Comment [JH1]: Need to update these, and add the metadata use cases

6 Use Cases

6.1 Simple example of creating shared memory using metadata

This use case illustrates how a user would control which physical memory shared memory is allocated from by walking a filtered resource tree and selecting a particular memory resource. The default is to allow the system to control where shared memory is allocated from.

```
mrapi_status_t status;
mrapi_resource_t* mem_root;
mrapi_shmem_hndl_t shmem_hndl;
mrapi_shmem_attributes_t shmem_attributes;
int i;
mrapi_addr_t addr;

// get the metadata resource tree (filtered for memory only)
mem_root = mrapi_resources_get (MRAPI_RSRC_MEM,&status);
if (status != MRAPI_SUCCESS) { ERR("Unable to get resource tree");}

// find the desired memory in the metadata resource tree
for (i = 0; i < mem_root->child_count; i++) {
            mrapi_resource_get_attribute (
                  mem_root->children[i],
                  MRAPI_RSRC_MEM_BASEADDR,
                  &addr,
                  sizeof(mrapi_addr_t),
                  &status);
      if (status != MRAPI_SUCCESS) { ERR ("Unable to get resource attr");}

      if (addr == 0xfffff000) {
         // we've found the resource for the region we want to use

         // set up the shared memory resource attribute with the metadata
         mrapi_shmem_init_attributes (&shmem_attributes, &status);
         if (status != MRAPI_SUCCESS) { ERR ("Unable to init shmem attrs");}

         mrapi_shmem_set_attribute (&shmem_attributes,
                        MRAPI_SHMEM_RESOURCE,
                        mem_root->children[i],
                        sizeof(mrapi_resource_t),
                        &status);
         if (status != MRAPI_SUCCESS) { ERR("Unable to set shmem attrs");}

        // create the shared memory
        shmem_hndl = mrapi_shmem_create (MRAPI_SHMEM_ID_ANY,
                        1024 /* size */,
                        NULL /*share with all nodes*/,
                        0 /*nodes_size*/,
```