
MODULE *Nv0000Classes*

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EXTENDS *Naturals*

CONSTANTS

<i>Nv0000CtrlReserved</i> ,	Reserved.
<i>Nv0000CtrlSystem</i> ,	Command for system.
<i>Nv0000CtrlGpu</i> ,	Command for <i>GPU</i> .
<i>Nv0000CtrlGsync</i> ,	Command for <i>GSYNC</i> .
<i>Nv0000CtrlDiag</i> ,	Command for Diagnostics.
<i>Nv0000CtrlEvent</i> ,	Command for Event interactions.
<i>Nv0000CtrlNvd</i> ,	Command for <i>NVIDIA</i> Debug Dumps.
<i>Nv0000CtrlSwInstr</i> ,	Command for <i>SW</i> Instruction.
<i>Nv0000CtrlGspC</i> ,	Unknown.
<i>Nv0000CtrlProc</i> ,	Command for /proc commands.
<i>Nv0000CtrlSyncGpuBoost</i> ,	Command for <i>SLI GPU</i> Boosts.
<i>Nv0000CtrlGpuAcct</i> ,	Command for <i>GPU</i> accounting.
<i>Nv0000CtrlVgpu</i> ,	Command for <i>vGPUs</i> .
<i>Nv0000CtrlClient</i>	Command for Clients.

CLIENTS

CONSTANTS

<i>Nv0000CtrlCmdGetAddrSpaceType</i> ,	Query memory address space type associated with an object.
<i>Nv0000CtrlCmdGetHandleInfo</i> ,	Query information on a handle.
<i>Nv0000CtrlCmdClientGetAccessRights</i> ,	Gets access rights for an object, the object does not need to be owned by the client requesting the access rights.
<i>Nv0000CtrlCmdSetInheritedShare</i> ,	Sets an inherited policy list.
<i>Nv0000CtrlCmdGetChildHandle</i> ,	Gets the child handle of a given type.
<i>Nv0000CtrlCmdShareObject</i>	Deprecating this command, but it is designed to share an

object.

Possible address space types.

CONSTANTS

*AddrSpaceTypeInvalid,
AddrSpaceTypeSysmem,
AddrSpaceTypeVidmem,
AddrSpaceTypeRegmem,
AddrSpaceTypeFabric*

$$\begin{aligned} AddrSpaceTypes &\triangleq \\ &\{ AddrSpaceTypeInvalid \\ &\quad , AddrSpaceTypeSysmem \\ &\quad , AddrSpaceTypeVidmem \\ &\quad , AddrSpaceTypeRegmem \\ &\quad , AddrSpaceTypeFabric \\ &\quad \} \end{aligned}$$

Object for getting the address space type.

$$\begin{aligned} & \text{NvGetAddrSpaceType} \triangleq \\ & \quad [\text{object} : \text{Nat} \\ & \quad , \text{mapFlags} : \text{Nat} \\ & \quad , \text{addrSpaceType} : \text{AddrSpaceTypes} \\ & \quad] \end{aligned}$$

Object handle we attempt to look up. [IN]

Flags for mapping a space address.
type. [IN]

Type of address space. [OUT]

This is the *NV0000* Allocation Object.

$$Nv0000AllocParams \triangleq [client : Nat$$

This is the client id which allows the process to interact with the driver.

This is the *processID* to lock the resources to.

There is also a name parameter which we removed as it serves no purpose in our specs.

$$\begin{aligned}
Nv0000Ctrls &\triangleq \\
&[Nv0000CtrlReserved : \{\}] \cup \\
&[Nv0000CtrlClient : \{Nv0000CtrlCmdGetAddrSpaceType \\
&\quad , Nv0000CtrlCmdGetHandleInfo \\
&\quad , Nv0000CtrlCmdClientGetAccessRights \\
&\quad , Nv0000CtrlCmdSetInheritedShare \\
&\quad , Nv0000CtrlCmdGetChildHandle
\end{aligned}$$

$$\begin{aligned}
& , Nv0000CtrlCmdShareObject \\
& \} \cup \\
[Nv0000CtrlGspC : \{ \}]
\end{aligned}$$

\ * Modification History
\ * Last modified *Fri Jun 17 17:02:51 EDT 2022* by *mbuchel*
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