Migration Guide: Moving from MindConnect Library 1.0 to 3.1

This article provides a set of guidelines to migrate MindConnect Library from version 1.0 to 3.0.

Introduction

If your custom agent currently uses MindConnect Library 1.0 to work with Mindsphere 2.0, it is important that you migrate to MindConnect Library 3.1 so that your custom agent continues to work with Mindsphere 3.0.

Please keep in mind that MindConnect Library 3.1 will not work with Mindsphere 2.0.

Overview

Making the move from 1.0 to 3.0 is a simple process that involves the following steps:

1. Update MindConnect Library structs and functions used in your custom agent code.
2. Compile your custom agent and deploy to target.

Configuration module

- Removed `initial_registration_uri` parameter from `mcl_configuration_t` data structure. Therefore it is not necessary to define it in the configuration anymore.
- `mindsphere_certificate` is now an optional parameter. User can set it to `NULL` if he/she does not want to give PEM formatted certificate explicitly rather prefers http client to use CA certificate store.
- `mcl_configuration_initialize` function is added which can be used in place of `mcl_new_configuration` function. The old function is still preserved.
- Callback functions `enter_critical_section` and `leave_critical_section` are added as parameters to `mcl_configuration_t`.

Communication module

- Renamed `MCL_AUTHORIZATION_FAIL` error to `MCL_UNAUTHORIZED` which is returned by all functions in this module.
- Replaced `event_list` parameter with `reserved` (type `void*`) for `mcl_communication_exchange` function, so it is expected to be given as `NULL` and the function will not return an event list with MindConnect Library 3.1.
- The functions below cannot be used with MindConnect Library 3.1:
  - `mcl_communication_download`
  - `mcl_communication_get_events`
  - `mcl_communication_ack_events`
- New function `mcl_communication_get_access_token` is introduced to get access token for exchange calls.
- New function `mcl_communication_update_security_information` is introduced to update `mcl_communication_t` with the stored registration information.

Data model module

- Replaced `Data model` module with `Data source configuration` module
- Introduced the types below:
  - `mcl_data_source_configuration_t` instead of `mcl_data_model_t`
  - `mcl_data_source_t` instead of `mcl_data_model_data_source_t`
- Removed `mcl_data_model_asset_t` type
- Removed the functions below:
  - `mcl_data_model_add_asset`
  - `mcl_data_model_set_location`
  - `mcl_data_model_add_tag`
  - `mcl_data_model_add_relation`
- Introduced the functions below:
  - `mcl_data_source_configuration_add_data_source` instead of `mcl_data_model_add_data_source`

- `mcl_data_source_configuration_add_data_point` instead of `mcl_data_model_add_data_point`
- `mcl_data_source_configuration_get_id` instead of `mcl_data_model_get_configuration_id`
- Renamed `mcl_data_model_generate_uuid` and moved to Random module as `mcl_random_generate_guid`

Timeseries module

- Removed `mcl_time_series_assign_group` function.

Event module

- Mindsphere 3.0 does not support event download, so that this module can be used for event upload with MindConnect Library 3.1.
- Event download or similar functionality will be delivered in a later stage.
- The structs and functions below cannot be used with MindConnect Library 3.1 by default:
    - `mcl_event_list_t`
    - `mcl_event_t`
    - `mcl_event_list_get_count`
    - `mcl_event_list_get_next`
    - `mcl_event_list_reset`
    - `mcl_event_list_destroy`
    - `mcl_event_set_payload`
    - `mcl_event_get_correlation_id`
    - `mcl_event_get_id`
    - `mcl_event_get_severity`
    - `mcl_event_get_timestamp`
    - `mcl_event_get_type`
    - `mcl_event_get_version`
    - `mcl_event_get_details`
    - `mcl_event_set_to_ack`
    - `mcl_event_get_ack_status`
- Introduced the function below for event upload:
    - `mcl_event_set_option`

File module

- Removed the functions below:
    - `mcl_file_get_name`
    - `mcl_file_get_size`
    - `mcl_file_get_buffer`
    - `mcl_file_destroy`

Store module

- Introduced the function below:
    - `mcl_store_new_data_model` to `mcl_store_new_data_source_configuration`
- The functions below cannot be used with MindConnect Library 3.1 by default:
    - `mcl_store_new_group`
- Changed parameters of the functions below:
    - `mcl_store_new_file`
    - `mcl_store_new_event`
- Maximum HTTP payload size for data upload is limited to 10MB for Mindsphere 3.0. Streamable store is not supported due to this limitation.
- 10MB restriction will be removed in a later stage.

Log util module

- Changed parameters of the functions below:
    - `mcl_log_util_convert_error_code_to_string`