

NAS VAAI Development Kit - ESX Server 7.0.1
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Chapter 1

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1.1 Data Structures

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Chapter 2

File Index

2.1 File List

Here is a list of all files with brief descriptions:

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public_vm_basic_types.h	58

Chapter 3

Data Structure Documentation

3.1 VxDiskLibBlock Struct Reference

Data Fields

- [VxDiskLibSectorType](#) offset
- [VxDiskLibSectorType](#) length

3.1.1 Field Documentation

3.1.1.1 [VxDiskLibSectorType](#) `VxDiskLibBlock::offset`

3.1.1.2 [VxDiskLibSectorType](#) `VxDiskLibBlock::length`

3.2 VxDiskLibBlockList Struct Reference

Data Fields

- `uint32 numBlocks`
- `VxDiskLibBlock blocks [1]`

3.2.1 Field Documentation

3.2.1.1 `uint32 VxDiskLibBlockList::numBlocks`

3.2.1.2 `VxDiskLibBlock VxDiskLibBlockList::blocks[1]`

3.3 VxDiskLibConnectParams Struct Reference

Data Structures

- union [VxDiskLibCreds](#)

Data Fields

- char * [vmxSpec](#)
- char * [serverName](#)
- char * [thumbPrint](#)
- long [privateUse](#)
- [VxDiskLibCredType](#) [credType](#)
- union [VxDiskLibConnectParams::VxDiskLibCreds](#) [creds](#)
- [uint32](#) [port](#)
- [uint32](#) [nfcHostPort](#)
- char * [vimApiVer](#)
- char [reserved](#) [8]
- [VxDiskLibConnectParamsState](#) * [state](#)
- union {
 - [VxDiskLibVStorageObjectSpec](#) [vStorageObjSpec](#)
 - [VxDiskLibDatastoreSpec](#) [dsSpec](#)}
- [VxDiskLibSpecType](#) [specType](#)

3.3.1 Detailed Description

[VxDiskLibConnectParams](#) - Connection setup parameters.

vmxSpec is required for opening a virtual disk on a datastore through the Virtual Center or ESX server. vmxSpec is of the form: <vmxPathName>?dcPath=<dcpah>&dsName=<dsname> where vmxPathName is the fullpath for the VMX file, dcpah is the inventory path of the datacenter and dsname is the datastore name.

Inventory path for the datacenter can be read off the Virtual Center client's inventory tree.

Example VM spec: "MyVm/MyVm.vmx?dcPath=Path/to/MyDatacenter&dsName=storage1"

3.3.2 Field Documentation

- 3.3.2.1 `char* VixDiskLibConnectParams::vmxSpec`
- 3.3.2.2 `char* VixDiskLibConnectParams::serverName`
- 3.3.2.3 `char* VixDiskLibConnectParams::thumbPrint`
- 3.3.2.4 `long VixDiskLibConnectParams::privateUse`
- 3.3.2.5 `VixDiskLibCredType VixDiskLibConnectParams::credType`
- 3.3.2.6 `union VixDiskLibConnectParams::VixDiskLibCreds VixDiskLibConnectParams::creds`
- 3.3.2.7 `uint32 VixDiskLibConnectParams::port`
- 3.3.2.8 `uint32 VixDiskLibConnectParams::nfcHostPort`
- 3.3.2.9 `char* VixDiskLibConnectParams::vimApiVer`
- 3.3.2.10 `char VixDiskLibConnectParams::reserved[8]`
- 3.3.2.11 `VixDiskLibConnectParamsState* VixDiskLibConnectParams::state`
- 3.3.2.12 `VixDiskLibVStorageObjectSpec VixDiskLibConnectParams::vStorageObjSpec`
- 3.3.2.13 `VixDiskLibDatastoreSpec VixDiskLibConnectParams::dsSpec`
- 3.3.2.14 `union { ... } VixDiskLibConnectParams::spec`
- 3.3.2.15 `VixDiskLibSpecType VixDiskLibConnectParams::specType`

3.4 VxDiskLibConnectParams::VxDiskLibConnectParams::VxDiskLibCreds Union Reference

Data Structures

- struct [VxDiskLibSessionIdCreds](#)
- struct [VxDiskLibUidPasswdCreds](#)

Data Fields

- struct [VxDiskLibConnectParams::VxDiskLibCreds::VxDiskLibUidPasswdCreds uid](#)
- struct [VxDiskLibConnectParams::VxDiskLibCreds::VxDiskLibSessionIdCreds sessionId](#)
- struct [VxDiskLibTicketIdCreds * ticketId](#)

3.4.1 Field Documentation

**3.4.1.1 struct VxDiskLibConnectParams::VxDiskLibCreds::VxDiskLibUidPasswdCreds
VxDiskLibConnectParams::VxDiskLibConnectParams::VxDiskLibCreds::uid**

**3.4.1.2 struct VxDiskLibConnectParams::VxDiskLibCreds::VxDiskLibSessionIdCreds
VxDiskLibConnectParams::VxDiskLibConnectParams::VxDiskLibCreds::sessionId**

**3.4.1.3 struct VxDiskLibTicketIdCreds* VxDiskLibConnect-
Params::VxDiskLibConnectParams::VxDiskLibCreds::ticketId
[read]**

3.5 VxDiskLibConnectParams::VxDiskLibConnectParams::VxDiskLibCreds::Struct Reference

Data Fields

- char * [cookie](#)
- char * [userName](#)
- char * [key](#)

3.5.1 Field Documentation

3.5.1.1 `char* VxDiskLibConnect-
Params::VxDiskLibConnectParams::VxDiskLibCreds::VxDiskLibConnectParams::VxDiskLibCreds::VxD`

3.5.1.2 `char* VxDiskLibConnect-
Params::VxDiskLibConnectParams::VxDiskLibCreds::VxDiskLibConnectParams::VxDiskLibCreds::VxD`

3.5.1.3 `char* VxDiskLibConnect-
Params::VxDiskLibConnectParams::VxDiskLibCreds::VxDiskLibConnectParams::VxDiskLibCreds::VxD`

3.6 VxDiskLibConnect-

Params::VxDiskLibConnectParams::VxDiskLibCreds::VxDiskLibConnectParams::VxDiskLibCreds::VxDiskLibU

Struct Reference

3.6 VxDiskLibConnectParams::VxDiskLibConnectParams::VxDiskLibCreds::¹¹VxDiskLibCreds:: Struct Reference

Data Fields

- char * `userName`
- char * `password`

3.6.1 Field Documentation

3.6.1.1 char* VxDiskLibConnect-

Params::VxDiskLibConnectParams::VxDiskLibCreds::VxDiskLibConnectParams::VxDiskLibCreds::VxD

3.6.1.2 char* VxDiskLibConnect-

Params::VxDiskLibConnectParams::VxDiskLibCreds::VxDiskLibConnectParams::VxDiskLibCreds::VxD

3.7 VxDiskLibCreateParams Struct Reference

Data Fields

- [VxDiskLibDiskType](#) diskType
- [VxDiskLibAdapterType](#) adapterType
- [uint16](#) hwVersion
- [VxDiskLibSectorType](#) capacity
- [uint32](#) logicalSectorSize
- [uint32](#) physicalSectorSize

3.7.1 Field Documentation

3.7.1.1 [VxDiskLibDiskType](#) VxDiskLibCreateParams::diskType

3.7.1.2 [VxDiskLibAdapterType](#) VxDiskLibCreateParams::adapterType

3.7.1.3 [uint16](#) VxDiskLibCreateParams::hwVersion

3.7.1.4 [VxDiskLibSectorType](#) VxDiskLibCreateParams::capacity

3.7.1.5 [uint32](#) VxDiskLibCreateParams::logicalSectorSize

3.7.1.6 [uint32](#) VxDiskLibCreateParams::physicalSectorSize

3.8 VixDiskLibDatastoreSpec Struct Reference

Data Fields

- char * [datastoreMoRef](#)

3.8.1 Field Documentation

3.8.1.1 char* VixDiskLibDatastoreSpec::datastoreMoRef

3.9 VxDiskLibGeometry Struct Reference

Data Fields

- `uint32 cylinders`
- `uint32 heads`
- `uint32 sectors`

3.9.1 Field Documentation

3.9.1.1 `uint32 VxDiskLibGeometry::cylinders`

3.9.1.2 `uint32 VxDiskLibGeometry::heads`

3.9.1.3 `uint32 VxDiskLibGeometry::sectors`

3.10 VixDiskLibInfo Struct Reference

Data Fields

- [VixDiskLibGeometry biosGeo](#)
- [VixDiskLibGeometry physGeo](#)
- [VixDiskLibSectorType capacity](#)
- [VixDiskLibAdapterType adapterType](#)
- int numLinks
- char * parentFileNameHint
- char * uuid
- uint32 logicalSectorSize
- uint32 physicalSectorSize

3.10.1 Field Documentation

3.10.1.1 VixDiskLibGeometry VixDiskLibInfo::biosGeo

3.10.1.2 VixDiskLibGeometry VixDiskLibInfo::physGeo

3.10.1.3 VixDiskLibSectorType VixDiskLibInfo::capacity

3.10.1.4 VixDiskLibAdapterType VixDiskLibInfo::adapterType

3.10.1.5 int VixDiskLibInfo::numLinks

3.10.1.6 char* VixDiskLibInfo::parentFileNameHint

3.10.1.7 char* VixDiskLibInfo::uuid

3.10.1.8 uint32 VixDiskLibInfo::logicalSectorSize

3.10.1.9 uint32 VixDiskLibInfo::physicalSectorSize

3.11 VxDiskLibNasPlugin Struct Reference

Data Fields

- [VxDiskLibPlugin](#) diskLibPlugin
- [VxDiskLibNasPluginStartSession](#) * StartSession
- [VxDiskLibNasPluginEndSession](#) * EndSession
- [VxDiskLibNasPluginExecutePrimitive](#) * ExecPrimitive
- [VxDiskLibNasPluginSupportStatus](#) * SupportStatus

3.11.1 Detailed Description

Plugin function table to be exported by a NAS plugin. See the description of the various data types for explanation.

3.11.2 Field Documentation

3.11.2.1 VxDiskLibPlugin VxDiskLibNasPlugin::diskLibPlugin

3.11.2.2 VxDiskLibNasPluginStartSession* VxDiskLibNasPlugin::StartSession

3.11.2.3 VxDiskLibNasPluginEndSession* VxDiskLibNasPlugin::EndSession

3.11.2.4 VxDiskLibNasPluginExecutePrimitive* VxDiskLibNasPlugin::ExecPrimitive

3.11.2.5 VxDiskLibNasPluginSupportStatus* VxDiskLibNasPlugin::SupportStatus

3.12 VixDiskLibNasPluginCloneFileParams Struct Reference

Data Fields

- [VixDiskLibNasPluginCommonParams common](#)
- [char * srcFileName](#)
- [char * dstFileName](#)
- [VixDiskLibNasPluginCloneFileFlags cloneFlags](#)
- [VixDiskLibNasPluginDataStoreParams * srcDataStoreInfo](#)

3.12.1 Field Documentation

3.12.1.1 VixDiskLibNasPluginCommonParams VixDiskLibNasPluginCloneFileParams::common

3.12.1.2 char* VixDiskLibNasPluginCloneFileParams::srcFileName

3.12.1.3 char* VixDiskLibNasPluginCloneFileParams::dstFileName

3.12.1.4 VixDiskLibNasPluginCloneFileFlags VixDiskLibNasPluginCloneFileParams::cloneFlags

3.12.1.5 VixDiskLibNasPluginDataStoreParams* VixDiskLibNasPluginCloneFileParams::srcDataStoreInfo

3.13 VxDiskLibNasPluginCommonParams Struct Reference

Data Fields

- [VxDiskLibNasPluginPrimitiveID primitiveID](#)
- [VxDiskLibNasPluginProgressRecord * progressRecord](#)
- [VxDiskLibNasPluginResultCommon * result](#)

3.13.1 Field Documentation

3.13.1.1 [VxDiskLibNasPluginPrimitiveID VxDiskLibNasPluginCommonParams::primitiveID](#)

3.13.1.2 [VxDiskLibNasPluginProgressRecord* VxDiskLibNasPluginCommonParams::progressRecord](#)

3.13.1.3 [VxDiskLibNasPluginResultCommon* VxDiskLibNasPluginCommonParams::result](#)

3.14 VixDiskLibNasPluginDataStoreParams Struct Reference

Data Fields

- `char * fsType`
- `uint32 fsVersion`
- `char * remoteIP`
- `char * remoteMountPoint`
- `char * localMountPoint`

3.14.1 Field Documentation

3.14.1.1 `char* VixDiskLibNasPluginDataStoreParams::fsType`

3.14.1.2 `uint32 VixDiskLibNasPluginDataStoreParams::fsVersion`

3.14.1.3 `char* VixDiskLibNasPluginDataStoreParams::remoteIP`

3.14.1.4 `char* VixDiskLibNasPluginDataStoreParams::remoteMountPoint`

3.14.1.5 `char* VixDiskLibNasPluginDataStoreParams::localMountPoint`

3.15 VxDiskLibNasPluginProgressRecord Struct Reference

Data Fields

- `void * private`
- `uint64 updateBytes`
- `uint64 progressBytes`
- `VxDiskLibNasPluginPeriodicCallback * callback`

3.15.1 Field Documentation

3.15.1.1 `void* VxDiskLibNasPluginProgressRecord::private`

3.15.1.2 `uint64 VxDiskLibNasPluginProgressRecord::updateBytes`

3.15.1.3 `uint64 VxDiskLibNasPluginProgressRecord::progressBytes`

3.15.1.4 `VxDiskLibNasPluginPeriodicCallback* VxDiskLibNasPluginProgressRecord::callback`

3.16 VixDiskLibNasPluginResultCommon Struct Reference

Data Fields

- VixError [status](#)

3.16.1 Field Documentation

3.16.1.1 VixError VixDiskLibNasPluginResultCommon::status

3.17 VxDiskLibNasPluginResvSpaceParams Struct Reference

Data Fields

- [VxDiskLibNasPluginCommonParams common](#)
- [char * fileName](#)

3.17.1 Field Documentation

3.17.1.1 [VxDiskLibNasPluginCommonParams VxDiskLibNasPluginResvSpaceParams::common](#)

3.17.1.2 [char* VxDiskLibNasPluginResvSpaceParams::fileName](#)

3.18 VixDiskLibNasPluginSessionParams Struct Reference

Data Fields

- `uint64 timeoutMS`

3.18.1 Field Documentation

3.18.1.1 `uint64 VixDiskLibNasPluginSessionParams::timeoutMS`

3.19 VxDiskLibNasPluginStatXParams Struct Reference

Data Fields

- [VxDiskLibNasPluginCommonParams common](#)
- [char * fileName](#)

3.19.1 Field Documentation

3.19.1.1 [VxDiskLibNasPluginCommonParams VxDiskLibNasPluginStatXParams::common](#)

3.19.1.2 [char* VxDiskLibNasPluginStatXParams::fileName](#)

3.20 VixDiskLibNasPluginStatXResult Struct Reference

Data Fields

- [VixDiskLibNasPluginResultCommon common](#)
- [uint64 totalBytes](#)
- [uint64 allocedBytes](#)
- [uint64 uniqueBytes](#)
- [VixDiskLibNasPluginAllocType allocType](#)

3.20.1 Field Documentation

[3.20.1.1 VixDiskLibNasPluginResultCommon VixDiskLibNasPluginStatXResult::common](#)

[3.20.1.2 uint64 VixDiskLibNasPluginStatXResult::totalBytes](#)

[3.20.1.3 uint64 VixDiskLibNasPluginStatXResult::allocedBytes](#)

[3.20.1.4 uint64 VixDiskLibNasPluginStatXResult::uniqueBytes](#)

[3.20.1.5 VixDiskLibNasPluginAllocType VixDiskLibNasPluginStatXResult::allocType](#)

3.21 VxDiskLibPlugin Struct Reference

Data Fields

- int majorVersion
- int minorVersion
- VxDiskLibPluginType type
- const char * name
- VxDiskLibPluginInit * Init
- VxDiskLibPluginDone * Done

3.21.1 Detailed Description

Plugin function table to be exported for each plugin the plugin library contains. See the description of the various data types for explanation.

3.21.2 Field Documentation

3.21.2.1 int VxDiskLibPlugin::majorVersion

3.21.2.2 int VxDiskLibPlugin::minorVersion

Major version supported by this plugin.

3.21.2.3 VxDiskLibPluginType VxDiskLibPlugin::type

Minor version supported by this plugin.

3.21.2.4 const char* VxDiskLibPlugin::name

The type of plugin this is

3.21.2.5 VxDiskLibPluginInit* VxDiskLibPlugin::Init

Name associated with this plugin.

3.21.2.6 VxDiskLibPluginDone* VxDiskLibPlugin::Done

Optional

3.22 VixDiskLibSpec Union Reference

Data Fields

- char * [vmxSpec](#)
- [VixDiskLibVStorageObjectSpec](#) [vStorageObjSpec](#)
- [VixDiskLibDatastoreSpec](#) [dsSpec](#)

3.22.1 Field Documentation

3.22.1.1 `char* VixDiskLibSpec::vmxSpec`

3.22.1.2 `VixDiskLibVStorageObjectSpec VixDiskLibSpec::vStorageObjSpec`

3.22.1.3 `VixDiskLibDatastoreSpec VixDiskLibSpec::dsSpec`

3.23 VixDiskLibVStorageObjectSpec Struct Reference

Data Fields

- char * [id](#)
- char * [datastoreMoRef](#)
- char * [ssId](#)

3.23.1 Field Documentation

3.23.1.1 `char* VixDiskLibVStorageObjectSpec::id`

3.23.1.2 `char* VixDiskLibVStorageObjectSpec::datastoreMoRef`

3.23.1.3 `char* VixDiskLibVStorageObjectSpec::ssId`

3.24 VMPoint Struct Reference

Data Fields

- int [x](#)
- int [y](#)

3.24.1 Field Documentation

3.24.1.1 int VMPoint::x

3.24.1.2 int VMPoint::y

3.25 VMRect Struct Reference

Data Fields

- int [left](#)
- int [top](#)
- int [right](#)
- int [bottom](#)

3.25.1 Field Documentation

3.25.1.1 int [VMRect::left](#)

3.25.1.2 int [VMRect::top](#)

3.25.1.3 int [VMRect::right](#)

3.25.1.4 int [VMRect::bottom](#)

Chapter 4

File Documentation

4.1 distribute_vixDiskLib.h File Reference

Data Structures

- struct [VixDiskLibGeometry](#)
 - struct [VixDiskLibCreateParams](#)
 - struct [VixDiskLibVStorageObjectSpec](#)
 - struct [VixDiskLibDatastoreSpec](#)
 - union [VixDiskLibSpec](#)
 - struct [VixDiskLibConnectParams](#)
 - union [VixDiskLibConnectParams::VixDiskLibConnectParams::VixDiskLibCreds](#)
 - struct [VixDiskLibConnectParams::VixDiskLibConnectParams::VixDiskLibCreds::VixDiskLibConnectParams::VixDiskLibConnectParams](#)
 - struct [VixDiskLibConnectParams::VixDiskLibConnectParams::VixDiskLibCreds::VixDiskLibConnectParams::VixDiskLibConnectParams::VixDiskLibConnectParams](#)
 - struct [VixDiskLibInfo](#)
 - struct [VixDiskLibBlock](#)
 - struct [VixDiskLibBlockList](#)

Defines

- ```
• #define VIXDISKLIB_SECTOR_SIZE 512
• #define VIXDISKLIB_HWVERSION_WORKSTATION_4 3
• #define VIXDISKLIB_HWVERSION_WORKSTATION_5 4
• #define VIXDISKLIB_HWVERSION_WORKSTATION_6 6
• #define VIXDISKLIB_HWVERSION_ESX30 VIXDISKLIB_HWVERSION_WORKSTATION_5
• #define VIXDISKLIB_HWVERSION_ESX4X 7
• #define VIXDISKLIB_HWVERSION_ESX50 8
• #define VIXDISKLIB_HWVERSION_ESX51 9
• #define VIXDISKLIB_HWVERSION_ESX55 10
• #define VIXDISKLIB_HWVERSION_ESX60 11
• #define VIXDISKLIB_HWVERSION_ESX65 13
• #define VIXDISKLIB_HWVERSION_CURRENT VIXDISKLIB_HWVERSION_ESX65
• #define VIXDISKLIB_MIN_CHUNK_SIZE (64 * 2)
• #define VIXDISKLIB_MAX_CHUNK_SIZE (64 * 2 * 1024)
• #define VIXDISKLIB_MAX_CHUNK_NUMBER (512 * 1024)
```

- #define `VIXDISKLIB_FLAG_OPEN_UNBUFFERED` (1 << 0)
- #define `VIXDISKLIB_FLAG_OPEN_SINGLE_LINK` (1 << 1)
- #define `VIXDISKLIB_FLAG_OPEN_READ_ONLY` (1 << 2)
- #define `VIXDISKLIB_FLAG_OPEN_COMPRESSION_ZLIB` (1 << 4)
- #define `VIXDISKLIB_FLAG_OPEN_COMPRESSION_FASTLZ` (1 << 5)
- #define `VIXDISKLIB_FLAG_OPEN_COMPRESSION_SKIPZ` (1 << 6)
- #define `VIXDISKLIB_FLAG_OPEN_COMPRESSION_MASK` (0x03f0)

## Typedefs

- typedef `uint64 VixDiskLibSectorType`
- typedef struct `VixDiskLibConnectParamsState` `VixDiskLibConnectParamsState`
- typedef struct `VixDiskLibHandleStruct` `VixDiskLibHandleStruct`
- typedef `VixDiskLibHandleStruct *` `VixDiskLibHandle`
- typedef struct `VixDiskLibConnectParam` \* `VixDiskLibConnection`
- typedef void( `VixDiskLibGenericLogFunc` )(const char \*fmt, va\_list args)
- typedef void( `VixDiskLibGenericLogVFunc` )(int routing, const char \*fmt, va\_list args)
- typedef `Bool(`\* `VixDiskLibProgressFunc` )(void \*progressData, int percentCompleted)
- typedef void(

`*) VixDiskLibCompletionCB )(void *cbData, VixError result)`

## Enumerations

- enum `VixDiskLibDiskType` {
   
`VIXDISKLIB_DISK_MONOLITHIC_SPARSE` = 1, `VIXDISKLIB_DISK_MONOLITHIC_FLAT` = 2, `VIXDISKLIB_DISK_SPLIT_SPARSE` = 3, `VIXDISKLIB_DISK_SPLIT_FLAT` = 4,
   
`VIXDISKLIB_DISK_VMFS_FLAT` = 5, `VIXDISKLIB_DISK_STREAM_OPTIMIZED` = 6,
 `VIXDISKLIB_DISK_VMFS_THIN` = 7, `VIXDISKLIB_DISK_VMFS_SPARSE` = 8,
   
`VIXDISKLIB_DISK_UNKNOWN` = 256 }
- enum `VixDiskLibAdapterType` { `VIXDISKLIB_ADAPTER_IDE` = 1, `VIXDISKLIB_ADAPTER_SCSI_BUSLOGIC` = 2, `VIXDISKLIB_ADAPTER_SCSI_LSILOGIC` = 3, `VIXDISKLIB_ADAPTER_UNKNOWN` = 256 }
- enum `VixDiskLibCredType` {
   
`VIXDISKLIB_CRED_UID` = 1, `VIXDISKLIB_CRED_SESSIONID` = 2, `VIXDISKLIB_CRED_TICKETID` = 3, `VIXDISKLIB_CRED_SSPI` = 4,
   
`VIXDISKLIB_CRED_UNKNOWN` = 256 }
- enum `VixDiskLibSpecType` { `VIXDISKLIB_SPEC_VMX` = 0, `VIXDISKLIB_SPEC_VSTORAGE_OBJECT` = 1, `VIXDISKLIB_SPEC_DATASTORE` = 128, `VIXDISKLIB_SPEC_UNKNOWN` = 256 }

## Functions

- `VixError VixDiskLib_InitEx (uint32 majorVersion, uint32 minorVersion, VixDiskLibGenericLogFunc *log, VixDiskLibGenericLogFunc *warn, VixDiskLibGenericLogFunc *panic, const char *libDir, const char *configFile)`
- `VixError VixDiskLib_Init (uint32 majorVersion, uint32 minorVersion, VixDiskLibGenericLogFunc *log, VixDiskLibGenericLogFunc *warn, VixDiskLibGenericLogFunc *panic, const char *libDir)`
- `void VixDiskLib_Exit (void)`
- `const char * VixDiskLib_ListTransportModes (void)`

- VixError `VixDiskLib_Cleanup` (const `VixDiskLibConnectParams` \*connectParams, `uint32` \*numCleanedUp, `uint32` \*numRemaining)
- VixError `VixDiskLib_Connect` (const `VixDiskLibConnectParams` \*connectParams, `VixDiskLibConnection` \*connection)
- VixError `VixDiskLib_PreparesForAccess` (const `VixDiskLibConnectParams` \*connectParams, const char \*identity)
- VixError `VixDiskLib_ConnectEx` (const `VixDiskLibConnectParams` \*connectParams, `Bool` readOnly, const char \*snapshotRef, const char \*transportModes, `VixDiskLibConnection` \*connection)
- VixError `VixDiskLib_Disconnect` (`VixDiskLibConnection` connection)
- VixError `VixDiskLib_EndAccess` (const `VixDiskLibConnectParams` \*connectParams, const char \*identity)
- VixError `VixDiskLib_Create` (const `VixDiskLibConnection` connection, const char \*path, const `VixDiskLibCreateParams` \*createParams, `VixDiskLibProgressFunc` progressFunc, void \*progressCallbackData)
- VixError `VixDiskLib_CreateChild` (`VixDiskLibHandle` diskHandle, const char \*childPath, `VixDiskLibDiskType` diskType, `VixDiskLibProgressFunc` progressFunc, void \*progressCallbackData)
- VixError `VixDiskLib_Open` (const `VixDiskLibConnection` connection, const char \*path, `uint32` flags, `VixDiskLibHandle` \*diskHandle)
- VixError `VixDiskLib_QueryAllocatedBlocks` (`VixDiskLibHandle` diskHandle, `VixDiskLibSectorType` startSector, `VixDiskLibSectorType` numSectors, `VixDiskLibSectorType` chunkSize, `VixDiskLibBlockList` \*\*blockList)
- VixError `VixDiskLib_FreeBlockList` (`VixDiskLibBlockList` \*blockList)
- VixError `VixDiskLib_GetInfo` (`VixDiskLibHandle` diskHandle, `VixDiskLibInfo` \*\*info)
- void `VixDiskLib_FreeInfo` (`VixDiskLibInfo` \*info)
- const char \* `VixDiskLib_GetTransportMode` (`VixDiskLibHandle` diskHandle)
- VixError `VixDiskLib_Close` (`VixDiskLibHandle` diskHandle)
- VixError `VixDiskLib_Read` (`VixDiskLibHandle` diskHandle, `VixDiskLibSectorType` startSector, `VixDiskLibSectorType` numSectors, `uint8` \*readBuffer)
- VixError `VixDiskLib_ReadAsync` (`VixDiskLibHandle` diskHandle, `VixDiskLibSectorType` startSector, `VixDiskLibSectorType` numSectors, `uint8` \*readBuffer, `VixDiskLibCompletionCB` callback, void \*cbData)
- VixError `VixDiskLib_Write` (`VixDiskLibHandle` diskHandle, `VixDiskLibSectorType` startSector, `VixDiskLibSectorType` numSectors, const `uint8` \*writeBuffer)
- VixError `VixDiskLib_WriteAsync` (`VixDiskLibHandle` diskHandle, `VixDiskLibSectorType` startSector, `VixDiskLibSectorType` numSectors, const `uint8` \*writeBuffer, `VixDiskLibCompletionCB` callback, void \*cbData)
- VixError `VixDiskLib_Flush` (`VixDiskLibHandle` diskHandle)
- VixError `VixDiskLib_Wait` (`VixDiskLibHandle` diskHandle)
- VixError `VixDiskLib_ReadMetadata` (`VixDiskLibHandle` diskHandle, const char \*key, char \*buf, size\_t bufLen, size\_t \*requiredLen)
- VixError `VixDiskLib_WriteMetadata` (`VixDiskLibHandle` diskHandle, const char \*key, const char \*val)
- VixError `VixDiskLib_GetMetadataKeys` (`VixDiskLibHandle` diskHandle, char \*keys, size\_t maxLen, size\_t \*requiredLen)
- VixError `VixDiskLib_Unlink` (`VixDiskLibConnection` connection, const char \*path)
- VixError `VixDiskLib_Grow` (`VixDiskLibConnection` connection, const char \*path, `VixDiskLibSectorType` capacity, `Bool` updateGeometry, `VixDiskLibProgressFunc` progressFunc, void \*progressCallbackData)
- VixError `VixDiskLib_Shrink` (`VixDiskLibHandle` diskHandle, `VixDiskLibProgressFunc` progressFunc, void \*progressCallbackData)

- VixError [VxDiskLib\\_Defragment](#) (`VxDiskLibHandle` diskHandle, `VxDiskLibProgressFunc` progressFunc, void \*progressCallbackData)
- VixError [VxDiskLib\\_Rename](#) (const char \*srcFileName, const char \*dstFileName)
- VixError [VxDiskLib\\_Clone](#) (const `VxDiskLibConnection` dstConnection, const char \*dstPath, const `VxDiskLibConnection` srcConnection, const char \*srcPath, const `VxDiskLibCreateParams` \*vixCreateParams, `VxDiskLibProgressFunc` progressFunc, void \*progressCallbackData, `Bool` overWrite)
- char \* [VxDiskLib\\_GetErrorText](#) (VixError err, const char \*locale)
- void [VxDiskLib\\_FreeErrorText](#) (char \*errMsg)
- VixError [VxDiskLib\\_IsAttachPossible](#) (`VxDiskLibHandle` parent, `VxDiskLibHandle` child)
- VixError [VxDiskLib\\_Attach](#) (`VxDiskLibHandle` parent, `VxDiskLibHandle` child)
- VixError [VxDiskLib\\_SpaceNeededForClone](#) (`VxDiskLibHandle` diskHandle, `VxDiskLibDiskType` cloneDiskType, `uint64` \*spaceNeeded)
- VixError [VxDiskLib\\_CheckRepair](#) (const `VxDiskLibConnection` connection, const char \*filename, `Bool` repair)
- VixError [VxDiskLib\\_GetConnectParams](#) (const `VxDiskLibConnection` connection, `VxDiskLibConnectParams` \*\*connectParams)
- void [VxDiskLib\\_FreeConnectParams](#) (`VxDiskLibConnectParams` \*connectParams)
- `VxDiskLibConnectParams` \* [VxDiskLib\\_AllocateConnectParams](#) ()



#### 4.1.1 Define Documentation

- 4.1.1.1 `#define VIXDISKLIB_SECTOR_SIZE 512`
- 4.1.1.2 `#define VIXDISKLIB_HWVERSION_WORKSTATION_4 3`
- 4.1.1.3 `#define VIXDISKLIB_HWVERSION_WORKSTATION_5 4`
- 4.1.1.4 `#define VIXDISKLIB_HWVERSION_WORKSTATION_6 6`
- 4.1.1.5 `#define VIXDISKLIB_HWVERSION_ESX30 VIXDISKLIB_HWVERSION_WORKSTATION_5`
- 4.1.1.6 `#define VIXDISKLIB_HWVERSION_ESX4X 7`
- 4.1.1.7 `#define VIXDISKLIB_HWVERSION_ESX50 8`
- 4.1.1.8 `#define VIXDISKLIB_HWVERSION_ESX51 9`
- 4.1.1.9 `#define VIXDISKLIB_HWVERSION_ESX55 10`
- 4.1.1.10 `#define VIXDISKLIB_HWVERSION_ESX60 11`
- 4.1.1.11 `#define VIXDISKLIB_HWVERSION_ESX65 13`
- 4.1.1.12 `#define VIXDISKLIB_HWVERSION_CURRENT VIXDISKLIB_HWVERSION_ESX65`
- 4.1.1.13 `#define VIXDISKLIB_MIN_CHUNK_SIZE (64 * 2)`
- 4.1.1.14 `#define VIXDISKLIB_MAX_CHUNK_SIZE (64 * 2 * 1024)`
- 4.1.1.15 `#define VIXDISKLIB_MAX_CHUNK_NUMBER (512 * 1024)`
- 4.1.1.16 `#define VIXDISKLIB_FLAG_OPEN_UNBUFFERED (1 << 0)`
- 4.1.1.17 `#define VIXDISKLIB_FLAG_OPEN_SINGLE_LINK (1 << 1)`
- 4.1.1.18 `#define VIXDISKLIB_FLAG_OPEN_READ_ONLY (1 << 2)`
- 4.1.1.19 `#define VIXDISKLIB_FLAG_OPEN_COMPRESSION_ZLIB (1 << 4)`
- 4.1.1.20 `#define VIXDISKLIB_FLAG_OPEN_COMPRESSION_FASTLZ (1 << 5)`
- 4.1.1.21 `#define VIXDISKLIB_FLAG_OPEN_COMPRESSION_SKIPZ (1 << 6)`
- 4.1.1.22 `#define VIXDISKLIB_FLAG_OPEN_COMPRESSION_MASK (0x03f0)`

#### 4.1.2 Typedef Documentation

- 4.1.2.1 `typedef uint64 VixDiskLibSectorType`
- 4.1.2.2 `typedef struct VixDiskLibConnectParamsState VixDiskLibConnectParamsState`
- 4.1.2.3 `typedef struct VixDiskLibHandleStruct VixDiskLibHandleStruct`
- 4.1.2.4 `typedef VixDiskLibHandleStruct* VixDiskLibHandle`
- 4.1.2.5 `typedef struct VixDiskLibConnectParam* VixDiskLibConnection`
- 4.1.2.6 `typedef void( VixDiskLibGenericLogFunc)(const char *fmt, va_list args)`

```
VIXDISKLIB_DISK_MONOLITHIC_FLAT
VIXDISKLIB_DISK_SPLIT_SPARSE
VIXDISKLIB_DISK_SPLIT_FLAT
VIXDISKLIB_DISK_VMFS_FLAT
VIXDISKLIB_DISK_STREAM_OPTIMIZED
VIXDISKLIB_DISK_VMFS_THIN
VIXDISKLIB_DISK_VMFS_SPARSE
VIXDISKLIB_DISK_UNKNOWN
```

#### 4.1.3.2 enum VixDiskLibAdapterType

Enumerator:

```
VIXDISKLIB_ADAPTER_IDE
VIXDISKLIB_ADAPTER_SCSI_BUSLOGIC
VIXDISKLIB_ADAPTER_SCSI_LSILOGIC
VIXDISKLIB_ADAPTER_UNKNOWN
```

#### 4.1.3.3 enum VixDiskLibCredType

Enumerator:

```
VIXDISKLIB_CRED_UID
VIXDISKLIB_CRED_SESSIONID
VIXDISKLIB_CRED_TICKETID
VIXDISKLIB_CRED_SSPI
VIXDISKLIB_CRED_UNKNOWN
```

#### 4.1.3.4 enum VixDiskLibSpecType

the type of spec

Enumerator:

```
VIXDISKLIB_SPEC_VMX
VIXDISKLIB_SPEC_VSTORAGE_OBJECT
VIXDISKLIB_SPEC_DATASTORE
VIXDISKLIB_SPEC_UNKNOWN
```

### 4.1.4 Function Documentation

#### 4.1.4.1 VixError VixDiskLib\_InitEx (uint32 *majorVersion*, uint32 *minorVersion*, VixDiskLibGenericLogFunc \* *log*, VixDiskLibGenericLogFunc \* *warn*, VixDiskLibGenericLogFunc \* *panic*, const char \* *libDir*, const char \* *configFile*)

Initializes VixDiskLib.

**Parameters:**

***majorVersion*** [in] Required major version number for client.  
***minorVersion*** [in] Required minor version number for client.  
***log*** [in] Callback for Log entries.  
***warn*** [in] Callback for warnings.  
***panic*** [in] Callback for panic.  
***libDir*** [in] Directory location where dependent libs are located.  
***configFile*** [in] Configuration file path in local encoding. configuration files are of the format name = "value" each name/value pair on a separate line. For a detailed description of allowed values, refer to the VixDiskLib documentation.

**Returns:**

VIX\_OK on success, suitable VIX error code otherwise.

#### 4.1.4.2 **VixError VixDiskLib\_Init (uint32 *majorVersion*, uint32 *minorVersion*, VixDiskLibGenericLogFunc \* *log*, VixDiskLibGenericLogFunc \* *warn*, VixDiskLibGenericLogFunc \* *panic*, const char \* *libDir*)**

Initializes VixDiskLib - deprecated, please use VixDiskLib\_InitEx.

**Parameters:**

***majorVersion*** [in] Required major version number for client.  
***minorVersion*** [in] Required minor version number for client.  
***log*** [in] Callback for Log entries.  
***warn*** [in] Callback for warnings.  
***panic*** [in] Callback for panic.  
***libDir*** [in] Directory location where dependent libs are located.

**Returns:**

VIX\_OK on success, suitable VIX error code otherwise.

#### 4.1.4.3 **void VixDiskLib\_Exit (void)**

Cleans up VixDiskLib.

#### 4.1.4.4 **const char\* VixDiskLib\_ListTransportModes (void)**

Get a list of transport modes known to VixDiskLib. This list is also the default used if VixDiskLib\_ConnectEx is called with transportModes set to NULL.

The string is a list of transport modes separated by colons. For example: "file:san:hotadd:nbd". See VixDiskLib\_ConnectEx for more details.

**Returns:**

Returns a string that is a list of plugins. The caller must not free the string.

**4.1.4.5 VixError VixDiskLib\_Cleanup (const VixDiskLibConnectParams \* *connectParams*,  
                  uint32 \* *numCleanedUp*, uint32 \* *numRemaining*)**

Perform a cleanup after an unclean shutdown of an application using VixDiskLib.

When using VixDiskLib\_ConnectEx, some state might have not been cleaned up if the resulting connection was not shut down cleanly. Use VixDiskLib\_Cleanup to remove this extra state.

**Parameters:**

*connectParams* [in] Hostname and login credentials to connect to a host managing virtual machines that were accessed and need cleanup. While VixDiskLib\_Cleanup can be invoked for local connections as well, it is a no-op in that case. Also, the vmxSpec property of connectParams should be set to NULL.

*numCleanedUp* [out] Number of virtual machines that were successfully cleaned up. – Can be NULL.

*numRemaining* [out] Number of virtual machines that still require cleaning up. – Can be NULL.

**Returns:**

VIX\_OK if all virtual machines were successfully cleaned up or if no virtual machines required cleanup. VIX error code otherwise and numRemaining can be used to check for the number of virtual machines requiring cleanup.

**4.1.4.6 VixError VixDiskLib\_Connect (const VixDiskLibConnectParams \* *connectParams*,  
                  VixDiskLibConnection \* *connection*)**

Connects to a local / remote server.

**Parameters:**

*connectParams* [in] NULL if manipulating local disks. For remote case this includes esx hostName and user credentials.

*connection* [out] Returned handle to a connection.

**Returns:**

VIX\_OK if success suitable VIX error code otherwise.

**4.1.4.7 VixError VixDiskLib\_PreparesForAccess (const VixDiskLibConnectParams \*  
                  *connectParams*, const char \* *identity*)**

This function is used to notify the host of the virtual machine that the disks of the virtual machine will be opened. The host disables operations on the virtual machine that may be adversely affected if they are performed while the disks are open by a third party application.

**Parameters:**

*connectParams* [in] This is always used on remote connections.

*identity* [in] An arbitrary string containing the identity of the application.

**Returns:**

VIX\_OK if success, suitable VIX error code otherwise.

#### 4.1.4.8 VixError VixDiskLib\_ConnectEx (const VixDiskLibConnectParams \* *connectParams*, Bool *readOnly*, const char \* *snapshotRef*, const char \* *transportModes*, VixDiskLibConnection \* *connection*)

Create a transport context to access disks belonging to a particular snapshot of a particular virtual machine. Using this transport context will enable callers to open virtual disks using the most efficient data access protocol available for managed virtual machines, hence getting better I/O performance.

If this call is used instead of VixDiskLib\_Connect, the additional information passed in will be used in order to optimize the I/O access path, to maximize I/O throughput.

Note: For local virtual machines/disks, this call is equivalent to VixDiskLib\_Connect.

##### Parameters:

*connectParams* [in] NULL if manipulating local disks. For remote case this includes esx hostName and user credentials.

*readOnly* [in] Should be set to TRUE if no write access is needed for the disks to be accessed through this connection. In some cases, a more efficient I/O path can be used for read-only access.

*snapshotRef* [in] A managed object reference to the specific snapshot of the virtual machine whose disks will be accessed with this connection. Specifying this property is only meaningful if the vmxSpec property in connectParams is set as well.

*transportModes* [in] An optional list of transport modes that can be used for this connection, separated by colons. If NULL is specified, VixDiskLib's default setting of "file:san:hotadd:nbd" is used. If a disk is opened through this connection, VixDiskLib will start with the first entry of the list and attempt to use this transport mode to gain access to the virtual disk. If this does not work, the next item in the list will be used until either the disk was successfully opened or the end of the list is reached.

*connection* [out] Returned handle to a connection.

##### Returns:

VIX\_OK if success, suitable VIX error code otherwise.

#### 4.1.4.9 VixError VixDiskLib\_Disconnect (VixDiskLibConnection *connection*)

Breaks an existing connection.

##### Parameters:

*connection* [in] Valid handle to a (local/remote) connection.

##### Returns:

VIX\_OK if success suitable VIX error code otherwise.

#### 4.1.4.10 VixError VixDiskLib\_EndAccess (const VixDiskLibConnectParams \* *connectParams*, const char \* *identity*)

This function is used to notify the host of a virtual machine that the virtual machine disks are closed and that the operations which rely on the virtual machine disks to be closed can now be allowed.

**Parameters:**

*connectParams* [in] Always used for a remote connection. Must be the same parameters as used in the corresponding PrepareForAccess call.

*identity* [in] An arbitrary string containing the identity of the application.

**Returns:**

VIX\_OK of success, suitable VIX error code otherwise.

**4.1.4.11 VixError VixDiskLib\_Create (const VixDiskLibConnection *connection*, const char \* *path*, const VixDiskLibCreateParams \* *createParams*, VixDiskLibProgressFunc *progressFunc*, void \* *progressCallbackData*)**

Creates a local disk. Remote disk creation is not supported.

**Parameters:**

*connection* [in] A valid connection.

*path* [in] VMDK file name given as absolute path e.g. "c:\\My Virtual Machines\\MailServer\\SystemDisk.vmdk".

*createParams* [in] Specification for the new disk (type, capacity ...).

*progressFunc* [in] Callback to report progress.

*progressCallbackData* [in] Callback data pointer.

**Returns:**

VIX\_OK if success suitable VIX error code otherwise.

**4.1.4.12 VixError VixDiskLib\_CreateChild (VixDiskLibHandle *diskHandle*, const char \* *childPath*, VixDiskLibDiskType *diskType*, VixDiskLibProgressFunc *progressFunc*, void \* *progressCallbackData*)**

Creates a redo log from a parent disk.

**Parameters:**

*diskHandle* [in] Handle to an open virtual disk.

*childPath* [in] Redo log file name given as absolute path e.g. "c:\\My Virtual Machines\\MailServer\\SystemDisk\_s0001.vmdk".

*diskType* [in] Either VIXDISKLIB\_DISK\_MONOLITHIC\_SPARSE or VIXDISKLIB\_DISK\_-SPLIT\_SPARSE.

*progressFunc* [in] Callback to report progress.

*progressCallbackData* [in] Callback data pointer.

**Returns:**

VIX\_OK if success, suitable VIX error code otherwise.

#### 4.1.4.13 VixError VixDiskLib\_Open (const VixDiskLibConnection *connection*, const char \* *path*, uint32 *flags*, VixDiskLibHandle \* *diskHandle*)

Opens a local or remote virtual disk.

**Parameters:**

*connection* [in] A valid connection.  
*path* [in] VMDK file name given as absolute path e.g. "[storage1] MailServer/SystemDisk.vmdk"  
*flags* [in, optional] Bitwise or'ed combination of VIXDISKLIB\_FLAG\_OPEN\_UNBUFFERED  
 VIXDISKLIB\_FLAG\_OPEN\_SINGLE\_LINK VIXDISKLIB\_FLAG\_OPEN\_READ\_ONLY.  
*diskHandle* [out] Handle to opened disk, NULL if disk was not opened.

**Returns:**

VIX\_OK if success, suitable VIX error code otherwise.

#### 4.1.4.14 VixError VixDiskLib\_QueryAllocatedBlocks (VixDiskLibHandle *diskHandle*, VixDiskLibSectorType *startSector*, VixDiskLibSectorType *numSectors*, VixDiskLibSectorType *chunkSize*, VixDiskLibBlockList \*\* *blockList*)

Get the blocks allocated.

**Parameters:**

*diskHandle* [in] Handle to an open virtual disk.  
*startSector* [in] Absolute offset.  
*numSectors* [in] Number of sectors to query.  
*chunkSize* [in] Minimum number of sectors covered by a chunk containing data.  
*blockList* [out] Buffer contains a [VixDiskLibBlockList](#).

**Returns:**

VIX\_OK if success, suitable VIX error code otherwise.

#### 4.1.4.15 VixError VixDiskLib\_FreeBlockList (VixDiskLibBlockList \* *blockList*)

Frees memory allocated in VixDiskLib\_QueryAllocatedBlocks.

**Parameters:**

*blockList* [in] block list to be freed.

#### 4.1.4.16 VixError VixDiskLib\_GetInfo (VixDiskLibHandle *diskHandle*, VixDiskLibInfo \*\* *info*)

Retrieves information about a disk.

**Parameters:**

*diskHandle* [in] Handle to an open virtual disk.  
*info* [out] Disk information filled up.

**Returns:**

VIX\_OK if success, suitable VIX error code otherwise.

**4.1.4.17 void VixDiskLib\_FreeInfo (VixDiskLibInfo \* *info*)**

Frees memory allocated in VixDiskLib\_GetInfo.

**Parameters:**

*info* [in] Disk information to be freed.

**4.1.4.18 const char\* VixDiskLib\_GetTransportMode (VixDiskLibHandle *diskHandle*)**

Returns a pointer to a static string identifying the transport mode that is used to access the virtual disk's data.

If a disk was opened through a connection obtained by VixDiskLib\_Connect, the return value will be "file" for a local disk and "nbd" or "nbdssl" for a managed disk.

The pointer to this string is static and must not be deallocated by the caller.

**Parameters:**

*diskHandle* [in] Handle to an open virtual disk.

**Returns:**

Returns a pointer to a static string identifying the transport mode used to access the disk's data.

**4.1.4.19 VixError VixDiskLib\_Close (VixDiskLibHandle *diskHandle*)**

Closes the disk.

**Parameters:**

*diskHandle* [in] Handle to an open virtual disk.

**Returns:**

VIX\_OK if success, suitable VIX error code otherwise.

**4.1.4.20 VixError VixDiskLib\_Read (VixDiskLibHandle *diskHandle*, VixDiskLibSectorType *startSector*, VixDiskLibSectorType *numSectors*, uint8 \* *readBuffer*)**

Reads a sector range.

**Parameters:**

*diskHandle* [in] Handle to an open virtual disk.

*startSector* [in] Absolute offset.

*numSectors* [in] Number of sectors to read.

*readBuffer* [out] Buffer to read into.

**Returns:**

VIX\_OK if success, suitable VIX error code otherwise.

---

**4.1.4.21 VixError VixDiskLib\_ReadAsync (VixDiskLibHandle *diskHandle*,  
VixDiskLibSectorType *startSector*, VixDiskLibSectorType *numSectors*, uint8 \*  
*readBuffer*, VixDiskLibCompletionCB *callback*, void \* *cbData*)**

Reads a sector range asynchronously.

**Parameters:**

*diskHandle* [in] Handle to an open virtual disk.  
*startSector* [in] Absolute offset.  
*numSectors* [in] Number of sectors to read.  
*readBuffer* [out] Buffer to read into.  
*callback* [in] Callback when data has been read  
*cbData* [in] User context data supplied during the callback

**Returns:**

VIX\_ASYNC if success, suitable VIX error code otherwise.

**4.1.4.22 VixError VixDiskLib\_Write (VixDiskLibHandle *diskHandle*, VixDiskLibSectorType  
*startSector*, VixDiskLibSectorType *numSectors*, const uint8 \* *writeBuffer*)**

Writes a sector range.

**Parameters:**

*diskHandle* [in] Handle to an open virtual disk.  
*startSector* [in] Absolute offset.  
*numSectors* [in] Number of sectors to write.  
*writeBuffer* [in] Buffer to write.

**Returns:**

VIX\_OK if success, suitable VIX error code otherwise.

**4.1.4.23 VixError VixDiskLib\_WriteAsync (VixDiskLibHandle *diskHandle*,  
VixDiskLibSectorType *startSector*, VixDiskLibSectorType *numSectors*, const uint8 \*  
*writeBuffer*, VixDiskLibCompletionCB *callback*, void \* *cbData*)**

Writes a sector range asynchronously.

**Parameters:**

*diskHandle* [in] Handle to an open virtual disk.  
*startSector* [in] Absolute offset.  
*numSectors* [in] Number of sectors to write.  
*writeBuffer* [in] Buffer to write.  
*callback* [in] Callback when data has been written/completed  
*cbData* [in] User context data supplied during the callback

**Returns:**

VIX\_ASYNC if success, suitable VIX error code otherwise.

**4.1.4.24 VixError VixDiskLib\_Flush (VixDiskLibHandle *diskHandle*)**

Flush the async write data to disk

**Parameters:**

*diskHandle* [in] Handle to an open virtual disk.

**Returns:**

VIX\_OK if success, suitable VIX error code otherwise.

**4.1.4.25 VixError VixDiskLib\_Wait (VixDiskLibHandle *diskHandle*)**

Waits for all async operations to complete

**Parameters:**

*diskHandle* [in] Handle to an open virtual disk.

**Returns:**

VIX\_OK if success, suitable VIX error code otherwise.

**4.1.4.26 VixError VixDiskLib\_ReadMetadata (VixDiskLibHandle *diskHandle*, const char \* *key*, char \* *buf*, size\_t *bufLen*, size\_t \* *requiredLen*)**

Retrieves the value of a metadata entry corresponding to the supplied key.

**Parameters:**

*diskHandle* [in] Handle to an open virtual disk.

*key* [in] Key name.

*buf* [out, optional] Placeholder for key's value in the metadata store, can be NULL.

*bufLen* [in] Size of the buffer.

*requiredLen* [out, optional] Size of buffer required for the value (including end of string character)

**Returns:**

VIX\_OK if success, VIX\_E\_DISK\_BUFFER\_TOO\_SMALL if too small a buffer and other errors as applicable.

**4.1.4.27 VixError VixDiskLib\_WriteMetadata (VixDiskLibHandle *diskHandle*, const char \* *key*, const char \* *val*)**

Creates or modifies a metadata table entry.

**Parameters:**

*diskHandle* [in] Handle to an open virtual disk.

*key* [in] Key name.

*val* [in] Key's value.

**Returns:**

VIX\_OK if success, suitable VIX error code otherwise.

#### 4.1.4.28 VixError VixDiskLib\_GetMetadataKeys (VixDiskLibHandle *diskHandle*, char \* *keys*, size\_t *maxLen*, size\_t \* *requiredLen*)

Retrieves the list of keys in the metadata table. Key names are returned as list of null-terminated strings, followed by an additional NULL character.

**Parameters:**

*diskHandle* [in] Handle to an open virtual disk.

*keys* [out, optional] Keynames buffer, can be NULL.

*maxLen* [in] Size of the keynames buffer.

*requiredLen* [out, optional] Space required for the keys including the double end-of-string characters.

**Returns:**

VIX\_OK if success, suitable VIX error code otherwise.

#### 4.1.4.29 VixError VixDiskLib\_Unlink (VixDiskLibConnection *connection*, const char \* *path*)

Deletes all extents of the specified disk link. If the path refers to a parent disk, the child (redo log) will be orphaned. Unlinking the child does not affect the parent.

**Parameters:**

*connection* [in] A valid connection.

*path* [in] Path to the disk to be deleted.

**Returns:**

VIX\_OK if success, suitable VIX error code otherwise.

#### 4.1.4.30 VixError VixDiskLib\_Grow (VixDiskLibConnection *connection*, const char \* *path*, VixDiskLibSectorType *capacity*, Bool *updateGeometry*, VixDiskLibProgressFunc *progressFunc*, void \* *progressCallbackData*)

Grows an existing disk, only local disks are grown.

**Precondition:**

The specified disk is not open.

**Parameters:**

*connection* [in] A valid connection.

*path* [in] Path to the disk to be grown.

*capacity* [in] Target size for the disk.

*updateGeometry* [in] Should vixDiskLib update the geometry?

*progressFunc* [in] Callback to report progress (called on the same thread).

*progressCallbackData* [in] Opaque pointer passed along with the percent complete.

**Returns:**

VIX\_OK if success, suitable VIX error code otherwise.

**4.1.4.31 VixError VixDiskLib\_Shrink (VixDiskLibHandle *diskHandle*, VixDiskLibProgressFunc *progressFunc*, void \* *progressCallbackData*)**

Shrinks an existing disk, only local disks are shrunk.

**Parameters:**

*diskHandle* [in] Handle to an open virtual disk.

*progressFunc* [in] Callback to report progress (called on the same thread).

*progressCallbackData* [in] Opaque pointer passed along with the percent complete.

**Returns:**

VIX\_OK if success, suitable VIX error code otherwise.

**4.1.4.32 VixError VixDiskLib\_Defragment (VixDiskLibHandle *diskHandle*, VixDiskLibProgressFunc *progressFunc*, void \* *progressCallbackData*)**

Defragments an existing disk.

**Parameters:**

*diskHandle* [in] Handle to an open virtual disk.

*progressFunc* [in] Callback to report progress (called on the same thread).

*progressCallbackData* [in] Opaque pointer passed along with the percent complete.

**Returns:**

VIX\_OK if success, suitable VIX error code otherwise.

**4.1.4.33 VixError VixDiskLib\_Rename (const char \* *srcFileName*, const char \* *dstFileName*)**

Renames a virtual disk.

**Parameters:**

*srcFileName* [in] Virtual disk file to rename.

*dstFileName* [in] New name for the virtual disk.

**Returns:**

VIX\_OK if success, suitable VIX error code otherwise.

---

**4.1.4.34 VixError VixDiskLib\_Clone (const VixDiskLibConnection *dstConnection*, const char \* *dstPath*, const VixDiskLibConnection *srcConnection*, const char \* *srcPath*, const VixDiskLibCreateParams \* *vixCreateParams*, VixDiskLibProgressFunc *progressFunc*, void \* *progressCallbackData*, Bool *overWrite*)**

Copies a disk with proper conversion.

**Parameters:**

*dstConnection* [in] A valid connection to access the destination disk.  
*dstPath* [in] Absolute path for the (new) destination disk.  
*srcConnection* [in] A valid connection to access the source disk.  
*srcPath* [in] Absolute path for the source disk.  
*vixCreateParams* [in] creationParameters (disktype, hardware type...). If the destination is remote, createParams is currently ignored and disk with default size and adapter type is created.  
*progressFunc* [in] Callback to report progress (called on the same thread).  
*progressCallbackData* [in] Opaque pointer passed along with the percent complete.  
*overWrite* [in] TRUE if Clone should overwrite an existing file.

**Returns:**

VIX\_OK if success, suitable VIX error code otherwise (network errors like file already exists hand-shake failure, ... are all combined into a generic connect message).

**4.1.4.35 char\* VixDiskLib\_GetErrorText (VixError *err*, const char \* *locale*)**

Returns the textual description of an error.

**Parameters:**

*err* [in] A VIX error code.  
*locale* [in] Language locale - not currently supported and must be NULL.

**Returns:**

The error message string. This should only be deallocated by VixDiskLib\_FreeErrorText. Returns NULL if there is an error in retrieving text.

**4.1.4.36 void VixDiskLib\_FreeErrorText (char \* *errMsg*)**

Free the error message returned by VixDiskLib\_GetErrorText.

**Parameters:**

*errMsg* [in] Message string returned by VixDiskLib\_GetErrorText. It is OK to call this function with NULL.

**Returns:**

None.

**4.1.4.37 VixError VixDiskLib\_IsAttachPossible (VixDiskLibHandle *parent*, VixDiskLibHandle *child*)**

Checks if the child disk chain can be attached to the parent disk chain.

**Parameters:**

*parent* [in] Handle to the disk to be attached.  
*child* [in] Handle to the disk to attach.

**Returns:**

VIX\_OK if success, suitable VIX error code otherwise.

**4.1.4.38 VixError VixDiskLib\_Attach (VixDiskLibHandle *parent*, VixDiskLibHandle *child*)**

Attaches the child disk chain to the parent disk chain. Parent handle is invalid after attaching and child represents the combined disk chain.

**Parameters:**

*parent* [in] Handle to the disk to be attached.  
*child* [in] Handle to the disk to attach.

**Returns:**

VIX\_OK if success, suitable VIX error code otherwise.

**4.1.4.39 VixError VixDiskLib\_SpaceNeededForClone (VixDiskLibHandle *diskHandle*, VixDiskLibDiskType *cloneDiskType*, uint64 \* *spaceNeeded*)**

Compute the space (in bytes) required to copy a disk chain.

**Parameters:**

*diskHandle* [in] Handle to the disk to be copied.  
*cloneDiskType* [in] Type of the (to be) newly created disk. If cloneDiskType is VIXDISKLIB\_DISK\_UNKNOWN, the source disk type is assumed.  
*spaceNeeded* [out] Place holder for space needed in bytes.

**Returns:**

VIX\_OK if success, suitable VIX error code otherwise.

**4.1.4.40 VixError VixDiskLib\_CheckRepair (const VixDiskLibConnection *connection*, const char \* *filename*, Bool *repair*)**

Check a sparse disk for internal consistency.

**Parameters:**

*connection* [in] A VixDiskLib connection.

*filename* [in] Path to disk to be checked.

*repair* [in] TRUE if repair should be attempted, false otherwise.

**Returns:**

VIX\_OK if success, suitable VIX error code otherwise. Note this refers to the success of the call, not the consistency of the disk being checked.

**4.1.4.41 VixError VixDiskLib\_GetConnectParams (const VixDiskLibConnection *connection*,  
VixDiskLibConnectParams \*\* *connectParams*)**

Return the details for the connection.

**Parameters:**

*connection* [in] A VixDiskLib connection.

*connectParams* [out] Details of the connection.

**Returns:**

VIX\_OK if success, suitable VIX error code otherwise.

**4.1.4.42 void VixDiskLib\_FreeConnectParams (VixDiskLibConnectParams \* *connectParams*)**

Free the connection details structure allocated during VixDiskLib\_GetConnectParams or VixDiskLib\_AllocateConnectParams.

**Parameters:**

*connectParams* [out] Connection details to be free'ed.

**Returns:**

None.

**4.1.4.43 VixDiskLibConnectParams\* VixDiskLib\_AllocateConnectParams ()**

Allocate the connection details structure

**Returns:**

A pointer to the instance of connection details; NULL if error.

## 4.2 distribute\_vixDiskLibNasPlugin.h File Reference

### Data Structures

- struct [VixDiskLibNasPluginDataStoreParams](#)
- struct [VixDiskLibNasPluginSessionParams](#)
- struct [VixDiskLibNasPluginProgressRecord](#)
- struct [VixDiskLibNasPluginResultCommon](#)
- struct [VixDiskLibNasPluginStatXResult](#)
- struct [VixDiskLibNasPluginCommonParams](#)
- struct [VixDiskLibNasPluginCloneFileParams](#)
- struct [VixDiskLibNasPluginResvSpaceParams](#)
- struct [VixDiskLibNasPluginStatXParams](#)
- struct [VixDiskLibNasPlugin](#)

### Defines

- #define [VIXDISKLIB\\_NASPLUGIN\\_MAJOR\\_VERSION](#) 1
- #define [VIXDISKLIB\\_NASPLUGIN\\_MINOR\\_VERSION](#) 2
- #define [VIXDISKLIB\\_NASPLUGIN\\_FSTYPE\\_NFS](#) "NFS"
- #define [VIXDISKLIB\\_NASPLUGIN\\_FSTYPE\\_NFS41](#) "NFS41"
- #define [VIXDISKLIB\\_NASPLUGIN\\_FSTYPE\\_VMFS](#) "VMFS"
- #define [VIXDISKLIB\\_NASPLUGIN\\_FSTYPE\\_VMFSL](#) "VMFS-L"
- #define [VIXDISKLIB\\_NASPLUGIN\\_INVALID\\_SESSION\\_ID](#) (0LL)

### Typedefs

- typedef [uint64 VixDiskLibNasPluginSessionID](#)
- typedef [Bool\( VixDiskLibNasPluginPeriodicCallback \)](#)(struct [VixDiskLibNasPluginProgressRecord](#) \*pRec)
- typedef [VixError\( VixDiskLibNasPluginStartSession \)](#)(const [VixDiskLibNasPluginDataStoreParams](#) \*nasConfigData, const [VixDiskLibNasPluginSessionParams](#) \*sessionParams, [VixDiskLibNasPluginSessionID](#) \*sessionID)
- typedef [VixError\( VixDiskLibNasPluginEndSession \)](#)([VixDiskLibNasPluginSessionID](#) sessionID)
- typedef [VixError\( VixDiskLibNasPluginSupportStatus \)](#)([VixDiskLibNasPluginSessionID](#) sessionID, const [VixDiskLibNasPluginPrimitiveID](#) primitiveID)
- typedef void([VixDiskLibNasPluginExecutePrimitive](#))([VixDiskLibNasPluginSessionID](#) sessionID, const [VixDiskLibNasPluginCommonParams](#) \*execParams)

### Enumerations

- enum [VixDiskLibNasPluginPrimitiveID](#) { [VIXDISKLIB\\_NASPLUGIN\\_PRIM\\_INVALID](#) = ((‘N’ << 24) | (‘A’ << 16) | (‘S’ << 8) | ‘0’), [VIXDISKLIB\\_NASPLUGIN\\_PRIM\\_CLONEFILE](#), [VIXDISKLIB\\_NASPLUGIN\\_PRIM\\_RESVSPACE](#), [VIXDISKLIB\\_NASPLUGIN\\_PRIM\\_STATX](#) }
- enum [VixDiskLibNasPluginAllocType](#) { [VIXDISKLIB\\_NASPLUGIN\\_FILE\\_ALLOC\\_EZT](#), [VIXDISKLIB\\_NASPLUGIN\\_FILE\\_ALLOC\\_LZT](#), [VIXDISKLIB\\_NASPLUGIN\\_FILE\\_ALLOC\\_THIN](#), [VIXDISKLIB\\_NASPLUGIN\\_FILE\\_ALLOC\\_UNKNOWN](#) = -1 }

- enum `VixDiskLibNasPluginCloneFileFlags` {
   
`VIXDISKLIB_NASPLUGIN_CLONEFILE_FLAG_GUARDED` = (1 << 0), `VIXDISKLIB_NASPLUGIN_CLONEFILE_FLAG_LAZY` = (1 << 1), `VIXDISKLIB_NASPLUGIN_CLONEFILE_FLAG_SRCDATASTORE_VALID` = (1 << 2), `VIXDISKLIB_NASPLUGIN_CLONEFILE_FLAG_DRYRUN` = (1 << 3),
   
`VIXDISKLIB_NASPLUGIN_CLONEFILE_FLAG_SKIPZEROES` = (1 << 4) }

#### 4.2.1 Define Documentation

- 4.2.1.1 `#define VIXDISKLIB_NASPLUGIN_MAJOR_VERSION 1`
- 4.2.1.2 `#define VIXDISKLIB_NASPLUGIN_MINOR_VERSION 2`
- 4.2.1.3 `#define VIXDISKLIB_NASPLUGIN_FSTYPE_NFS "NFS"`
- 4.2.1.4 `#define VIXDISKLIB_NASPLUGIN_FSTYPE_NFS41 "NFS41"`
- 4.2.1.5 `#define VIXDISKLIB_NASPLUGIN_FSTYPE_VMFS "VMFS"`
- 4.2.1.6 `#define VIXDISKLIB_NASPLUGIN_FSTYPE_VMFSL "VMFS-L"`
- 4.2.1.7 `#define VIXDISKLIB_NASPLUGIN_INVALID_SESSION_ID (0LL)`

#### 4.2.2 Typedef Documentation

- 4.2.2.1 `typedef uint64 VixDiskLibNasPluginSessionID`
- 4.2.2.2 `typedef Bool( VixDiskLibNasPluginPeriodicCallback)(struct VixDiskLibNasPluginProgressRecord *pRec)`
- 4.2.2.3 `typedef VixError( VixDiskLibNasPluginStartSession)(const VixDiskLibNasPluginDataStoreParams *nasConfigData, const VixDiskLibNasPluginSessionParams *sessionParams, VixDiskLibNasPluginSessionID *sessionId)`

Prototype for `VixDiskLibNasPlugin` session initialization.

The NAS plugin needs configuration information to establish connectivity to the NAS device. VI already stores this information as part of NFS datastore configuration for VMFS. The NAS plugin is provided NAS configuration information as part of an init session request. The configuration data contains the NAS device IP address, NAS device mount point, corresponding datastore name on the ESX host, and the ESX filesystem type and version. This should enable a NAS plugin writer to connect to, say, a RPC program running on the NAS device and exchange other vendor-specific setup information and configuration data. The plugin should return a session identifier for the virtual disk library to use as a context for a single or a set of VM operations. The client can also negotiate session properties like timeouts, priority etc. during session initiation. The session initialization may fail if the plugin does not support the given NAS volume.

Note that this entry point may be called for a datastore which the plugin does not support. For example, it may be called for a datastore on a NAS server from a different vendor, or datastore on a NAS server whose firmware does not support NAS offloads. It is the plugin's responsibility to verify it can communicate with the NAS server and that the NAS server supports the offload primitives and that the remote mount point exists on the NAS server.

**Parameters:**

***nasConfigData*** IN The configuration data contains the NAS device IP address, NAS device mount point, corresponding datastore name on the ESX host, and the ESX filesystem type and version.

***flags*** IN sessionParams Session properties like timeouts, priority

***sessionID*** OUT Structure returned in the case of a successful session; it is an identifier for the virtual disk library to use as a context for a single or a set of VM operations.

**Returns:**

VIX\_OK if the session was successfully established, a VIX\_\* error otherwise.

**4.2.2.4   **typedef VixError( VixDiskLibNasPluginEndSession)(VixDiskLibNasPluginSessionID sessionID)****

Prototype for [VixDiskLibNasPlugin](#) session teardown.

The caller may issue multiple sets of VixDiskLibNasPluginExecutePrimitive calls in a given session. A session may end at the request of the caller or after the plugin hits a timeout.

**Parameters:**

***VixDiskLibNasPluginSessionID*** sessionID IN Structure that was returned by the corresponding VixDiskLibNasPluginStartSession call.

**Returns:**

VIX\_OK if the session was successfully terminated, a VIX\_\* error otherwise.

**4.2.2.5   **typedef VixError( VixDiskLibNasPluginSupportStatus)(VixDiskLibNasPluginSessionID sessionID, const VixDiskLibNasPluginPrimitiveID primitiveID)****

Prototype for [VixDiskLibNasPlugin](#) entrypoint to check if a primitive is supported.

Once a session is established, the caller can ask for the support status of a vStorage primitive in the context of an established session ID. For example, the caller may ask for support status of the VIXDISKLIB\_NASPLUGIN\_PRIM\_STATX primitive. The plugin shall determine if the offload primitive is supported on the datastore. This may require communication with the NAS device, and the method is vendor specific.

**Parameters:**

***sessionID*** IN Handle identifying a live session

***primitiveID*** IN Primitive ID to get the support status for.

**Returns:**

VIX\_OK if the session support was successfully determined, a VIX\_\* error otherwise.

**4.2.2.6   **typedef void( VixDiskLibNasPluginExecutePrimitive)(VixDiskLibNasPluginSessionID sessionID, const VixDiskLibNasPluginCommonParams \*execParams)****

Prototype for [VixDiskLibNasPlugin](#) primitive execution.

Once a session is established, the caller can ask for a vStorage primitive to be done on a set of files in the context of an established session ID. For example, the caller may ask for a file to be quick-cloned (snapshotted) to another file on the same datastore. The plugin shall issue the request to the NAS device in a vendor specific format.

One example of a primitive that would be very useful on NFS is the ability to reserve physical space to back the logical size of a file. The preferred disk format to run enterprise workloads in ESX virtual machines is zeroedthick; VMFS-3 reserves space for zeroedthick virtual disk files at file creation time, thus removing the possibility of the virtual machine crashing because of lack of physical space at the time the application writes to the virtual disk. A newly created virtual disk file on a NFS server could be set to an arbitrary length (many tens or hundreds of GB in this case) using POSIX lseek and write, but the NFS server will not allocate backing storage to the file. This violates the space guarantee requirement of zeroedthick disk format. On NAS devices that understand the vStorage API for file devices, one can issue an VixDiskLibNasPluginExecutePrimitive with primitiveID set to VIXDISKLIB\_NASPLUGIN\_PRIM\_RESVSPACE to instruct the NAS device to use vendor-specific mechanisms to reserve space for a newly created or existing virtual disk of non-zero logical size.

This entrypoint can block until the client request is successfully completed on the NAS device. However, the plugin must periodically invoke the provided update callback. Specifically, the plugin must invoke execParams->progressRecord->callback for every execParams->progressRecord->updateBytes bytes that it transfers, each time setting the execParams->progressRecord->progressBytes appropriately. If the callback returns FALSE, it is an indication that the user has requested to abort the operation; as such, the plugin must abort the operation (including the cleanup of any internal state), set the execParams->result data appropriately, and return. If communication with the NAS device is broken or timed out or no progress is reported by the NAS device within the session timeout period, the NAS plugin must abort the operation and return.

#### Parameters:

*sessionID* IN Handle identifying a live session  
*execParams* IN Parameters to the operation.

### 4.2.3 Enumeration Type Documentation

#### 4.2.3.1 enum VixDiskLibNasPluginPrimitiveID

##### Enumerator:

**VIXDISKLIB\_NASPLUGIN\_PRIM\_INVALID**  
**VIXDISKLIB\_NASPLUGIN\_PRIM\_CLONEFILE**  
**VIXDISKLIB\_NASPLUGIN\_PRIM\_RESVSPACE**  
**VIXDISKLIB\_NASPLUGIN\_PRIM\_STATX**

#### 4.2.3.2 enum VixDiskLibNasPluginAllocType

##### Enumerator:

**VIXDISKLIB\_NASPLUGIN\_FILE\_ALLOC\_EZT**  
**VIXDISKLIB\_NASPLUGIN\_FILE\_ALLOC\_LZT**  
**VIXDISKLIB\_NASPLUGIN\_FILE\_ALLOC\_THIN**  
**VIXDISKLIB\_NASPLUGIN\_FILE\_ALLOC\_UNKNOWN**

#### 4.2.3.3 enum VixDiskLibNasPluginCloneFileFlags

Enumerator:

```
VIXDISKLIB_NASPLUGIN_CLONEFILE_FLAG_GUARDED
VIXDISKLIB_NASPLUGIN_CLONEFILE_FLAG_LAZY
VIXDISKLIB_NASPLUGIN_CLONEFILE_FLAG_SRCDATASTORE_VALID
VIXDISKLIB_NASPLUGIN_CLONEFILE_FLAG_DRYRUN
VIXDISKLIB_NASPLUGIN_CLONEFILE_FLAG_SKIPZEROES
```

## 4.3 distribute\_vixDiskLibPlugin.h File Reference

### Data Structures

- struct [VixDiskLibPlugin](#)

### Defines

- #define [VIXDISKLIB\\_PLUGIN\\_MAJOR\\_VERSION](#) 1
- #define [VIXDISKLIB\\_PLUGIN\\_MINOR\\_VERSION](#) 0

### Typedefs

- typedef VixError( [VixDiskLibPluginInit](#) )([VixDiskLibGenericLogFunc](#) \*log, [VixDiskLibGenericLogFunc](#) \*warn, [VixDiskLibGenericLogFunc](#) \*panic)
- typedef void( [VixDiskLibPluginDone](#) )(void)

### Enumerations

- enum [VixDiskLibPluginType](#) { [VIXDISKLIB\\_PLUGIN\\_TYPE\\_TRANSPORT](#), [VIXDISKLIB\\_PLUGIN\\_TYPE\\_NAS](#), [VIXDISKLIB\\_PLUGIN\\_TYPE\\_TRANSPORT\\_NO\\_UNLOAD](#) }

### Variables

- [VixDiskLibPlugin](#) \*\* [VixDiskLibPlugin\\_EntryPoint](#)

#### 4.3.1 Define Documentation

4.3.1.1 #define [VIXDISKLIB\\_PLUGIN\\_MAJOR\\_VERSION](#) 1

4.3.1.2 #define [VIXDISKLIB\\_PLUGIN\\_MINOR\\_VERSION](#) 0

#### 4.3.2 Typedef Documentation

4.3.2.1 typedef VixError( [VixDiskLibPluginInit](#))([VixDiskLibGenericLogFunc](#) \*log, [VixDiskLibGenericLogFunc](#) \*warn, [VixDiskLibGenericLogFunc](#) \*panic)

Prototype for initializing a plugin in the library. This function will be called when the plugin is loaded to initializze the plugin. If anything but VIX\_OK is returned, the plugin will not be loaded.

#### Parameters:

*log* IN Log function.

*log* IN Warning function.

*log* IN Panic function.

#### 4.3.2.2 `typedef void( VixDiskLibPluginDone)(void)`

Function to be called when a plugin is unloaded.

### 4.3.3 Enumeration Type Documentation

#### 4.3.3.1 `enum VixDiskLibPluginType`

Enumerator:

*VIXDISKLIB\_PLUGIN\_TYPE\_TRANSPORT*  
*VIXDISKLIB\_PLUGIN\_TYPE\_NAS*  
*VIXDISKLIB\_PLUGIN\_TYPE\_TRANSPORT\_NO\_UNLOAD*

### 4.3.4 Variable Documentation

#### 4.3.4.1 `VixDiskLibPlugin** VixDiskLibPlugin_EntryPoint`

Main entry point into plugin that must be exported. This is an array of pointers to ViDiskLibPlugin structures corresponding to the plugins in this library. The last element in the array must be a NULL pointer.

## 4.4 public\_vm\_basic\_types.h File Reference

### Data Structures

- struct [VMPoint](#)
- struct [VMRect](#)

### Defines

- #define [INCLUDE\\_ALLOW\\_USERLEVEL](#)
- #define [INCLUDE\\_ALLOW\\_MODULE](#)
- #define [INCLUDE\\_ALLOW\\_VMMON](#)
- #define [INCLUDE\\_ALLOW\\_VMKERNEL](#)
- #define [INCLUDE\\_ALLOW\\_VMKDRIVERS](#)
- #define [INCLUDE\\_ALLOW\\_VMK\\_MODULE](#)
- #define [INCLUDE\\_ALLOW\\_DISTRIBUTE](#)
- #define [INCLUDE\\_ALLOW\\_VMCORE](#)
- #define [vm\\_x86\\_64](#) 0
- #define [vm\\_arm\\_64](#) 0
- #define [vm\\_64bit](#) (sizeof (void \*) == 8)
- #define [\\_XTYPEDEF\\_BOOL](#)
- #define [FALSE](#) 0
- #define [TRUE](#) 1
- #define [IS\\_BOOL](#)(x) (((x) & ~1) == 0)
- #define [CONST3264](#)(a) (a)
- #define [CONST3264U](#)(a) (a)
- #define [MIN\\_INT8](#) (([int8](#))0x80)
- #define [MAX\\_INT8](#) (([int8](#))0x7f)
- #define [MIN\\_UINT8](#) (([uint8](#))0)
- #define [MAX\\_UINT8](#) (([uint8](#))0xff)
- #define [MIN\\_INT16](#) (([int16](#))0x8000)
- #define [MAX\\_INT16](#) (([int16](#))0x7fff)
- #define [MIN\\_UINT16](#) (([uint16](#))0)
- #define [MAX\\_UINT16](#) (([uint16](#))0xffff)
- #define [MIN\\_INT32](#) (([int32](#))0x80000000)
- #define [MAX\\_INT32](#) (([int32](#))0x7fffffff)
- #define [MIN\\_UINT32](#) (([uint32](#))0)
- #define [MAX\\_UINT32](#) (([uint32](#))0xffffffff)
- #define [MIN\\_INT64](#) (CONST64(0x8000000000000000))
- #define [MAX\\_INT64](#) (CONST64(0x7fffffffffffff))
- #define [MIN\\_UINT64](#) (CONST64U(0))
- #define [MAX\\_UINT64](#) (CONST64U(0xffffffffffff))
- #define [AsPercent](#)(v) (([Percent](#))(v))
- #define [UINT64\\_2\\_BPN](#)(u) (([BPN](#))(u))
- #define [BPN\\_2\\_UINT64](#)(b) (([uint64](#))(b))
- #define [INVALID\\_WORLD\\_ID](#) (([World\\_ID](#))0)
- #define [INVALID\\_CARTEL\\_ID](#) INVALID\_WORLD\_ID
- #define [INVALID\\_SESSION\\_ID](#) INVALID\_CARTEL\_ID
- #define [INVALID\\_CARTELGROUP\\_ID](#) INVALID\_CARTEL\_ID
- #define [INVALID\\_WORLDLET\\_ID](#) (([Worldlet\\_ID](#))-1)

- #define **LA\_2\_LPN**(\_la) ((\_la) >> PAGE\_SHIFT)
- #define **LPN\_2\_LA**(\_lpn) ((\_lpn) << PAGE\_SHIFT)
- #define **LAST\_LPN** (((**LA**) 1) << (8 \* sizeof(**LA**) - PAGE\_SHIFT)) - 1)
- #define **LAST\_LPN32** (((**LA32**)1) << (8 \* sizeof(**LA32**) - PAGE\_SHIFT)) - 1)
- #define **LAST\_LPN64** (((**LA64**)1) << (8 \* sizeof(**LA64**) - PAGE\_SHIFT)) - 1)
- #define **LPN\_MASK** LAST\_LPN
- #define **LPN\_MASK32** LAST\_LPN32
- #define **LPN\_MASK64** LAST\_LPN64
- #define **MAX\_PPN\_BITS** 33
- #define **MAX\_PPN** (((**PPN**)1 << MAX\_PPN\_BITS) - 1)
- #define **INVALID\_PPN** ((**PPN**)0x000fffffffffffffull)
- #define **INVALID\_PPN32** ((**PPN32**)0xffffffff)
- #define **APIC\_INVALID\_PPN** ((**PPN**)0x000fffffffffffffeull)
- #define **INVALID\_BPN** ((**BPN**)0x0000fffffffffffffull)
- #define **MPN38\_MASK** ((1ull << 38) - 1)
- #define **RESERVED\_MPN** ((**MPN**)0)
- #define **INVALID\_MPN** ((**MPN**)MPN38\_MASK)
- #define **MEMREF\_MPN** ((**MPN**)MPN38\_MASK - 1)
- #define **RELEASED\_MPN** ((**MPN**)MPN38\_MASK - 2)
- #define **MAX\_MPN** ((**MPN**)MPN38\_MASK - 3)
- #define **INVALID\_IOPN** ((**IOPN**)-1)
- #define **MAX\_IOPN** (INVALID\_IOPN - 1)
- #define **INVALID\_LPN** ((**LPN**)-1)
- #define **INVALID\_VPN** ((**VPN**)-1)
- #define **INVALID\_LPN64** ((**LPN64**)-1)
- #define **INVALID\_PAGENUM** ((**PageNum**)0x000000fffffffffffffull)
- #define **INVALID\_PAGENUM32** ((**uint32**)-1)
- #define **FMTLA** ""
- #define **FMTVA** ""
- #define **FMTVPN** ""
- #define **EXTERN** extern
- #define **CONST** const
- #define **INLINE** inline
- #define **VMX86\_EXTERN\_DATA** extern
- #define **INLINE\_ALWAYS** **INLINE**
- #define **INLINE\_SINGLE\_CALLER** **INLINE\_ALWAYS**
- #define **SIDE\_EFFECT\_FREE**
- #define **CONST\_FUNCTION**
- #define **NORETURN**
- #define **HOT**
- #define **COLD**
- #define **LIKELY**(\_exp) (\_exp)
- #define **UNLIKELY**(\_exp) (\_exp)
- #define **PRINTF\_DECL**(fmtPos, varPos)
- #define **SCANF\_DECL**(fmtPos, varPos)
- #define **UNUSED\_PARAM**(\_parm) \_parm
- #define **UNUSED\_TYPE**(\_parm) UNUSED\_PARAM(\_parm)
- #define **UNUSED\_VARIABLE**(\_var) (void)\_var
- #define **MUST\_CHECK\_RETURN**
- #define **ALIGNED**(n)

- #define INFINITE\_LOOP() do { } while (1)
- #define FMPID "d"
- #define FMTUID "u"
- #define FMTMODE "o"

## TypeDefs

- typedef uint64\_t uint64
- typedef int64\_t int64
- typedef uint32\_t uint32
- typedef int32\_t int32
- typedef uint16\_t uint16
- typedef int16\_t int16
- typedef uint8\_t uint8
- typedef int8\_t int8
- typedef char Bool
- typedef int64 VmTimeType
- typedef int64 VmTimeRealClock
- typedef int64 VmTimeVirtualClock
- typedef uint8 \* TCA
- typedef uint8 Percent
- typedef uintptr\_t VA
- typedef uintptr\_t VPN
- typedef uint64 PA
- typedef uint64 PPN
- typedef uint64 TPA
- typedef uint64 TPPN
- typedef uint64 PhysMemOff
- typedef uint64 PhysMemSize
- typedef uint64 BA
- typedef uint64 BPN
- typedef uint64 PageCnt
- typedef uint64 PageNum
- typedef unsigned MemHandle
- typedef unsigned IoHandle
- typedef int32 World\_ID
- typedef World\_ID User\_CartelID
- typedef User\_CartelID User\_SessionID
- typedef User\_CartelID User\_CartelGroupID
- typedef uint32 Worldlet\_ID
- typedef int8 Reg8
- typedef int16 Reg16
- typedef int32 Reg32
- typedef int64 Reg64
- typedef uint8 UReg8
- typedef uint16 UReg16
- typedef uint32 UReg32
- typedef uint64 UReg64
- typedef uint64 MA
- typedef uint32 MPN32

- typedef `uint64 SectorType`
- typedef `uintptr_t LA`
- typedef `uintptr_t LPN`
- typedef `uint32 VA32`
- typedef `uint32 VPN32`
- typedef `uint32 LA32`
- typedef `uint32 LPN32`
- typedef `uint32 PA32`
- typedef `uint32 PPN32`
- typedef `uint64 VA64`
- typedef `uint64 VPN64`
- typedef `uint64 LA64`
- typedef `uint64 LPN64`
- typedef `uint64 PA64`
- typedef `uint64 PPN64`
- typedef `uint64 TPPN64`
- typedef `uint64 MA64`
- typedef `uint64 MPN`
- typedef `uint64 IOA`
- typedef `uint64 IOPN`
- typedef `VA32 UserVA32`
- typedef `VA64 UserVA64`
- typedef `UserVA64 UserVAConst`
- typedef `UserVA32 UserVA32Const`
- typedef `UserVA64 UserVA64Const`
- typedef `void * UserVA`
- typedef `int64 PollDevHandle`
- typedef `uint16 utf16_t`
- typedef `uint32 MX_Rank`



#### 4.4.1 Define Documentation

- 4.4.1.1 `#define INCLUDE_ALLOW_USERLEVEL`
- 4.4.1.2 `#define INCLUDE_ALLOW_MODULE`
- 4.4.1.3 `#define INCLUDE_ALLOW_VMMON`
- 4.4.1.4 `#define INCLUDE_ALLOW_VMKERNEL`
- 4.4.1.5 `#define INCLUDE_ALLOW_VMKDRIVERS`
- 4.4.1.6 `#define INCLUDE_ALLOW_VMK_MODULE`
- 4.4.1.7 `#define INCLUDE_ALLOW_DISTRIBUTE`
- 4.4.1.8 `#define INCLUDE_ALLOW_VMCORE`
- 4.4.1.9 `#define vm_x86_64 0`
- 4.4.1.10 `#define vm_arm_64 0`
- 4.4.1.11 `#define vm_64bit (sizeof (void *) == 8)`
- 4.4.1.12 `#define _XTYPEDEF_BOOL`
- 4.4.1.13 `#define FALSE 0`
- 4.4.1.14 `#define TRUE 1`
- 4.4.1.15 `#define IS_BOOL(x) (((x) & ~1) == 0)`
- 4.4.1.16 `#define CONST3264(a) (a)`
- 4.4.1.17 `#define CONST3264U(a) (a)`
- 4.4.1.18 `#define MIN_INT8 ((int8)0x80)`
- 4.4.1.19 `#define MAX_INT8 ((int8)0x7f)`
- 4.4.1.20 `#define MIN_UINT8 ((uint8)0)`
- 4.4.1.21 `#define MAX_UINT8 ((uint8)0xff)`
- 4.4.1.22 `#define MIN_INT16 ((int16)0x8000)`
- 4.4.1.23 `#define MAX_INT16 ((int16)0x7fff)`
- 4.4.1.24 `#define MIN_UINT16 ((uint16)0)`
- 4.4.1.25 `#define MAX_UINT16 ((uint16)0xffff)`
- 4.4.1.26 `#define MIN_INT32 ((int32)0x80000000)`
- 4.4.1.27 `#define MAX_INT32 ((int32)0x7fffffff)`
- 4.4.1.28 `#define MIN_UINT32 ((uint32)0)`
- 4.4.1.29 `#define MAX_UINT32 ((uint32)0xffffffff)`
- 4.4.1.30 `#define MIN_INT64 (CONST64(0x8000000000000000))`

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