4.4.2.1 MRAPI_RMEM_CREATE

NAME

mrapi_rmem_create

SYNOPSIS

```
mrapi_rmem_hndl_t mrapi_rmem_create(
   MRAPI_IN mrapi_rmem_id_t rmem_id,
   MRAPI_IN void* mem,
   MRAPI_IN mrapi_rmem_atype_t access_type,
   MRAPI_IN mrapi_rmem_attributes_t* attributes,
   MRAPI_IN mrapi_uint_t size,
   MRAPI_OUT mrapi_status_t* status
);
```

DESCRIPTION

This function promotes a private or shared memory segment on the calling node to a remote memory segment and returns a handle. The `mem` parameter is a pointer to the base address of the local memory buffer (see Section 3.5.2). Once a memory segment has been created, its attributes may not be changed. If the attributes are NULL, then implementation defined default attributes will be used. If `rmem_id` is set to `MRAPI_RMEM_ID_ANY`, then MRAPI will choose an internal id. `access_type` specifies access semantics. Access semantics are per remote memory buffer instance, and are either *strict* (meaning all clients must use the same access type), or *any* (meaning that clients may use any type supported by the MRAPI implementation). Implementations may define multiple access types (depending on underlying silicon capabilities), but must provide at minimum: `MRAPI_RMEM_ATYPE_ANY` (which indicates any semantics), and `MRAPI_RMEM_ATYPE_DEFAULT`, which has strict semantics Note that `MRAPI_RMEM_ATYPE_ANY` is only valid for remote memory buffer creation, clients must use `MRAPI_RMEM_ATYPE_DEFAULT` or another specific type of access mechanism provided by the MRAPI implementation (DMA, etc.) Specifying any type of access (even default) other than MRAPI_RMEM_ATYPE_ANY forces strict mode. The access type is explicitly passed in to create rather than being an attribute because it is so system specific, there is no easy way to define an attribute with a default value.

RETURN VALUE

On success a remote memory segment handle is returned, the address is filled in and `*status` is set to `MRAPI_SUCCESS`. On error, `*status` is set to the appropriate error defined below. In the case where the remote memory segment already exists, status will be set to `MRAPI_EXISTS` and the handle returned will not be a valid handle.

ERRORS

`MRAPI_ERR_RMEM_ID_INVALID`	The `rmem_id` is not a valid remote memory segment id.
`MRAPI_ERR_RMEM_EXISTS`	This remote memory segment is already created.
`MRAPI_ERR_MEM_LIMIT`	No memory available.
`MRAPI_ERR_RMEM_TYPENOTVALID`	Invalid `access_type` parameter
`MRAPI_ERR_NODE_NOTINIT`	The calling node is not initialized.
`MRAPI_ERR_PARAMETER`	Incorrect `attributes`, `rmem`, or `size` parameter.
`MRAPI_ERR_RMEM_CONFLICT`	The memory pointer + size collides with another remote memory segment.

NOTE