4.6 MRAPI Metadata

MRAPI supports the searching and querying of metadata about the host system. The host system has a set of resources, with each resource having a set of attributes. Each attribute has a value.

A central concept of the MRAPI metadata support is the data structure that represents resources in a system. A call to `mrapi_resources_get()` will result in the creation of a data structure in the form of a tree. The nodes are the resources, and the edges represent scope (not ownership). By navigating the data structure, the user can locate the resource desired, and then use the `mrapi_resource_get_attribute()` function to obtains the value of an attribute. The function `mrapi_resource_tree_free()` is used to free the memory used by the data structure. A node can only see the resources in it's domain and a given domain's scope may change over time if the system is repartitioned for power, hypervisor, etc.

The source for the MRAPI metadata system resources can be initialized in several ways. Each implementation upon initialization can obtain resource information from a number of ways, including from standard information systems like SPIRIT Consortium's IP-XACT and Linux device trees.

The MRAPI metadata supports dynamic attributes (attributes with values that change in time). MRAPI supports the ability to start, stop, reset, and query dynamic attributes. Dynamics attributes are not required to be supported.

MRAPI also supports registering callbacks that are called when an event occurs. Events can include an attribute exceeding a threshold, or a counter rollover. Callbacks are not required to be supported when no events are defined by the implementation.