTE_MULTI_GPU_B OARD		hipDeviceAttributeIsMulti GpuBoard		
CU_DEVICE_ATTRIBUTE_MULTI_GPU_B OARD_GROUP_ID		hipDeviceAttributeMultiG puBoardGroupId		

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CU_DEVICE_ATTRIBUTE_PAGEABLE_M		hipDeviceAttributePageab		
EMORY_ACCESS		leMemoryAccess		
CU_DEVICE_ATTRIBUTE_PAGEABLE_M		hipDeviceAttributePageab		
EMORY_ACCESS_USES_HOST_PAGE_TA BLES		leMemoryAccessUsesHos tPageTables		
CU_DEVICE_ATTRIBUTE_PCI_BUS_ID		hipDeviceAttributePciBus		
		Id		
CU_DEVICE_ATTRIBUTE_PCI_DEVICE_I		hipDeviceAttributePciDev		
D CU DEVICE ATTRIBUTE PCI DOMAIN		iceId		
ID		hipDeviceAttributePciDo mainId		
CU_DEVICE_ATTRIBUTE_REGISTERS_P	+	hipDeviceAttributeMaxRe		
ER_BLOCK		gistersPerBlock		
CU_DEVICE_ATTRIBUTE_SHARED_MEM	+	hipDeviceAttributeMaxSh		
ORY_PER_BLOCK		aredMemoryPerBlock		
CU_DEVICE_ATTRIBUTE_SINGLE_TO_D OUBLE_PRECISION_PERF_RATIO		hipDeviceAttributeSingle ToDoublePrecisionPerfRa		
OUBLE_FRECISION_FERF_RATIO		tio		
CU_DEVICE_ATTRIBUTE_STREAM_PRIO		hipDeviceAttributeStream		
RITIES_SUPPORTED		PrioritiesSupported		
CU_DEVICE_ATTRIBUTE_SURFACE_ALI		hipDeviceAttributeSurfac		
GNMENT		eAlignment		
CU_DEVICE_ATTRIBUTE_TCC_DRIVER		hipDeviceAttributeTccDri		
		ver		
CU_DEVICE_ATTRIBUTE_TEXTURE_ALI GNMENT		hipDeviceAttributeTextur eAlignment		
CU_DEVICE_ATTRIBUTE_TEXTURE_PIT		hipDeviceAttributeTextur		
CH_ALIGNMENT		ePitchAlignment		
CU_DEVICE_ATTRIBUTE_TOTAL_CONS		hipDeviceAttributeTotalC		
TANT_MEMORY		onstantMemory		
CU_DEVICE_ATTRIBUTE_UNIFIED_ADD RESSING		hipDeviceAttributeUnifie dAddressing		
CU_DEVICE_ATTRIBUTE_WARP_SIZE		hipDeviceAttributeWarpS		
CC_DEVICE_MINIBUTE_WINI_SIZE		ize		
CU_DEVICE_CPU		hipCpuDeviceId		
CU_DEVICE_INVALID		hipInvalidDeviceId		
CU_DEVICE_P2P_ATTRIBUTE_ACCESS_	+	hipDevP2PAttrHipArrayA		
ACCESS_SUPPORTED		ccessSupported		
CU_DEVICE_P2P_ATTRIBUTE_ACCESS_		hipDevP2PAttrAccessSup		
SUPPORTED		ported		
CU_DEVICE_P2P_ATTRIBUTE_ARRAY_A	+	hipDevP2PAttrHipArrayA		
CCESS_ACCESS_SUPPORTED		ccessSupported		
CU_DEVICE_P2P_ATTRIBUTE_CUDA_AR		hipDevP2PAttrHipArrayA		
RAY_ACCESS_SUPPORTED		ccessSupported		
CU_DEVICE_P2P_ATTRIBUTE_NATIVE_		hipDevP2PAttrNativeAto		
ATOMIC_SUPPORTED		micSupported		
CU_DEVICE_P2P_ATTRIBUTE_PERFORM		hipDevP2PAttrPerforman		
ANCE_RANK		ceRank		
CU_EVENT_BLOCKING_SYNC		hipEventBlockingSync		

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CU_EVENT_DEFAULT		hipEventDefault		
CU_EVENT_DISABLE_TIMING		hipEventDisableTiming		
CU_EVENT_INTERPROCESS		hipEventInterprocess		
CU_EXTERNAL_MEMORY_HANDLE_TY		hipExternalMemoryHandl		
PE_D3D11_RESOURCE		eTypeD3D11Resource		
CU_EXTERNAL_MEMORY_HANDLE_TY		hipExternalMemoryHandl		
PE_D3D11_RESOURCE_KMT		eTypeD3D11ResourceKm		
CU EXTERNAL MEMORY HANDLE TY		t hipExternalMemoryHandl		
PE_D3D12_HEAP		eTypeD3D12Heap		
CU_EXTERNAL_MEMORY_HANDLE_TY		hipExternalMemoryHandl		
PE_D3D12_RESOURCE		eTypeD3D12Resource		
CU_EXTERNAL_MEMORY_HANDLE_TY		hipExternalMemoryHandl		
PE_OPAQUE_FD		eTypeOpaqueFd		
CU_EXTERNAL_MEMORY_HANDLE_TY		hipExternalMemoryHandl eTypeOpaqueWin32		
PE_OPAQUE_WIN32				
CU_EXTERNAL_MEMORY_HANDLE_TY		hipExternalMemoryHandl		
PE_OPAQUE_WIN32_KMT		eTypeOpaqueWin32Kmt		
CU_EXTERNAL_SEMAPHORE_HANDLE_		hipExternalSemaphoreHa		
TYPE_D3D12_FENCE		ndleTypeD3D12Fence		
CU_EXTERNAL_SEMAPHORE_HANDLE_		hipExternalSemaphoreHa		
TYPE_OPAQUE_FD		ndleTypeOpaqueFd		
CU_EXTERNAL_SEMAPHORE_HANDLE_		hipExternalSemaphoreHa		
TYPE_OPAQUE_WIN32		ndleTypeOpaqueWin32		
CU_EXTERNAL_SEMAPHORE_HANDLE_		hipExternalSemaphoreHa		
TYPE_OPAQUE_WIN32_KMT		ndleTypeOpaqueWin32K mt		
CU_FUNC_ATTRIBUTE_BINARY_VERSI		HIP_FUNC_ATTRIBUT		
ON		E_BINARY_VERSION		
CU_FUNC_ATTRIBUTE_CACHE_MODE_		HIP_FUNC_ATTRIBUT		
CH FUNC ATTEMPLITE CONCT SIZE DV		E_CACHE_MODE_CA		
CU_FUNC_ATTRIBUTE_CONST_SIZE_BY TES		HIP_FUNC_ATTRIBUT E_CONST_SIZE_BYTES		
CU_FUNC_ATTRIBUTE_LOCAL_SIZE_BY		HIP_FUNC_ATTRIBUT		
TES		E_LOCAL_SIZE_BYTES		
CU_FUNC_ATTRIBUTE_MAX		HIP_FUNC_ATTRIBUT		
CU_FUNC_ATTRIBUTE_MAX_DYNAMIC		E_MAX HIP FUNC ATTRIBUT		
_SHARED_SIZE_BYTES		E_MAX_DYNAMIC_SH		
		ARED_SIZE_BYTES		
CU_FUNC_ATTRIBUTE_MAX_THREADS		HIP_FUNC_ATTRIBUT		
_PER_BLOCK		E_MAX_THREADS_PE R_BLOCK		
CU_FUNC_ATTRIBUTE_NUM_REGS		HIP_FUNC_ATTRIBUT		
		E_NUM_REGS		
CU_FUNC_ATTRIBUTE_PREFERRED_SH		HIP_FUNC_ATTRIBUT		
ARED_MEMORY_CARVEOUT		E_PREFERRED_SHARE D_MEMORY_CARVEO		
		UT		
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CU_FUNC_ATTRIBUTE_PTX_VERSION		HIP_FUNC_ATTRIBUT		
OU FUND ATTRIBUTE GUARER GIZE R		E_PTX_VERSION		
CU_FUNC_ATTRIBUTE_SHARED_SIZE_B YTES		HIP_FUNC_ATTRIBUT E_SHARED_SIZE_BYT		
TIES		ES ES		
CU_FUNC_CACHE_PREFER_EQUAL		hipFuncCachePreferEqual		
CU_FUNC_CACHE_PREFER_L1		hipFuncCachePreferL1		
CU_FUNC_CACHE_PREFER_NONE		hipFuncCachePreferNone		
CU_FUNC_CACHE_PREFER_SHARED		hipFuncCachePreferShare d		
CU_GRAPH_EXEC_UPDATE_ERROR		hipGraphExecUpdateErro r		
CU_GRAPH_EXEC_UPDATE_ERROR_FU		hipGraphExecUpdateErro		
NCTION_CHANGED		rFunctionChanged		
CU_GRAPH_EXEC_UPDATE_ERROR_NO		hipGraphExecUpdateErro		
DE_TYPE_CHANGED		rNodeTypeChanged		
CU_GRAPH_EXEC_UPDATE_ERROR_NO T SUPPORTED		hipGraphExecUpdateErro rNotSupported		
CU GRAPH EXEC UPDATE ERROR PA		hipGraphExecUpdateErro		
RAMETERS_CHANGED		rParametersChanged		
CU_GRAPH_EXEC_UPDATE_ERROR_TO		hipGraphExecUpdateErro		
POLOGY_CHANGED		rTopologyChanged		
CU_GRAPH_EXEC_UPDATE_ERROR_UN		hipGraphExecUpdateErro		
SUPPORTED_FUNCTION_CHANGE		rUnsupportedFunctionCha nge		
CU_GRAPH_EXEC_UPDATE_SUCCESS		hipGraphExecUpdateSucc		
CV CD A DV NODE TWDE COVINT		ess		
CU_GRAPH_NODE_TYPE_COUNT		hipGraphNodeTypeCount		
CU_GRAPH_NODE_TYPE_EMPTY		hipGraphNodeTypeEmpty		
CU_GRAPH_NODE_TYPE_EVENT_RECO RD		hipGraphNodeTypeEvent Record		
CU_GRAPH_NODE_TYPE_GRAPH		hipGraphNodeTypeGraph		
CU_GRAPH_NODE_TYPE_HOST		hipGraphNodeTypeHost		
CU_GRAPH_NODE_TYPE_KERNEL		hipGraphNodeTypeKernel		
CU_GRAPH_NODE_TYPE_MEMCPY		hipGraphNodeTypeMemc		
CU_GRAPH_NODE_TYPE_MEMSET		hipGraphNodeTypeMems et		
CU_GRAPH_NODE_TYPE_WAIT_EVENT		hipGraphNodeTypeWaitE vent		
CU_IPC_HANDLE_SIZE		HIP_IPC_HANDLE_SIZ E		
CU_IPC_MEM_LAZY_ENABLE_PEER_AC		hipIpcMemLazyEnablePe		
CESS		erAccess		
CU_JIT_CACHE_MODE		hipJitOptionCacheMode		
CU_JIT_ERROR_LOG_BUFFER		hipJitOptionErrorLogBuff er		

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CU_JIT_ERROR_LOG_BUFFER_SIZE_BYT		hipJitOptionErrorLogBuff		
ES CAN ARE EAST OF STREET		erSizeBytes		
CU_JIT_FALLBACK_STRATEGY		hipJitOptionFallbackStrat egy		
CU_JIT_FAST_COMPILE		hipJitOptionFastCompile		
CU_JIT_GENERATE_DEBUG_INFO		hipJitOptionGenerateDeb		
		ugInfo		
CU_JIT_GENERATE_LINE_INFO		hipJitOptionGenerateLine		
CU JIT INFO LOG BUFFER		Info hipJitOptionInfoLogBuffe		
CC_JII_INTO_EGG_BCTTER		r		
CU_JIT_INFO_LOG_BUFFER_SIZE_BYTE		hipJitOptionInfoLogBuffe		
S CU_JIT_LOG_VERBOSE		rSizeBytes		
CU_JIT_MAX_REGISTERS		hipJitOptionLogVerbose		
		hipJitOptionMaxRegisters		
CU_JIT_NEW_SM3X_OPT		hipJitOptionSm3xOpt		
CU_JIT_NUM_OPTIONS		hipJitOptionNumOptions		
CU_JIT_OPTIMIZATION_LEVEL		hipJitOptionOptimization Level		
CU_JIT_TARGET		hipJitOptionTarget		
CU_JIT_TARGET_FROM_CUCONTEXT		hipJitOptionTargetFromC		
		ontext		
CU_JIT_THREADS_PER_BLOCK		hipJitOptionThreadsPerBl		
CU_JIT_WALL_TIME		ock hipJitOptionWallTime		
CU_LAUNCH_PARAM_BUFFER_POINTE		HIP_LAUNCH_PARAM		
R		_BUFFER_POINTER		
CU_LAUNCH_PARAM_BUFFER_SIZE		HIP_LAUNCH_PARAM		
CU_LAUNCH_PARAM_END		_BUFFER_SIZE HIP_LAUNCH_PARAM		
CU_LAUNCII_I AKAW_LIND		END		
CU_LIMIT_MALLOC_HEAP_SIZE		hipLimitMallocHeapSize		
CU_LIMIT_PRINTF_FIFO_SIZE		hipLimitPrintfFifoSize		
CU_MEMHOSTALLOC_DEVICEMAP		hipHostMallocMapped		
CU_MEMHOSTALLOC_PORTABLE		hipHostMallocPortable		
CU_MEMHOSTALLOC_WRITECOMBINE		hipHostMallocWriteComb		
D CH MENHOCEPECICEED DEVICEMAD		ined		
CU_MEMHOSTREGISTER_DEVICEMAP		hipHostRegisterMapped		
CU_MEMHOSTREGISTER_IOMEMORY		hipHostRegisterIoMemor y		
CU_MEMHOSTREGISTER_PORTABLE		hipHostRegisterPortable		
CU_MEMORYTYPE_ARRAY		hipMemoryTypeArray		
CU_MEMORYTYPE_DEVICE		hipMemoryTypeDevice		
CU_MEMORYTYPE_HOST		hipMemoryTypeHost		
CU_MEMORYTYPE_UNIFIED		hipMemoryTypeUnified		
CU_MEM_ADVISE_SET_ACCESSED_BY		hipMemAdviseSetAccess		
		edBy		
CU_MEM_ADVISE_SET_PREFERRED_LO		hipMemAdviseSetPreferre		
CATION		dLocation		

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hipMemAdviseUnsetAcce		
hipMemAdviseUnsetPrefe		
hipMemAttachGlobal		
hipMemAttachHost		
hipMemAttachSingle		
hipMemRangeAttributeAc		
hipMemRangeAttributeLa stPrefetchLocation		
hipMemRangeAttributePr		
hipMemRangeAttributeRe adMostly		
hipOccupancyDefault		
HIP_RESOURCE_TYPE ARRAY		
HIP_RESOURCE_TYPE		
HIP_RESOURCE_TYPE		
HIP_RESOURCE_TYPE _PITCH2D		
HIP_RES_VIEW_FORM AT_FLOAT_1X16		
HIP_RES_VIEW_FORM AT FLOAT 1X32		
HIP_RES_VIEW_FORM		
	rredLocation hipMemAdviseUnsetRead Mostly hipMemAttachGlobal hipMemAttachHost hipMemAttachSingle hipMemRangeAttributeAc cessedBy hipMemRangeAttributeLa stPrefetchLocation hipMemRangeAttributePr eferredLocation hipMemRangeAttributeRe adMostly hipOccupancyDefault HIP_RESOURCE_TYPE _ARRAY HIP_RESOURCE_TYPE _LINEAR HIP_RESOURCE_TYPE _MIPMAPPED_ARRAY HIP_RESOURCE_TYPE _MIPMAPPED_ARRAY HIP_RESOURCE_TYPE _PITCH2D HIP_RES_VIEW_FORM AT_FLOAT_1X16 HIP_RES_VIEW_FORM AT_FLOAT_2X16 HIP_RES_VIEW_FORM AT_FLOAT_2X32 HIP_RES_VIEW_FORM AT_FLOAT_2X32 HIP_RES_VIEW_FORM AT_FLOAT_4X32 HIP_RES_VIEW_FORM AT_FLOAT_4X16 HIP_RES_VIEW_FORM AT_FLOAT_4X16 HIP_RES_VIEW_FORM AT_FLOAT_4X32 HIP_RES_VIEW_FORM AT_FLOAT_4X32 HIP_RES_VIEW_FORM AT_SIGNED_BC4 HIP_RES_VIEW_FORM AT_SIGNED_BC5 HIP_RES_VIEW_FORM AT_SIGNED_BC6H	rredLocation hipMemAdviseUnsetRead Mostly hipMemAttachGlobal hipMemAttachHost hipMemAttachSingle hipMemRangeAttributeAc cessedBy hipMemRangeAttributeLa stPrefetchLocation hipMemRangeAttributePr eferredLocation hipMemRangeAttributeRe adMostly hipOccupancyDefault HIP_RESOURCE_TYPE _ARRAY HIP_RESOURCE_TYPE _LINEAR HIP_RESOURCE_TYPE _MIPMAPPED_ARRAY HIP_RESOURCE_TYPE _MIPMAPPED_ARRAY HIP_RESOURCE_TYPE _PITCH2D HIP_RES_VIEW_FORM AT_FLOAT_1X16 HIP_RES_VIEW_FORM AT_FLOAT_2X16 HIP_RES_VIEW_FORM AT_FLOAT_2X32 HIP_RES_VIEW_FORM AT_FLOAT_2X32 HIP_RES_VIEW_FORM AT_FLOAT_4X32 HIP_RES_VIEW_FORM AT_FLOAT_4X32 HIP_RES_VIEW_FORM AT_FLOAT_4X32 HIP_RES_VIEW_FORM AT_FLOAT_4X32 HIP_RES_VIEW_FORM AT_SIGNED_BC4 HIP_RES_VIEW_FORM AT_SIGNED_BC5 HIP_RES_VIEW_FORM AT_SIGNED_BC6H HIP_RES_VIEW_FORM AT_SIGNED_BC6H HIP_RES_VIEW_FORM

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CU_RES_VIEW_FORMAT_SINT_1X32		HIP_RES_VIEW_FORM		
		AT_SINT_1X32		
CU_RES_VIEW_FORMAT_SINT_1X8		HIP_RES_VIEW_FORM		
		AT_SINT_1X8		
CU_RES_VIEW_FORMAT_SINT_2X16		HIP_RES_VIEW_FORM		
CH DEC VIEW FORMAT CINT 2V22		AT_SINT_2X16		
CU_RES_VIEW_FORMAT_SINT_2X32		HIP_RES_VIEW_FORM AT_SINT_2X32		
CU RES VIEW FORMAT SINT 2X8		HIP_RES_VIEW_FORM		
CO_RES_VIEW_I ORMAI_SHVI_ZAG		AT_SINT_2X8		
CU_RES_VIEW_FORMAT_SINT_4X16		HIP_RES_VIEW_FORM		
		AT_SINT_4X16		
CU_RES_VIEW_FORMAT_SINT_4X32		HIP_RES_VIEW_FORM		
		AT_SINT_4X32		
CU_RES_VIEW_FORMAT_SINT_4X8		HIP_RES_VIEW_FORM		
av pra vypy = =====		AT_SINT_4X8		
CU_RES_VIEW_FORMAT_UINT_1X16		HIP_RES_VIEW_FORM		
OU DEC VIEW FORMAT HINT 1922		AT_UINT_1X16		
CU_RES_VIEW_FORMAT_UINT_1X32		HIP_RES_VIEW_FORM AT_UINT_1X32		
CU_RES_VIEW_FORMAT_UINT_1X8		HIP_RES_VIEW_FORM		
CO_RES_VIEW_FORMAT_UNVI_IX8		AT_UINT_1X8		
CU_RES_VIEW_FORMAT_UINT_2X16		HIP_RES_VIEW_FORM		
		AT_UINT_2X16		
CU_RES_VIEW_FORMAT_UINT_2X32		HIP_RES_VIEW_FORM		
		AT_UINT_2X32		
CU_RES_VIEW_FORMAT_UINT_2X8		HIP_RES_VIEW_FORM		
		AT_UINT_2X8		
CU_RES_VIEW_FORMAT_UINT_4X16		HIP_RES_VIEW_FORM		
CU_RES_VIEW_FORMAT_UINT_4X32		AT_UINT_4X16		
CU_RES_VIEW_FORMAT_UINT_4A32		HIP_RES_VIEW_FORM AT UINT 4X32		
CU RES VIEW FORMAT UINT 4X8		HIP_RES_VIEW_FORM		
CC_RES_VIEW_I ORUMII_CHVI_ING		AT_UINT_4X8		
CU_RES_VIEW_FORMAT_UNSIGNED_BC		HIP_RES_VIEW_FORM		
1		AT_UNSIGNED_BC1		
CU_RES_VIEW_FORMAT_UNSIGNED_BC		HIP_RES_VIEW_FORM		
2		AT_UNSIGNED_BC2		
CU_RES_VIEW_FORMAT_UNSIGNED_BC		HIP_RES_VIEW_FORM		
CH DEC VIEW FORMAT UNGIONED DO		AT_UNSIGNED_BC3		
CU_RES_VIEW_FORMAT_UNSIGNED_BC		HIP_RES_VIEW_FORM AT UNSIGNED BC4		
CU_RES_VIEW_FORMAT_UNSIGNED_BC		HIP_RES_VIEW_FORM		
5		AT_UNSIGNED_BC5		
CU_RES_VIEW_FORMAT_UNSIGNED_BC		HIP_RES_VIEW_FORM		
6H		AT_UNSIGNED_BC6H		
CU_RES_VIEW_FORMAT_UNSIGNED_BC		HIP_RES_VIEW_FORM		
7		AT_UNSIGNED_BC7		
CU_SHARED_MEM_CONFIG_DEFAULT_		hipSharedMemBankSizeD		
BANK_SIZE		efault		
CU_SHARED_MEM_CONFIG_EIGHT_BYT		hipSharedMemBankSizeE		
E_BANK_SIZE		ightByte		

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CU_SHARED_MEM_CONFIG_FOUR_BYT		hipSharedMemBankSizeF		
E_BANK_SIZE		ourByte		
CU_STREAM_CAPTURE_MODE_GLOBAL		hipStreamCaptureModeGl obal		
CU_STREAM_CAPTURE_MODE_RELAXE		hipStreamCaptureModeRe		
D		laxed		
CU_STREAM_CAPTURE_MODE_THREAD _LOCAL		hipStreamCaptureModeTh readLocal		
CU_STREAM_CAPTURE_STATUS_ACTIV E		hipStreamCaptureStatusA ctive		
CU_STREAM_CAPTURE_STATUS_INVAL IDATED		hipStreamCaptureStatusIn validated		
CU_STREAM_CAPTURE_STATUS_NONE		hipStreamCaptureStatusN		
		one		
CU_STREAM_DEFAULT		hipStreamDefault		
CU_STREAM_NON_BLOCKING		hipStreamNonBlocking		
CU_STREAM_PER_THREAD		hipStreamPerThread		
CU_STREAM_WAIT_VALUE_AND		hipStreamWaitValueAnd		
CU_STREAM_WAIT_VALUE_EQ		hipStreamWaitValueEq		
CU_STREAM_WAIT_VALUE_GEQ		hipStreamWaitValueGte		
CU_STREAM_WAIT_VALUE_NOR		hipStreamWaitValueNor		
CU_TRSA_OVERRIDE_FORMAT		HIP_TRSA_OVERRIDE_ FORMAT		
CU_TRSF_NORMALIZED_COORDINATES		HIP_TRSF_NORMALIZ ED_COORDINATES		
CU_TRSF_READ_AS_INTEGER		HIP_TRSF_READ_AS_I		
		NTEGER		
CU_TRSF_SRGB		HIP_TRSF_SRGB		
CU_TR_ADDRESS_MODE_BORDER		HIP_TR_ADDRESS_MO DE_BORDER		
CU_TR_ADDRESS_MODE_CLAMP		HIP_TR_ADDRESS_MO DE_CLAMP		
CU_TR_ADDRESS_MODE_MIRROR		HIP_TR_ADDRESS_MO DE_MIRROR		
CU_TR_ADDRESS_MODE_WRAP		HIP_TR_ADDRESS_MO DE_WRAP		
CU_TR_FILTER_MODE_LINEAR		HIP_TR_FILTER_MODE _LINEAR		
CU_TR_FILTER_MODE_POINT		HIP_TR_FILTER_MODE _POINT		
CUaddress_mode		HIPaddress_mode		
CUaddress_mode_enum		HIPaddress_mode_enum		
CUarray		hipArray*		
CUarray_format		hipArray_Format		
CUarray_format_enum		hipArray_Format		
CUarray_st		hipArray		
CUcomputemode		hipComputeMode		
CUcomputemode_enum		hipComputeMode		
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CUcontext		hipCtx_t		
CUctx_st		ihipCtx_t		
CUdevice		hipDevice_t		
CUdevice_P2PAttribute		hipDeviceP2PAttr		
CUdevice_P2PAttribute_enum		hipDeviceP2PAttr		
CUdevice_attribute		hipDeviceAttribute_t		
CUdevice_attribute_enum		hipDeviceAttribute_t		
CUdevice_v1		hipDevice_t		
CUdeviceptr		hipDeviceptr_t		
CUdeviceptr_v1		hipDeviceptr_t		
CUdeviceptr_v2		hipDeviceptr_t		
CUevent		hipEvent_t		
CUevent_st		ihipEvent_t		
CUexternalMemory		hipExternalMemory_t		
CUexternalMemoryHandleType		hipExternalMemoryHandl		
CUexternalMemoryHandleType_enum		eType hipExternalMemoryHandl		
Coexternativemory francie Type_enum		eType_enum		
CUexternalSemaphore		hipExternalSemaphore_t		
CUexternalSemaphoreHandleType		hipExternalSemaphoreHa ndleType		
CUexternalSemaphoreHandleType_enum		hipExternalSemaphoreHa ndleType_enum		
CUfilter_mode		HIPfilter_mode		
CUfilter_mode_enum		HIPfilter_mode_enum		
CUfunc_cache		hipFuncCache_t		
CUfunc_cache_enum		hipFuncCache_t		
CUfunc_st		ihipModuleSymbol_t		
CUfunction		hipFunction_t		
CUfunction_attribute		hipFunction_attribute		
CUfunction_attribute_enum		hipFunction_attribute		
CUgraph		hipGraph_t		
CUgraphExec		hipGraphExec_t		
CUgraphExecUpdateResult		hipGraphExecUpdateResu lt		
CUgraphExecUpdateResult_enum		hipGraphExecUpdateResu lt		
CUgraphExec_st		hipGraphExec		
CUgraphNode		hipGraphNode_t		
CUgraphNodeType		hipGraphNodeType		
CUgraphNodeType_enum		hipGraphNodeType		
CUgraphNode_st		hipGraphNode		
CUgraph_st		ihipGraph		
CUgraphicsResource		hipGraphicsResource_t		

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CUgraphicsResource_st		hipGraphicsResource		
CUhostFn		hipHostFn_t		
CUipcEventHandle		hipIpcEventHandle_t		
CUipcEventHandle_st		hipIpcEventHandle_st		
CUipcEventHandle_v1		hipIpcEventHandle_t		
CUipcMemHandle		hipIpcMemHandle_t		
CUipcMemHandle_st		hipIpcMemHandle_st		
CUipcMemHandle_v1		hipIpcMemHandle_t		
CUjit_option		hipJitOption		
CUjit_option_enum		hipJitOption		
CUlimit		hipLimit_t		
CUlimit_enum		hipLimit_t		
CUmem_advise		hipMemoryAdvise		
CUmem_advise_enum		hipMemoryAdvise		
CUmem_range_attribute		hipMemRangeAttribute		
CUmem_range_attribute_enum		hipMemRangeAttribute		
CUmemorytype		hipMemoryType		
CUmemorytype_enum		hipMemoryType		
CUmipmappedArray		hipMipmappedArray_t		
CUmipmappedArray_st		hipMipmappedArray		
CUmod_st		ihipModule_t		
CUmodule		hipModule_t		
CUresourceViewFormat		HIPresourceViewFormat		
CUresourceViewFormat_enum		HIPresourceViewFormat_		
		enum		
CUresourcetype		HIPresourcetype		
CUresourcetype_enum		HIPresourcetype_enum		
CUresult		hipError_t		
CUsharedconfig		hipSharedMemConfig		
CUsharedconfig_enum		hipSharedMemConfig		
CUstream		hipStream_t		
CUstreamCallback		hipStreamCallback_t		
CUstreamCaptureMode		hipStreamCaptureMode		
CUstreamCaptureMode_enum		hipStreamCaptureMode		
CUstreamCaptureStatus		hipStreamCaptureStatus		
CUstreamCaptureStatus_enum		hipStreamCaptureStatus		
CUstream_st		ihipStream_t		
CUsurfObject		hipSurfaceObject_t		
CUsurfObject_v1		hipSurfaceObject_t		
CUtexObject		hipTextureObject_t		
CUtexObject_v1		hipTextureObject_t		
CUtexref		hipTexRef		

CUDA	D	HIP	D	E
CUtexref_st		textureReference		
CUDACC		HIPCC		
cudaError_enum		hipError_t		
CUDA_MEMSET_NODE_PARAMS		hipMemsetParams		
CUDA_MEMSET_NODE_PARAMS_st		hipMemsetParams		
CUDA MEMSET NODE PARAMS v1		hipMemsetParams		
CUGLDeviceList		hipGLDeviceList		
CUGLDeviceList enum		hipGLDeviceList		
CU_GL_DEVICE_LIST_ALL		hipGLDeviceListAll		
CU_GL_DEVICE_LIST_CURRENT_FRAM		hipGLDeviceListCurrentF		
E		rame		
CU_GL_DEVICE_LIST_NEXT_FRAME		hipGLDeviceListNextFra		
CIV. CD - DVICC DECUCED EL - CC NOV		me		
CU_GRAPHICS_REGISTER_FLAGS_NON E		hipGraphicsRegisterFlags None		
CU_GRAPHICS_REGISTER_FLAGS_READ		hipGraphicsRegisterFlags		
ONLY		ReadOnly		
CU_GRAPHICS_REGISTER_FLAGS_SURF		hipGraphicsRegisterFlags		
ACE_LDST		SurfaceLoadStore		
CU_GRAPHICS_REGISTER_FLAGS_TEXT URE GATHER		hipGraphicsRegisterFlags TextureGather		
CU_GRAPHICS_REGISTER_FLAGS_WRIT		hipGraphicsRegisterFlags		
E_DISCARD		WriteDiscard		
CUgraphicsRegisterFlags		hipGraphicsRegisterFlags		
CUgraphicsRegisterFlags_enum		hipGraphicsRegisterFlags		
CU_GRAPH_EXEC_UPDATE_ERROR		hipGraphExecUpdateErro r		+
CU_GRAPH_EXEC_UPDATE_ERROR_FU		hipGraphExecUpdateErro		+
NCTION_CHANGED		rFunctionChanged		
CU_GRAPH_EXEC_UPDATE_ERROR_NO		hipGraphExecUpdateErro		+
DE_TYPE_CHANGED CU_GRAPH_EXEC_UPDATE_ERROR_NO		rNodeTypeChanged hipGraphExecUpdateErro		
T SUPPORTED		rNotSupported		+
CU_GRAPH_EXEC_UPDATE_ERROR_PA		hipGraphExecUpdateErro		+
RAMETERS_CHANGED		rParametersChanged		
CU_GRAPH_EXEC_UPDATE_ERROR_TO POLOGY_CHANGED		hipGraphExecUpdateErro rTopologyChanged		+
CU GRAPH EXEC UPDATE ERROR UN		hipGraphExecUpdateErro		+
SUPPORTED_FUNCTION_CHANGE		rUnsupportedFunctionCha		+
		nge		
CU_GRAPH_EXEC_UPDATE_SUCCESS		hipGraphExecUpdateSucc ess		+
CU_GRAPH_NODE_TYPE_COUNT		hipGraphNodeTypeCount		+
CU_GRAPH_NODE_TYPE_EMPTY		hipGraphNodeTypeEmpty		+
CU_GRAPH_NODE_TYPE_EVENT_RECO RD		hipGraphNodeTypeEvent Record		+
CU_GRAPH_NODE_TYPE_GRAPH		hipGraphNodeTypeGraph		+
CU_GRAPH_NODE_TYPE_HOST		hipGraphNodeTypeHost		
CU_GRAPH_NODE_TYPE_KERNEL		hipGraphNodeTypeKernel		+
CO_GRAFII_NODE_I I FE_RERNEL		inporapinvoue i ypekeillei		+

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CUDA	D	HIP	D	E
CU_GRAPH_NODE_TYPE_MEMCPY		hipGraphNodeTypeMemc		+
		py		
CU_GRAPH_NODE_TYPE_MEMSET		hipGraphNodeTypeMems		+
		et		
CU_GRAPH_NODE_TYPE_WAIT_EVENT		hipGraphNodeTypeWaitE		+
		vent		

#### 1.1.2 Error Handling

Error Handling is currently supported.

#### 1.1.3 Initialization

CUDA	D	HIP	D	E
cuInit		hipInit		

## 1.1.4 Version Management

CUDA	D	HIP	D	E
cuDriverGetVersion		hipDriverGetVersion		

#### 1.1.5 Device Management

CUDA	D	HIP	D	E
cuDeviceGet		hipDeviceGet		
cuDeviceGetAttribute		hipDeviceGetAttribute		
cuDeviceGetCount		hipGetDeviceCount		
cuDeviceGetName		hipDeviceGetName		
cuDeviceTotalMem		hipDeviceTotalMem		
cuDeviceTotalMem_v2		hipDeviceTotalMem		

## 1.1.6 Device Management [DEPRECATED]

CUDA	D	HIP	D	E
cuDeviceComputeCapability	+	hipDeviceComputeCapability		

## 1.1.7 Primary Context Management

CUDA	D	HIP	D	E
cuDevicePrimaryCtxGetState		hipDevicePrimaryCtxGetState		
cuDevicePrimaryCtxRelease		hipDevicePrimaryCtxRelease		
cuDevicePrimaryCtxRelease_v2		hipDevicePrimaryCtxRelease		
cuDevicePrimaryCtxReset		hipDevicePrimaryCtxReset		
cuDevicePrimaryCtxReset_v2		hipDevicePrimaryCtxReset		
cuDevicePrimaryCtxRetain		hipDevicePrimaryCtxRetain		
cuDevicePrimaryCtxSetFlags		hipDevicePrimaryCtxSetFlags		
cuDevicePrimaryCtxSetFlags_v2		hipDevicePrimaryCtxSetFlags		

## 1.1.8 Context Management

CUDA	D	HIP	D	E
cuCtxCreate		hipCtxCreate	+	
cuCtxCreate_v2		hipCtxCreate	+	
cuCtxCreate_v3		hipCtxCreate	+	
cuCtxDestroy		hipCtxDestroy	+	
cuCtxDestroy_v2		hipCtxDestroy	+	
cuCtxGetApiVersion		hipCtxGetApiVersion	+	
cuCtxGetCacheConfig		hipCtxGetCacheConfig	+	
cuCtxGetCurrent		hipCtxGetCurrent	+	
cuCtxGetDevice		hipCtxGetDevice	+	
cuCtxGetFlags		hipCtxGetFlags	+	
cuCtxGetLimit		hipDeviceGetLimit		
cuCtxGetSharedMemConfig		hipCtxGetSharedMemConfig	+	
cuCtxGetStreamPriorityRange		hipDeviceGetStreamPriorityRa nge		
cuCtxPopCurrent		hipCtxPopCurrent	+	
cuCtxPopCurrent_v2		hipCtxPopCurrent	+	
cuCtxPushCurrent		hipCtxPushCurrent	+	
cuCtxPushCurrent_v2		hipCtxPushCurrent	+	
cuCtxSetCacheConfig		hipCtxSetCacheConfig	+	
cuCtxSetCurrent		hipCtxSetCurrent	+	
cuCtxSetSharedMemConfig		hipCtxSetSharedMemConfig	+	
cuCtxSynchronize		hipCtxSynchronize	+	
cuCtxCreate_v3		hipCtxCreate	+	

#### 1.1.9 Context Management [DEPRECATED]

Context Management [Deprecated] is currently unsupported.

#### 1.1.10 Module Management

CUDA	D	HIP	D	E
cuModuleGetFunction		hipModuleGetFunction		
cuModuleGetGlobal		hipModuleGetGlobal		
cuModuleGetGlobal_v2		hipModuleGetGlobal		
cuModuleGetTexRef		hipModuleGetTexRef		
cuModuleLoad		hipModuleLoad		
cuModuleLoadData		hipModuleLoadData		
cuModuleLoadDataEx		hipModuleLoadDataEx		
cuModuleUnload		hipModuleUnload		

#### **1.1.11 Memory Management**

CUDA	D	HIP	D	E
cuArA581:C639		hipArray3DCreate		
cuArray3DCreate_v2		hipArray3DCreate		
cuArrayCreate		hipArrayCreate		
cuArrayCreate_v2		hipArrayCreate		
cuArrayDestroy		hipArrayDestroy		
cuDeviceGetByPCIBusId		hipDeviceGetByPCIBusId		
cuDeviceGetPCIBusId		hipDeviceGetPCIBusId		
cuIpcCloseMemHandle		hipIpcCloseMemHandle		
cuIpcGetEventHandle		hipIpcGetEventHandle		
cuIpcGetMemHandle		hipIpcGetMemHandle		
cuIpcOpenEventHandle		hipIpcOpenEventHandle		
cuIpcOpenMemHandle		hipIpcOpenMemHandle		
cuMemAlloc		hipMalloc		
cuMemAllocHost		hipHostAlloc		
cuMemAllocHost_v2		hipHostAlloc		
cuMemAllocManaged		hipMallocManaged		
cuMemAllocPitch		hipMemAllocPitch		
cuMemAllocPitch_v2		hipMemAllocPitch		
cuMemAlloc_v2		hipMalloc		
cuMemFree		hipFree		
cuMemFreeHost		hipHostFree		

CUDA	D	HIP	D	E
cuMemFree_v2		hipFree		
cuMemGetAddressRange		hipMemGetAddressRange		
cuMemGetAddressRange_v2		hipMemGetAddressRange		
cuMemGetInfo		hipMemGetInfo		
cuMemGetInfo_v2		hipMemGetInfo		
cuMemHostAlloc		hipHostAlloc		
cuMemHostGetDevicePointer		hipHostGetDevicePointer		
cuMemHostGetDevicePointer_v2		hipHostGetDevicePointer		
cuMemHostGetFlags		hipHostGetFlags		
cuMemHostRegister		hipHostRegister		
cuMemHostRegister_v2		hipHostRegister		
cuMemHostUnregister		hipHostUnregister		
cuMemcpy2D		hipMemcpyParam2D		
cuMemcpy2DAsync		hipMemcpyParam2DAsync		
cuMemcpy2DAsync_v2		hipMemcpyParam2DAsync		
cuMemcpy2DUnaligned		hipDrvMemcpy2DUnaligned		
cuMemcpy2DUnaligned_v2		hipDrvMemcpy2DUnaligned		
cuMemcpy2D_v2		hipMemcpyParam2D		
cuMemcpy3D		hipDrvMemcpy3D		
cuMemcpy3DAsync		hipDrvMemcpy3DAsync		
cuMemcpy3DAsync_v2		hipDrvMemcpy3DAsync		
cuMemcpy3D_v2		hipDrvMemcpy3D		
cuMemcpyAtoH		hipMemcpyAtoH		
cuMemcpyAtoH_v2		hipMemcpyAtoH		
cuMemcpyDtoD		hipMemcpyDtoD		
cuMemcpyDtoDAsync		hipMemcpyDtoDAsync		
cuMemcpyDtoDAsync_v2		hipMemcpyDtoDAsync		
cuMemcpyDtoD_v2		hipMemcpyDtoD		
cuMemcpyDtoH		hipMemcpyDtoH		
cuMemcpyDtoHAsync		hipMemcpyDtoHAsync		
cuMemcpyDtoHAsync_v2		hipMemcpyDtoHAsync		
cuMemcpyDtoH_v2		hipMemcpyDtoH		
cuMemcpyHtoA		hipMemcpyHtoA		
cuMemcpyHtoA_v2		hipMemcpyHtoA		
cuMemcpyHtoD		hipMemcpyHtoD		
cuMemcpyHtoDAsync		hipMemcpyHtoDAsync		
cuMemcpyHtoDAsync_v2		hipMemcpyHtoDAsync		
cuMemcpyHtoD_v2		hipMemcpyHtoD		
cuMemsetD16		hipMemsetD16		
cuMemsetD16Async		hipMemsetD16Async		
cuMemsetD16_v2		hipMemsetD16		
cuMemsetD32		hipMemsetD32		

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CUDA	D	HIP	D	E
cuMemsetD32Async		hipMemsetD32Async		
cuMemsetD32_v2		hipMemsetD32		
cuMemsetD8		hipMemsetD8		
cuMemsetD8Async		hipMemsetD8Async		
cuMemsetD8_v2		hipMemsetD8		
cuMipmappedArrayCreate		hipMipmappedArrayCreate		
cuMipmappedArrayDestroy		hipMipmappedArrayDestroy		
cuMipmappedArrayGetLevel		hipMipmappedArrayGetLevel		

#### 1.1.12 Virtual Memory Management

Virtual Memory Management is currently unsupported.

#### 1.1.13 Stream Ordered Memory Allocator

Stream Ordered Memory Allocator is currently unsupported.

#### 1.1.14 Unified Addressing

CUDA	D	HIP	D	E
cuMemAdvise		hipMemAdvise		
cuMemRangeGetAttribute		hipMemRangeGetAttribute		
cuMemRangeGetAttributes		hipMemRangeGetAttributes		
cuMemPrefetchAsync		hipMemPrefetchAsync		

#### 1.1.15 Stream Management

CUDA	D	HIP	D	E
cuStreamAddCallback		hipStreamAddCallback		
cuStreamAttachMemAsync		hipStreamAttachMemAsync		
cuStreamBeginCapture		hipStreamBeginCapture		
cuStreamBeginCapture_v2		hipStreamBeginCapture		
cuStreamCreate		hipStreamCreateWithFlags		
cuStreamCreateWithPriority		hipStreamCreateWithPriority		
cuStreamDestroy		hipStreamDestroy		
cuStreamDestroy_v2		hipStreamDestroy		
cuStreamEndCapture		hipStreamEndCapture		
cuStreamGetFlags		hipStreamGetFlags		
cuStreamGetPriority		hipStreamGetPriority		
cuStreamQuery		hipStreamQuery		
cuStreamSynchronize		hipStreamSynchronize		

#### 1.1.16 Event Management

CUDA	D	HIP	D	E
cuEventCreate		hipEventCreateWithFlags		
cuEventDestroy		hipEventDestroy		
cuEventDestroy_v2		hipEventDestroy		
cuEventElapsedTime		hipEventElapsedTime		
cuEventQuery		hipEventQuery		
cuEventRecord		hipEventRecord		
cuEventSynchronize		hipEventSynchronize		

#### 1.1.17 External Resource Interoperability

CUDA	D	HIP	D	E
cuDestroyExternalMemory		hipDestroyExternalMemory		
		hipExternalMemoryGetMapped		
cuExternalMemoryGetMappedBuffer		Buffer		
cuImportExternalMemory		hipImportExternalMemory		
cuImportExternalSemaphore		hipImportExternalSemaphore		
		hipSignalExternalSemaphoresA		
cuSignalExternalSemaphoresAsync		sync		
		hipWaitExternalSemaphoresAs		
cuWaitExternalSemaphoresAsync		ync		

#### **1.1.18 Stream Memory Operations**

CUDA	D	HIP	D	E
cuStreamWaitValue32		hipStreamWaitValue32		
cuStreamWaitValue64		hipStreamWaitValue64		
cuStreamWriteValue32		hipStreamWriteValue32		
cuStreamWriteValue64		hipStreamWriteValue64		

#### 1.1.19 Execution Control

CUDA	D	HIP	D	E
cuFuncGetAttribute		hipFuncGetAttribute		
cuLaunchKernel		hipModuleLaunchKernel		

#### 1.1.20 Execution Control [DEPRECATED]

Execution Control (Deprecated) is no longer unsupported.

### 1.1.21 Graph Management

CUDA	D	HIP	D	E
cuGraphAddDependencies		hipGraphAddDependencies		+
cuGraphAddEmptyNode		hipGraphAddEmptyNode		+
cuGraphAddKernelNode		hipGraphAddKernelNode		+
cuGraphAddMemcpyNode		hipGraphAddMemcpyNode		+
cuGraphAddMemsetNode		hipGraphAddMemsetNode		+
cuGraphCreate		hipGraphCreate		+
cuGraphDestroy		hipGraphDestroy		+
cuGraphExecDestroy		hipGraphExecDestroy		+
cuGraphExecKernelNodeSetParams		hipGraphExecKernelNodeSetPa rams		+
cuGraphGetNodes		hipGraphGetNodes		+
cuGraphGetRootNodes		hipGraphGetRootNodes		+
cuGraphInstantiate		hipGraphInstantiate		+
cuGraphInstantiate_v2		hipGraphInstantiate		+
cuGraphKernelNodeGetParams		hipGraphKernelNodeGetParam s		+
cuGraphKernelNodeSetParams		hipGraphKernelNodeSetParams		+
cuGraphLaunch		hipGraphLaunch		+
cuGraphMemcpyNodeGetParams		hipGraphMemcpyNodeGetPara ms		+
cuGraphMemcpyNodeSetParams		hipGraphMemcpyNodeSetPara ms		+
cuGraphMemsetNodeGetParams		hipGraphMemsetNodeGetPara ms		+
cuGraphMemsetNodeSetParams		hipGraphMemsetNodeSetPara ms		+

### 1.1.22 Occupancy

CUDA	D	HIP	D	E
cuOccupancyMaxActiveBlocksPerMultipro		hipModuleOccupancyMaxActiv		
cessor		eBlocksPerMultiprocessor		
		hipModuleOccupancyMaxActiv		
cuOccupancyMaxActiveBlocksPerMultipro		eBlocksPerMultiprocessorWith		
cessorWithFlags		Flags		
		hipModuleOccupancyMaxPote		
cuOccupancyMaxPotentialBlockSize		ntialBlockSize		
cuOccupancyMaxPotentialBlockSizeWithF		hipModuleOccupancyMaxPote		
lags		ntialBlockSizeWithFlags		

### 1.1.23 Texture Reference Management [DEPRECATED]

CUDA	D	HIP	D	E
cuTeA760:D781	+	hipTexRefGetAddress	+	
cuTexRefGetAddressMode	+	hipTexRefGetAddressMode	+	

CUDA	D	HIP	D	E
cuTexRefGetAddress_v2	+	hipTexRefGetAddress	+	
cuTexRefGetArray	+	hipTexRefGetArray		
cuTexRefGetFilterMode	+	hipTexRefGetFilterMode	+	
cuTexRefGetFlags	+	hipTexRefGetFlags	+	
cuTexRefGetFormat	+	hipTexRefGetFormat	+	
cuTexRefGetMaxAnisotropy	+	hipTexRefGetMaxAnisotropy	+	
cuTexRefGetMipmapFilterMode	+	hipTexRefGetMipmapFilterMo de	+	
cuTexRefGetMipmapLevelBias	+	hipTexRefGetMipmapLevelBia s	+	
cuTexRefGetMipmapLevelClamp	+	hipTexRefGetMipmapLevelCla mp	+	
cuTexRefGetMipmappedArray	+	hipTexRefGetMipMappedArra y	+	
cuTexRefSetAddress	+	hipTexRefSetAddress	+	
cuTexRefSetAddress2D	+	hipTexRefSetAddress2D	+	
cuTexRefSetAddress2D_v2		hipTexRefSetAddress2D	+	
cuTexRefSetAddress2D_v3		hipTexRefSetAddress2D	+	
cuTexRefSetAddressMode	+	hipTexRefSetAddressMode		
cuTexRefSetAddress_v2	+	hipTexRefSetAddress	+	
cuTexRefSetArray	+	hipTexRefSetArray		
cuTexRefSetBorderColor	+	hipTexRefSetBorderColor		
cuTexRefSetFilterMode	+	hipTexRefSetFilterMode		
cuTexRefSetFlags	+	hipTexRefSetFlags		
cuTexRefSetFormat	+	hipTexRefSetFormat		
cuTexRefSetMaxAnisotropy	+	hipTexRefSetMaxAnisotropy		
cuTexRefSetMipmapFilterMode	+	hipTexRefSetMipmapFilterMo de		
cuTexRefSetMipmapLevelBias	+	hipTexRefSetMipmapLevelBia s		
cuTexRefSetMipmapLevelClamp	+	hipTexRefSetMipmapLevelCla mp		
cuTexRefSetMipmappedArray	+	hipTexRefSetMipmappedArray		

### 1.1.24 Surface Reference Management [DEPRECATED]

Surface Reference Management (Deprecated) is no longer supported.

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#### 1.1.25 Texture Object Management

CUDA	D	HIP	D	E
cuTexObjectCreate		hipTexObjectCreate		
cuTexObjectDestroy		hipTexObjectDestroy		
cuTexObjectGetResourceDesc		hipTexObjectGetResourceDesc		
cuTexObjectGetResourceViewDesc		hipTexObjectGetResourceView Desc		
cuTexObjectGetTextureDesc		hipTexObjectGetTextureDesc		

#### 1.1.26 Surface Object Management

Surface Object Management is no longer supported.

#### **1.1.27** Peer Context Memory Access

CUDA	D	HIP	D	E
cuCtxDisablePeerAccess		hipCtxDisablePeerAccess	+	
cuCtxEnablePeerAccess		hipCtxEnablePeerAccess	+	
cuDeviceCanAccessPeer		hipDeviceCanAccessPeer		
cuDeviceGetP2PAttribute		hipDeviceGetP2PAttribute		

#### 1.1.28 Graphics Interoperability

CUDA	D	HIP	D	E
cuGraphicsMapResources		hipGraphicsMapResources		
		hipGraphicsResourceGetMappe		
cuGraphicsResourceGetMappedPointer		dPointer		
		hipGraphicsResourceGetMappe		
cuGraphicsResourceGetMappedPointer_v2		dPointer		
cuGraphicsUnmapResources		hipGraphicsUnmapResources		
cuGraphicsUnregisterResource		hipGraphicsUnregisterResource		

#### **1.1.29 Driver Entry Point Access**

Driver Entry Point Access is no longer supported.

### 1.1.30 Profiler Control [DEPRECATED]

Profiler Control (Deprecated) is no longer supported.

#### 1.1.31 Profiler Control

CUDA	D	HIP	D	E
cuProfilerStart		hipProfilerStart	+	
cuProfilerStop		hipProfilerStop	+	

#### 1.1.32 OpenGL Interoperability

CUDA	D	HIP	D	E
cuGLGetDevices		hipGLGetDevices		
cuGraphicsGLRegisterBuffer		hipGraphicsGLRegisterBuffer		

#### 1.1.33 VDPAU Interoperability

VDPAU Interoperability is no longer supported.

#### 1.1.34 EGL Interoperability

EGL Interoperability is no longer supported.

#### 1.1.35 Direct3D 9 Interoperability

Direct3D 9 Interoperability is no longer supported.

#### 1.1.36 Direct3D 10 Interoperability

Direct3D 10 Interoperability is no longer supported.

#### 1.1.37 Direct3D 11 Interoperability

Direct3D 11 Interoperability is no longer supported

# 1.2 CUDA Runtime API Supported by HIP

# 1.2.1 Device Management

CUDA	D	HIP	D	E
cudaChooseDevice		hipChooseDevice		
cudaDeviceGetAttribute		hipDeviceGetAttribute		
cudaDeviceGetByPCIBusId		hipDeviceGetByPCIBusId		
cudaDeviceGetCacheConfig		hipDeviceGetCacheConfig		
cudaDeviceGetLimit		hipDeviceGetLimit		
cudaDeviceGetP2PAttribute		hipDeviceGetP2PAttribute		
cudaDeviceGetPCIBusId		hipDeviceGetPCIBusId		
cudaDeviceGetSharedMemConfig		hipDeviceGetSharedMemConfi		
cudaDeviceGetStreamPriorityRange		hipDeviceGetStreamPriorityRa nge		
cudaDeviceReset		hipDeviceReset		
cudaDeviceSetCacheConfig		hipDeviceSetCacheConfig		
cudaDeviceSetSharedMemConfig		hipDeviceSetSharedMemConfi		
cudaDeviceSynchronize		hipDeviceSynchronize		
cudaGetDevice		hipGetDevice		
cudaGetDeviceCount		hipGetDeviceCount		
cudaGetDeviceFlags		hipGetDeviceFlags		
cudaGetDeviceProperties		hipGetDeviceProperties		
cudaIpcCloseMemHandle		hipIpcCloseMemHandle		
cudaIpcGetEventHandle		hipIpcGetEventHandle		
cudaIpcGetMemHandle		hipIpcGetMemHandle		
cudaIpcOpenEventHandle		hipIpcOpenEventHandle		
cudaIpcOpenMemHandle		hipIpcOpenMemHandle		
cudaSetDevice		hipSetDevice		
cudaSetDeviceFlags		hipSetDeviceFlags		

# 1.2.2 Thread Management [DEPRECATED]

CUDA	D	HIP	D	E
cudaThreadExit	+	hipDeviceReset		
cudaThreadGetCacheConfig	+	hipDeviceGetCacheConfig		
cudaThreadSetCacheConfig	+	hipDeviceSetCacheConfig		
cudaThreadSynchronize	+	hipDeviceSynchronize		

# 1.2.3 Error Handling

CUDA	D	HIP	D	E
cudaGetErrorName		hipGetErrorName		
cudaGetErrorString		hipGetErrorString		
cudaGetLastError		hipGetLastError		
cudaPeekAtLastError		hipPeekAtLastError		

# 1.2.4 Stream Management

CUDA	D	HIP	D	E
cudaStreamAddCallback		hipStreamAddCallback		
cudaStreamAttachMemAsync		hipStreamAttachMemAsync		
cudaStreamBeginCapture		hipStreamBeginCapture		
cudaStreamCreate		hipStreamCreate		
cudaStreamCreateWithFlags		hipStreamCreateWithFlags		
cudaStreamCreateWithPriority		hipStreamCreateWithPriority		
cudaStreamDestroy		hipStreamDestroy		
cudaStreamEndCapture		hipStreamEndCapture		
cudaStreamGetFlags		hipStreamGetFlags		
cudaStreamGetPriority		hipStreamGetPriority		
cudaStreamQuery		hipStreamQuery		
cudaStreamSynchronize		hipStreamSynchronize		

# 1.2.5 Event Management

CUDA	D	HIP	D	E
cudaEventCreate		hipEventCreate		
cudaEventCreateWithFlags		hipEventCreateWithFlags		
cudaEventDestroy		hipEventDestroy		
cudaEventElapsedTime		hipEventElapsedTime		
cudaEventQuery		hipEventQuery		
cudaEventRecord		hipEventRecord		
cudaEventSynchronize		hipEventSynchronize		

# 1.2.6 External Resource Interoperability

CUDA	D	HIP	D	E
cudaDestroyExternalMemory		hipDestroyExternalMemory		
cudaDestroyExternalSemaphore		hipDestroyExternalSemaphore		
cudaExternalMemoryGetMappedBuffer		hipExternalMemoryGetMapped Buffer		
cudaImportExternalMemory		hipImportExternalMemory		
cudaImportExternalSemaphore		hipImportExternalSemaphore		

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	hipSignalExternalSemaphoresA	
cudaSignalExternalSemaphoresAsync	sync	
	hipWaitExternalSemaphoresAs	
cudaWaitExternalSemaphoresAsync	ync	

### 1.2.7 Execution Control

CUDA	D	HIP	D	E
cudaFuncGetAttributes		hipFuncGetAttributes		
cudaFuncSetAttribute		hipFuncSetAttribute		
cudaFuncSetCacheConfig		hipFuncSetCacheConfig		
cudaFuncSetSharedMemConfig		hipFuncSetSharedMemConfig		
cudaLaunchCooperativeKernel		hipLaunchCooperativeKernel		
cudaLaunchCooperativeKernelMultiDevice	+	hipLaunchCooperativeKernelM ultiDevice		
cudaLaunchKernel		hipLaunchKernel		

# 1.2.8 Occupancy

CUDA	D	HIP	D	E
cudaOccupancyMaxActiveBlocksPerMultip		hipOccupancyMaxActiveBlock		
rocessor		sPerMultiprocessor		
cudaOccupancyMaxActiveBlocksPerMultip		hipOccupancyMaxActiveBlock		
rocessorWithFlags		sPerMultiprocessorWithFlags		
cudaOccupancyMaxPotentialBlockSize		hipOccupancyMaxPotentialBlo		
		ckSize		

# 1.2.9 Memory Management

CUDA	D	HIP	D	E
cudaFree		hipFree		
cudaFreeArray		hipFreeArray		
cudaFreeHost		hipHostFree		
cudaFreeMipmappedArray		hipFreeMipmappedArray		
cudaGetMipmappedArrayLevel		hipGetMipmappedArrayLevel		
cudaGetSymbolAddress		hipGetSymbolAddress		
cudaGetSymbolSize		hipGetSymbolSize		
cudaHostAlloc		hipHostAlloc		
cudaHostGetDevicePointer		hipHostGetDevicePointer		
cudaHostGetFlags		hipHostGetFlags		
cudaHostRegister		hipHostRegister		
cudaHostUnregister		hipHostUnregister		
cudaMalloc		hipMalloc		
cudaMalloc3D		hipMalloc3D		
cudaMalloc3DArray		hipMalloc3DArray		
cudaMallocArray		hipMallocArray		
cudaMallocHost		hipMallocHost		
cudaMallocManaged		hipMallocManaged		
cudaMallocMipmappedArray		hipMallocMipmappedArray		
cudaMallocPitch		hipMallocPitch		
cudaMemAdvise		hipMemAdvise		
cudaMemGetInfo		hipMemGetInfo		
cudaMemPrefetchAsync		hipMemPrefetchAsync		
cudaMemRangeGetAttribute		hipMemRangeGetAttribute		
cudaMemRangeGetAttributes		hipMemRangeGetAttributes		
cudaMemcpy		hipMemcpy		
cudaMemcpy2D		hipMemcpy2D		
cudaMemcpy2DAsync		hipMemcpy2DAsync		
cudaMemcpy2DFromArray		hipMemcpy2DFromArray		
		hipMemcpy2DFromArrayAsyn		
cudaMemcpy2DFromArrayAsync		C		
cudaMemcpy2DToArray		hipMemcpy2DToArray		
cudaMemcpy2DToArrayAsync		hipMemcpy2DToArrayAsync		
cudaMemcpy3D		hipMemcpy3D		
cudaMemcpy3DAsync		hipMemcpy3DAsync		
cudaMemcpyAsync		hipMemcpyAsync		
cudaMemcpyFromSymbol		hipMemcpyFromSymbol		
cudaMemcpyFromSymbolAsync		hipMemcpyFromSymbolAsync		
cudaMemcpyPeer		hipMemcpyPeer		
cudaMemcpyPeerAsync		hipMemcpyPeerAsync		

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CUDA	D	HIP	D	E
cudaMemcpyToSymbol		hipMemcpyToSymbol		
cudaMemcpyToSymbolAsync		hipMemcpyToSymbolAsync		
cudaMemset		hipMemset		
cudaMemset2D		hipMemset2D		
cudaMemset2DAsync		hipMemset2DAsync		
cudaMemset3D		hipMemset3D		
cudaMemset3DAsync		hipMemset3DAsync		
cudaMemsetAsync		hipMemsetAsync		
make_cudaExtent		make_hipExtent		
make_cudaPitchedPtr		make_hipPitchedPtr		
make_cudaPos		make_hipPos		

### **1.2.10** Memory Management [DEPRECATED]

CUDA	D	HIP	D	E
cudaMemcpyFromArray	+	hipMemcpyFromArray	+	
cudaMemcpyToArray	+	hipMemcpyToArray	+	

### 1.2.11 Stream Ordered Memory Allocator

Stream Ordered Memory Allocator is no longer supported.

## 1.2.12 Unified Addressing

CUDA	D	HIP	D	E
cudaPointerGetAttributes		hipPointerGetAttributes		

# 1.2.13 Peer Device Memory Access

CUDA	D	HIP	D	E
cudaDeviceCanAccessPeer		hipDeviceCanAccessPeer		
cudaDeviceDisablePeerAccess		hipDeviceDisablePeerAccess		
cudaDeviceEnablePeerAccess		hipDeviceEnablePeerAccess		

# 1.2.14 OpenGL Interoperability

CUDA	D	HIP	D	E
cudaGLGetDevices		hipGLGetDevices		
cudaGraphicsGLRegisterBuffer		hipGraphicsGLRegisterBuffer		

### 1.2.15 VDPAU Interoperability

VDPAU Interoperability is no longer supported.

### 1.2.16 EGL Interoperability

EGL Interoperability is no longer supported.

### 1.2.17 Direct3D 9 Interoperability

Direct3D 9 Interoperability is no longer supported.

#### 1.2.18 Direct3D 10 Interoperability

Direct3D 10 Interoperability is no longer supported.

#### 1.2.19 Direct3D 11 Interoperability

Direct3D 11 Interoperability is no longer supported.

### 1.2.20 Graphics Interoperability

CUDA	D	HIP	D	E
cudaGraphicsMapResources		hipGraphicsMapResources		
		hipGraphicsResourceGetMappe		
cudaGraphicsResourceGetMappedPointer		dPointer		
cudaGraphicsUnmapResources		hipGraphicsUnmapResources		
cudaGraphicsUnregisterResource		hipGraphicsUnregisterResource		

## **1.2.21** Texture Reference Management [DEPRECATED]

CUDA	D	HIP	D	E
cudaBindTexture	+	hipBindTexture	+	
cudaBindTexture2D	+	hipBindTexture2D	+	
cudaBindTextureToArray	+	hipBindTextureToArray	+	
cudaBindTextureToMipmappedArray	+	hipBindTextureToMipmapped		
		Array		
cudaCreateChannelDesc		hipCreateChannelDesc		
cudaGetChannelDesc		hipGetChannelDesc		
cudaGetTextureAlignmentOffset	+	hipGetTextureAlignmentOffset	+	
cudaGetTextureReference	+	hipGetTextureReference		
cudaUnbindTexture	+	hipUnbindTexture	+	

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### 1.2.22 Surface Reference Management [DEPRECATED]

Surface Reference Management [DEPRECATED] is no longer supported.

### 1.2.23 Texture Object Management

CUDA	D	HIP	D	E
cuTexObjectGetTextureDesc		hipGetTextureObjectTextureDe		
		sc		
cudaCreateTextureObject		hipCreateTextureObject		
cudaDestroyTextureObject		hipDestroyTextureObject		
cudaGetTextureObjectResourceDesc		hipGetTextureObjectResourceD		
		esc		
cudaGetTextureObjectResourceViewDesc		hipGetTextureObjectResourceV		
		iewDesc		
cuTexObjectGetTextureDesc		hipGetTextureObjectTextureDe		
		sc		

# 1.2.24 Surface Object Management

CUDA	D	HIP	D	E
cudaCreateSurfaceObject		hipCreateSurfaceObject		
cudaDestroySurfaceObject		hipDestroySurfaceObject		

### 1.2.25 Version Management

CUDA	D	HIP	D	E
cudaDriverGetVersion		hipDriverGetVersion		
cudaRuntimeGetVersion		hipRuntimeGetVersion		

### 1.2.26 Graph Management

CUDA	D	HIP	D	E
cudaGraphAddDependencies		hipGraphAddDependencies		+
cudaGraphAddEmptyNode		hipGraphAddEmptyNode		+
cudaGraphAddKernelNode		hipGraphAddKernelNode		+
cudaGraphAddMemcpyNode		hipGraphAddMemcpyNode		+
cudaGraphAddMemcpyNode1D		hipGraphAddMemcpyNode1D		+
cudaGraphAddMemsetNode		hipGraphAddMemsetNode		+
cudaGraphCreate		hipGraphCreate		+
cudaGraphDestroy		hipGraphDestroy		+
cudaGraphExecDestroy		hipGraphExecDestroy		+
cudaGraphExecKernelNodeSetParams		hipGraphExecKernelNodeSetPa		+
		rams		
cudaGraphGetNodes		hipGraphGetNodes		+
cudaGraphGetRootNodes		hipGraphGetRootNodes		+

CUDA	D	HIP	D	E
cudaGraphInstantiate		hipGraphInstantiate		+
cudaGraphKernelNodeGetParams		hipGraphKernelNodeGetParam		+
		S		
cudaGraphKernelNodeSetParams		hipGraphKernelNodeSetParams		+
cudaGraphLaunch		hipGraphLaunch		+
cudaGraphMemcpyNodeGetParams		hipGraphMemcpyNodeGetPara		+
		ms		
cudaGraphMemcpyNodeSetParams		hipGraphMemcpyNodeSetPara		+
		ms		

## 1.2.27 Driver Entry Point Access

Driver Entry Point Access is no longer supported.

#### **1.2.28 C++ API Routines**

C++ API Routines are no longer supported.

#### 1.2.29 Interactions with CUDA Driver API

Interactions with CUDA Driver API are no longer supported.

### **1.2.30** Profiler Control [DEPRECATED]

Profiler Control (Deprecated) are no longer supported.

#### 1.2.31 Profiler Control

CUDA	D	HIP	D	E
cudaProfilerStart		hipProfilerStart	+	
cudaProfilerStop		hipProfilerStop	+	

### 1.2.32 Data Types Used by CUDA Runtime

CUDA	D	HIP	D	E
CUDA_IPC_HANDLE_SIZE		HIP_IPC_HANDLE_SIZE		
CUevent_st		ihipEvent_t		
CUgraphExec_st		hipGraphExec		+
CUgraphNode_st		hipGraphNode		+
CUgraph_st		ihipGraph		+
CUstream_st		ihipStream_t		
cudaAddressModeBorder		hipAddressModeBorder		
cudaAddressModeClamp		hipAddressModeClamp		
cudaAddressModeMirror		hipAddressModeMirror		
cudaAddressModeWrap		hipAddressModeWrap		

CUDA	D	HIP	D	E
cudaArray		hipArray		
cudaArrayCubemap		hipArrayCubemap		
cudaArrayDefault		hipArrayDefault		
cudaArrayLayered		hipArrayLayered		
cudaArraySurfaceLoadStore		hipArraySurfaceLoadStore		
cudaArrayTextureGather		hipArrayTextureGather		
cudaArray_const_t		hipArray_const_t		
cudaArray_t		hipArray_t		
cudaBoundaryModeClamp		hipBoundaryModeClamp		
cudaBoundaryModeTrap		hipBoundaryModeTrap		
cudaBoundaryModeZero		hipBoundaryModeZero		
cudaChannelFormatDesc		hipChannelFormatDesc		
cudaChannelFormatDesc		hipChannelFormatDesc		
cudaChannelFormatKind		hipChannelFormatKind		
cudaChannelFormatKindFloat		hipChannelFormatKindFloat		
cudaChannelFormatKindNone		hipChannelFormatKindNone		
cudaChannelFormatKindSigned		hipChannelFormatKindSign ed		
cudaChannelFormatKindUnsigned		hipChannelFormatKindUnsi gned		
cudaComputeMode		hipComputeMode		
cudaComputeModeDefault		hipComputeModeDefault		
cudaComputeModeExclusive		hipComputeModeExclusive		
cudaComputeModeExclusiveProcess		hipComputeModeExclusive Process		
cudaComputeModeProhibited		hipComputeModeProhibited		
cudaCooperativeLaunchMultiDeviceNo PostSync		hipCooperativeLaunchMulti DeviceNoPostSync		
cudaCooperativeLaunchMultiDeviceNo PreSync		hipCooperativeLaunchMulti DeviceNoPreSync		
cudaCpuDeviceId		hipCpuDeviceId		
cudaDevAttrAsyncEngineCount		hipDeviceAttributeAsyncEn gineCount		
cudaDevAttrCanMapHostMemory		hipDeviceAttributeCanMap HostMemory		
cudaDevAttrCanUseHostPointerForReg isteredMem		hipDeviceAttributeCanUseH ostPointerForRegisteredMe m		
cudaDevAttrClockRate		hipDeviceAttributeClockRat e		
cudaDevAttrComputeCapabilityMajor		hipDeviceAttributeCompute CapabilityMajor		
cudaDevAttrComputeCapabilityMinor		hipDeviceAttributeCompute CapabilityMinor		

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cudaDevAttrComputeMode		hipDeviceAttributeCompute Mode		
cudaDevAttrComputePreemptionSuppo		hipDeviceAttributeCompute		
rted		PreemptionSupported		
cudaDevAttrConcurrentKernels		hipDeviceAttributeConcurre		
		ntKernels		
cudaDevAttrConcurrentManagedAcces		hipDeviceAttributeConcurre		
s cudaDevAttrCooperativeLaunch		ntManagedAccess hipDeviceAttributeCooperati		
cudaDevAttrCooperativeLauticii		veLaunch		
cudaDevAttrCooperativeMultiDeviceL		hipDeviceAttributeCooperati		
aunch		veMultiDeviceLaunch		
cudaDevAttrDirectManagedMemAcces		hipDeviceAttributeDirectMa		
sFromHost		nagedMemAccessFromHost		
cudaDevAttrEccEnabled		hipDeviceAttributeEccEnabl		
		ed		
cudaDevAttrGlobalL1CacheSupported		hipDeviceAttributeGlobalL1		
cudaDevAttrGlobalMemoryBusWidth		CacheSupported hipDeviceAttributeMemory		
cudaDevAtti Giobalivieliloi y Bus w idtii		BusWidth		
cudaDevAttrGpuOverlap		hipDeviceAttributeAsyncEn		
The second of th		gineCount		
cudaDevAttrHostNativeAtomicSupport		hipDeviceAttributeHostNati		
ed		veAtomicSupported		
cudaDevAttrIntegrated		hipDeviceAttributeIntegrate d		
cudaDevAttrIsMultiGpuBoard		hipDeviceAttributeIsMultiG puBoard		
cudaDevAttrKernelExecTimeout		hipDeviceAttributeKernelEx		
		ecTimeout		
cudaDevAttrL2CacheSize		hipDeviceAttributeL2Cache		
		Size		
cudaDevAttrLocalL1CacheSupported		hipDeviceAttributeLocalL1		
1 D Au M 1M		CacheSupported		
cudaDevAttrManagedMemory		hipDeviceAttributeManaged Memory		
cudaDevAttrMaxBlockDimX		hipDeviceAttributeMaxBloc		
cudabe vi turvia Abrockbini A		kDimX		
cudaDevAttrMaxBlockDimY		hipDeviceAttributeMaxBloc		
		kĎimY		
cudaDevAttrMaxBlockDimZ		hipDeviceAttributeMaxBloc		
		kDimZ		
cudaDevAttrMaxBlocksPerMultiproces		hipDeviceAttributeMaxBloc		
sor cudaDevAttrMaxGridDimX		ksPerMultiprocessor		
CudaDevAlifiviaxOffdDiffix		hipDeviceAttributeMaxGrid DimX		
cudaDevAttrMaxGridDimY		hipDeviceAttributeMaxGrid		
		DimY		

CUDA	D	HIP	D	E
cudaDevAttrMaxGridDimZ		hipDeviceAttributeMaxGrid DimZ		
cudaDevAttrMaxPitch		hipDeviceAttributeMaxPitch		
cudaDevAttrMaxRegistersPerBlock		hipDeviceAttributeMaxRegi stersPerBlock		
cudaDevAttrMaxRegistersPerMultiproc essor		hipDeviceAttributeMaxRegi stersPerMultiprocessor		
cudaDevAttrMaxSharedMemoryPerBlo ck		hipDeviceAttributeMaxShar edMemoryPerBlock		
cudaDevAttrMaxSharedMemoryPerBlo ckOptin		hipDeviceAttributeSharedM emPerBlockOptin		
cudaDevAttrMaxSharedMemoryPerMu ltiprocessor		hipDeviceAttributeMaxShar edMemoryPerMultiprocesso r		
cudaDevAttrMaxSurface1DLayeredWidth		hipDeviceAttributeMaxSurfa ce1DLayered		
cudaDevAttrMaxSurface1DWidth		hipDeviceAttributeMaxSurfa ce1D		
cudaDevAttrMaxSurface2DHeight		hipDeviceAttributeMaxSurfa ce2D		
cudaDevAttrMaxSurface2DLayeredHei ght		hipDeviceAttributeMaxSurfa ce2DLayered		
cudaDevAttrMaxSurface2DLayeredWidth		hipDeviceAttributeMaxSurfa ce2DLayered		
cudaDevAttrMaxSurface2DWidth		hipDeviceAttributeMaxSurfa ce2D		
cudaDevAttrMaxSurface3DDepth		hipDeviceAttributeMaxSurfa ce3D		
cudaDevAttrMaxSurface3DHeight		hipDeviceAttributeMaxSurfa ce3D		
cudaDevAttrMaxSurface3DWidth		hipDeviceAttributeMaxSurfa ce3D		
cudaDevAttrMaxSurfaceCubemapLaye redWidth		hipDeviceAttributeMaxSurfa ceCubemapLayered		
cudaDevAttrMaxSurfaceCubemapWidt h		hipDeviceAttributeMaxSurfa ceCubemap		
cudaDevAttrMaxTexture1DLayeredWidth		hipDeviceAttributeMaxText ure1DLayered		
cudaDevAttrMaxTexture1DLinearWidt h		hipDeviceAttributeMaxText ure1DLinear		
cudaDevAttrMaxTexture1DMipmappe dWidth		hipDeviceAttributeMaxText ure1DMipmap		
cudaDevAttrMaxTexture1DWidth		hipDeviceAttributeMaxText ure1DWidth		
cudaDevAttrMaxTexture2DGatherHeig ht		hipDeviceAttributeMaxText ure2DGather		
cudaDevAttrMaxTexture2DGatherWidt h		hipDeviceAttributeMaxText ure2DGather		

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cudaDevAttrMaxTexture2DHeight		hipDeviceAttributeMaxText ure2DHeight		
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cudaDevAttrMaxTexture3DDepth		ure2DWidth hipDeviceAttributeMaxText		
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cudaDevAttrMaxTexture1DLayeredWidth		hipDeviceAttributeMaxText ure1DLayered		
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cudaDevAttrTexturePitchAlignment		hipDeviceAttributeTexturePi tchAlignment		
cudaDevAttrTotalConstantMemory		hipDeviceAttributeTotalCon stantMemory		

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cudaDevAttrUnifiedAddressing		hipDeviceAttributeUnifiedA		
		ddressing		
cudaDevAttrWarpSize		hipDeviceAttributeWarpSize		
cudaDevP2PAttrAccessSupported		hipDevP2PAttrAccessSupported		
cudaDevP2PAttrCudaArrayAccessSupp orted		hipDevP2PAttrHipArrayAcc essSupported		
cudaDevP2PAttrNativeAtomicSupporte d		hipDevP2PAttrNativeAtomi cSupported		
cudaDevP2PAttrPerformanceRank		hipDevP2PAttrPerformance Rank		
cudaDeviceAttr		hipDeviceAttribute_t		
cudaDeviceBlockingSync		hipDeviceScheduleBlocking Sync		
cudaDeviceLmemResizeToMax		hipDeviceLmemResizeToM ax		
cudaDeviceMapHost		hipDeviceMapHost		
cudaDeviceP2PAttr		hipDeviceP2PAttr		
cudaDeviceProp		hipDeviceProp_t		
cudaDeviceScheduleAuto		hipDeviceScheduleAuto		
cudaDeviceScheduleBlockingSync		hipDeviceScheduleBlocking		
cudaDeviceScheduleMask		Sync hipDeviceScheduleMask		
cudaDeviceScheduleSpin		hipDeviceScheduleSpin		
cudaDeviceScheduleYield		hipDeviceScheduleYield		
cudaError		hipError_t		
		hipErrorAlreadyAcquired		
cudaErrorAlreadyAcquired cudaErrorAlreadyMapped		hipErrorAlreadyMapped		
cudaErrorArrayIsMapped				
cudaErrorAssert		hipErrorArrayIsMapped hipErrorAssert		
		hipErrorCapturedEvent		
cudaErrorCapturedEvent				
cudaErrorContextIsDestroyed		hipErrorContextIsDestroyed		
cudaErrorCooperativeLaunchTooLarge		hipErrorCooperativeLaunch TooLarge		
cudaErrorCudartUnloading		hipErrorDeinitialized		
cudaErrorDeviceAlreadyInUse		hipErrorContextAlreadyInUs e		
cudaErrorDeviceUninitialized		hipErrorInvalidContext		
cudaErrorECCUncorrectable		hipErrorECCNotCorrectable		
cudaErrorFileNotFound		hipErrorFileNotFound		
cudaErrorHostMemoryAlreadyRegister ed		hipErrorHostMemoryAlread yRegistered		
cudaErrorHostMemoryNotRegistered		hipErrorHostMemoryNotRe gistered		

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cudaErrorIllegalAddress		hipErrorIllegalAddress		
cudaErrorInitializationError		hipErrorNotInitialized		
cudaErrorInsufficientDriver		hipErrorInsufficientDriver		
cudaErrorInvalidConfiguration		hipErrorInvalidConfiguratio		
		n		
cudaErrorInvalidDevice		hipErrorInvalidDevice		
cudaErrorInvalidDeviceFunction		hipErrorInvalidDeviceFuncti		
		on		
cudaErrorInvalidDevicePointer	+	hipErrorInvalidDevicePointe		
cudaErrorInvalidGraphicsContext		r hipErrorInvalidGraphicsCon		
cudaErrormvandGrapmesContext		text		
cudaErrorInvalidKernelImage		hipErrorInvalidImage		
cudaErrorInvalidMemcpyDirection		hipErrorInvalidMemcpyDire		
		ction		
cudaErrorInvalidPitchValue		hipErrorInvalidPitchValue		
cudaErrorInvalidPtx		hipErrorInvalidKernelFile		
cudaErrorInvalidResourceHandle		hipErrorInvalidHandle		
cudaErrorInvalidSource		hipErrorInvalidSource		
cudaErrorInvalidSymbol		hipErrorInvalidSymbol		
cudaErrorInvalidValue		hipErrorInvalidValue		
cudaErrorLaunchFailure		hipErrorLaunchFailure		
cudaErrorLaunchOutOfResources		hipErrorLaunchOutOfResou		
		rces		
cudaErrorLaunchTimeout		hipErrorLaunchTimeOut		
cudaErrorMapBufferObjectFailed		hipErrorMapFailed		
cudaErrorMemoryAllocation		hipErrorOutOfMemory		
cudaErrorMissingConfiguration		hipErrorMissingConfiguratio		
		n		
cudaErrorNoDevice		hipErrorNoDevice		
cudaErrorNoKernelImageForDevice		hipErrorNoBinaryForGpu		
cudaErrorNotMapped		hipErrorNotMapped		
cudaErrorNotMappedAsArray		hipErrorNotMappedAsArray		
cudaErrorNotMappedAsPointer		hipErrorNotMappedAsPoint		
and a Come N a (Dec. dec		er		
cudaErrorNotReady		hipErrorNotReady		
cudaErrorNotSupported		hipErrorNotSupported		
cudaErrorOperatingSystem		hipErrorOperatingSystem		
cudaErrorPeerAccessAlreadyEnabled		hipErrorPeerAccessAlready Enabled		
cudaErrorPeerAccessNotEnabled		hipErrorPeerAccessNotEnab led		
cudaErrorPeerAccessUnsupported		hipErrorPeerAccessUnsupported		
cudaErrorPriorLaunchFailure	+	hipErrorPriorLaunchFailure		

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cudaErrorProfilerAlreadyStarted	+	hipErrorProfilerAlreadyStart		
		ed		
cudaErrorProfilerAlreadyStopped	+	hipErrorProfilerAlreadyStop		
cudaErrorProfilerDisabled		ped hipErrorProfilerDisabled		
cudaErrorProfilerNotInitialized	+	hipErrorProfilerNotInitialize		
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cudaErrorSetOnActiveProcess		hipErrorSetOnActiveProcess		
cudaErrorSharedObjectInitFailed		hipErrorSharedObjectInitFai		
		led		
cudaErrorSharedObjectSymbolNotFoun		hipErrorSharedObjectSymbo		
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cudaErrorstreamCapturemphen		cit		
cudaErrorStreamCaptureInvalidated		hipErrorStreamCaptureInvali		
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cudaErrorStreamCaptureIsolation		hipErrorStreamCaptureIsolat		
1 F G G A M		ion		
cudaErrorStreamCaptureMerge		hipErrorStreamCaptureMerg e		
cudaErrorStreamCaptureUnjoined		hipErrorStreamCaptureUnjoi		
		ned		
cudaErrorStreamCaptureUnmatched		hipErrorStreamCaptureUnm		
		atched		
cudaErrorStreamCaptureUnsupported		hipErrorStreamCaptureUnsu pported		
cudaErrorStreamCaptureWrongThread		hipErrorStreamCaptureWron		
- Control of the cont		gThread		
cudaErrorSymbolNotFound		hipErrorNotFound		
cudaErrorUnknown		hipErrorUnknown		
cudaErrorUnmapBufferObjectFailed		hipErrorUnmapFailed		
cudaErrorUnsupportedLimit		hipErrorUnsupportedLimit		
cudaError_t		hipError_t		
cudaEventBlockingSync		hipEventBlockingSync		
cudaEventDefault		hipEventDefault		
cudaEventDisableTiming		hipEventDisableTiming		
cudaEventInterprocess		hipEventInterprocess		
cudaEvent_t		hipEvent_t		
cudaExternalMemoryBufferDesc		hipExternalMemoryBufferD esc		
cudaExternalMemoryHandleDesc		hipExternalMemoryHandleD esc		
cudaExternalMemoryHandleType		hipExternalMemoryHandleT		
		ype		
cudaExternalMemoryHandleTypeD3D1		hipExternalMemoryHandleT		
1Resource		ypeD3D11Resource		

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cudaExternalMemoryHandleTypeD3D1		hipExternalMemoryHandleT		
1ResourceKmt		ypeD3D11ResourceKmt		
cudaExternalMemoryHandleTypeD3D1		hipExternalMemoryHandleT		
2Heap		ypeD3D12Heap		
cudaExternalMemoryHandleTypeD3D1		hipExternalMemoryHandleT		
2Resource		ypeD3D12Resource		
cudaExternalMemoryHandleTypeOpaq		hipExternalMemoryHandleT		
ueFd		ypeOpaqueFd		
cudaExternalMemoryHandleTypeOpaq ueWin32		hipExternalMemoryHandleT ypeOpaqueWin32		
cudaExternalMemoryHandleTypeOpaq		hipExternalMemoryHandleT		
ueWin32Kmt		ypeOpaqueWin32Kmt		
cudaExternalMemory_t		hipExternalMemory_t		
cudaExternalSemaphoreHandleDesc		hipExternalSemaphoreHandl		
cudalizatinaiscinaphoreriandiesese		eDesc		
cudaExternalSemaphoreHandleType		hipExternalSemaphoreHandl		
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cudaExternalSemaphoreHandleTypeD3		hipExternalSemaphoreHandl		
D12Fence		eTypeD3D12Fence		
cudaExternalSemaphoreHandleTypeOp		hipExternalSemaphoreHandl		
aqueFd		eTypeOpaqueFd		
cudaExternalSemaphoreHandleTypeOp		hipExternalSemaphoreHandl		
aqueWin32		eTypeOpaqueWin32		
cudaExternalSemaphoreHandleTypeOp		hipExternalSemaphoreHandl		
aqueWin32Kmt		eTypeOpaqueWin32Kmt		
cudaExternalSemaphoreSignalParams		hipExternalSemaphoreSignal Params		
cudaExternalSemaphoreSignalParams_		hipExternalSemaphoreSignal		
v1		Params		
cudaExternalSemaphoreWaitParams		hipExternalSemaphoreWaitP		
1		arams		
cudaExternalSemaphoreWaitParams_v		hipExternalSemaphoreWaitP		
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cudaExternalSemaphore_t		hipExternalSemaphore_t		
cudaFilterModeLinear		hipFilterModeLinear		
cudaFilterModePoint		hipFilterModePoint		
cudaFuncAttribute		hipFuncAttribute		
cudaFuncAttributeMax		hipFuncAttributeMax		
cudaFuncAttributeMaxDynamicShared		hipFuncAttributeMaxDynam		
MemorySize		icSharedMemorySize		
cudaFuncAttributePreferredSharedMem		hipFuncAttributePreferredSh		
oryCarveout		aredMemoryCarveout		
cudaFuncAttributes		hipFuncAttributes		
cudaFuncCache		hipFuncCache_t		
cudaFuncCachePreferEqual		hipFuncCachePreferEqual		
cudaFuncCachePreferL1		hipFuncCachePreferL1		
cudaFuncCachePreferNone		hipFuncCachePreferNone		
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cudaFuncCachePreferShared		hipFuncCachePreferShared		
cudaGraphExecUpdateError		hipGraphExecUpdateError		+
cudaGraphExecUpdateErrorFunctionCh		hipGraphExecUpdateErrorF		+
anged		unctionChanged		
cudaGraphExecUpdateErrorNodeType		hipGraphExecUpdateErrorN		+
Changed		odeTypeChanged		
cudaGraphExecUpdateErrorNotSupport ed		hipGraphExecUpdateErrorN otSupported		+
cudaGraphExecUpdateErrorParameters		hipGraphExecUpdateErrorP		+
Changed		arametersChanged		·
cudaGraphExecUpdateErrorTopologyC		hipGraphExecUpdateErrorT		+
hanged		opologyChanged		
cudaGraphExecUpdateErrorUnsupporte		hipGraphExecUpdateErrorU		+
dFunctionChange		nsupportedFunctionChange		
cudaGraphExecUpdateResult		hipGraphExecUpdateResult		+
cudaGraphExecUpdateSuccess		hipGraphExecUpdateSucces s		+
cudaGraphExec_t		hipGraphExec_t		+
cudaGraphNodeType		hipGraphNodeType		+
cudaGraphNodeTypeCount		hipGraphNodeTypeCount		+
cudaGraphNodeTypeEmpty		hipGraphNodeTypeEmpty		+
cudaGraphNodeTypeEventRecord		hipGraphNodeTypeEventRe		+
		cord		
cudaGraphNodeTypeGraph		hipGraphNodeTypeGraph		+
cudaGraphNodeTypeHost		hipGraphNodeTypeHost		+
cudaGraphNodeTypeKernel		hipGraphNodeTypeKernel		+
cudaGraphNodeTypeMemcpy		hipGraphNodeTypeMemcpy		+
cudaGraphNodeTypeMemset		hipGraphNodeTypeMemset		+
cudaGraphNodeTypeWaitEvent		hipGraphNodeTypeWaitEve nt		+
cudaGraphNode_t		hipGraphNode_t		+
cudaGraph_t		hipGraph_t		+
cudaGraphicsResource		hipGraphicsResource		
cudaGraphicsResource_t		hipGraphicsResource_t		
cudaHostAllocDefault		hipHostMallocDefault		
cudaHostAllocMapped		hipHostMallocMapped		
cudaHostAllocPortable		hipHostMallocPortable		
cudaHostAllocWriteCombined		hipHostMallocWriteCombin		
		ed		
cudaHostFn_t		hipHostFn_t		
cudaHostNodeParams		hipHostNodeParams		
cudaHostRegisterDefault		hipHostRegisterDefault		
cudaHostRegisterIoMemory		hipHostRegisterIoMemory		
cudaHostRegisterMapped		hipHostRegisterMapped		

cudalNostRegisterPortable cudalPoeviceId cudalpeVemtHandle_st cudalpeEventHandle_st cudalpeEventHandle_st cudalpeEventHandle_st cudalpeMemHandle_st cudalpeMemHandle_st cudalpeMemLazyEnablePeerAccess cudakemElookeParams cudal_a.mithParams cudal_mithParams cudalmemAdviseSetAccessedBy hipAmadviseSetAccessed By cudaMemAdviseSetPreferredLocation cudaMemAdviseSetPreferredLocation cudaMemAdviseUnsetAccessedBy cudaMemAdviseUnsetAccessedBy cudaMemAdviseUnsetPreferredLocatio n cudaMemAdviseUnsetReadMostly hipMemAdviseUnsetReadM ostly cudaMemAttachGlobal cudaMemAttachGlobal hipMemAttachGlobal hipMemAttachGlobal cudaMemAttachHost hipMemAttachHost cudaMemRangeAttributeAccessedBy hipMemRangeAttributeAccessedBy hipMemRangeAttributeAccessedBy hipMemRangeAttributeAccessedBy cudaMemRangeAttributeAccessedBy hipMemRangeAttributeAccessedBy hipMemRangeAttributeAccessedBy hipMemRangeAttributeAccessedBy hipMemRangeAttributeAccessedBy hipMemRangeAttributeAccessedBy hipMemRangeAttributeAccessedBy hipMemRangeAttributeAccessedBy hipMemCapyAborans hipMemcpyDeviceToDevice cudaMemcpyDeviceToDevice hipMemcpyBostToHost hipMemcpyHostToHost hipMemcpyAdvise hipMemcpyAdvise	CUDA	D	HIP	D	E
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cuda/peMemLazyEnablePeer Access         hipIpcMemLazyEnablePeer Access           cudaKernelNodeParams         hipKernelNodeParams           cudaLaunchParams         hipLaunchParams           cudaLimit         hipLimit_t           cudaLimitMallocHeapSize         hipLimitPrintfFifoSize           cudaLimitPrintfFifoSize         hipLimitPrintfFifoSize           cudaMemAdviseSetAccessedBy         hipMemAdviseSetAccessed           cudaMemAdviseSetPreferredLocation         hipMemAdviseSetPreferred           cudaMemAdviseSetReadMostly         hipMemAdviseSetReadMost           cudaMemAdviseUnsetAccessedBy         hipMemAdviseUnsetAccess           cdBy         cudaMemAdviseUnsetPreferred           cudaMemAdviseUnsetReadMostly         hipMemAdviseUnsetPreferr           cudaMemAdviseUnsetReadMostly         hipMemAdviseUnsetReadMostly           cudaMemAdviseUnsetReadMostly         hipMemAdviseUnsetReadMostly           cudaMemAttachGlobal         hipMemAttachGlobal           cudaMemAttachBingle         hipMemAttachSingle           cudaMemRangeAttribute         hipMemRangeAttribute           cudaMemRangeAttributeLastPrefetchL         hipMemRangeAttributePrefetchLocation           cudaMemRangeAttributePreferredLocation         hipMemRangeAttributePrefetch           cudaMemRangeAttributeReadMostly         hipMempangeAttributePrefetch     <	cudaIpcMemHandle_st		hipIpcMemHandle_st		
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cudaLaunchParams cudaLaunchParams hipLaunchParams hipLaunchParams hipLaunchParams hipLaunchParams hipLimit_t cudaLimit cudaLimitMallocHeapSize hipLimitMallocHeapSize cudaLimitPrintfFifoSize hipLimitPrintfFifoSize hipLimitPrintfFifoSize cudaMemAdviseSetAccessedBy hipMemAdviseSetAccessed By cudaMemAdviseSetPreferredLocation cudaMemAdviseSetReadMostly hipMemAdviseSetReadMost cudaMemAdviseUnsetAccessedBy hipMemAdviseUnsetAccess edBy cudaMemAdviseUnsetPreferredLocatio hipMemAdviseUnsetPreferredLocatio n cudaMemAdviseUnsetReadMostly hipMemAdviseUnsetPreferr edLocation cudaMemAdviseUnsetReadMostly hipMemAdviseUnsetReadMostly cudaMemAdviseUnsetReadMostly hipMemAdviseUnsetReadMostly hipMemAdviseUnsetReadMostly cudaMemAttachGlobal cudaMemAttachGlobal hipMemAttachGlobal cudaMemAttachGlobal cudaMemAttachGlobal cudaMemAttachGlobal cudaMemAttachGlobal cudaMemRangeAttribute hipMemRangeAttribute cudaMemRangeAttribute cudaMemRangeAttributeAccessedBy hipMemRangeAttributeAccessedBy cudaMemRangeAttributeLastPrefetchL hipMemRangeAttributeLast cocation cudaMemRangeAttributePreferredLoca tion cudaMemRangeAttributePreferredLoca tion cudaMemRangeAttributeReadMostly hipMemRangeAttributePrefe rredLocation cudaMemRangeAttributeRead Mostly hipMemRangeAttributeRead Mostly hipMemcpyDefault hipMemcpyDefault cudaMemcpyDeviceToDevice cudaMemcpyDeviceToDevice hipMemcpyDeviceToDevice cudaMemcpyHostToDevice hipMemcpyHostToDevice cudaMemcpyHostToHost hipMemcpyKind	cudaIpcMemLazyEnablePeerAccess		hipIpcMemLazyEnablePeer		
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cudaLimitPrintfFifoSize         hipLimitPrintfFifoSize           cudaMemAdviseSetAccessedBy         hipMemAdviseSetAccessed           cudaMemAdviseSetPreferredLocation         hipMemAdviseSetPreferred           cudaMemAdviseSetReadMostly         hipMemAdviseSetReadMost           cudaMemAdviseUnsetAccessedBy         hipMemAdviseUnsetAccess           edBy         edBy           cudaMemAdviseUnsetPreferredLocatio         hipMemAdviseUnsetPreferr           n         edLocation           cudaMemAdviseUnsetReadMostly         hipMemAdviseUnsetReadM           cudaMemAttachGlobal         hipMemAttachGlobal           cudaMemAttachGlobal         hipMemAttachGlobal           cudaMemAttachGlobal         hipMemAttachGlobal           cudaMemRangeAttribute         hipMemRangeAttribute           cudaMemRangeAttribute         hipMemRangeAttribute           cudaMemRangeAttributeAccessedBy         hipMemRangeAttributeLast           cudaMemRangeAttributePreferredLocation         hipMemRangeAttributePreferred           cudaMemRangeAttributePreferredLocation         hipMemRangeAttributeRead           cudaMemRangeAttributeReadMostly         hipMemRangeAttributeRead           word         hipMemRangeAttributeRead           dostly         cudaMemcpyDefault           cudaMemcpyDeviceToDevice         hipMemcpyDeviceToDev			hipLimit_t		
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cudaStreamCallback_t hipStreamCallback_t	cudaSharedMemConfig		hipSharedMemConfig		
	cudaStreamCallback_t		hipStreamCallback_t		

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cudaStreamCaptureMode		hipStreamCaptureMode		
cudaStreamCaptureModeGlobal		hipStreamCaptureModeGlob al		
cudaStreamCaptureModeRelaxed		hipStreamCaptureModeRela xed		
cudaStreamCaptureModeThreadLocal		hipStreamCaptureModeThre adLocal		
cudaStreamCaptureStatus		hipStreamCaptureStatus		
cudaStreamCaptureStatusActive		hipStreamCaptureStatusActi ve		
cudaStreamCaptureStatusInvalidated		hipStreamCaptureStatusInva lidated		
cudaStreamCaptureStatusNone		hipStreamCaptureStatusNon e		
cudaStreamDefault		hipStreamDefault		
cudaStreamNonBlocking		hipStreamNonBlocking		
cudaStreamPerThread		hipStreamPerThread		
cudaStream_t		hipStream_t		
cudaSuccess		hipSuccess		
cudaSurfaceBoundaryMode		hipSurfaceBoundaryMode		
cudaSurfaceObject_t		hipSurfaceObject_t		
cudaTextureDesc		hipTextureDesc		
cudaTextureFilterMode		hipTextureFilterMode		
cudaTextureObject_t		hipTextureObject_t		
cudaTextureReadMode		hipTextureReadMode		
cudaTextureType1D		hipTextureType1D		
cudaTextureType1DLayered		hipTextureType1DLayered		
cudaTextureType2D		hipTextureType2D		
cudaTextureType2DLayered		hipTextureType2DLayered		
cudaTextureType3D		hipTextureType3D		
cudaTextureTypeCubemap		hipTextureTypeCubemap		
cudaTextureTypeCubemapLayered		hipTextureTypeCubemapLa yered		
surfaceReference		surfaceReference		
cudaDevAttrMaxTextureCubemapLaye		hipDeviceAttributeMaxText		
redWidth		ureCubemapLayered		
cudaGLDeviceList		hipGLDeviceList		
cudaGLDeviceListAll		hipGLDeviceListAll		
cudaGLDeviceListCurrentFrame		hipGLDeviceListCurrentFra me		
cudaGLDeviceListNextFrame		hipGLDeviceListNextFrame		
cudaGraphicsRegisterFlags		hipGraphicsRegisterFlags		
cudaGraphicsRegisterFlagsNone		hipGraphicsRegisterFlagsNo ne		

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cudaGraphicsRegisterFlagsReadOnly		hipGraphicsRegisterFlagsRe adOnly		
cudaGraphicsRegisterFlagsSurfaceLoad		hipGraphicsRegisterFlagsSu		
Store		rfaceLoadStore		
cudaGraphicsRegisterFlagsTextureGath		hipGraphicsRegisterFlagsTe		
er		xtureGather		
cudaGraphicsRegisterFlagsWriteDiscar		hipGraphicsRegisterFlagsWr		
d		iteDiscard		
cudaMemoryType		hipMemoryType		
cudaMemoryTypeDevice		hipMemoryTypeDevice		
cudaMemoryTypeHost		hipMemoryTypeHost		

# 1.2.33 Execution Control [REMOVED]

CUDA	D	HIP	D	E
cudaConfigureCall		hipConfigureCall		
cudaLaunch		hipLaunchByPtr		
cudaSetupArgument		hipSetupArgument		

# 1.3 cuBLAS APIs Supported by HIP

# 1.3.1 cuBLAS Data Types

CUDA	D	HIP	D	E
CUBLAS_ATOMICS_ALLOWED		HIPBLAS_ATOMICS_ALLOWED		
CUBLAS_ATOMICS_NOT_ALLOWED		HIPBLAS_ATOMICS_NOT_ALLOWED		
CUBLAS_DIAG_NON_UNIT		HIPBLAS_DIAG_NON_UNIT		
CUBLAS_DIAG_UNIT		HIPBLAS_DIAG_UNIT		
CUBLAS_FILL_MODE_FULL		HIPBLAS_FILL_MODE_FULL		
CUBLAS_FILL_MODE_LOWER		HIPBLAS_FILL_MODE_LOWER		
CUBLAS_FILL_MODE_UPPER		HIPBLAS_FILL_MODE_UPPER		
CUBLAS_GEMM_DEFAULT		HIPBLAS_GEMM_DEFAULT		
CUBLAS_GEMM_DFALT		HIPBLAS_GEMM_DEFAULT		
CUBLAS_OP_C		HIPBLAS_OP_C		
CUBLAS_OP_HERMITAN		HIPBLAS_OP_C		
CUBLAS_OP_N		HIPBLAS_OP_N		
CUBLAS_OP_T		HIPBLAS_OP_T		
CUBLAS_POINTER_MODE_DEVICE		HIPBLAS_POINTER_MODE_DEVICE		
CUBLAS_POINTER_MODE_HOST		HIPBLAS_POINTER_MODE_HOST		
CUBLAS_SIDE_LEFT		HIPBLAS_SIDE_LEFT		
CUBLAS_SIDE_RIGHT		HIPBLAS_SIDE_RIGHT		
CUBLAS_STATUS_ALLOC_FAILED		HIPBLAS_STATUS_ALLOC_FAILED		

### HIP-Supported CUDA API Reference Guide

CUBLAS_STATUS_ARCH_MISMATCH	HIPBLAS_STATUS_ARCH_MISMATCH	
CUBLAS_STATUS_EXECUTION_FAILED	HIPBLAS_STATUS_EXECUTION_FAILED	
CUBLAS_STATUS_INTERNAL_ERROR	HIPBLAS_STATUS_INTERNAL_ERROR	
CUBLAS_STATUS_INVALID_VALUE	HIPBLAS_STATUS_INVALID_VALUE	
CUBLAS_STATUS_MAPPING_ERROR	HIPBLAS_STATUS_MAPPING_ERROR	
CUBLAS_STATUS_NOT_INITIALIZED	HIPBLAS_STATUS_NOT_INITIALIZED	
CUBLAS_STATUS_NOT_SUPPORTED	HIPBLAS_STATUS_NOT_SUPPORTED	
CUBLAS_STATUS_SUCCESS	HIPBLAS_STATUS_SUCCESS	
cublasAtomicsMode_t	hipblasAtomicsMode_t	
cublasDataType_t	hipblasDatatype_t	
cublasDiagType_t	hipblasDiagType_t	
cublasFillMode_t	hipblasFillMode_t	
cublasGemmAlgo_t	hipblasGemmAlgo_t	
cublasHandle_t	hipblasHandle_t	
cublasOperation_t	hipblasOperation_t	
cublasPointerMode_t	hipblasPointerMode_t	
cublasSideMode_t	hipblasSideMode_t	
cublasStatus	hipblasStatus_t	
cublasStatus_t	hipblasStatus_t	

# 1.3.2 CUDA Datatypes Reference

CUDA	D	HIP	D	E
CUDA_C_16F		HIPBLAS_C_16F		
CUDA_C_32F		HIPBLAS_C_32F		
CUDA_C_32I		HIPBLAS_C_32I		
CUDA_C_32U		HIPBLAS_C_32U		
CUDA_C_64F		HIPBLAS_C_64F		
CUDA_C_8I		HIPBLAS_C_8I		
CUDA_C_8U		HIPBLAS_C_8U		
CUDA_R_16F		HIPBLAS_R_16F		
CUDA_R_32F		HIPBLAS_R_32F		
CUDA_R_32I		HIPBLAS_R_32I		
CUDA_R_32U		HIPBLAS_R_32U		
CUDA_R_64F		HIPBLAS_R_64F		
CUDA_R_8I		HIPBLAS_R_8I		
CUDA_R_8U		HIPBLAS_R_8U		
cudaDataType		hipblasDatatype_t		
cudaDataType_t		hipblasDatatype_t		

# 1.3.3 cuBLAS Helper Function Reference

CUDA	D	HIP	D	E
cublasCreate		hipblasCreate		
cublasCreate_v2		hipblasCreate		
cublasDestroy		hipblasDestroy		
cublasDestroy_v2		hipblasDestroy		
cublasGetAtomicsMode		hipblasGetAtomicsMode		
cublasGetMatrix		hipblasGetMatrix		
cublasGetMatrixAsync		hipblasGetMatrixAsync		
cublasGetPointerMode		hipblasGetPointerMode		
cublasGetPointerMode_v2		hipblasGetPointerMode		
cublasGetStream		hipblasGetStream		
cublasGetStream_v2		hipblasGetStream		
cublasGetVector		hipblasGetVector		
cublasGetVectorAsync		hipblasGetVectorAsync		
cublasSetAtomicsMode		hipblasSetAtomicsMode		
cublasSetMatrix		hipblasSetMatrix		
cublasSetMatrixAsync		hipblasSetMatrixAsync		
cublasSetPointerMode		hipblasSetPointerMode		
cublasSetPointerMode_v2		hipblasSetPointerMode		
cublasSetStream		hipblasSetStream		
cublasSetStream_v2		hipblasSetStream		
cublasSetVector		hipblasSetVector		
cublasSetVectorAsync		hipblasSetVectorAsync		

### 1.3.4 cuBLAS Level-1 Function Reference

CUDA	D	HIP	D	E
cublasCaxpy		hipblasCaxpy		
cublasCaxpy_v2		hipblasCaxpy		
cublasCcopy		hipblasCcopy		
cublasCcopy_v2		hipblasCcopy		
cublasCdotc		hipblasCdotc		
cublasCdotc_v2		hipblasCdotc		
cublasCdotu		hipblasCdotu		
cublasCdotu_v2		hipblasCdotu		
cublasCrot		hipblasCrot		
cublasCrot_v2		hipblasCrot		
cublasCrotg		hipblasCrotg		
cublasCrotg_v2		hipblasCrotg		

CUDA	D	НІР	D	E
cublasCscal		hipblasCscal		
cublasCscal_v2		hipblasCscal		
cublasCsrot		hipblasCsrot		
cublasCsrot_v2		hipblasCsrot		
cublasCsscal		hipblasCsscal		
cublasCsscal_v2		hipblasCsscal		
cublasCswap		hipblasCswap		
cublasCswap_v2		hipblasCswap		
cublasDasum		hipblasDasum		
cublasDasum_v2		hipblasDasum		
cublasDaxpy		hipblasDaxpy		
cublasDaxpy_v2		hipblasDaxpy		
cublasDcopy		hipblasDcopy		
cublasDcopy_v2		hipblasDcopy		
cublasDdot		hipblasDdot		
cublasDdot_v2		hipblasDdot		
cublasDnrm2		hipblasDnrm2		
cublasDnrm2_v2		hipblasDnrm2		
cublasDrot		hipblasDrot		
cublasDrot_v2		hipblasDrot		
cublasDrotg		hipblasDrotg		
cublasDrotg_v2		hipblasDrotg		
cublasDrotm		hipblasDrotm		
cublasDrotm_v2		hipblasDrotm		
cublasDrotmg		hipblasDrotmg		
cublasDrotmg_v2		hipblasDrotmg		
cublasDscal		hipblasDscal		
cublasDscal_v2		hipblasDscal		
cublasDswap		hipblasDswap		
cublasDswap_v2		hipblasDswap		
cublasDzasum		hipblasDzasum		
cublasDzasum_v2		hipblasDzasum		
cublasDznrm2		hipblasDznrm2		
cublasDznrm2_v2		hipblasDznrm2		
cublasIcamax		hipblasIcamax		
cublasIcamax_v2		hipblasIcamax		
cublasIcamin		hipblasIcamin		
cublasIcamin_v2		hipblasIcamin		
cublasIdamax		hipblasIdamax		
cublasIdamax_v2		hipblasIdamax		

CUDA	D	HIP	D	E
cublasIdamin		hipblasIdamin		
cublasIdamin_v2		hipblasIdamin		
cublasIsamax		hipblasIsamax		
cublasIsamax_v2		hipblasIsamax		
cublasIsamin		hipblasIsamin		
cublasIsamin_v2		hipblasIsamin		
cublasIzamax		hipblasIzamax		
cublasIzamax_v2		hipblasIzamax		
cublasIzamin		hipblasIzamin		
cublasIzamin_v2		hipblasIzamin		
cublasNrm2Ex		hipblasNrm2Ex		
cublasSasum		hipblasSasum		
cublasSasum_v2		hipblasSasum		
cublasSaxpy		hipblasSaxpy		
cublasSaxpy_v2		hipblasSaxpy		
cublasScasum		hipblasScasum		
cublasScasum_v2		hipblasScasum		
cublasScnrm2		hipblasScnrm2		
cublasScnrm2_v2		hipblasScnrm2		
cublasScopy		hipblasScopy		
cublasScopy_v2		hipblasScopy		
cublasSdot		hipblasSdot		
cublasSdot_v2		hipblasSdot		
cublasSnrm2		hipblasSnrm2		
cublasSnrm2_v2		hipblasSnrm2		
cublasSrot		hipblasSrot		
cublasSrot_v2		hipblasSrot		
cublasSrotg		hipblasSrotg		
cublasSrotg_v2		hipblasSrotg		
cublasSrotm		hipblasSrotm		
cublasSrotm_v2		hipblasSrotm		
cublasSrotmg		hipblasSrotmg		
cublasSrotmg_v2		hipblasSrotmg		
cublasSscal		hipblasSscal		
cublasSscal_v2		hipblasSscal		
cublasSswap		hipblasSswap		
cublasSswap_v2		hipblasSswap		
cublasZaxpy		hipblasZaxpy		
cublasZaxpy_v2		hipblasZaxpy		
cublasZcopy		hipblasZcopy		

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CUDA	D	HIP	D	E
cublasZcopy_v2		hipblasZcopy		
cublasZdotc		hipblasZdotc		
cublasZdotc_v2		hipblasZdotc		
cublasZdotu		hipblasZdotu		
cublasZdotu_v2		hipblasZdotu		
cublasZdrot		hipblasZdrot		
cublasZdrot_v2		hipblasZdrot		
cublasZdscal		hipblasZdscal		
cublasZdscal_v2		hipblasZdscal		
cublasZrot		hipblasZrot		
cublasZrot_v2		hipblasZrot		
cublasZrotg		hipblasZrotg		
cublasZrotg_v2		hipblasZrotg		
cublasZscal		hipblasZscal		
cublasZscal_v2		hipblasZscal		
cublasZswap		hipblasZswap		
cublasZswap_v2		hipblasZswap		

# 1.3.5 cuBLAS Level-2 Function Reference

CUDA	D	HIP	D	E
cublasCgbmv		hipblasCgbmv		
cublasCgbmv_v2		hipblasCgbmv		
cublasCgemv		hipblasCgemv		
cublasCgemv_v2		hipblasCgemv		
cublasCgerc		hipblasCgerc		
cublasCgerc_v2		hipblasCgerc		
cublasCgeru		hipblasCgeru		
cublasCgeru_v2		hipblasCgeru		
cublasChbmv		hipblasChbmv		
cublasChbmv_v2		hipblasChbmv		
cublasChemv		hipblasChemv		
cublasChemv_v2		hipblasChemv		
cublasCher		hipblasCher		
cublasCher2		hipblasCher2		
cublasCher2_v2		hipblasCher2		
cublasCher_v2		hipblasCher		
cublasChpmv		hipblasChpmv		
cublasChpmv_v2		hipblasChpmv		

CUDA	D	HIP	D	E
cublasChpr		hipblasChpr		
cublasChpr2		hipblasChpr2		
cublasChpr2_v2		hipblasChpr2		
cublasChpr_v2		hipblasChpr		
cublasCsymv		hipblasCsymv		
cublasCsymv_v2		hipblasCsymv		
cublasCsyr		hipblasCsyr		
cublasCsyr2		hipblasCsyr2		
cublasCsyr2_v2		hipblasCsyr2		
cublasCsyr_v2		hipblasCsyr		
cublasCtbmv		hipblasCtbmv		
cublasCtbmv_v2		hipblasCtbmv		
cublasCtbsv		hipblasCtbsv		
cublasCtbsv_v2		hipblasCtbsv		
cublasCtpmv		hipblasCtpmv		
cublasCtpmv_v2		hipblasCtpmv		
cublasCtpsv		hipblasCtpsv		
cublasCtpsv_v2		hipblasCtpsv		
cublasCtrmv		hipblasCtrmv		
cublasCtrmv_v2		hipblasCtrmv		
cublasCtrsv		hipblasCtrsv		
cublasCtrsv_v2		hipblasCtrsv		
cublasDgbmv		hipblasDgbmv		
cublasDgbmv_v2		hipblasDgbmv		
cublasDgemv		hipblasDgemv		
cublasDgemv_v2		hipblasDgemv		
cublasDger		hipblasDger		
cublasDger_v2		hipblasDger		
cublasDsbmv		hipblasDsbmv		
cublasDsbmv_v2		hipblasDsbmv		
cublasDspmv		hipblasDspmv		
cublasDspmv_v2		hipblasDspmv		
cublasDspr		hipblasDspr		
cublasDspr2		hipblasDspr2		
cublasDspr2_v2		hipblasDspr2		
cublasDspr_v2		hipblasDspr		
cublasDsymv		hipblasDsymv		
cublasDsymv_v2		hipblasDsymv		
cublasDsyr		hipblasDsyr		
cublasDsyr2		hipblasDsyr2		

CUDA	D	HIP	D	E
cublasDsyr2_v2		hipblasDsyr2		
cublasDsyr_v2		hipblasDsyr		
cublasDtbmv		hipblasDtbmv		
cublasDtbmv_v2		hipblasDtbmv		
cublasDtbsv		hipblasDtbsv		
cublasDtbsv_v2		hipblasDtbsv		
cublasDtpmv		hipblasDtpmv		
cublasDtpmv_v2		hipblasDtpmv		
cublasDtpsv		hipblasDtpsv		
cublasDtpsv_v2		hipblasDtpsv		
cublasDtrmv		hipblasDtrmv		
cublasDtrmv_v2		hipblasDtrmv		
cublasDtrsv		hipblasDtrsv		
cublasDtrsv_v2		hipblasDtrsv		
cublasSgbmv		hipblasSgbmv		
cublasSgbmv_v2		hipblasSgbmv		
cublasSgemv		hipblasSgemv		
cublasSgemv_v2		hipblasSgemv		
cublasSger		hipblasSger		
cublasSger_v2		hipblasSger		
cublasSsbmv		hipblasSsbmv		
cublasSsbmv_v2		hipblasSsbmv		
cublasSspmv		hipblasSspmv		
cublasSspmv_v2		hipblasSspmv		
cublasSspr		hipblasSspr		
cublasSspr2		hipblasSspr2		
cublasSspr2_v2		hipblasSspr2		
cublasSspr_v2		hipblasSspr		
cublasSsymv		hipblasSsymv		
cublasSsymv_v2		hipblasSsymv		
cublasSsyr		hipblasSsyr		
cublasSsyr2		hipblasSsyr2		
cublasSsyr2_v2		hipblasSsyr2		
cublasSsyr_v2		hipblasSsyr		
cublasStbmv		hipblasStbmv		
cublasStbmv_v2		hipblasStbmv		
cublasStbsv		hipblasStbsv		
cublasStbsv_v2		hipblasStbsv		
cublasStpmv		hipblasStpmv		
cublasStpmv_v2		hipblasStpmv		

CUDA	D	HIP	D	E
cublasStpsv		hipblasStpsv		
cublasStpsv_v2		hipblasStpsv		
cublasStrmv		hipblasStrmv		
cublasStrmv_v2		hipblasStrmv		
cublasStrsv		hipblasStrsv		
cublasStrsv_v2		hipblasStrsv		
cublasZgbmv		hipblasZgbmv		
cublasZgbmv_v2		hipblasZgbmv		
cublasZgemv		hipblasZgemv		
cublasZgemv_v2		hipblasZgemv		
cublasZgerc		hipblasZgerc		
cublasZgerc_v2		hipblasZgerc		
cublasZgeru		hipblasZgeru		
cublasZgeru_v2		hipblasZgeru		
cublasZhbmv		hipblasZhbmv		
cublasZhbmv_v2		hipblasZhbmv		
cublasZhemv		hipblasZhemv		
cublasZhemv_v2		hipblasZhemv		
cublasZher		hipblasZher		
cublasZher2		hipblasZher2		
cublasZher2_v2		hipblasZher2		
cublasZher_v2		hipblasZher		
cublasZhpmv		hipblasZhpmv		
cublasZhpmv_v2		hipblasZhpmv		
cublasZhpr		hipblasZhpr		
cublasZhpr2		hipblasZhpr2		
cublasZhpr2_v2		hipblasZhpr2		
cublasZhpr_v2		hipblasZhpr		
cublasZsymv		hipblasZsymv		
cublasZsymv_v2		hipblasZsymv		
cublasZsyr		hipblasZsyr		
cublasZsyr2		hipblasZsyr2		
cublasZsyr2_v2		hipblasZsyr2		
cublasZsyr_v2		hipblasZsyr		
cublasZtbmv		hipblasZtbmv		
cublasZtbmv_v2		hipblasZtbmv		
cublasZtbsv		hipblasZtbsv		
cublasZtbsv_v2		hipblasZtbsv		
cublasZtpmv		hipblasZtpmv		
cublasZtpmv_v2		hipblasZtpmv		

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CUDA	D	HIP	D	E
cublasZtpsv		hipblasZtpsv		
cublasZtpsv_v2		hipblasZtpsv		
cublasZtrmv		hipblasZtrmv		
cublasZtrmv_v2		hipblasZtrmv		
cublasZtrsv		hipblasZtrsv		
cublasZtrsv_v2		hipblasZtrsv		

### 1.3.6 cuBLAS Level-3 Function Reference

CUDA	D	HIP	D	E
cublasCgemm		hipblasCgemm		
cublasCgemmBatched		hipblasCgemmBatched		
cublasCgemmStridedBatched		hipblasCgemmStridedBatched		
cublasCgemm_v2		hipblasCgemm		
cublasChemm		hipblasChemm		
cublasChemm_v2		hipblasChemm		
cublasCher2k		hipblasCher2k		
cublasCher2k_v2		hipblasCher2k		
cublasCherk		hipblasCherk		
cublasCherk_v2		hipblasCherk		
cublasCherkx		hipblasCherkx		
cublasCsymm		hipblasCsymm		
cublasCsymm_v2		hipblasCsymm		
cublasCsyr2k		hipblasCsyr2k		
cublasCsyr2k_v2		hipblasCsyr2k		
cublasCsyrk		hipblasCsyrk		
cublasCsyrk_v2		hipblasCsyrk		
cublasCsyrkx		hipblasCsyrkx		
cublasCtrmm		hipblasCtrmm		
cublasCtrmm_v2		hipblasCtrmm		
cublasCtrsm		hipblasCtrsm		
cublasCtrsm_v2		hipblasCtrsm		
cublasDgemm		hipblasDgemm		
cublasDgemmBatched		hipblasDgemmBatched		
cublasDgemmStridedBatched		hipblasDgemmStridedBatched		
cublasDgemm_v2		hipblasDgemm		
cublasDsymm		hipblasDsymm		
cublasDsymm_v2		hipblasDsymm		
cublasDsyr2k		hipblasDsyr2k		

CUDA	D	HIP	D	E
cublasDsyr2k_v2		hipblasDsyr2k		
cublasDsyrk		hipblasDsyrk		
cublasDsyrk_v2		hipblasDsyrk		
cublasDsyrkx		hipblasDsyrkx		
cublasDtrmm		hipblasDtrmm		
cublasDtrmm_v2		hipblasDtrmm		
cublasDtrsm		hipblasDtrsm		
cublasDtrsm_v2		hipblasDtrsm		
cublasHgemm		hipblasHgemm		
cublasHgemmBatched		hipblasHgemmBatched		
cublasHgemmStridedBatched		hipblasHgemmStridedBatched		
cublasSgemm		hipblasSgemm		
cublasSgemmBatched		hipblasSgemmBatched		
cublasSgemmStridedBatched		hipblasSgemmStridedBatched		
cublasSgemm_v2		hipblasSgemm		
cublasSsymm		hipblasSsymm		
cublasSsymm_v2		hipblasSsymm		
cublasSsyr2k		hipblasSsyr2k		
cublasSsyr2k_v2		hipblasSsyr2k		
cublasSsyrk		hipblasSsyrk		
cublasSsyrk_v2		hipblasSsyrk		
cublasSsyrkx		hipblasSsyrkx		
cublasStrmm		hipblasStrmm		
cublasStrmm_v2		hipblasStrmm		
cublasStrsm		hipblasStrsm		
cublasStrsm_v2		hipblasStrsm		
cublasZgemm		hipblasZgemm		
cublasZgemmBatched		hipblasZgemmBatched		
cublasZgemmStridedBatched		hipblasZgemmStridedBatched		
cublasZgemm_v2		hipblasZgemm		
cublasZhemm		hipblasZhemm		
cublasZhemm_v2		hipblasZhemm		
cublasZher2k		hipblasZher2k		
cublasZher2k_v2		hipblasZher2k		
cublasZherk		hipblasZherk		
cublasZherk_v2		hipblasZherk		
cublasZherkx		hipblasZherkx		
cublasZsymm		hipblasZsymm		
cublasZsymm_v2		hipblasZsymm		
cublasZsyr2k		hipblasZsyr2k		

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CUDA	D	HIP	D	E
cublasZsyr2k_v2		hipblasZsyr2k		
cublasZsyrk		hipblasZsyrk		
cublasZsyrk_v2		hipblasZsyrk		
cublasZsyrkx		hipblasZsyrkx		
cublasZtrmm		hipblasZtrmm		
cublasZtrmm_v2		hipblasZtrmm		
cublasZtrsm		hipblasZtrsm		
cublasZtrsm_v2		hipblasZtrsm		

# 1.3.7 BLAS-like Extension

CUDA	D	HIP	D	E
cublasAxpyEx		hipblasAxpyEx		
cublasCdgmm		hipblasCdgmm		
cublasCgeam		hipblasCgeam		
cublasCgeqrfBatched		hipblasCgeqrfBatched		
cublasCgetrfBatched		hipblasCgetrfBatched		
cublasCgetriBatched		hipblasCgetriBatched		
cublasCgetrsBatched		hipblasCgetrsBatched		
cublasCtrsmBatched		hipblasCtrsmBatched		
cublasDdgmm		hipblasDdgmm		
cublasDgeam		hipblasDgeam		
cublasDgeqrfBatched		hipblasDgeqrfBatched		
cublasDgetrfBatched		hipblasDgetrfBatched		
cublasDgetriBatched		hipblasDgetriBatched		
cublasDgetrsBatched		hipblasDgetrsBatched		
cublasDotEx		hipblasDotEx		
cublasDotcEx		hipblasDotcEx		
cublasDtrsmBatched		hipblasDtrsmBatched		
cublasGemmBatchedEx		hipblasGemmBatchedEx		
cublasGemmEx		hipblasGemmEx		
cublasGemmStridedBatchedEx		hipblasGemmStridedBatchedEx		
cublasRotEx		hipblasRotEx		
cublasScalEx		hipblasScalEx		
cublasSdgmm		hipblasSdgmm		
cublasSgeam		hipblasSgeam		
cublasSgeqrfBatched		hipblasSgeqrfBatched		
cublasSgetrfBatched		hipblasSgetrfBatched		
cublasSgetriBatched		hipblasSgetriBatched		

CUDA	D	HIP	D	E
cublasSgetrsBatched		hipblasSgetrsBatched		
cublasStrsmBatched		hipblasStrsmBatched		
cublasZdgmm		hipblasZdgmm		
cublasZgeam		hipblasZgeam		
cublasZgeqrfBatched		hipblasZgeqrfBatched		
cublasZgetrfBatched		hipblasZgetrfBatched		
cublasZgetriBatched		hipblasZgetriBatched		
cublasZgetrsBatched		hipblasZgetrsBatched		
cublasZtrsmBatched		hipblasZtrsmBatched		

# 1.4 cuCOMPLEX APIs Supported by HIP

## 1.4.1 cuComplex Data Types

CUDA	D	HIP	D	E
cuComplex		hipComplex		
cuDoubleComplex		hipDoubleComplex		
cuFloatComplex		hipFloatComplex		

## 1.4.2 cuComplex API functions

CUDA	D	HIP	D	E
cuCabs		hipCabs		
cuCabsf		hipCabsf		
cuCadd		hipCadd		
cuCaddf		hipCaddf		
cuCdiv		hipCdiv		
cuCdivf		hipCdivf		
cuCfma		hipCfma		
cuCfmaf		hipCfmaf		
cuCimag		hipCimag		
cuCimagf		hipCimagf		
cuCmul		hipCmul		
cuCmulf		hipCmulf		
cuComplexDoubleToFloat		hipComplexDoubleToFloat		
cuComplexFloatToDouble		hipComplexFloatToDouble		
cuConj		hipConj		
cuConjf		hipConjf		
cuCreal		hipCreal		
cuCrealf		hipCrealf		
cuCsub		hipCsub		
cuCsubf		hipCsubf		
make_cuComplex		make_hipComplex		
make_cuDoubleComplex		make_hipDoubleComplex		
make_cuFloatComplex		make_hipFloatComplex		

## 1.5 CUDA Device

## **1.5.1** Device Functions

CUDA	D	HIP	D	E
all		all		
any		any		
assert_fail		assert_fail		
assertfail		assertfail		
ballot		ballot		
brev		brev		
brevll		brevll		
byte_perm		byte_perm		
clz		clz		
clzll		clzll		
cosf		cosf		
double2float_rd		double2float_rd		
double2float_rn		double2float_rn		
double2float_ru		double2float_ru		
double2float_rz		double2float_rz		
double2hiint		double2hiint		
double2int_rd		double2int_rd		
double2int_rn		double2int_rn		
double2int_ru		double2int_ru		
double2int_rz		double2int_rz		
double2ll_rd		double2ll_rd		
double2ll_rn		double2ll_rn		
double2ll_ru		double2ll_ru		
double2ll_rz		double2ll_rz		
double2loint		double2loint		
double2uint_rd		double2uint_rd		
double2uint_rn		double2uint_rn		
double2uint_ru		double2uint_ru		
double2uint_rz		double2uint_rz		
double2ull_rd		double2ull_rd		
double2ull_rn		double2ull_rn		
double2ull_ru		double2ull_ru		
double2ull_rz		double2ull_rz		
double_as_longlong		double_as_longlong		
exp10f		exp10f		
expf		expf		
fadd_rd		fadd_rd		
fadd_rn		fadd_rn		

CUDA	D	HIP	D	E
fadd_ru		fadd_ru		
fadd_rz		fadd_rz		
fdiv_rd		fdiv_rd		
fdiv_rn		fdiv_rn		
fdiv_ru		fdiv_ru		
fdiv_rz		fdiv_rz		
fdividef		fdividef		
ffs		ffs		
ffsll		ffsll		
float22half2_rn		float22half2_rn		
float2half		float2half		
float2half2_rn		float2half2_rn		
float2half_rd		float2half_rd		
float2half_rn		float2half_rn		
float2half_ru		float2half_ru		
float2half_rz		float2half_rz		
float2int_rd		float2int_rd		
float2int_rn		float2int_rn		
float2int_ru		float2int_ru		
float2int_rz		float2int_rz		
float2ll_rd		float2ll_rd		
float2ll_rn		float2ll_rn		
float2ll_ru		float2ll_ru		
float2ll_rz		float2ll_rz		
float2uint_rd		float2uint_rd		
float2uint_rn		float2uint_rn		
float2uint_ru		float2uint_ru		
float2uint_rz		float2uint_rz		
float2ull_rd		float2ull_rd		
float2ull_rn		float2ull_rn		
float2ull_ru		float2ull_ru		
float2ull_rz		float2ull_rz		
float_as_int		float_as_int		
float_as_uint		float_as_uint		
floats2half2_rn		floats2half2_rn		
fmaf_rd		fmaf_rd		
fmaf_rn		fmaf_rn		
fmaf_ru		fmaf_ru		
fmaf_rz		fmaf_rz		
fmul_rd		fmul_rd		
fmul_rn		fmul_rn		

CUDA	D	HIP	D	E
fmul_ru		fmul_ru		
fmul_rz		fmul_rz		
frcp_rd		frcp_rd		
frcp_rn		frcp_rn		
frcp_ru		frcp_ru		
frcp_rz		frcp_rz		
frsqrt_rn		frsqrt_rn		
fsqrt_rd		fsqrt_rd		
fsqrt_rn		fsqrt_rn		
fsqrt_ru		fsqrt_ru		
fsqrt_rz		fsqrt_rz		
fsub_rd		fsub_rd		
fsub_rn		fsub_rn		
fsub_ru		fsub_ru		
fsub_rz		fsub_rz		
funnelshift_l		funnelshift_l		
funnelshift_lc		funnelshift_lc		
funnelshift_r		funnelshift_r		
funnelshift_rc		funnelshift_rc		
h2div		h2div		
habs		habs		
habs2		habs2		
hadd		hadd		
hadd2		hadd2		
hadd2_sat		hadd2_sat		
hadd_sat		hadd_sat		
half22float2		half22float2		
half2float		half2float		
half2half2		half2half2		
half2int_rd		half2int_rd		
half2int_rn		half2int_rn		
half2int_ru		half2int_ru		
half2int_rz		half2int_rz		
half2ll_rd		half2ll_rd		
half2ll_rn		half2ll_rn		
half2ll_ru		half2ll_ru		
half2ll_rz		half2ll_rz		
half2short_rd		half2short_rd		
half2short_rn		half2short_rn		
half2short_ru		half2short_ru		
half2short_rz		half2short_rz		
half2uint_rd		half2uint_rd		

CUDA	D	HIP	D	E
half2uint_rn		half2uint_rn		
half2uint_ru		half2uint_ru		
half2uint_rz		half2uint_rz		
half2ull_rd		half2ull_rd		
half2ull_rn		half2ull_rn		
half2ull_ru		half2ull_ru		
half2ull_rz		half2ull_rz		
half2ushort_rd		half2ushort_rd		
half2ushort_rn		half2ushort_rn		
half2ushort_ru		half2ushort_ru		
half2ushort_rz		half2ushort_rz		
half_as_short		half_as_short		
half_as_ushort		half_as_ushort		
halves2half2		halves2half2		
hbeq2		hbeq2		
hbequ2		hbequ2		
hbge2		hbge2		
hbgeu2		hbgeu2		
hbgt2		hbgt2		
_hbgtu2		hbgtu2		
hble2		hble2		
_hbleu2		hbleu2		
hblt2		hblt2		
hbltu2		hbltu2		
_hbne2		hbne2		
hbneu2		hbneu2		
hdiv		hdiv		
heq		heq		
heq2		heq2		
hequ		hequ		
hequ2		hequ2		
hfma		hfma		
hfma2		hfma2		
hfma2_sat		hfma2_sat		
hfma_sat		hfma_sat		
hge		hge		
_hge2		hge2		
hgeu		hgeu		
_hgeu2		hgeu2		
hgt		hgt		
_hgt2		hgt2		

CUDA	D	HIP	D	E
hgtu		hgtu		
_hgtu2		_hgtu2		
high2float		high2float		
high2half		high2half		
high2half2		high2half2		
_highs2half2		highs2half2		
hiloint2double		hiloint2double		
hisinf		hisinf		
hisnan		hisnan		
hisnan2		hisnan2		
hle		hle		
hle2		_hle2		
hleu		hleu		
hleu2		hleu2		
hlt		hlt		
hlt2		hlt2		
hltu		hltu		
hltu2		hltu2		
hmul		hmul		
hmul2		hmul2		
hmul2_sat		hmul2_sat		
hmul_sat		hmul_sat		
hne		hne		
hne2		hne2		
hneg		hneg		
hneg2		hneg2		
hneu		hneu		
hneu2		hneu2		
hsub		hsub		
_hsub2		_hsub2		
hsub2_sat		hsub2_sat		
hsub_sat		hsub_sat		
int2double_rn		int2double_rn		
int2float_rd		int2float_rd		
int2float_rn		int2float_rn		
int2float_ru		int2float_ru		
int2float_rz		int2float_rz		
int2half_rd		int2half_rd		
int2half_rn		int2half_rn		
int2half_ru		int2half_ru		
int2half_rz		int2half_rz		
int_as_float		int_as_float		

CUDA	D	HIP	D	E
ldca		ldca		
ldcg		ldcg		
ldcs		ldcs		
ldg		ldg		
ll2double_rd		ll2double_rd		
ll2double_rn		ll2double_rn		
ll2double_ru		ll2double_ru		
ll2double_rz		ll2double_rz		
ll2float_rd		ll2float_rd		
ll2float_rn		ll2float_rn		
ll2float_ru		ll2float_ru		
ll2float_rz		ll2float_rz		
ll2half_rd		ll2half_rd		
ll2half_rn		ll2half_rn		
ll2half_ru		ll2half_ru		
ll2half_rz		ll2half_rz		
log10f		log10f		
log2f		log2f		
logf		logf		
longlong_as_double		longlong_as_double		
low2float		low2float		
low2half		low2half		
_low2half2		low2half2		
lowhigh2highlow		lowhigh2highlow		
lows2half2		lows2half2		
mul24		mul24		
mul64hi		mul64hi		
mulhi		mulhi		
popc		popc		
popcll		popcll		
powf		powf		
rhadd		rhadd		
sad		sad		
saturatef		saturatef		
shfl	+	shfl		
shfl_down	+	shfl_down		
shfl_up	+	shfl_up		
shfl_xor	+	shfl_xor		
short2half_rd		short2half_rd		
short2half_rn		short2half_rn		
short2half_ru		short2half_ru		

CUDA	D	HIP	D	E
short2half_rz		short2half_rz		
short_as_half		short_as_half		
sincosf		sincosf		
sinf		sinf		
syncthreads		syncthreads		
syncthreads_and		syncthreads_and		
syncthreads_count		syncthreads_count		
syncthreads_or		syncthreads_or		
tanf		tanf		
threadfence		threadfence		
threadfence_block		threadfence_block		
threadfence_system		threadfence_system	'	
uhadd		uhadd		
uint2double_rn		uint2double_rn		
uint2float_rd		uint2float_rd		
uint2float_rn		uint2float_rn		
uint2float_ru		uint2float_ru		
uint2float_rz		uint2float_rz		
uint2half_rd		uint2half_rd		
uint2half_rn		uint2half_rn		
uint2half_ru		uint2half_ru		
uint2half_rz		uint2half_rz		
uint_as_float		uint_as_float		
ull2double_rd		ull2double_rd		
ull2double_rn		ull2double_rn		
ull2double_ru		ull2double_ru		
ull2double_rz		ull2double_rz		
ull2float_rd		ull2float_rd		
ull2float_rn		ull2float_rn		
ull2float_ru		ull2float_ru		
ull2float_rz		ull2float_rz		
ull2half_rd		ull2half_rd		
ull2half_rn		ull2half_rn		
ull2half_ru		ull2half_ru		
ull2half_rz		ull2half_rz		
umul24		umul24		
umul64hi		umul64hi		
umulhi		umulhi		
urhadd		urhadd		
usad		usad		
ushort2half_rd		ushort2half_rd		
ushort2half_rn		ushort2half_rn		

CUDA	D	HIP	D	E
ushort2half_ru		ushort2half_ru		
ushort2half_rz		ushort2half_rz		
ushort_as_half		ushort_as_half		
abs		abs		
acos		acos		
acosf		acosf		
acosh		acosh		
acoshf		acoshf		
asin		asin		
asinf		asinf		
asinh		asinh		
asinhf		asinhf		
atan		atan		
atan2		atan2		
atan2f		atan2f		
atanf		atanf		
atanh		atanh		
atanhf		atanhf		
atomicAdd		atomicAdd		
atomicAdd_system		atomicAdd_system		
atomicAnd		atomicAnd		
atomicAnd_system		atomicAnd_system		
atomicCAS		atomicCAS		
atomicCAS_system		atomicCAS_system		
atomicDec		atomicDec		
atomicExch		atomicExch		
atomicExch_system		atomicExch_system		
atomicInc		atomicInc		
atomicMax		atomicMax		
atomicMax_system		atomicMax_system		
atomicMin		atomicMin		
atomicMin_system		atomicMin_system		
atomicOr		atomicOr		
atomicOr_system		atomicOr_system		
atomicSub		atomicSub		
atomicSub_system		atomicSub_system		
atomicXor		atomicXor		
atomicXor_system		atomicXor_system		
cbrt		cbrt		
cbrtf		cbrtf		
ceil		ceil		

CUDA	D	HIP	D	E
ceilf		ceilf		
clock		clock		
clock64		clock64		
copysign		copysign		
copysignf		copysignf		
cos		cos		
cosf		cosf		
cosh		cosh		
coshf		coshf		
cospi		cospi		
cospif		cospif		
cyl_bessel_i0		cyl_bessel_i0		
cyl_bessel_i0f		cyl_bessel_i0f		
cyl_bessel_i1		cyl_bessel_i1		
cyl_bessel_i1f		cyl_bessel_i1f		
erf		erf		
erfc		erfc		
erfcf		erfcf		
erfcinv		erfcinv		
erfcinvf		erfcinvf		
erfcx		erfcx		
erfcxf		erfcxf		
erff		erff		
erfinv		erfinv		
erfinvf		erfinvf		
exp		exp		
exp10		exp10		
exp10f		exp10f		
exp2		exp2		
exp2f		exp2f		
expf		expf		
expm1		expm1		
expm1f		expm1f		
fabs		fabs		
fabsf		fabsf		
fdim		fdim		
fdimf		fdimf		
fdividef		fdividef		
floor		floor		
floorf		floorf		
fma		fma		
fmaf		fmaf		
tmat		tmaf		

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CUDA	D	HIP	D	E
fmax		fmax		
fmaxf		fmaxf		
fmin		fmin		
fminf		fminf		
fmod		fmod		
fmodf		fmodf		
frexp		frexp		
frexpf		frexpf		
h2ceil		h2ceil		
h2cos		h2cos		
h2exp		h2exp		
h2exp10		h2exp10		
h2exp2		h2exp2		
h2floor		h2floor		
h2log		h2log		
h2log10		h2log10		
h2log2		h2log2		
h2rcp		h2rcp		
h2rint		h2rint		
h2rsqrt		h2rsqrt		
h2sin		h2sin		
h2sqrt		h2sqrt		
h2trunc		h2trunc		
hceil		hceil		
hcos		hcos		
hexp		hexp		
hexp10		hexp10		
hexp2		hexp2		
hfloor		hfloor		
hlog		hlog		
hlog10		hlog10		
hlog2		hlog2		
hrcp		hrep		
hrint		hrint		
hrsqrt		hrsqrt		
hsin		hsin		
hsqrt		hsqrt		
htrunc		htrunc		
hypot		hypot		
hypotf		hypotf		
ilogb		ilogb		

Ilogbf	CUDA	D	HIP	D	E
isinf         isinf           isnan         isnan           j0         j0           jof         jof           jof         jof           jl         jl           jl         jl           jn         jn           labs         labs           ldexp         ldexp           ldexp         ldexp           ldexp         ldexp           ldexpf         ldexp           ldexpf         ldexp           ldexpf         ldexpf           ldexpf         ldexpf           labs         llabs           llabs         llabs           llabs         llabs           llabs         llatexpf           layma         lgamma </td <td>ilogbf</td> <td></td> <td>ilogbf</td> <td></td> <td></td>	ilogbf		ilogbf		
isnan   isnan   j0   j0   j0   j0   j0   j0   j0   j	isfinite		isfinite		
j0	isinf		isinf		
j0f   j1	isnan		isnan		
j0f   j1	j0		j0		
j1 j1f j1f j1f jn jn jn jnf labs labs labs labs ldexp ldexp ldexpf lgamma lgammaf lgammaf lgammaf llabs llrint llrint llrint llrintf llround llroundf log	j0f		j0f		
jn					
jnf labs labs labs labs ldexp ldexp ldexp ldexpf lgamma lgamma lgamma lgamma lgamma lgamma lgamma lgamma lgamma llabs llabs llinit llrint llrint llrint llround llround llround llround llog log log log log log log log log lo	j1f		j1f		
labs ldexp ldexp ldexpf ldexpf ldexpf lgamma lgammaf lgammaf lgammaf llabs llabs llabs llabs llabs llabs llabs llabs llrint llrint llrintf llround llround llroundf llog log	jn		jn		
labs ldexp ldexp ldexpf ldexpf ldexpf lgamma lgammaf lgammaf lgammaf llabs llabs llabs llabs llabs llabs llabs llabs llrint llrint llrintf llround llround llroundf llog log	jnf		jnf		
Idexpf   Idexpf   Igamma   Ilabs   Ilrint   Ilrint   Ilrint   Ilrint   Ilrint   Ilrint   Ilrint   Ilround   Ilround   Ilround   Ilround   Ilroundf   Ilrint   Ilrint   Ilrint   Ilrintf   Ilrintf   Ilrintf   Ilrintf   Ilrintf   Ilroundf   Illoundf   Il					
Idexpf   Idexpf   Igamma   Ilabs   Ilrint   Ilrint   Ilrint   Ilrint   Ilrint   Ilrint   Ilrint   Ilround   Ilround   Ilround   Ilround   Ilroundf   Ilrint   Ilrint   Ilrint   Ilrintf   Ilrintf   Ilrintf   Ilrintf   Ilrintf   Ilroundf   Illoundf   Il	ldexp		ldexp		
Igamma     Igammaf       Ilabs     Ilabs       Ilrint     Ilrint       Ilrintf     Ilrintf       Ilround     Ilroundf       Ilroundf     Ilroundf       Ilroundf     Ilroundf       log     log       log10     log10       log10f     log10f       log1pf     log1pf       log2 pp     log2pf       log2 log2f     log2f       logbf     logbf       logbf     logbf       logf     logf       lrint     lrint       lrintf     lrintf       lroundf     lroundf       max     max       min     modf       modff     modff       nan     nan       nanf     nanf       nearbyint     nearbyint					
Igammaf   Igammaf   Igammaf   Ilabs   Ilrint   Ilrint   Ilrintf   Ilrintf   Ilround   Ilroundf   Ilrintf   Ilrintf   Ilrintf   Ilrintf   Ilrintf   Ilroundf   Illroundf   Ilroundf   Ilro					
Illrint Illrint Illrint Illrint Illround Illround Illround Illround Illround Illround Illround Illround Illroundf Illrint Illrintf Illrintf Illroundf Illrou					
Ilrintf Ilround Ilround Ilroundf Ilroundf Ilroundf Ilroundf Illoundf Illoundf Illoundf Illoundf Illoundf Illoundf Illoundf Illougl Illough Illound Illoundf	llabs		llabs		
Ilroundf Ilroundf Ilroundf Illoundf Ill	llrint		llrint		
Ilroundf   Ilroundf   Ilroundf   Ilog   Il	llrintf		llrintf		
log	llround		llround		
log10     log10f       log1pf     log1pf       log2     log2       log2f     log2f       logb     logb       logbf     logbf       logf     logf       lrint     lrintf       lround     lroundf       max     max       min     min       modf     modff       nan     nanf       nearbyint     nearbyint	llroundf		llroundf		
log10     log10f       log1pf     log1pf       log2     log2       log2f     log2f       logb     logb       logbf     logbf       logf     logf       lrint     lrintf       lround     lroundf       max     max       min     min       modf     modff       nan     nanf       nearbyint     nearbyint	log		log		
log10f         log1p           log1pf         log1pf           log2         log2           logbf         logbf           logbf         logbf           logf         logf           lrint         lrint           lround         lround           lroundf         lroundf           max         max           min         min           modf         modf           nan         nan           nearbyint         nearbyint					
log1p         log1pf           log2         log2           log2f         log2f           logb         logb           logbf         logbf           logf         logf           lrint         lrint           lrintf         lrintf           lround         lround           lroundf         max           min         min           modf         modf           nan         nan           narf         nearbyint					
log1pf         log2           log2f         log2f           logb         logb           logbf         logbf           logf         logf           lrint         lrint           lrintf         lrintf           lround         lround           lroundf         lroundf           max         max           min         min           modf         modf           nan         nan           nanf         nanf           nearbyint         nearbyint			I .		
log2         log2f           logb         logb           logbf         logbf           logf         logf           lrint         lrint           lrintf         lrintf           lround         lround           lroundf         lroundf           max         max           min         min           modf         modf           modff         man           nan         nan           nearbyint         nearbyint					
log2f       log2f         logb       logb         logbf       logbf         logf       logf         lrint       lrint         lrintf       lrintf         lround       lround         lroundf       lroundf         max       max         min       min         modf       modf         modff       modff         nan       nan         nearbyint       nearbyint					
logb       logb         logf       logf         lrint       lrint         lrintf       lrintf         lround       lround         lroundf       lroundf         max       max         min       min         modf       modf         nan       nan         nanf       nanf         nearbyint       nearbyint					
logbf       logf         logf       logf         lrint       lrint         lrintf       lrintf         lround       lround         lroundf       lroundf         max       max         min       min         modf       modf         modff       modff         nan       nan         nanf       nearbyint					
logf     logf       lrint     lrint       lrintf     lrintf       lround     lround       lroundf     lroundf       max     max       min     min       modf     modf       modff     modff       nan     nan       nanf     nanf       nearbyint     nearbyint					
IrintIrintIrintfIrintfIroundIroundIroundfIroundfmaxmaxminminmodfmodfmodffmodffnannannanfnanfnearbyintnearbyint	logf		logf		
IroundIroundIroundfIroundfmaxmaxminminmodfmodfmodffmodffnannannanfnanfnearbyintnearbyint	lrint				
lroundf     lroundf       max     max       min     min       modf     modf       modff     modff       nan     nan       nanf     nanf       nearbyint     nearbyint	lrintf		lrintf		
maxmaxminminmodfmodfmodffmodffnannannanfnanfnearbyintnearbyint	Iround		lround		
minminmodfmodfmodffmodffnannannanfnanfnearbyintnearbyint	lroundf		lroundf		
modfmodfmodffmodffnannannanfnanfnearbyintnearbyint	max		max		
modfmodfmodffmodffnannannanfnanfnearbyintnearbyint					
modffmodffnannannanfnanfnearbyintnearbyint					
nannannanfnanfnearbyintnearbyint					
nanf nanf nanf nearbyint nearbyint					
nearbyint nearbyint					
	nearbyintf		nearbyintf		

CUDA	D	HIP	D	E
nextafter		nextafter		
nextafterf		nextafterf		
norm		norm		
norm3d		norm3d		
norm3df		norm3df		
norm4d		norm4d		
norm4df		norm4df		
normcdf		normcdf		
normcdff		normcdff		
normcdfinv		normcdfinv		
normcdfinvf		normcdfinvf		
normf		normf		
pow		pow		
powf		powf		
rebrt		rebrt		
rcbrtf		rcbrtf		
remainder		remainder		
remainderf		remainderf		
remquo		remquo		
remquof		remquof		
rhypot		rhypot		
rhypotf		rhypotf		
rint		rint		
rintf		rintf		
rnorm		rnorm		
rnorm3d		rnorm3d		
rnorm3df		rnorm3df		
rnorm4d		rnorm4d		
rnorm4df		rnorm4df		
rnormf		rnormf		
round		round		
roundf		roundf		
rsqrt		rsqrt		
rsqrtf		rsqrtf		
scalbln		scalbln		
scalbInf		scalblnf		
scalbn		scalbn		
scalbnf		scalbnf		
signbit		signbit		
sin		sin		
sincos		sincos		

CUDA	D	HIP	D	E
sincosf		sincosf		
sincospi		sincospi		
sincospif		sincospif		
sinf		sinf		
sinh		sinh		
sinhf		sinhf		
sinpi		sinpi		
sinpif		sinpif		
sqrt		sqrt		
sqrtf		sqrtf		
tan		tan		
tanf		tanf		
tanh		tanh		
tanhf		tanhf		
tgamma		tgamma		
tgammaf		tgammaf		
trunc		trunc		
truncf		truncf		
y0		y0		
y0f		y0f		
y1		y1		
y1f		y1f		
yn		yn		
ynf		ynf		

# 1.6 CUDNN API Supported by HIP

## 1.6.1 CUDNN Data Types

CUDA	D	HIP	D	E
CUDNN_16BIT_INDICES		HIPDNN_16BIT_INDICES		
CUDNN_32BIT_INDICES		HIPDNN_32BIT_INDICES		
CUDNN_64BIT_INDICES		HIPDNN_64BIT_INDICES		
CUDNN_8BIT_INDICES		HIPDNN_8BIT_INDICES		
CUDNN_ACTIVATION_CLIPPED_REL		HIPDNN_ACTIVATION_CLI		
U		PPED_RELU		
CUDNN_ACTIVATION_ELU		HIPDNN_ACTIVATION_ELU		
CUDNN_ACTIVATION_IDENTITY		HIPDNN_ACTIVATION_PAT HTRU		
CUDNN_ACTIVATION_RELU		HIPDNN_ACTIVATION_REL U		
CUDNN_ACTIVATION_SIGMOID		HIPDNN_ACTIVATION_SIG MOID		
CUDNN_ACTIVATION_SWISH		HIPDNN_ACTIVATION_SWI SH		
CUDNN_ACTIVATION_TANH		HIPDNN_ACTIVATION_TA NH		
CUDNN_BATCHNORM_PER_ACTIVAT ION		HIPDNN_BATCHNORM_PE R_ACTIVATION		
CUDNN_BATCHNORM_SPATIAL		HIPDNN_BATCHNORM_SP ATIAL		
CUDNN_BATCHNORM_SPATIAL_PER SISTENT		HIPDNN_BATCHNORM_SP ATIAL PERSISTENT		
CUDNN_BIDIRECTIONAL		HIPDNN_BIDIRECTIONAL		
CUDNN_BN_MIN_EPSILON		HIPDNN_BN_MIN_EPSILON		
CUDNN_CONVOLUTION		HIPDNN_CONVOLUTION		
CUDNN_CONVOLUTION_BWD_DATA _ALGO_0		HIPDNN_CONVOLUTION_B WD_DATA_ALGO_0		
CUDNN_CONVOLUTION_BWD_DATA _ALGO_1		HIPDNN_CONVOLUTION_B WD_DATA_ALGO_1		
CUDNN_CONVOLUTION_BWD_DATA _ALGO_COUNT		HIPDNN_CONVOLUTION_B WD_DATA_ALGO_TRANSP OSE GEMM		
CUDNN_CONVOLUTION_BWD_DATA ALGO FFT		HIPDNN_CONVOLUTION_B WD_DATA_ALGO_FFT		
CUDNN_CONVOLUTION_BWD_DATA _ALGO_FFT_TILING		HIPDNN_CONVOLUTION_B WD_DATA_ALGO_FFT_TILI NG		
CUDNN_CONVOLUTION_BWD_DATA _ALGO_WINOGRAD		HIPDNN_CONVOLUTION_B WD_DATA_ALGO_WINOGR AD		
CUDNN_CONVOLUTION_BWD_DATA _ALGO_WINOGRAD_NONFUSED		HIPDNN_CONVOLUTION_B WD_DATA_ALGO_WINOGR AD_NONFUSED		

CUDNN_CONVOLUTION_BWD_DATA _NO_WORKSPACE	+	HIPDNN_CONVOLUTION_B WD_DATA_NO_WORKSPAC E	
CUDNN_CONVOLUTION_BWD_DATA _PREFER_FASTEST	+	HIPDNN_CONVOLUTION_B WD_DATA_PREFER_FASTE ST	
CUDNN_CONVOLUTION_BWD_DATA _SPECIFY_WORKSPACE_LIMIT	+	HIPDNN_CONVOLUTION_B WD_DATA_SPECIFY_WOR KSPACE_LIMIT	
CUDNN_CONVOLUTION_BWD_FILTE R_ALGO_0		HIPDNN_CONVOLUTION_B WD_FILTER_ALGO_0	
CUDNN_CONVOLUTION_BWD_FILTE R_ALGO_1		HIPDNN_CONVOLUTION_B WD_FILTER_ALGO_1	
CUDNN_CONVOLUTION_BWD_FILTE R_ALGO_3		HIPDNN_CONVOLUTION_B WD_FILTER_ALGO_3	
CUDNN_CONVOLUTION_BWD_FILTE R_ALGO_COUNT		HIPDNN_CONVOLUTION_B WD FILTER ALGO COUNT	
CUDNN_CONVOLUTION_BWD_FILTE R ALGO FFT		HIPDNN_CONVOLUTION_B WD_FILTER_ALGO_FFT	
CUDNN_CONVOLUTION_BWD_FILTE R_ALGO_FFT_TILING		HIPDNN_CONVOLUTION_B WD_FILTER_ALGO_FFT_TI LING	
CUDNN_CONVOLUTION_BWD_FILTE R_ALGO_WINOGRAD		HIPDNN_CONVOLUTION_B WD_FILTER_ALGO_WINOG RAD	
CUDNN_CONVOLUTION_BWD_FILTE R_ALGO_WINOGRAD_NONFUSED		HIPDNN_CONVOLUTION_B WD_FILTER_ALGO_WINOG RAD_NONFUSED	
CUDNN_CONVOLUTION_BWD_FILTE R_NO_WORKSPACE	+	HIPDNN_CONVOLUTION_B WD_FILTER_NO_WORKSPA CE	
CUDNN_CONVOLUTION_BWD_FILTE R_PREFER_FASTEST	+	HIPDNN_CONVOLUTION_B WD_FILTER_PREFER_FAST EST	
CUDNN_CONVOLUTION_BWD_FILTE R_SPECIFY_WORKSPACE_LIMIT	+	HIPDNN_CONVOLUTION_B WD_FILTER_SPECIFY_WOR KSPACE_LIMIT	
CUDNN_CONVOLUTION_FWD_ALGO _COUNT		HIPDNN_CONVOLUTION_F WD_ALGO_COUNT	
CUDNN_CONVOLUTION_FWD_ALGODIRECT		HIPDNN_CONVOLUTION_F WD_ALGO_DIRECT	
CUDNN_CONVOLUTION_FWD_ALGO _FFT		HIPDNN_CONVOLUTION_F WD_ALGO_FFT	
CUDNN_CONVOLUTION_FWD_ALGO _FFT_TILING		HIPDNN_CONVOLUTION_F WD_ALGO_FFT_TILING	
CUDNN_CONVOLUTION_FWD_ALGO _GEMM		HIPDNN_CONVOLUTION_F WD_ALGO_GEMM	
CUDNN_CONVOLUTION_FWD_ALGO _IMPLICIT_GEMM		HIPDNN_CONVOLUTION_F WD_ALGO_IMPLICIT_GEM M	
CUDNN_CONVOLUTION_FWD_ALGO _IMPLICIT_PRECOMP_GEMM		HIPDNN_CONVOLUTION_F WD_ALGO_IMPLICIT_PREC OMP_GEMM	
CUDNN_CONVOLUTION_FWD_ALGO _WINOGRAD		HIPDNN_CONVOLUTION_F WD_ALGO_WINOGRAD	

		I	
CUDNN_CONVOLUTION_FWD_ALGO		HIPDNN_CONVOLUTION_F	
_WINOGRAD_NONFUSED		WD_ALGO_WINOGRAD_NO NFUSED	
CUDNN_CONVOLUTION_FWD_NO_W	+	HIPDNN_CONVOLUTION_F	
ORKSPACE	<u> </u>	WD_NO_WORKSPACE	
CUDNN_CONVOLUTION_FWD_PREFE	+	HIPDNN_CONVOLUTION_F	
R_FASTEST		WD_PREFER_FASTEST	
CUDNN_CONVOLUTION_FWD_SPECI	+	HIPDNN_CONVOLUTION_F	
FY_WORKSPACE_LIMIT		WD_SPECIFY_WORKSPACE LIMIT	
CUDNN_CROSS_CORRELATION		HIPDNN_CROSS_CORRELA	
		TION	
CUDNN_DATA_DOUBLE		HIPDNN_DATA_DOUBLE	
CUDNN_DATA_FLOAT		HIPDNN_DATA_FLOAT	
CUDNN_DATA_HALF		HIPDNN_DATA_HALF	
CUDNN_DATA_INT32		HIPDNN_DATA_INT32	
CUDNN_DATA_INT8		HIPDNN_DATA_INT8	
CUDNN_DATA_INT8x4		HIPDNN_DATA_INT8x4	
CUDNN_DEFAULT_MATH		HIPDNN_DEFAULT_MATH	
CUDNN_GRU		HIPDNN_GRU	
CUDNN_LINEAR_INPUT		HIPDNN_LINEAR_INPUT	
CUDNN_LRN_CROSS_CHANNEL_DIM		HIPDNN_LRN_CROSS_CHA	
1		NNEL	
CUDNN_LSTM		HIPDNN_LSTM	
CUDNN_NOT_PROPAGATE_NAN		HIPDNN_NOT_PROPAGATE NAN	
CUDNN_OP_TENSOR_ADD		HIPDNN_OP_TENSOR_ADD	
CUDNN_OP_TENSOR_MAX		HIPDNN_OP_TENSOR_MAX	
CUDNN_OP_TENSOR_MIN		HIPDNN_OP_TENSOR_MIN	
CUDNN_OP_TENSOR_MUL		HIPDNN_OP_TENSOR_MUL	
CUDNN_OP_TENSOR_SQRT		HIPDNN_OP_TENSOR_SQR	
		T	
CUDNN_POOLING_AVERAGE_COUNT		HIPDNN_POOLING_AVERA	
_EXCLUDE_PADDING		GE_COUNT_EXCLUDE_PAD DING	
CUDNN_POOLING_AVERAGE_COUNT		HIPDNN POOLING AVERA	
_INCLUDE_PADDING		GE_COUNT_INCLUDE_PAD	
		DING	
CUDNN_POOLING_MAX		HIPDNN_POOLING_MAX	
CUDNN_POOLING_MAX_DETERMINI STIC		HIPDNN_POOLING_MAX_D ETERMINISTIC	
CUDNN_PROPAGATE_NAN		HIPDNN_PROPAGATE_NAN	
CUDNN REDUCE TENSOR ADD		HIPDNN_REDUCE_TENSOR	
		_ADD	
CUDNN_REDUCE_TENSOR_AMAX		HIPDNN_REDUCE_TENSOR AMAX	
CUDNN_REDUCE_TENSOR_AVG		HIPDNN_REDUCE_TENSOR	
CUDANI DEDIVOR MENGOS VI IMPERIO		_AVG	
CUDNN_REDUCE_TENSOR_FLATTEN ED_INDICES		HIPDNN_REDUCE_TENSOR _FLATTENED_INDICES	
ED_IMDICES		_i LATTENED_INDICES	

CUDNN_REDUCE_TENSOR_MAX	HIPDNN_REDUCE_TENSOR MAX	
CUDNN_REDUCE_TENSOR_MIN	HIPDNN_REDUCE_TENSOR MIN	
CUDNN_REDUCE_TENSOR_MUL	HIPDNN_REDUCE_TENSOR MUL	
CUDNN_REDUCE_TENSOR_MUL_NO_ ZEROS	HIPDNN_REDUCE_TENSOR _MUL_NO_ZEROS	
CUDNN_REDUCE_TENSOR_NORM1	HIPDNN_REDUCE_TENSOR _NORM1	
CUDNN_REDUCE_TENSOR_NORM2	HIPDNN_REDUCE_TENSOR _NORM2	
CUDNN_REDUCE_TENSOR_NO_INDIC ES	HIPDNN_REDUCE_TENSOR _NO_INDICES	
CUDNN_RNN_ALGO_PERSIST_DYNA MIC	HIPDNN_RNN_ALGO_PERSI ST_DYNAMIC	
CUDNN_RNN_ALGO_PERSIST_STATI C	HIPDNN_RNN_ALGO_PERSI ST_STATIC	
CUDNN_RNN_ALGO_PERSIST_STATI C_SMALL_H	HIPDNN_RNN_ALGO_PERSI ST_STATIC_SMALL_H	
CUDNN_RNN_ALGO_STANDARD	HIPDNN_RNN_ALGO_STAN DARD	
CUDNN_RNN_DOUBLE_BIAS	HIPDNN_RNN_WITH_BIAS	
CUDNN_RNN_NO_BIAS	HIPDNN_RNN_NO_BIAS	
CUDNN_RNN_RELU	HIPDNN_RNN_RELU	
CUDNN_RNN_SINGLE_INP_BIAS	HIPDNN_RNN_WITH_BIAS	
CUDNN_RNN_SINGLE_REC_BIAS	HIPDNN_RNN_WITH_BIAS	
CUDNN_RNN_TANH	HIPDNN_RNN_TANH	
CUDNN_SKIP_INPUT	HIPDNN_SKIP_INPUT	
CUDNN_SOFTMAX_ACCURATE	HIPDNN_SOFTMAX_ACCU RATE	
CUDNN_SOFTMAX_FAST	HIPDNN_SOFTMAX_FAST	
CUDNN_SOFTMAX_LOG	HIPDNN_SOFTMAX_LOG	
CUDNN_SOFTMAX_MODE_CHANNEL	HIPDNN_SOFTMAX_MODE _CHANNEL	
CUDNN_SOFTMAX_MODE_INSTANCE	HIPDNN_SOFTMAX_MODE _INSTANCE	
CUDNN_STATUS_ALLOC_FAILED	HIPDNN_STATUS_ALLOC_ FAILED	
CUDNN_STATUS_ARCH_MISMATCH	HIPDNN_STATUS_ARCH_M ISMATCH	
CUDNN_STATUS_BAD_PARAM	HIPDNN_STATUS_BAD_PA RAM	
CUDNN_STATUS_EXECUTION_FAILE D	HIPDNN_STATUS_EXECUTI ON_FAILED	
CUDNN_STATUS_INTERNAL_ERROR	HIPDNN_STATUS_INTERNA L_ERROR	
CUDNN_STATUS_INVALID_VALUE	HIPDNN_STATUS_INVALID _VALUE	
CUDNN_STATUS_LICENSE_ERROR	HIPDNN_STATUS_LICENSE _ERROR	

CUDNN_STATUS_MAPPING_ERROR		HIPDNN_STATUS_MAPPIN	
		G_ERROR	
CUDNN_STATUS_NOT_INITIALIZED		HIPDNN_STATUS_NOT_INI TIALIZED	
CUDNN_STATUS_NOT_SUPPORTED		HIPDNN_STATUS_NOT_SU PPORTED	
CUDNN_STATUS_RUNTIME_PREREQ UISITE_MISSING		HIPDNN_STATUS_RUNTIM E_PREREQUISITE_MISSING	
CUDNN_STATUS_SUCCESS		HIPDNN_STATUS_SUCCESS	
CUDNN_TENSOR_NCHW		HIPDNN_TENSOR_NCHW	
CUDNN_TENSOR_NCHW_VECT_C		HIPDNN_TENSOR_NCHW_V ECT_C	
CUDNN_TENSOR_NHWC		HIPDNN_TENSOR_NHWC	
CUDNN_TENSOR_OP_MATH		HIPDNN_TENSOR_OP_MAT H	
CUDNN_UNIDIRECTIONAL		HIPDNN_UNIDIRECTIONAL	
CUDNN_VERSION		HIPDNN_VERSION	
cudnnActivationDescriptor_t		hipdnnActivationDescriptor_t	
cudnnActivationMode_t		hipdnnActivationMode_t	
cudnnBatchNormMode_t		hipdnnBatchNormMode_t	
cudnnConvolutionBwdDataAlgoPerfStruct		hipdnnConvolutionBwdDataAl goPerf_t	
cudnnConvolutionBwdDataAlgoPerf_t		hipdnnConvolutionBwdDataAl goPerf_t	
cudnnConvolutionBwdDataAlgo_t		hipdnnConvolutionBwdDataAl go_t	
cudnnConvolutionBwdDataPreference_t	+	hipdnnConvolutionBwdDataPre ference_t	
cudnn Convolution Bwd Filter Algo Perf Struct		hipdnnConvolutionBwdFilterAl goPerf_t	
cudnnConvolutionBwdFilterAlgoPerf_t		hipdnnConvolutionBwdFilterAl goPerf_t	
cudnnConvolutionBwdFilterAlgo_t		hipdnnConvolutionBwdFilterAl go_t	
cudnnConvolutionBwdFilterPreference_t	+	hipdnnConvolutionBwdFilterPr eference_t	
cudnnConvolutionDescriptor_t		hipdnnConvolutionDescriptor_t	
cudnnConvolutionFwdAlgoPerfStruct		hipdnnConvolutionFwdAlgoPer f_t	
cudnnConvolutionFwdAlgoPerf_t		hipdnnConvolutionFwdAlgoPer f_t	
cudnnConvolutionFwdAlgo_t		hipdnnConvolutionFwdAlgo_t	
cudnnConvolutionFwdPreference_t	+	hipdnnConvolutionFwdPreferen ce_t	
cudnnConvolutionMode_t		hipdnnConvolutionMode_t	
cudnnDataType_t		hipdnnDataType_t	
cudnnDirectionMode_t		hipdnnDirectionMode_t	
cudnnDropoutDescriptor_t		hipdnnDropoutDescriptor_t	
cudnnFilterDescriptor_t		hipdnnFilterDescriptor_t	

cudnnHandle_t	hipdnnHandle_t
cudnnIndicesType_t	hipdnnIndicesType_t
cudnnLRNDescriptor_t	hipdnnLRNDescriptor_t
cudnnLRNMode_t	hipdnnLRNMode_t
cudnnMathType_t	hipdnnMathType_t
cudnnNanPropagation_t	hipdnnNanPropagation_t
cudnnOpTensorDescriptor_t	hipdnnOpTensorDescriptor_t
cudnnOpTensorOp_t	hipdnnOpTensorOp_t
cudnnPersistentRNNPlan_t	hipdnnPersistentRNNPlan_t
cudnnPoolingDescriptor_t	hipdnnPoolingDescriptor_t
cudnnPoolingMode_t	hipdnnPoolingMode_t
cudnnRNNAlgo_t	hipdnnRNNAlgo_t
cudnnRNNBiasMode_t	hipdnnRNNBiasMode_t
cudnnRNNDescriptor_t	hipdnnRNNDescriptor_t
cudnnRNNInputMode_t	hipdnnRNNInputMode_t
cudnnRNNMode_t	hipdnnRNNMode_t
cudnnReduceTensorDescriptor_t	hipdnnReduceTensorDescriptor _t
cudnnReduceTensorIndices_t	hipdnnReduceTensorIndices_t
cudnnReduceTensorOp_t	hipdnnReduceTensorOp_t
cudnnSoftmaxAlgorithm_t	hipdnnSoftmaxAlgorithm_t
cudnnSoftmaxMode_t	hipdnnSoftmaxMode_t
cudnnStatus_t	hipdnnStatus_t
cudnnTensorDescriptor_t	hipdnnTensorDescriptor_t
cudnnTensorFormat_t	hipdnnTensorFormat_t

## 1.6.2 CUDNN Functions

CUDA	D	HIP	D	E
cudnnActivationBackward		hipdnnActivationBackward		
cudnnActivationForward		hipdnnActivationForward		
cudnnAddTensor		hipdnnAddTensor		
cudnnBatchNormalizationBackward		hipdnnBatchNormalizationBack ward		
cudnn Batch Normalization Forward Inference		hipdnnBatchNormalizationFor wardInference		
cudnnBatchNormalizationForwardTraining		hipdnnBatchNormalizationFor wardTraining		
cudnnConvolutionBackwardBias		hipdnnConvolutionBackwardBi as		
cudnnConvolutionBackwardData		hipdnnConvolutionBackwardD ata		
cudnnConvolutionBackwardFilter		hipdnnConvolutionBackwardFil ter		
cudnnConvolutionForward		hipdnnConvolutionForward		

cudnnCreate		hipdnnCreate	
cudnnCreateActivationDescriptor		hipdnnCreateActivationDescrip tor	
cudnnCreateConvolutionDescriptor		hipdnnCreateConvolutionDescr iptor	
cudnnCreateDropoutDescriptor		hipdnnCreateDropoutDescriptor	
cudnnCreateFilterDescriptor		hipdnnCreateFilterDescriptor	
cudnnCreateLRNDescriptor		hipdnnCreateLRNDescriptor	
cudnnCreateOpTensorDescriptor		hipdnnCreateOpTensorDescript or	
cudnnCreatePersistentRNNPlan	+	hipdnnCreatePersistentRNNPla n	
cudnnCreatePoolingDescriptor		hipdnnCreatePoolingDescriptor	
cudnnCreateRNNDescriptor		hipdnnCreateRNNDescriptor	
cudnnCreateReduceTensorDescriptor		hipdnnCreateReduceTensorDes criptor	
cudnnCreateTensorDescriptor		hipdnnCreateTensorDescriptor	
cudnnDeriveBNTensorDescriptor		hipdnnDeriveBNTensorDescrip tor	
cudnnDestroy		hipdnnDestroy	
cudnnDestroyActivationDescriptor		hipdnnDestroyActivationDescri ptor	
cudnnDestroyConvolutionDescriptor		hipdnnDestroyConvolutionDesc riptor	
cudnnDestroyDropoutDescriptor		hipdnnDestroyDropoutDescript or	
cudnnDestroyFilterDescriptor		hipdnnDestroyFilterDescriptor	
cudnnDestroyLRNDescriptor		hipdnnDestroyLRNDescriptor	
cudnnDestroyOpTensorDescriptor		hipdnnDestroyOpTensorDescri ptor	
cudnnDestroyPersistentRNNPlan	+	hipdnnDestroyPersistentRNNPl an	
cudnnDestroyPoolingDescriptor		hipdnnDestroyPoolingDescripto r	
cudnnDestroyRNNDescriptor		hipdnnDestroyRNNDescriptor	
cudnnDestroyReduceTensorDescriptor		hipdnnDestroyReduceTensorDe scriptor	
cudnnDestroyTensorDescriptor		hipdnnDestroyTensorDescriptor	
cudnnDropoutGetStatesSize		hipdnnDropoutGetStatesSize	
cudnnFindConvolutionBackwardDataAlgor ithm		hipdnnFindConvolutionBackwa rdDataAlgorithm	
cudnnFindConvolutionBackwardDataAlgor ithmEx		hipdnnFindConvolutionBackwa rdDataAlgorithmEx	
cudnnFindConvolutionBackwardFilterAlgo rithm		hipdnnFindConvolutionBackwa rdFilterAlgorithm	
cudnnFindConvolutionBackwardFilterAlgo rithmEx		hipdnnFindConvolutionBackwa rdFilterAlgorithmEx	
cudnnFindConvolutionForwardAlgorithm		hipdnnFindConvolutionForwar dAlgorithm	

cudnnFindConvolutionForwardAlgorithmE		hipdnnFindConvolutionForwar dAlgorithmEx	
x cudnnGetActivationDescriptor		hipdnnGetActivationDescriptor	
cudnnGetConvolution2dDescriptor		hipdnnGetConvolution2dDescri	
T.		ptor	
cudnnGetConvolution2dForwardOutputDi		hipdnnGetConvolution2dForwa	
m		rdOutputDim	
cudnnGetConvolutionBackwardDataAlgorit hm	+	hipdnnGetConvolutionBackwar dDataAlgorithm	
cudnnGetConvolutionBackwardDataWorks		hipdnnGetConvolutionBackwar	
paceSize		dDataWorkspaceSize	
cudnnGetConvolutionBackwardFilterAlgori thm	+	hipdnnGetConvolutionBackwar dFilterAlgorithm	
cudnnGetConvolutionBackwardFilterWork		hipdnnGetConvolutionBackwar	
spaceSize		dFilterWorkspaceSize	
cudnnGetConvolutionForwardAlgorithm	+	hipdnnGetConvolutionForward Algorithm	
cudnn Get Convolution Forward Work space Si		hipdnnGetConvolutionForward	
cudnnGetErrorString		WorkspaceSize hipdnnGetErrorString	
cudnnGetFilter4dDescriptor		hipdnnGetFilter4dDescriptor	
cudnnGetFilterNdDescriptor		hipdnnGetFilterNdDescriptor	
cudnnGetLRNDescriptor		hipdnnGetLRNDescriptor	
cudnnGetOpTensorDescriptor		hipdnnGetOpTensorDescriptor	
cudnnGetPooling2dDescriptor		hipdnnGetPooling2dDescriptor	
cudnnGetPooling2dForwardOutputDim		hipdnnGetPooling2dForwardOu tputDim	
cudnnGetRNNDescriptor	+	hipdnnGetRNNDescriptor	
cudnnGetRNNLinLayerBiasParams	+	hipdnnGetRNNLinLayerBiasPa rams	
cudnnGetRNNLinLayerMatrixParams	+	hipdnnGetRNNLinLayerMatrix Params	
cudnnGetRNNParamsSize	+	hipdnnGetRNNParamsSize	
cudnnGetRNNTrainingReserveSize	+	hipdnnGetRNNTrainingReserv eSize	
cudnnGetRNNWorkspaceSize	+	hipdnnGetRNNWorkspaceSize	
cudnnGetReduceTensorDescriptor		hipdnnGetReduceTensorDescri ptor	
cudnnGetReductionWorkspaceSize		hipdnnGetReductionWorkspace Size	
cudnnGetStream		hipdnnGetStream	
cudnnGetTensor4dDescriptor		hipdnnGetTensor4dDescriptor	
cudnnGetTensorNdDescriptor		hipdnnGetTensorNdDescriptor	
cudnnGetVersion		hipdnnGetVersion	
cudnnLRNCrossChannelBackward		hipdnnLRNCrossChannelBack ward	
cudnnLRNCrossChannelForward		hipdnnLRNCrossChannelForwa rd	
cudnnOpTensor		hipdnnOpTensor	
cudnnPoolingBackward		hipdnnPoolingBackward	

cudnnPoolingForward		hipdnnPoolingForward
cudnnRNNBackwardData	+	hipdnnRNNBackwardData
cudnnRNNBackwardWeights	+	hipdnnRNNBackwardWeights
cudnnRNNForwardInference	+	hipdnnRNNForwardInference
cudnnRNNForwardTraining	+	hipdnnRNNForwardTraining
cudnnReduceTensor		hipdnnReduceTensor
cudnnScaleTensor		hipdnnScaleTensor
cudnnSetActivationDescriptor		hipdnnSetActivationDescriptor
cudnnSetConvolution2dDescriptor		hipdnnSetConvolution2dDescri ptor
cudnnSetConvolutionGroupCount		hipdnnSetConvolutionGroupCo unt
cudnnSetConvolutionMathType		hipdnnSetConvolutionMathTyp e
cudnnSetConvolutionNdDescriptor		hipdnnSetConvolutionNdDescri ptor
cudnnSetDropoutDescriptor		hipdnnSetDropoutDescriptor
cudnnSetFilter4dDescriptor		hipdnnSetFilter4dDescriptor
cudnnSetFilterNdDescriptor		hipdnnSetFilterNdDescriptor
cudnnSetLRNDescriptor		hipdnnSetLRNDescriptor
cudnnSetOpTensorDescriptor		hipdnnSetOpTensorDescriptor
cudnnSetPersistentRNNPlan	+	hipdnnSetPersistentRNNPlan
cudnnSetPooling2dDescriptor		hipdnnSetPooling2dDescriptor
cudnnSetPoolingNdDescriptor		hipdnnSetPoolingNdDescriptor
cudnnSetRNNDescriptor	+	hipdnnSetRNNDescriptor
cudnnSetRNNDescriptor_v5	+	hipdnnSetRNNDescriptor_v5
cudnnSetRNNDescriptor_v6	+	hipdnnSetRNNDescriptor_v6
cudnnSetReduceTensorDescriptor		hipdnnSetReduceTensorDescrip tor
cudnnSetStream		hipdnnSetStream
cudnnSetTensor		hipdnnSetTensor
cudnnSetTensor4dDescriptor		hipdnnSetTensor4dDescriptor
cudnnSetTensor4dDescriptorEx		hipdnnSetTensor4dDescriptorE x
cudnnSetTensorNdDescriptor		hipdnnSetTensorNdDescriptor
cudnnSoftmaxBackward		hipdnnSoftmaxBackward
cudnnSoftmaxForward		hipdnnSoftmaxForward

# 1.7 CUFFT API Supported by HIP

## 1.7.1 CUFFT Data Types

CUDA	D	HIP	D	E
CUFFT_ALLOC_FAILED		HIPFFT_ALLOC_FAILED		
CUFFT_C2C		HIPFFT_C2C		
CUFFT_C2R		HIPFFT_C2R		
CUFFT_D2Z		HIPFFT_D2Z		
CUFFT_EXEC_FAILED		HIPFFT_EXEC_FAILED		
CUFFT_FORWARD		HIPFFT_FORWARD		
CUFFT_INCOMPLETE_PARAMETER_L IST		HIPFFT_INCOMPLETE_PAR AMETER_LIST		
CUFFT_INTERNAL_ERROR		HIPFFT_INTERNAL_ERROR		
CUFFT_INVALID_DEVICE		HIPFFT_INVALID_DEVICE		
CUFFT_INVALID_PLAN		HIPFFT_INVALID_PLAN		
CUFFT_INVALID_SIZE		HIPFFT_INVALID_SIZE		
CUFFT_INVALID_TYPE		HIPFFT_INVALID_TYPE		
CUFFT_INVALID_VALUE		HIPFFT_INVALID_VALUE		
CUFFT_INVERSE		HIPFFT_BACKWARD		
CUFFT_NOT_IMPLEMENTED		HIPFFT_NOT_IMPLEMENTE D		
CUFFT_NOT_SUPPORTED		HIPFFT_NOT_SUPPORTED		
CUFFT_NO_WORKSPACE		HIPFFT_NO_WORKSPACE		
CUFFT_PARSE_ERROR		HIPFFT_PARSE_ERROR		
CUFFT_R2C		HIPFFT_R2C		
CUFFT_SETUP_FAILED		HIPFFT_SETUP_FAILED		
CUFFT_SUCCESS		HIPFFT_SUCCESS		
CUFFT_UNALIGNED_DATA		HIPFFT_UNALIGNED_DAT A		
CUFFT_Z2D		HIPFFT_Z2D		
CUFFT_Z2Z		HIPFFT_Z2Z		
cufftComplex		hipfftComplex		
cufftDoubleComplex		hipfftDoubleComplex		
cufftDoubleReal		hipfftDoubleReal		
cufftHandle		hipfftHandle		
cufftReal		hipfftReal		
cufftResult		hipfftResult		
cufftResult_t		hipfftResult_t		
cufftType		hipfftType		
cufftType_t		hipfftType_t		
CUFFT_CB_LD_COMPLEX		HIPFFT_CB_LD_COMPLEX		
CUFFT_CB_LD_COMPLEX_DOUBLE		HIPFFT_CB_LD_COMPLEX_ DOUBLE		
CUFFT_CB_LD_REAL		HIPFFT_CB_LD_REAL		

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CUFFT_CB_LD_REAL_DOUBLE	HIPFFT_CB_LD_REAL_DOU BLE	
CUFFT_CB_ST_COMPLEX	HIPFFT_CB_ST_COMPLEX	
CUFFT_CB_ST_COMPLEX_DOUBLE	HIPFFT_CB_ST_COMPLEX_ DOUBLE	
CUFFT_CB_ST_REAL	HIPFFT_CB_ST_REAL	
CUFFT_CB_ST_REAL_DOUBLE	HIPFFT_CB_ST_REAL_DOU BLE	
CUFFT_CB_UNDEFINED	HIPFFT_CB_UNDEFINED	
cufftXtCallbackType	hipfftXtCallbackType	
cufftXtCallbackType_t	hipfftXtCallbackType_t	

## 1.7.2 CUFFT API Functions

CUDA	D	HIP	D	E
cufftCreate		hipfftCreate		
cufftDestroy		hipfftDestroy		
cufftEstimate1d		hipfftEstimate1d		
cufftEstimate2d		hipfftEstimate2d		
cufftEstimate3d		hipfftEstimate3d		
cufftEstimateMany		hipfftEstimateMany		
cufftExecC2C		hipfftExecC2C		
cufftExecC2R		hipfftExecC2R		
cufftExecD2Z		hipfftExecD2Z		
cufftExecR2C		hipfftExecR2C		
cufftExecZ2D		hipfftExecZ2D		
cufftExecZ2Z		hipfftExecZ2Z		
cufftGetProperty		hipfftGetProperty		
cufftGetSize		hipfftGetSize		
cufftGetSize1d		hipfftGetSize1d		
cufftGetSize2d		hipfftGetSize2d		
cufftGetSize3d		hipfftGetSize3d		
cufftGetSizeMany		hipfftGetSizeMany		
cufftGetSizeMany64		hipfftGetSizeMany64		
cufftGetVersion		hipfftGetVersion		
cufftMakePlan1d		hipfftMakePlan1d		
cufftMakePlan2d		hipfftMakePlan2d		
cufftMakePlan3d		hipfftMakePlan3d		
cufftMakePlanMany		hipfftMakePlanMany		
cufftMakePlanMany64		hipfftMakePlanMany64		
cufftPlan1d		hipfftPlan1d		
cufftPlan2d		hipfftPlan2d		
cufftPlan3d		hipfftPlan3d		

cufftPlanMany	hipfftPlanMany	
cufftSetAutoAllocation	hipfftSetAutoAllocation	
cufftSetStream	hipfftSetStream	
cufftSetWorkArea	hipfftSetWorkArea	
cufftCallbackLoadC	hipfftCallbackLoadC	
cufftCallbackLoadD	hipfftCallbackLoadD	
cufftCallbackLoadR	hipfftCallbackLoadR	
cufftCallbackLoadZ	hipfftCallbackLoadZ	
cufftCallbackStoreC	hipfftCallbackStoreC	
cufftCallbackStoreD	hipfftCallbackStoreD	
cufftCallbackStoreR	hipfftCallbackStoreR	
cufftCallbackStoreZ	hipfftCallbackStoreZ	
cufftXtClearCallback	hipfftXtClearCallback	
cufftXtSetCallback	hipfftXtSetCallback	
cufftXtSetCallbackSharedSize	hipfftXtSetCallbackSharedSize	

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# 1.8 CURAND API Supported by HIP

## 1.8.1 CURAND Data Types

CUDA	D	HIP	D	E
CURAND_RNG_PSEUDO_DEFAULT		HIPRAND_RNG_PSEUDO_D EFAULT		
CURAND_RNG_PSEUDO_MRG32K3A		HIPRAND_RNG_PSEUDO_M RG32K3A		
CURAND_RNG_PSEUDO_MT19937		HIPRAND_RNG_PSEUDO_M T19937		
CURAND_RNG_PSEUDO_MTGP32		HIPRAND_RNG_PSEUDO_M TGP32		
CURAND_RNG_PSEUDO_PHILOX4_32 _10		HIPRAND_RNG_PSEUDO_P HILOX4_32_10		
CURAND_RNG_PSEUDO_XORWOW		HIPRAND_RNG_PSEUDO_X ORWOW		
CURAND_RNG_QUASI_DEFAULT		HIPRAND_RNG_QUASI_DE FAULT		
CURAND_RNG_QUASI_SCRAMBLED_ SOBOL32		HIPRAND_RNG_QUASI_SC RAMBLED_SOBOL32		
CURAND_RNG_QUASI_SCRAMBLED_ SOBOL64		HIPRAND_RNG_QUASI_SC RAMBLED_SOBOL64		
CURAND_RNG_QUASI_SOBOL32		HIPRAND_RNG_QUASI_SO BOL32		
CURAND_RNG_QUASI_SOBOL64		HIPRAND_RNG_QUASI_SO BOL64		
CURAND_RNG_TEST		HIPRAND_RNG_TEST		
CURAND_STATUS_ALLOCATION_FAILED		HIPRAND_STATUS_ALLOC ATION_FAILED		
CURAND_STATUS_ARCH_MISMATCH		HIPRAND_STATUS_ARCH_ MISMATCH		
CURAND_STATUS_DOUBLE_PRECISI ON_REQUIRED		HIPRAND_STATUS_DOUBL E_PRECISION_REQUIRED		
CURAND_STATUS_INITIALIZATION_ FAILED		HIPRAND_STATUS_INITIAL IZATION_FAILED		
CURAND_STATUS_INTERNAL_ERRO R		HIPRAND_STATUS_INTERN AL_ERROR		
CURAND_STATUS_LAUNCH_FAILUR E		HIPRAND_STATUS_LAUNC H_FAILURE		
CURAND_STATUS_LENGTH_NOT_MU LTIPLE		HIPRAND_STATUS_LENGT H_NOT_MULTIPLE		
CURAND_STATUS_NOT_INITIALIZED		HIPRAND_STATUS_NOT_IN ITIALIZED		
CURAND_STATUS_OUT_OF_RANGE		HIPRAND_STATUS_OUT_O F_RANGE		
CURAND_STATUS_PREEXISTING_FAI LURE		HIPRAND_STATUS_PREEXI STING_FAILURE		
CURAND_STATUS_SUCCESS		HIPRAND_STATUS_SUCCE SS		
CURAND_STATUS_TYPE_ERROR		HIPRAND_STATUS_TYPE_E RROR		

CURAND_STATUS_VERSION_MISMA TCH	HIPRAND_STAN_MISMATCH	ATUS_VERSIO I
CURAND_VERSION	HIPRAND_VE	RSION
curandDirectionVectors32_t	hiprandDirectio	nVectors32_t
curandDiscreteDistribution_st	hiprandDiscrete	Distribution_st
curandDiscreteDistribution_t	hiprandDiscrete	Distribution_t
curandGenerator_st	hiprandGenerat	or_st
curandGenerator_t	hiprandGenerat	or_t
curandRngType	hiprandRngTyp	e_t
curandRngType_t	hiprandRngTyp	e_t
curandState	hiprandState	
curandStateMRG32k3a	hiprandStateMF	RG32k3a
curandStateMRG32k3a_t	hiprandStateMF	RG32k3a_t
curandStateMtgp32	hiprandStateMt	gp32
curandStateMtgp32_t	hiprandStateMt	gp32_t
curandStatePhilox4_32_10	hiprandStatePhi	llox4_32_10
curandStatePhilox4_32_10_t	hiprandStatePhi	llox4_32_10_t
curandStateSobol32	hiprandStateSol	00132
curandStateSobol32_t	hiprandStateSol	pol32_t
curandStateXORWOW	hiprandStateXC	DRWOW
curandStateXORWOW_t	hiprandStateXC	DRWOW_t
curandState_t	hiprandState_t	
curandStatus	hiprandStatus_t	
curandStatus_t	hiprandStatus_t	

## 1.8.2 Host API Functions

CUDA	D	HIP	D	E
curandCreateGenerator		hiprandCreateGenerator		
curandCreateGeneratorHost		hiprandCreateGeneratorHost		
curandCreatePoissonDistribution		hiprandCreatePoissonDistributi on		
curandDestroyDistribution		hiprandDestroyDistribution		
curandDestroyGenerator		hiprandDestroyGenerator		
curandGenerate		hiprandGenerate		
curandGenerateLogNormal		hiprandGenerateLogNormal		
curandGenerateLogNormalDouble		hiprandGenerateLogNormalDo uble		
curandGenerateNormal		hiprandGenerateNormal		
curandGenerateNormalDouble		hiprandGenerateNormalDouble		
curandGeneratePoisson		hiprandGeneratePoisson		
curandGenerateSeeds		hiprandGenerateSeeds		
curandGenerateUniform		hiprandGenerateUniform		
curandGenerateUniformDouble		hiprandGenerateUniformDoubl e		

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curandGetVersion	hiprandGetVersion	
curandMakeMTGP32Constants	hiprandMakeMTGP32Constant	
	S	
curandMakeMTGP32KernelState	hiprandMakeMTGP32KernelSt	
	ate	
curandSetGeneratorOffset	hiprandSetGeneratorOffset	
curandSetPseudoRandomGeneratorSeed	hiprandSetPseudoRandomGene	
	ratorSeed	
curandSetQuasiRandomGeneratorDimensi	hiprandSetQuasiRandomGener	
ons	atorDimensions	
curandSetStream	hiprandSetStream	

### **1.8.3** Device API Functions

CUDA	D	HIP	D	E
curand		hiprand		
curand_discrete		hiprand_discrete		
curand_discrete4		hiprand_discrete4		
curand_init		hiprand_init		
curand_log_normal		hiprand_log_normal		
curand_log_normal2		hiprand_log_normal2		
curand_log_normal2_double		hiprand_log_normal2_double		
curand_log_normal4		hiprand_log_normal4		
curand_log_normal4_double		hiprand_log_normal4_double		
curand_log_normal_double		hiprand_log_normal_double		
curand_normal		hiprand_normal		
curand_normal2		hiprand_normal2		
curand_normal2_double		hiprand_normal2_double		
curand_normal4		hiprand_normal4		

curand_normal4_double	hiprand_normal4_double	
curand_normal_double	hiprand_normal_double	
curand_poisson	hiprand_poisson	
curand_poisson4	hiprand_poisson4	
curand_uniform	hiprand_uniform	
curand_uniform2_double	hiprand_uniform2_double	
curand_uniform4	hiprand_uniform4	
curand_uniform4_double	hiprand_uniform4_double	
curand_uniform_double	hiprand_uniform_double	

# 1.9 CUSPARSE API supported by HIP

## 1.9.1 CUSPARSE Types References

CUDA	D	HIP	D	$\mathbf{E}$
CUSPARSE_ACTION_NUMERIC		HIPSPARSE_ACTION_NUME RIC		
CUSPARSE_ACTION_SYMBOLIC		HIPSPARSE_ACTION_SYMB OLIC		
CUSPARSE_COOMM_ALG1	+	HIPSPARSE_COOMM_ALG1		
CUSPARSE_COOMM_ALG2	+	HIPSPARSE_COOMM_ALG2		
CUSPARSE_COOMM_ALG3	+	HIPSPARSE_COOMM_ALG3		
CUSPARSE_COOMV_ALG	+	HIPSPARSE_COOMV_ALG		
CUSPARSE_CSRMM_ALG1	+	HIPSPARSE_CSRMM_ALG1		
CUSPARSE_CSRMV_ALG1	+	HIPSPARSE_CSRMV_ALG1		
CUSPARSE_CSRMV_ALG2	+	HIPSPARSE_CSRMV_ALG2		
CUSPARSE_DIAG_TYPE_NON_UNIT		HIPSPARSE_DIAG_TYPE_NO N_UNIT		
CUSPARSE_DIAG_TYPE_UNIT		HIPSPARSE_DIAG_TYPE_UN IT		
CUSPARSE_DIRECTION_COLUMN		HIPSPARSE_DIRECTION_CO LUMN		
CUSPARSE_DIRECTION_ROW		HIPSPARSE_DIRECTION_RO W		
CUSPARSE_FILL_MODE_LOWER		HIPSPARSE_FILL_MODE_LO WER		
CUSPARSE_FILL_MODE_UPPER		HIPSPARSE_FILL_MODE_UP PER		
CUSPARSE_FORMAT_COO		HIPSPARSE_FORMAT_COO		
CUSPARSE_FORMAT_COO_AOS		HIPSPARSE_FORMAT_COO_ AOS		
CUSPARSE_FORMAT_CSC		HIPSPARSE_FORMAT_CSC		
CUSPARSE_FORMAT_CSR		HIPSPARSE_FORMAT_CSR		
CUSPARSE_HYB_PARTITION_AUTO	+	HIPSPARSE_HYB_PARTITIO N_AUTO		
CUSPARSE_HYB_PARTITION_MAX	+	HIPSPARSE_HYB_PARTITIO N_MAX		
CUSPARSE_HYB_PARTITION_USER	+	HIPSPARSE_HYB_PARTITIO N_USER		
CUSPARSE_INDEX_16U		HIPSPARSE_INDEX_16U		

CUDA	D	HIP	D	E
CUSPARSE_INDEX_32I		HIPSPARSE_INDEX_32I		
CUSPARSE_INDEX_64I		HIPSPARSE_INDEX_64I		
CUSPARSE_INDEA_041		HIPSPARSE_INDEA_041		
CUSPARSE_INDEX_BASE_ONE		HIPSPARSE_INDEX_BASE_O		
CHICDARGE INDEX DAGE ZEDO		NE HIDSDARGE DUDEN DAGE Z		
CUSPARSE_INDEX_BASE_ZERO		HIPSPARSE_INDEX_BASE_Z ERO		
CUSPARSE_MATRIX_TYPE_GENERAL		HIPSPARSE_MATRIX_TYPE_		
CHARLES WATERWATER WERE WERE		GENERAL		
CUSPARSE_MATRIX_TYPE_HERMITIA N		HIPSPARSE_MATRIX_TYPE_ HERMITIAN		
CUSPARSE_MATRIX_TYPE_SYMMETR		HIPSPARSE_MATRIX_TYPE_		
IC		SYMMETRIC		
CUSPARSE_MATRIX_TYPE_TRIANGUL AR		HIPSPARSE_MATRIX_TYPE_ TRIANGULAR		
CUSPARSE_MM_ALG_DEFAULT	+	HIPSPARSE_MM_ALG_DEFA		
		ULT		
CUSPARSE_MV_ALG_DEFAULT	+	HIPSPARSE_MV_ALG_DEFA ULT		
CUSPARSE_OPERATION_CONJUGATE_		HIPSPARSE_OPERATION_C		
TRANSPOSE		ONJUGATE_TRANSPOSE		
CUSPARSE_OPERATION_NON_TRANS		HIPSPARSE_OPERATION_N		
POSE CUSPARSE_OPERATION_TRANSPOSE		ON_TRANSPOSE HIPSPARSE_OPERATION_TR		
		ANSPOSE		
CUSPARSE_ORDER_COL		HIPSPARSE_ORDER_COL		
CUSPARSE_ORDER_ROW		HIPSPARSE_ORDER_ROW		
CUSPARSE_POINTER_MODE_DEVICE		HIPSPARSE_POINTER_MOD		
		E_DEVICE		
CUSPARSE_POINTER_MODE_HOST		HIPSPARSE_POINTER_MOD E HOST		
CUSPARSE_SOLVE_POLICY_NO_LEVE		HIPSPARSE_SOLVE_POLICY		
L		_NO_LEVEL		
CUSPARSE_SOLVE_POLICY_USE_LEV		HIPSPARSE_SOLVE_POLICY		
EL CUSPARSE_SPARSETODENSE_ALG_DE		_USE_LEVEL HIPSPARSE_SPARSETODEN		
FAULT		SE_ALG_DEFAULT		
CUSPARSE_SPGEMM_DEFAULT		HIPSPARSE_SPGEMM_DEFA ULT		
CUSPARSE_SPMM_ALG_DEFAULT		HIPSPARSE_SPMM_ALG_DE		
		FAULT		
CUSPARSE_SPMM_COO_ALG1		HIPSPARSE_SPMM_COO_AL G1		
CUSPARSE_SPMM_COO_ALG2		HIPSPARSE_SPMM_COO_AL G2		
CUSPARSE_SPMM_COO_ALG3		HIPSPARSE_SPMM_COO_AL G3		
CUSPARSE_SPMM_COO_ALG4		HIPSPARSE_SPMM_COO_AL		
		G4		

CUDA	D	HIP	D	E
CUSPARSE_SPMM_CSR_ALG1		HIPSPARSE_SPMM_CSR_AL		
CUSPARSE_SPMM_CSR_ALG2		G1 HIPSPARSE_SPMM_CSR_AL		
		G2		
CUSPARSE_SPMV_ALG_DEFAULT		HIPSPARSE_MV_ALG_DEFA ULT		
CUSPARSE_SPMV_COO_ALG1		HIPSPARSE_COOMV_ALG		
CUSPARSE_SPMV_CSR_ALG1		HIPSPARSE_CSRMV_ALG1		
CUSPARSE_SPMV_CSR_ALG2		HIPSPARSE_CSRMV_ALG2		
CUSPARSE_STATUS_ALLOC_FAILED		HIPSPARSE_STATUS_ALLO C FAILED		
CUSPARSE_STATUS_ARCH_MISMATC H		HIPSPARSE_STATUS_ARCH MISMATCH		
CUSPARSE_STATUS_EXECUTION_FAI LED		HIPSPARSE_STATUS_EXEC UTION_FAILED		
CUSPARSE_STATUS_INSUFFICIENT_R ESOURCES		HIPSPARSE_STATUS_INSUF FICIENT_RESOURCES		
CUSPARSE_STATUS_INTERNAL_ERRO		HIPSPARSE_STATUS_INTER NAL_ERROR		
CUSPARSE_STATUS_INVALID_VALUE		HIPSPARSE_STATUS_INVAL ID_VALUE		
CUSPARSE_STATUS_MAPPING_ERROR		HIPSPARSE_STATUS_MAPPI NG ERROR		
CUSPARSE_STATUS_MATRIX_TYPE_N		HIPSPARSE_STATUS_MATRI		
OT_SUPPORTED		X_TYPE_NOT_SUPPORTED		
CUSPARSE_STATUS_NOT_INITIALIZE D		HIPSPARSE_STATUS_NOT_I NITIALIZED		
CUSPARSE_STATUS_NOT_SUPPORTED		HIPSPARSE_STATUS_NOT_S UPPORTED		
CUSPARSE_STATUS_SUCCESS		HIPSPARSE_STATUS_SUCCE SS		
CUSPARSE_STATUS_ZERO_PIVOT		HIPSPARSE_STATUS_ZERO_ PIVOT		
bsric02Info_t		bsric02Info_t		
bsrilu02Info_t		bsrilu02Info_t		
bsrsv2Info_t		bsrsv2Info_t		
csrgemm2Info_t		csrgemm2Info_t		
csrilu02Info_t		csrilu02Info_t		
csrsm2Info_t		csrsm2Info_t		
csrsv2Info_t		csrsv2Info_t		
csru2csrInfo		csru2csrInfo		

CUDA	D	HIP	D	E
csru2csrInfo_t		csru2csrInfo_t		
cusparseAction_t		hipsparseAction_t		
cuspuisor terror_t		impopursor tetron_t		
cusparseDiagType_t		hipsparseDiagType_t		
cusparseDirection_t		hipsparseDirection_t		
		- 1		
cusparseDnMatDescr		hipsparseDnMatDescr		
cusparseDnMatDescr_t		hipsparseDnMatDescr_t		
D. V. D.		11 D. V. D.		
cusparseDnVecDescr_t		hipsparseDnVecDescr_t		
cusparseFillMode_t		hipsparseFillMode_t		
avanous a Comment +		hipsparseFormat_t		
cusparseFormat_t		mpsparseronnat_t		
cusparseHandle_t		hipsparseHandle_t		
cusparseHybMat_t		hipsparseHybMat_t		
cusparscriyowat_t	+	mpsparserryowat_t		
cusparseHybPartition_t	+	hipsparseHybPartition_t		
cusparseIndexBase_t		hipsparseIndexBase_t		
cuspuisemdexBuse_t				
cusparseIndexType_t		hipsparseIndexType_t		
cusparseMatDescr_t		hipsparseMatDescr_t		
_				
cusparseMatrixType_t		hipsparseMatrixType_t		
cusparseOperation_t		hipsparseOperation_t		
cusparseOrder_t		hipsparseOrder_t		
cusparsePointerMode_t		hipsparsePointerMode_t		
C.I. D.L.		1.'		
cusparseSolvePolicy_t		hipsparseSolvePolicy_t		
cusparseSpGEMMAlg_t		hipsparseSpGEMMAlg_t		
cusparseSpGEMMDescr		hipsparseSpGEMMDescr		
cuspaiscopoliviiviDesci		mpsparsespoeminiDescr		
cusparseSpGEMMDescr_t		hipsparseSpGEMMDescr_t		
cusparseSpMMAlg_t		hipsparseSpMMAlg_t		
cusparscopiviiviAig_t		mpsparsespivitviAig_t		
cusparseSpMVAlg_t		hipsparseSpMVAlg_t		
cusparseSpMatDescr_t		hipsparseSpMatDescr_t		

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CUDA	D	HIP	D	E
cusparseSpVecDescr_t		hipsparseSpVecDescr_t		
cusparseSparseToDenseAlg_t		hipsparseSparseToDenseAlg_t		
cusparseStatus_t		hipsparseStatus_t		
pruneInfo_t		pruneInfo_t		

## 1.9.2 CUSPARSE Management Function Reference

CUDA	D	HIP	D	E
cusparseCreate		hipsparseCreate		
cusparseDestroy		hipsparseDestroy		
cusparseGetPointerMode		hipsparseGetPointerMode		
cusparseGetStream		hipsparseGetStream		
cusparseGetVersion		hipsparseGetVersion		
cusparseSetPointerMode		hipsparseSetPointerMode		
cusparseSetStream		hipsparseSetStream		
cusparseCreate		hipsparseCreate		
cusparseDestroy		hipsparseDestroy		
cusparseGetPointerMode		hipsparseGetPointerMode		
cusparseGetStream		hipsparseGetStream		
cusparseGetVersion		hipsparseGetVersion		
cusparseSetPointerMode		hipsparseSetPointerMode		
cusparseSetStream		hipsparseSetStream		

## 1.9.3 CUSPARSE Helper Function Reference

CUDA	D	HIP	D	E
cusparseCreateBsric02Info		hipsparseCreateBsric02Info		
cusparseCreateBsrilu02Info		hipsparseCreateBsrilu02Info		
cusparseCreateBsrsv2Info		hipsparseCreateBsrsv2Info		
cusparseCreateCsrgemm2Info	+	hipsparseCreateCsrgemm2Info		
cusparseCreateCsric02Info		hipsparseCreateCsric02Info		
cusparseCreateCsrilu02Info		hipsparseCreateCsrilu02Info		
cusparseCreateCsrsm2Info	+	hipsparseCreateCsrsm2Info		
cusparseCreateCsrsv2Info	+	hipsparseCreateCsrsv2Info		
cusparseCreateHybMat	+	hipsparseCreateHybMat		
cusparseCreateMatDescr		hipsparseCreateMatDescr		
cusparseCreatePruneInfo		hipsparseCreatePruneInfo		
cusparseDestroyBsric02Info		hipsparseDestroyBsric02Info		
cusparseDestroyBsrilu02Info		hipsparseDestroyBsrilu02Info		
cusparseDestroyBsrsv2Info		hipsparseDestroyBsrsv2Info		
cusparseDestroyCsrgemm2Info	+	hipsparseDestroyCsrgemm2Info		
cusparseDestroyCsric02Info		hipsparseDestroyCsric02Info		
cusparseDestroyCsrilu02Info		hipsparseDestroyCsrilu02Info		
cusparseDestroyCsrsm2Info	+	hipsparseDestroyCsrsm2Info		
cusparseDestroyCsrsv2Info	+	hipsparseDestroyCsrsv2Info		
cusparseDestroyHybMat	+	hipsparseDestroyHybMat		
cusparseDestroyMatDescr		hipsparseDestroyMatDescr		
cusparseDestroyPruneInfo		hipsparseDestroyPruneInfo		
cusparseGetMatDiagType		hipsparseGetMatDiagType		
cusparseGetMatFillMode		hipsparseGetMatFillMode		
cusparseGetMatIndexBase		hipsparseGetMatIndexBase		

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CUDA	D	HIP	D	E
cusparseGetMatType		hipsparseGetMatType		
cusparseSetMatDiagType		hipsparseSetMatDiagType		
cusparseSetMatFillMode		hipsparseSetMatFillMode		
cusparseSetMatIndexBase		hipsparseSetMatIndexBase		
cusparseSetMatType		hipsparseSetMatType		

## 1.9.4 CUSPARSE Types Reference

CUDA	D	HIP	D	E
CUSPARSE_SDDMM_ALG_DEFAULT		HIPSPARSE_SDDMM_ALG_D EFAULT		
cusparseSDDMMAlg_t		hipsparseSDDMMAlg_t		

#### 1.9.5 CUSPARSE Level 1 Function Reference

CUDA	D	HIP	D	E
cusparseCaxpyi	+	hipsparseCaxpyi		
cusparseCdotci	+	hipsparseCdotci		
cusparseCdoti	+	hipsparseCdoti		
cusparseCgthr	+	hipsparseCgthr		
cusparseCgthrz	+	hipsparseCgthrz		
cusparseCsctr	+	hipsparseCsctr		
cusparseDaxpyi	+	hipsparseDaxpyi		
cusparseDdoti	+	hipsparseDdoti		
cusparseDgthr	+	hipsparseDgthr		
cusparseDgthrz	+	hipsparseDgthrz		
cusparseDroti	+	hipsparseDroti		
cusparseDsctr	+	hipsparseDsctr		
cusparseSaxpyi	+	hipsparseSaxpyi		

CUDA	D	HIP	D	E
cusparseSdoti	+	hipsparseSdoti		
cusparseSgthr	+	hipsparseSgthr		
cusparseSgthrz	+	hipsparseSgthrz		
cusparseSroti	+	hipsparseSroti		
cusparseSsctr	+	hipsparseSsctr		
cusparseZaxpyi	+	hipsparseZaxpyi		
cusparseZdotci	+	hipsparseZdotci		
cusparseZdoti	+	hipsparseZdoti		
cusparseZgthr	+	hipsparseZgthr		
cusparseZgthrz	+	hipsparseZgthrz		
cusparseZsctr	+	hipsparseZsctr		

### 1.9.6 CUSPARSE Level 2 Function Reference

CUDA	D	HIP	D	E
cusparseCbsrmv		hipsparseCbsrmv		
cusparseCbsrsv2_analysis		hipsparseCbsrsv2_analysis		
cusparseCbsrsv2_bufferSize		hipsparseCbsrsv2_bufferSize		
cusparseCbsrsv2_bufferSizeExt		hipsparseCbsrsv2_bufferSizeExt		
cusparseCbsrsv2_solve		hipsparseCbsrsv2_solve		
cusparseCcsrmv	+	hipsparseCcsrmv		
cusparseCcsrsv2_analysis	+	hipsparseCcsrsv2_analysis		
cusparseCcsrsv2_bufferSize	+	hipsparseCcsrsv2_bufferSize		
cusparseCcsrsv2_bufferSizeExt	+	hipsparseCcsrsv2_bufferSizeExt		
cusparseCcsrsv2_solve	+	hipsparseCcsrsv2_solve		
cusparseChybmv	+	hipsparseChybmv		
cusparseDbsrmv		hipsparseDbsrmv		

CUDA	D	HIP	D	E
cusparseDbsrsv2_analysis		hipsparseDbsrsv2_analysis		
cusparseDbsrsv2_bufferSize		hipsparseDbsrsv2_bufferSize		
cusparseDbsrsv2_bufferSizeExt		hipsparseDbsrsv2_bufferSizeExt		
cusparseDbsrsv2_solve		hipsparseDbsrsv2_solve		
cusparseDcsrmv	+	hipsparseDcsrmv		
cusparseDcsrsv2_analysis	+	hipsparseDcsrsv2_analysis		
cusparseDcsrsv2_bufferSize		hipsparseDcsrsv2_bufferSize		
cusparseDcsrsv2_bufferSizeExt	+	hipsparseDcsrsv2_bufferSizeExt		
cusparseDcsrsv2_solve	+	hipsparseDcsrsv2_solve		
cusparseDhybmv	+	hipsparseDhybmv		
cusparseSbsrmv		hipsparseSbsrmv		
cusparseSbsrsv2_analysis		hipsparseSbsrsv2_analysis		
cusparseSbsrsv2_bufferSize		hipsparseSbsrsv2_bufferSize		
cusparseSbsrsv2_bufferSizeExt		hipsparseSbsrsv2_bufferSizeExt		
cusparseSbsrsv2_solve		hipsparseSbsrsv2_solve		
cusparseScsrmv	+	hipsparseScsrmv		
cusparseScsrsv2_analysis	+	hipsparseScsrsv2_analysis		
cusparseScsrsv2_bufferSize	+	hipsparseScsrsv2_bufferSize		
cusparseScsrsv2_bufferSizeExt	+	hipsparseScsrsv2_bufferSizeExt		
cusparseScsrsv2_solve	+	hipsparseScsrsv2_solve		
cusparseShybmv	+	hipsparseShybmv		
cusparseXbsrsv2_zeroPivot		hipsparseXbsrsv2_zeroPivot		
cusparseXcsrsv2_zeroPivot	+	hipsparseXcsrsv2_zeroPivot		
cusparseZbsrmv		hipsparseZbsrmv		
cusparseZbsrsv2_analysis		hipsparseZbsrsv2_analysis		
cusparseZbsrsv2_bufferSize		hipsparseZbsrsv2_bufferSize		

CUDA	D	HIP	D	E
cusparseZbsrsv2_bufferSizeExt		hipsparseZbsrsv2_bufferSizeExt		
cusparseZbsrsv2_solve		hipsparseZbsrsv2_solve		
cusparseZcsrmv	+	hipsparseZcsrmv		
cusparseZcsrsv2_analysis	+	hipsparseZcsrsv2_analysis		
cusparseZcsrsv2_bufferSize	+	hipsparseZcsrsv2_bufferSize		
cusparseZcsrsv2_bufferSizeExt	+	hipsparseZcsrsv2_bufferSizeExt		
cusparseZcsrsv2_solve	+	hipsparseZcsrsv2_solve		
cusparseZhybmv	+	hipsparseZhybmv		
cusparseCgemvi		hipsparseCgemvi		
cusparseCgemvi_bufferSize		hipsparseCgemvi_bufferSize		
cusparseDgemvi		hipsparseDgemvi		
cusparseDgemvi_bufferSize		hipsparseDgemvi_bufferSize		
cusparseSgemvi		hipsparseSgemvi		
cusparseSgemvi_bufferSize		hipsparseSgemvi_bufferSize		
cusparseZgemvi		hipsparseZgemvi		
cusparseZgemvi_bufferSize		hipsparseZgemvi_bufferSize		

### 1.9.7 CUSPARSE Level 3 Function Reference

CUDA	D	HIP	D	E
cusparseCbsrmm		hipsparseCbsrmm		
cusparseCcsrmm	+	hipsparseCcsrmm		
cusparseCcsrmm2	+	hipsparseCcsrmm2		
cusparseCcsrsm2_analysis	+	hipsparseCcsrsm2_analysis		
cusparseCcsrsm2_bufferSizeExt	+	hipsparseCcsrsm2_bufferSizeExt		
cusparseCcsrsm2_solve	+	hipsparseCcsrsm2_solve		
cusparseCgemmi	+	hipsparseCgemmi		

CUDA	D	HIP	D	E
cusparseDbsrmm		hipsparseDbsrmm		
cusparseDcsrmm	+	hipsparseDcsrmm		
cusparseDcsrmm2	+	hipsparseDcsrmm2		
cusparseDcsrsm2_analysis	+	hipsparseDcsrsm2_analysis		
cusparseDcsrsm2_bufferSizeExt	+	hipsparseDcsrsm2_bufferSizeExt		
cusparseDcsrsm2_solve	+	hipsparseDcsrsm2_solve		
cusparseDgemmi	+	hipsparseDgemmi		
cusparseSbsrmm		hipsparseSbsrmm		
cusparseScsrmm	+	hipsparseScsrmm		
cusparseScsrmm2	+	hipsparseScsrmm2		
cusparseScsrsm2_analysis	+	hipsparseScsrsm2_analysis		
cusparseScsrsm2_bufferSizeExt	+	hipsparseScsrsm2_bufferSizeExt		
cusparseScsrsm2_solve	+	hipsparseScsrsm2_solve		
cusparseSgemmi	+	hipsparseSgemmi		
cusparseXcsrsm2_zeroPivot	+	hipsparseXcsrsm2_zeroPivot		
cusparseZbsrmm		hipsparseZbsrmm		
cusparseZcsrmm	+	hipsparseZcsrmm		
cusparseZcsrmm2	+	hipsparseZcsrmm2		
cusparseZcsrsm2_analysis	+	hipsparseZcsrsm2_analysis		
cusparseZcsrsm2_bufferSizeExt	+	hipsparseZcsrsm2_bufferSizeExt		
cusparseZcsrsm2_solve	+	hipsparseZcsrsm2_solve		
cusparseZgemmi	+	hipsparseZgemmi		

## 1.9.8 CUSPARSE Extra Function Reference

CUDA	D	HIP	D	E
cusparseCcsrgeam	+	hipsparseCcsrgeam		
cusparseCcsrgeam2		hipsparseCcsrgeam2		
cusparseCcsrgeam2_bufferSizeExt		hipsparseCcsrgeam2_bufferSizeExt		
cusparseCcsrgemm	+	hipsparseCcsrgemm		
cusparseCcsrgemm2	+	hipsparseCcsrgemm2		
cusparseCcsrgemm2_bufferSizeExt	+	hipsparseCcsrgemm2_bufferSizeExt		
cusparseDcsrgeam	+	hipsparseDcsrgeam		
cusparseDcsrgeam2		hipsparseDcsrgeam2		
cusparseDcsrgeam2_bufferSizeExt		hipsparseDcsrgeam2_bufferSizeExt		
cusparseDcsrgemm	+	hipsparseDcsrgemm		
cusparseDcsrgemm2	+	hipsparseDcsrgemm2		
cusparseDcsrgemm2_bufferSizeExt	+	hipsparseDcsrgemm2_bufferSizeExt		
cusparseScsrgeam	+	hipsparseScsrgeam		
cusparseScsrgeam2		hipsparseScsrgeam2		
cusparseScsrgeam2_bufferSizeExt		hipsparseScsrgeam2_bufferSizeExt		
cusparseScsrgemm	+	hipsparseScsrgemm		
cusparseScsrgemm2	+	hipsparseScsrgemm2		
cusparseScsrgemm2_bufferSizeExt	+	hipsparseScsrgemm2_bufferSizeExt		
cusparseXcsrgeam2Nnz		hipsparseXcsrgeam2Nnz		
cusparseXcsrgeamNnz	+	hipsparseXcsrgeamNnz		
cusparseXcsrgemm2Nnz	+	hipsparseXcsrgemm2Nnz		
cusparseXcsrgemmNnz	+	hipsparseXcsrgemmNnz		
cusparseZcsrgeam	+	hipsparseZcsrgeam		
cusparseZcsrgeam2		hipsparseZcsrgeam2		
cusparseZcsrgeam2_bufferSizeExt		hipsparseZcsrgeam2_bufferSizeExt		



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CUDA	D	HIP	D	E
cusparseZcsrgemm	+	hipsparseZcsrgemm		
cusparseZcsrgemm2	+	hipsparseZcsrgemm2		
cusparseZcsrgemm2_bufferSizeExt	+	hipsparseZcsrgemm2_bufferSizeExt		

## 1.9.9 CUSPARSE Preconditioners Reference

CUDA	D	HIP	D	E
cusparseCbsric02		hipsparseCbsric02		
cusparseCbsric02_analysis		hipsparseCbsric02_analysis		
cusparseCbsric02_bufferSize		hipsparseCbsric02_bufferSize		
cusparseCbsrilu02		hipsparseCbsrilu02		
cusparseCbsrilu02_analysis		hipsparseCbsrilu02_analysis		
cusparseCbsrilu02_bufferSize		hipsparseCbsrilu02_bufferSize		
cusparseCbsrilu02_numericBoost		hipsparseCbsrilu02_numericBoost		
cusparseCcsric02		hipsparseCcsric02		
cusparseCcsric02_analysis		hipsparseCcsric02_analysis		
cusparseCcsric02_bufferSize		hipsparseCcsric02_bufferSize		
cusparseCcsric02_bufferSizeExt		hipsparseCcsric02_bufferSizeExt		
cusparseCcsrilu02		hipsparseCcsrilu02		
cusparseCcsrilu02_analysis		hipsparseCcsrilu02_analysis		
cusparseCcsrilu02_bufferSize		hipsparseCcsrilu02_bufferSize		
cusparseCcsrilu02_bufferSizeExt		hipsparseCcsrilu02_bufferSizeExt		
cusparseCcsrilu02_numericBoost		hipsparseCcsrilu02_numericBoost		
cusparseDbsric02		hipsparseDbsric02		
cusparseDbsric02_analysis		hipsparseDbsric02_analysis		
cusparseDbsric02_bufferSize		hipsparseDbsric02_bufferSize		
cusparseDbsrilu02		hipsparseDbsrilu02		

CUDA	D	HIP	D	E
cusparseDbsrilu02_analysis		hipsparseDbsrilu02_analysis		
cusparseDbsrilu02_bufferSize		hipsparseDbsrilu02_bufferSize		
cusparseDbsrilu02_numericBoost		hipsparseDbsrilu02_numericBoost		
cusparseDcsric02		hipsparseDcsric02		
cusparseDcsric02_analysis		hipsparseDcsric02_analysis		
cusparseDcsric02_bufferSize		hipsparseDcsric02_bufferSize		
cusparseDcsric02_bufferSizeExt		hipsparseDcsric02_bufferSizeExt		
cusparseDcsrilu02		hipsparseDcsrilu02		
cusparseDcsrilu02_analysis		hipsparseDcsrilu02_analysis		
cusparseDcsrilu02_bufferSize		hipsparseDcsrilu02_bufferSize		
cusparseDcsrilu02_bufferSizeExt		hipsparseDcsrilu02_bufferSizeExt		
cusparseDcsrilu02_numericBoost		hipsparseDcsrilu02_numericBoost		
cusparseSbsric02		hipsparseSbsric02		
cusparseSbsric02_analysis		hipsparseSbsric02_analysis		
cusparseSbsric02_bufferSize		hipsparseSbsric02_bufferSize		
cusparseSbsrilu02		hipsparseSbsrilu02		
cusparseSbsrilu02_analysis		hipsparseSbsrilu02_analysis		
cusparseSbsrilu02_bufferSize		hipsparseSbsrilu02_bufferSize		
cusparseSbsrilu02_numericBoost		hipsparseSbsrilu02_numericBoost		
cusparseScsric02		hipsparseScsric02		
cusparseScsric02_analysis		hipsparseScsric02_analysis		
cusparseScsric02_bufferSize		hipsparseScsric02_bufferSize		
cusparseScsric02_bufferSizeExt		hipsparseScsric02_bufferSizeExt		
cusparseScsrilu02		hipsparseScsrilu02		
cusparseScsrilu02_analysis		hipsparseScsrilu02_analysis		
cusparseScsrilu02_bufferSize		hipsparseScsrilu02_bufferSize		

D	HIP	D	E
	hipsparseScsrilu02_bufferSizeExt		
	hipsparseScsrilu02_numericBoost		
	hipsparseXbsric02_zeroPivot		
	hipsparseXbsrilu02_zeroPivot		
	hipsparseXcsric02_zeroPivot		
	hipsparseXcsrilu02_zeroPivot		
	hipsparseZbsric02		
	hipsparseZbsric02_analysis		
	hipsparseZbsric02_bufferSize		
	hipsparseZbsrilu02		
	hipsparseZbsrilu02_analysis		
	hipsparseZbsrilu02_bufferSize		
	hipsparseZbsrilu02_numericBoost		
	hipsparseZcsric02		
	hipsparseZcsric02_analysis		
	hipsparseZcsric02_bufferSize		
	hipsparseZcsric02_bufferSizeExt		
	hipsparseZcsrilu02		
	hipsparseZcsrilu02_analysis		
	hipsparseZcsrilu02_bufferSize		
	hipsparseZcsrilu02_bufferSizeExt		
	hipsparseZcsrilu02_numericBoost		
	hipsparseCgtsv2		
	hipsparseCgtsv2_bufferSizeExt		
	hipsparseCgtsv2_nopivot		
	hipsparseCgtsv2_nopivot_bufferSizeExt		
		hipsparseScsrilu02_numericBoost hipsparseXbsric02_zeroPivot hipsparseXcsric02_zeroPivot hipsparseXcsrilu02_zeroPivot hipsparseZcsrilu02_zeroPivot hipsparseZbsric02 hipsparseZbsric02_analysis hipsparseZbsric02_bufferSize hipsparseZbsrilu02 hipsparseZbsrilu02_analysis hipsparseZbsrilu02_numericBoost hipsparseZcsric02 hipsparseZcsric02 hipsparseZcsric02_analysis hipsparseZcsric02_analysis hipsparseZcsric02_analysis hipsparseZcsric02_analysis hipsparseZcsric02_bufferSize hipsparseZcsric02_bufferSize hipsparseZcsrilu02 hipsparseZcsrilu02_bufferSizeExt hipsparseZcsrilu02_bufferSize hipsparseZcsrilu02_bufferSize hipsparseZcsrilu02_bufferSizeExt hipsparseZcsrilu02_numericBoost hipsparseCgtsv2_bufferSizeExt hipsparseCgtsv2_bufferSizeExt hipsparseCgtsv2_nopivot	hipsparseXbsridu02_zeroPivot hipsparseXbsridu02_zeroPivot hipsparseXcsridu02_zeroPivot hipsparseXcsridu02_zeroPivot hipsparseXcsridu02_zeroPivot hipsparseZbsricu02 hipsparseZbsricu02_analysis hipsparseZbsricu02_bufferSize hipsparseZbsridu02 hipsparseZbsridu02_analysis hipsparseZbsridu02_bufferSize hipsparseZbsridu02_numericBoost hipsparseZcsricu02 hipsparseZcsricu02_analysis hipsparseZcsricu02_bufferSize hipsparseZcsricu02_bufferSize hipsparseZcsricu02_bufferSize hipsparseZcsridu02_hipsparseZcsridu02 hipsparseZcsridu02_bufferSizeExt hipsparseZcsridu02_bufferSize hipsparseZcsridu02_bufferSizeExt hipsparseZcsridu02_bufferSizeExt hipsparseZcsridu02_numericBoost hipsparseZcsridu02_numericBoost hipsparseCgtsv2_bufferSizeExt hipsparseCgtsv2_bufferSizeExt hipsparseCgtsv2_bufferSizeExt hipsparseCgtsv2_bufferSizeExt

CUDA	D	HIP	D	E
cusparseDgtsv2		hipsparseDgtsv2		
cusparseDgtsv2_bufferSizeExt		hipsparseDgtsv2_bufferSizeExt		
cusparseDgtsv2_nopivot		hipsparseDgtsv2_nopivot		
cusparseDgtsv2_nopivot_bufferSizeExt		hipsparseDgtsv2_nopivot_bufferSizeExt		
cusparseSgtsv2		hipsparseSgtsv2		
cusparseSgtsv2_bufferSizeExt		hipsparseSgtsv2_bufferSizeExt		
cusparseSgtsv2_nopivot		hipsparseSgtsv2_nopivot		
cusparseSgtsv2_nopivot_bufferSizeExt		hipsparseSgtsv2_nopivot_bufferSizeExt		
cusparseZgtsv2		hipsparseZgtsv2		
cusparseZgtsv2_bufferSizeExt		hipsparseZgtsv2_bufferSizeExt		
cusparseZgtsv2_nopivot		hipsparseZgtsv2_nopivot		
cusparseZgtsv2_nopivot_bufferSizeExt		hipsparseZgtsv2_nopivot_bufferSizeExt		

# 1.9.10 CUSPARSE Reorderings Reference

The CUSPARSE Reordering APIs are currently unsupported.

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#### 1.9.11 CUSPARSE Format Conversion Reference

CUDA	D	HIP	D	E
cusparseCbsr2csr		hipsparseCbsr2csr		
cusparseCcsc2dense	+	hipsparseCcsc2dense		
cusparseCcsr2bsr		hipsparseCcsr2bsr		
cusparseCcsr2csc	+	hipsparseCcsr2csc		
cusparseCcsr2csr_compress		hipsparseCcsr2csr_compress		
cusparseCcsr2csru		hipsparseCcsr2csru		
cusparseCcsr2dense	+	hipsparseCcsr2dense		
cusparseCcsr2gebsr		hipsparseCcsr2gebsr		
cusparseCcsr2gebsr_bufferSize		hipsparseCcsr2gebsr_bufferSize		
cusparseCcsr2hyb	+	hipsparseCcsr2hyb		
cusparseCcsru2csr		hipsparseCcsru2csr		
cusparseCcsru2csr_bufferSizeExt		hipsparseCcsru2csr_bufferSizeExt		
cusparseCdense2csc	+	hipsparseCdense2csc		
cusparseCdense2csr	+	hipsparseCdense2csr		
cusparseCgebsr2csr		hipsparseCgebsr2csr		
cusparseCgebsr2gebsc		hipsparseCgebsr2gebsc		
cusparseCgebsr2gebsc_bufferSize		hipsparseCgebsr2gebsc_bufferSize		
cusparseCgebsr2gebsr		hipsparseCgebsr2gebsr		
cusparseCgebsr2gebsr_bufferSize		hipsparseCgebsr2gebsr_bufferSize		
cusparseChyb2csr	+	hipsparseChyb2csr		
cusparseCnnz		hipsparseCnnz		
cusparseCnnz_compress		hipsparseCnnz_compress		
cusparseCreateCsru2csrInfo		hipsparseCreateCsru2csrInfo		
cusparseCreateIdentityPermutation		hipsparseCreateIdentityPermutation		

CUDA	D	HIP	D	E
cusparseDbsr2csr		hipsparseDbsr2csr		
cusparseDcsc2dense	+	hipsparseDcsc2dense		
cusparseDcsr2bsr		hipsparseDcsr2bsr		
cusparseDcsr2csc	+	hipsparseDcsr2csc		
cusparseDcsr2csr_compress		hipsparseDcsr2csr_compress		
cusparseDcsr2csru		hipsparseDcsr2csru		
cusparseDcsr2dense	+	hipsparseDcsr2dense		
cusparseDcsr2gebsr		hipsparseDcsr2gebsr		
cusparseDcsr2gebsr_bufferSize		hipsparseDcsr2gebsr_bufferSize		
cusparseDcsr2hyb	+	hipsparseDcsr2hyb		
cusparseDcsru2csr		hipsparseDcsru2csr		
cusparseDcsru2csr_bufferSizeExt		hipsparseDcsru2csr_bufferSizeExt		
cusparseDdense2csc	+	hipsparseDdense2csc		
cusparseDdense2csr	+	hipsparseDdense2csr		
cusparseDestroyCsru2csrInfo		hipsparseDestroyCsru2csrInfo		
cusparseDgebsr2csr		hipsparseDgebsr2csr		
cusparseDgebsr2gebsc		hipsparseDgebsr2gebsc		
cusparseDgebsr2gebsc_bufferSize		hipsparseDgebsr2gebsc_bufferSize		
cusparseDgebsr2gebsr		hipsparseDgebsr2gebsr		
cusparseDgebsr2gebsr_bufferSize		hipsparseDgebsr2gebsr_bufferSize		
cusparseDhyb2csr	+	hipsparseDhyb2csr		
cusparseDnnz		hipsparseDnnz		
cusparseDnnz_compress		hipsparseDnnz_compress		
cusparseDpruneCsr2csr		hipsparseDpruneCsr2csr		
cusparseDpruneCsr2csrByPercentage		hipsparseDpruneCsr2csrByPercentage		
cusparseDpruneCsr2csrByPercentage_buffer SizeExt		hipsparseDpruneCsr2csrByPercentage_b ufferSizeExt		

CUDA	D	HIP	D	E
cusparseDpruneCsr2csrNnz		hipsparseDpruneCsr2csrNnz		
cusparseDpruneCsr2csrNnzByPercentage		hipsparseDpruneCsr2csrNnzByPercenta ge		
cusparseDpruneCsr2csr_bufferSizeExt		hipsparseDpruneCsr2csr_bufferSizeExt		
cusparseDpruneDense2csr		hipsparseDpruneDense2csr		
cusparseDpruneDense2csrByPercentage		hipsparseDpruneDense2csrByPercentag e		
cusparseDpruneDense2csrByPercentage_buf ferSizeExt		hipsparseDpruneDense2csrByPercentag e_bufferSizeExt		
cusparseDpruneDense2csrNnz		hipsparseDpruneDense2csrNnz		
cusparseDpruneDense2csrNnzByPercentage		hipsparseDpruneDense2csrNnzByPerce ntage		
cusparseDpruneDense2csr_bufferSizeExt		hipsparseDpruneDense2csr_bufferSizeE xt		
cusparseSbsr2csr		hipsparseSbsr2csr		
cusparseScsc2dense	+	hipsparseScsc2dense		
cusparseScsr2bsr		hipsparseScsr2bsr		
cusparseScsr2csc	+	hipsparseScsr2csc		
cusparseScsr2csr_compress		hipsparseScsr2csr_compress		
cusparseScsr2csru		hipsparseScsr2csru		
cusparseScsr2dense	+	hipsparseScsr2dense		
cusparseScsr2gebsr		hipsparseScsr2gebsr		
cusparseScsr2gebsr_bufferSize		hipsparseScsr2gebsr_bufferSize		
cusparseScsr2hyb	+	hipsparseScsr2hyb		
cusparseScsru2csr		hipsparseScsru2csr		
cusparseScsru2csr_bufferSizeExt		hipsparseScsru2csr_bufferSizeExt		
cusparseSdense2csc	+	hipsparseSdense2csc		
cusparseSdense2csr	+	hipsparseSdense2csr		
cusparseSgebsr2csr		hipsparseSgebsr2csr		
cusparseSgebsr2gebsc		hipsparseSgebsr2gebsc		
cusparseSgebsr2gebsc_bufferSize		hipsparseSgebsr2gebsc_bufferSize		

CUDA	D	HIP	D	E
cusparseSgebsr2gebsr		hipsparseSgebsr2gebsr		
cusparseSgebsr2gebsr_bufferSize		hipsparseSgebsr2gebsr_bufferSize		
cusparseShyb2csr	+	hipsparseShyb2csr		
cusparseSnnz		hipsparseSnnz		
cusparseSnnz_compress		hipsparseSnnz_compress		
cusparseSpruneCsr2csr		hipsparseSpruneCsr2csr		
cusparseSpruneCsr2csrByPercentage		hipsparseSpruneCsr2csrByPercentage		
cusparseSpruneCsr2csrByPercentage_buffer SizeExt		hipsparseSpruneCsr2csrByPercentage_b ufferSizeExt		
cusparseSpruneCsr2csrNnz		hipsparseSpruneCsr2csrNnz		
cusparseSpruneCsr2csrNnzByPercentage		hipsparseSpruneCsr2csrNnzByPercentag		
cusparseSpruneCsr2csr_bufferSizeExt		hipsparseSpruneCsr2csr_bufferSizeExt		
cusparseSpruneDense2csr		hipsparseSpruneDense2csr		
cusparseSpruneDense2csrByPercentage		hipsparseSpruneDense2csrByPercentage		
cusparseSpruneDense2csrByPercentage_buff erSizeExt		hipsparseSpruneDense2csrByPercentage _bufferSizeExt		
cusparseSpruneDense2csrNnz		hipsparseSpruneDense2csrNnz		
cusparseSpruneDense2csrNnzByPercentage		hipsparseSpruneDense2csrNnzByPercen tage		
cusparseSpruneDense2csr_bufferSizeExt		hipsparseSpruneDense2csr_bufferSizeE xt		
cusparseXcoo2csr		hipsparseXcoo2csr		
cusparseXcoosortByColumn		hipsparseXcoosortByColumn		
cusparseXcoosortByRow		hipsparseXcoosortByRow		
cusparseXcoosort_bufferSizeExt		hipsparseXcoosort_bufferSizeExt		
cusparseXcscsort		hipsparseXcscsort		
cusparseXcscsort_bufferSizeExt		hipsparseXcscsort_bufferSizeExt		
cusparseXcsr2bsrNnz		hipsparseXcsr2bsrNnz		
cusparseXcsr2coo		hipsparseXcsr2coo		
cusparseXcsr2gebsrNnz		hipsparseXcsr2gebsrNnz		

CUDA	D	HIP	D	E
cusparseXcsrsort		hipsparseXcsrsort		
cusparseXcsrsort_bufferSizeExt		hipsparseXcsrsort_bufferSizeExt		
cusparseXgebsr2gebsrNnz		hipsparseXgebsr2gebsrNnz		
cusparseZbsr2csr		hipsparseZbsr2csr		
cusparseZcsc2dense	+	hipsparseZcsc2dense		
cusparseZcsr2bsr		hipsparseZcsr2bsr		
cusparseZcsr2csc	+	hipsparseZcsr2csc		
cusparseZcsr2csr_compress		hipsparseZcsr2csr_compress		
cusparseZcsr2csru		hipsparseZcsr2csru		
cusparseZcsr2dense	+	hipsparseZcsr2dense		
cusparseZcsr2gebsr		hipsparseZcsr2gebsr		
cusparseZcsr2gebsr_bufferSize		hipsparseZcsr2gebsr_bufferSize		
cusparseZcsr2hyb	+	hipsparseZcsr2hyb		
cusparseZcsru2csr		hipsparseZcsru2csr		
cusparseZcsru2csr_bufferSizeExt		hipsparseZcsru2csr_bufferSizeExt		
cusparseZdense2csc	+	hipsparseZdense2csc		
cusparseZdense2csr	+	hipsparseZdense2csr		
cusparseZgebsr2csr		hipsparseZgebsr2csr		
cusparseZgebsr2gebsc		hipsparseZgebsr2gebsc		
cusparseZgebsr2gebsc_bufferSize		hipsparseZgebsr2gebsc_bufferSize		
cusparseZgebsr2gebsr		hipsparseZgebsr2gebsr		
cusparseZgebsr2gebsr_bufferSize		hipsparseZgebsr2gebsr_bufferSize		
cusparseZhyb2csr	+	hipsparseZhyb2csr		
cusparseZnnz		hipsparseZnnz		
cusparseZnnz_compress		hipsparseZnnz_compress		

## 1.9.12 CUSPARSE Generic API Reference

CUDA	D	HIP	D	E
cusparseAxpby		hipsparseAxpby		
cusparseCooAoSGet		hipsparseCooAoSGet		
cusparseCooGet		hipsparseCooGet		
cusparseCooSetPointers		hipsparseCooSetPointers		
cusparseCreateCoo		hipsparseCreateCoo		
cusparseCreateCooAoS		hipsparseCreateCooAoS		
cusparseCreateCsc		hipsparseCreateCsc		
cusparseCreateCsr		hipsparseCreateCsr		
cusparseCreateDnMat		hipsparseCreateDnMat		
cusparseCreateDnVec		hipsparseCreateDnVec		
cusparseCreateSpVec		hipsparseCreateSpVec		
cusparseCscSetPointers		hipsparseCscSetPointers		
cusparseCsrGet		hipsparseCsrGet		
cusparseCsrSetPointers		hipsparseCsrSetPointers		
cusparseDenseToSparse_analysis		hipsparseDenseToSparse_analysis		
cusparseDenseToSparse_bufferSize		hipsparseDenseToSparse_bufferSize		
cusparseDenseToSparse_convert		hipsparseDenseToSparse_convert		
cusparseDestroyDnMat		hipsparseDestroyDnMat		
cusparseDestroyDnVec		hipsparseDestroyDnVec		
cusparseDestroySpMat		hipsparseDestroySpMat		
cusparseDestroySpVec		hipsparseDestroySpVec		
cusparseDnMatGet		hipsparseDnMatGet		
cusparseDnMatGetValues		hipsparseDnMatGetValues		
cusparseDnMatSetValues		hipsparseDnMatSetValues		
cusparseDnVecGet		hipsparseDnVecGet		

CUDA	D	HIP	D	E
cusparseDnVecGetValues		hipsparseDnVecGetValues		
cusparseDnVecSetValues		hipsparseDnVecSetValues		
cusparseGather		hipsparseGather		
cusparseRot		hipsparseRot		
cusparseScatter		hipsparseScatter		
cusparseSpGEMM_compute		hipsparseSpGEMM_compute		
cusparseSpGEMM_copy		hipsparseSpGEMM_copy		
cusparseSpGEMM_createDescr		hipsparseSpGEMM_createDescr		
cusparseSpGEMM_destroyDescr		hipsparseSpGEMM_destroyDescr		
cusparseSpGEMM_workEstimation		hipsparseSpGEMM_workEstimation		
cusparseSpMM		hipsparseSpMM		
cusparseSpMM_bufferSize		hipsparseSpMM_bufferSize		
cusparseSpMV		hipsparseSpMV		
cusparseSpMV_bufferSize		hipsparseSpMV_bufferSize		
cusparseSpMatGetFormat		hipsparseSpMatGetFormat		
cusparseSpMatGetIndexBase		hipsparseSpMatGetIndexBase		
cusparseSpMatGetSize		hipsparseSpMatGetSize		
cusparseSpMatGetValues		hipsparseSpMatGetValues		
cusparseSpMatSetValues		hipsparseSpMatSetValues		
cusparseSpVV		hipsparseSpVV		
cusparseSpVV_bufferSize		hipsparseSpVV_bufferSize		
cusparseSpVecGet		hipsparseSpVecGet		
cusparseSpVecGetIndexBase		hipsparseSpVecGetIndexBase		
cusparseSpVecGetValues		hipsparseSpVecGetValues		
cusparseSpVecSetValues		hipsparseSpVecSetValues		
cusparseSparseToDense		hipsparseSparseToDense		

CUDA	D	HIP	D	E
cusparseSparseToDense_bufferSize		hipsparseSparseToDense_bufferSize		
cusparseSDDMM		hipsparseSDDMM		
cusparseSDDMM_bufferSize		hipsparseSDDMM_bufferSize		
cusparseSDDMM_preprocess		hipsparseSDDMM_preprocess		
cusparseSpMM_preprocess		hipsparseSpMM_preprocess		