

Registry Data Model

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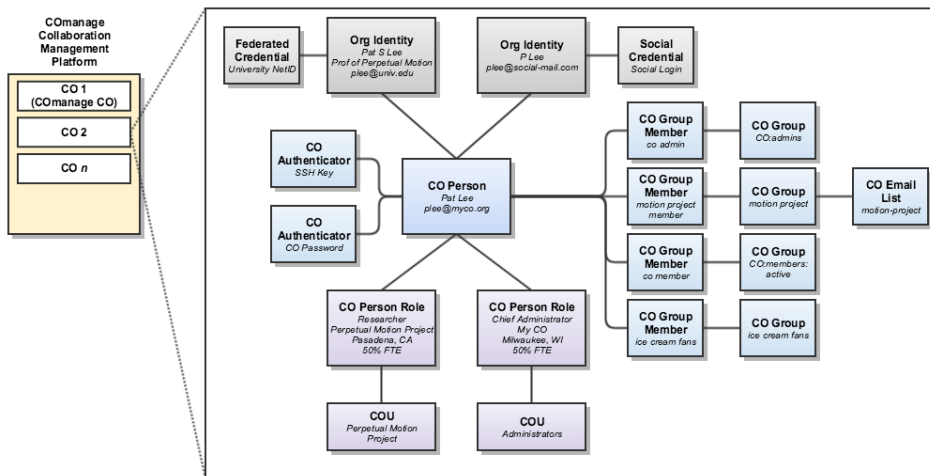
Overview

The CManage Registry Data Model revolves around the *CO Person*, which conceptually represents one person associated with a CO.

- A CManage installation is referred to as a *Collaboration Management Platform*, or *CMP*.
- A CMP is a multi-tenant installation, each tenant is referred to as a *Collaborative Organization* or *CO*.
- The core operational record of a participant within the CO is the *CO Person*.
 - The CO Person record maintains information that is unique to a person within the CO, such as names and identifiers.
 - An individual person should only have one CO Person record within a CO.
 - However, an individual person may participate in multiple COs housed within the same CMP, and could therefore have multiple CO Person records (each isolated from the other) within the CMP.
- In order for a person to become a CO Person, they must first have at least one *Organizational Identity*, which conceptually represents their identity as asserted by a "home" or "external" institution, such as their University or a social identity provider.
 - It is possible for [Org Identity records to be pooled](#) across all COs within the CMP, however this setting is deprecated and not recommended.
 - A person's external credentials (federated or social login information) are attached to the Organizational Identity, and typically used for access to the platform's services.
- A CO Person record is created and one or more Org Identities are linked to it.
- A CO Person may have one or more *CO Person Roles* within the CO. A CO Person Role record maintains information that is unique to a role a person has within a CO, such as title and physical address.
 - For some use cases, it is necessary for the CO to manage credentials such as SSH Keys. In this case, these *Authenticators* attach to the CO Person.

There are two ways to create sets of CO People within a CO.

- [CO Groups](#) are simple collections of CO People. Any CO Person can create a CO Group.
- [CO Units](#) (or COUs) are intended to represent an organizational hierarchy, including delegation of CO Person administration. Only CO Administrators can create COUs.
 - When COUs are enabled, CO Person Roles are attached to COUs.



See Also: [Understanding Registry People Types](#)

Tables

Registry is a database oriented application, with quite a few tables under the hood. These tables fall into a few broad categories:

- **Primary Objects:** Primary objects are those that directly relate to the primary purpose of Registry: storing information about people and other entities related to the organization. Example include CO Person and CO Departments.
- **Secondary Objects:** Secondary objects store additional information about Primary objects, in particular when there is a many-to-one relationship. Examples include Name and Email Address.
- **Configuration Objects:** Configuration objects primarily relate to the behavior of the application.

Table Metadata

In addition to the column definitions available for each table below, all tables have additional columns used by the framework and supporting code. These columns include

- Timestamps managed by Cake (created, modified)
- Columns used in support of [Changelog Behavior](#)

Table Status

The statuses for each table are defined as

- **Stable:** The table definition will not change in a backwards-incompatible manner across minor releases. Stable tables may only be removed in major releases.
- **Tentative:** The table definition will likely become stable, but may change in a backwards-incompatible manner across minor and patch releases. Tentative tables may be refactored or removed without notice.
- **Experimental:** No specific assertion is made about the stability of the table. It may be changed significantly or even removed without notice.
- **Obsolete:** The table is no longer in use as of the specified version.
- **Not Implemented:** The table definition is for planning purposes only.

Major, minor, and patch releases are as defined in [semantic versioning](#).

Table Inventory

Table Name	Description	Status	Introduced
cm_ad_hoc_attributes	Ad Hoc Attributes	Tentative	v3.3.0
cm_addresses	Addresses	Stable	v0.2
cm_application_preferences	Application Preferences (frontend state)	Tentative	v4.0.0
cm_authenticator_reset_tokens	Authenticator Reset Tokens	Experimental	v4.1.0
cm_co_announcement_channels	Per-CO Announcement Channels	Tentative	v3.2.0
cm_co_announcements	Per-CO Announcements	Tentative	v3.2.0
cm_co_announcements_widgets	Per-CO Announcements Widgets configuration	Tentative	v3.2.0
cm_api_source_records	API Source Record Cache	Experimental	v3.3.0
cm_api_sources	API Organizational Identity Sources	Experimental	v3.3.0
cm_api_users	API (Programmatic) Users	Tentative	v0.2
cm_applications	Known applications	Not Implemented, replaced by co_services	
cm_attribute_enumerations	Attribute enumerations (per-CO or platform wide)	Tentative	v2.0.0
cm_authentication_events	Registry authentication events	Tentative	v2.0.0
cm_authenticator_statuses	Authenticator Statuses	Tentative	v3.1.0
cm_authenticators	Authenticators	Tentative	v3.1.0
cm_certificate_authenticators	Certificate Authenticators	Experimental	v3.1.0
cm_certificates	Certificates	Experimental	v3.1.0
cm_clusters	Clusters	Tentative	v3.3.0
cm_cmp_enrollment_attributes	CMP enrollment attribute configuration	Tentative	v0.3
cm_cmp_enrollment_configurations	CMP enrollment configuration	Tentative	v0.3
cm_co_applications	Per-CO configured applications	Not Implemented	
cm_co_changelog_provisioner_exports		Obsolete as of v0.8.2	v0.8
cm_co_changelog_provisioner_targets	Per-CO Changelog provisioning target configurations	Tentative	v0.8
cm_co_crowd_provisioner_targets	Per-CO Crowd provisioning target configurations	Tentative	v3.2.0
cm_co_dashboard_widgets	Per-CO Dashboard Widgets	Tentative	v3.2.0
cm_co_dashboards	Per-CO Dashboards	Tentative	v3.2.0
cm_co_departments	Per-CO departments	Tentative	v3.1.0
cm_co_directory_permissions	Per-CO restrictions on publishing of directory information	Not Implemented	
cm_co_email_address_widgets	Per-CO Email Address Widgets configuration	Experimental	v4.1.0

cm_co_email_lists	Per-CO email lists	Tentative	v3.1.0
cm_co_enrollment_attributes	Per-CO enrollment flow attribute configurations	Stable	v0.3
cm_co_enrollment_attribute_defaults	Default values for CO enrollment flow attributes configuration	Stable	v0.8.1
cm_co_enrollment_authenticators	Authenticators attached to Enrollment Flows	Experimental	v3.3.0
cm_co_enrollment_clusters	Clusters attached to Enrollment Flows	Tentative	v3.3.0
cm_co_enrollment_flow_wedges	Enroller Plugins attached to Enrollment Flows	Tentative	v4.0.0
cm_co_enrollment_flows	Per-CO enrollment flow configurations	Stable	v0.3
cm_co_enrollment_sources	Organizational Identity Sources attached to Enrollment Flows	Experimental	v2.0.0
cm_co_expiration_counts	Per-CO expiration counts	Tentative	v2.0.0
cm_co_expiration_policies	Per-CO expiration policies	Stable	v0.9.2
cm_co_extended_attributes	Per-CO extended attributes	Stable	v0.3
cm_co_extended_types	Per-CO attribute type configurations	Stable	v0.6
cm_co_fifer_servers	Per-CO FIFER services	Not Implemented	
cm_co_github_provisioner_targets	Per-CO GitHub provisioning target configurations	Tentative	v0.9.1
cm_co_grouper_provisioner_groups	Per-CO per-Grouper target Grouper group map	Tentative	v0.8.3
cm_co_grouper_provisioner_targets	Per-CO Grouper provisioning target configurations	Tentative	v0.8.3
cm_co_groups	Per-CO groups	Stable	v0.2
cm_co_group_members	Per-CO group memberships	Stable	v0.2
cm_co_group_nestings	Per-CO group nestings	Tentative	v3.3.0
cm_co_group_ois_mappings	Per-CO mappings from OIS records to group memberships	Tentative	v2.0.0
cm_co_homedir_provisioner_targets	Per-CO Home Directory provisioning target configurations	Experimental	v0.9
cm_co_identifier_assignments	Per-CO rules for identifier assignment	Stable	v0.6
cm_co_identifier_validators	Per-CO identifier validators	Tentative	v2.0.0
cm_co_invites	Per-CO invitations to join	Tentative	v0.1
cm_co_jira_provisioner_targets	Per-CO Jira provisioning target configurations	Tentative	v4.0.0
cm_co_job_history_records	Per-CO Job History Records	Tentative	v2.0.0
cm_co_jobs	Per-CO Job Records	Tentative	v2.0.0
cm_co_ldap_provisioner_attr_groupings	Per-CO per-LDAP target attribute grouping definitions	Stable	v0.8
cm_co_ldap_provisioner_attributes	Per-CO per-LDAP target attribute definitions	Stable	v0.8
cm_co_ldap_provisioner_dns	Per-CO per-LDAP target DN map	Stable	v0.8
cm_co_ldap_provisioner_targets	Per-CO LDAP provisioning target configurations	Stable	v0.8
cm_co_ldap_service_token_provisioner_targets	Per-CO Per-LDAP target service token provisioning configurations	Experimental	v2.0.0
cm_co_localizations	Per-CO Text Localizations	Stable	v0.8.3
cm_co_mailman_lists	Per-CO Mailman Lists	Tentative	v3.1.0
cm_co_mailman_provisioner_targets	Per-CO Mailman provisioning target configurations	Tentative	v3.1.0
cm_co_message_templates	Per-CO Message Templates	Tentative	v2.0.0
cm_co_mid_point_provisioner_targets	Per-CO MidPoint provisioning target configuration	Experimental	V3.3.0
cm_co_name_identifier_assignments	Per-Identifier tracking of assigned name-based sequences	Obsolete	
cm_co_navigation_links	Per-CO Navigation Links	Stable	v0.8.2
cm_co_notifications_widgets	Per-CO Notifications Widgets configuration	Tentative	v3.2.0
cm_co_notifications	Per-CO Notifications	Stable	v0.8.4
cm_co_nsf_demographics	Demographics for statistics	Stable	v0.3
cm_co_org_identity_links	Per-CO link to org identity	Stable	v0.3
cm_co_people	Per-CO person identity	Stable	v0.2
cm_co_person_roles	Per-CO person role identity	Stable	v0.3
cm_co_person_sources	Per-CO link from person to org person	Obsolete as of v0.3	v0.2

cm_co_petition_attributes	Per-CO enrollment petition attributes	Stable	v0.3
cm_co_petition_history_records	Per-CO enrollment petition history records	Stable	v0.3
cm_co_petitions	Per-CO enrollment petitions	Stable	v0.3
cm_co_pipelines	Per-CO pipelines	Tentative	v2.0.0
cm_co_provisioning_counts	Per-provisioning target job execution counts	Stable	v4.3.0
cm_co_provisioning_exports	Per-CO provisioning target export record	Stable	v0.8.2
cm_co_provisioning_queued_events	Per-CO provisioning events to process	Not Implemented, replaced by cm_co_jobs	v0.8
cm_co_provisioning_target_filters	Data Filters attached to CO Provisioning Targets	Tentative	v3.3.0
cm_co_provisioning_targets	Per-CO provisioning targets	Stable	v0.8
cm_co_recovery_widgets	Per-CO Recovery Widgets configuration	Experimental	v4.1.0
cm_co_role_assignments	Per-CO person role assignments	Not Implemented	
cm_co_role_groups	Per-CO group memberships implied by role	Not implemented	
cm_co_roles	Per-CO role definitions	Not Implemented	
cm_co_salesforce_provisioner_targets	Per-CO Salesforce provisioning target configurations	Tentative	v3.2.0
cm_co_self_service_permissions		Stable	v0.9
cm_co_sequential_identifier_assignments	Per-Identifier tracking of next values for sequentially assigned identifiers	Stable	v0.6
cm_co_service_token_settings	Per-CO service token settings	Obsolete as of v3.3.0	v2.0.0
cm_co_service_tokens	Per-CO service tokens	Obsolete as of v3.3.0	v2.0.0
cm_co_services	Per-CO Services	Tentative	v2.0.0
cm_co_settings	Per-CO Settings	Stable	v0.9.1
cm_co_sql_provisioner_targets	Per-CO SQL provisioning target configurations	Tentative	v3.3.0
cm_co_t_and_c_agreements	Per-CO Person agreements to terms and conditions	Stable	v0.8.3
cm_co_terms_and_conditions	Per-CO terms and conditions	Stable	v0.8.3
cm_co_themes	Per-CO themes	Tentative	v2.0.0
cm_co_url_widgets	Per-CO URL Widgets configuration	Tentative	v3.2.0
cm_configuration	COordinate configuration values	Obsolete	
cm_core_apis	Core APIs	Tentative	v4.0.0
cm_cos	Definitions of (virtual) organizations	Stable	v0.2
cm_cous	Definitions of (virtual) organization units	Stable	v0.3
cm_data_filters	Data Filters	Tentative	v3.3.0
cm_data_scrubber_filter_attributes	Per-CO Data Scrubber Filter Attributes	Tentative	v4.1.0
cm_data_scrubber_filters	Per-CO Data Scrubber Filters	Tentative	v4.1.0
cm_dictionaries	Dictionaries	Tentative	v4.0.0
cm_dictionary_entries	Dictionary Entries	Tentative	v4.0.0
cm_dictionary_identifier_validators	Dictionary Identifier Validator configurations	Tentative	v4.0.0
cm_dictionary_vetters	Dictionary Vetters	Experimental	v4.1.0
cm_elector_data_filter_precedences	Per-CO Elector Data Filter Precedence Rules	Experimental	v4.1.0
cm_elector_data_filters	Per-CO Elector Data Filters	Experimental	v4.1.0
cm_email_address_widget_verifications	Email Address Self Service Dashboard Widget Verifications	Experimental	v4.1.0
cm_email_addresses	Email Addresses	Stable	v0.2
cm_env_sources	Env Organizational Identity Sources	Experimental	v3.1.0
cm_file_sources	File Organizational Identity Sources	Experimental	v2.0.0
cm_group_filter_rules	Group Filter Rules	Experimental	v3.3.0
cm_group_filters	Group Filters	Tentative	v3.3.0
cm_group_name_filters	Group Name Filters	Tentative	v3.3.0
cm_history_records	Transaction history (human readable)	Stable	v0.7

cm_http_servers	HTTP Servers	Tentative	v3.2.0
cm_identifier_enroller_identifiers	Identifiers to be collected by an Identifier Enroller	Experimental	v4.0.0
cm_identifier_enrollers	Identifier Enrollers	Experimental	v4.0.0
cm_identifiers	Person identifiers, from organizational source	Stable	v0.2
cm_identity_documents	Identity Documents	Tentative	v4.0.0
cm_kafka_servers	Kafka Servers	Experimental	v4.0.0
cm_ldap_identifier_validators	LDAP Identifier Validator configurations	Tentative	v2.0.0
cm_ldap_servers	LDAP Servers	Tentative	v3.2.0
cm_ldap_sources	LDAP Organizational Identity Sources	Experimental	v2.0.0
cm_locks	Process Locks	Tentative	v3.3.0
cm_match_server_attributes	ID Match Server Attributes	Tentative	v4.0.0
cm_match_servers	ID Match Servers	Tentative	v3.3.0
cm_meem_enrollers	MEEM Enrollers	Experimental	v4.0.0
cm_meem_mfa_statuses	MEEM MFA Status	Experimental	v4.0.0
cm_meta	Meta (platform) information	Tentative	v0.9.4
cm_names	Names	Stable	v0.2
cm_namespace_assigner_settings	Namespace Assigner Settings	Experimental	v4.1.0
cm_nationality_enrollers	Nationality Enrollers	Tentative	v4.0.0
cm_navigation_links	Navigation Links	Stable	v0.8.2
cm_net_forum_sources	netFORUM Organizational Identity Sources	Experimental	v2.0.0
cm_novi_sources	Novi AMS Organizational Identity Sources	Experimental	v4.1.0
cm_oauth2_servers	OAuth2 Servers	Tentative	v3.2.0
cm_orcid_sources	ORCID Organizational Identity Sources	Tentative as of v3.2.0	v2.0.0
cm_org_identities	Person identity, from organizational source	Stable	v0.3
cm_org_identity_source_filters	Data Filters attached to Organizational Identity Sources	Experimental	v4.1.0
cm_org_identity_source_records	Cached records from external org identity sources	Experimental	v2.0.0
cm_org_identity_sources	External sources of organizational identities	Experimental	v2.0.0
cm_organizations	Definitions of (external) organizations	Tentative	v4.0.0
cm_organizations (obsolete)	Definitions of (real) organizations	Obsolete as of v2.0.0	v0.2
cm_password_authenticators	Password Authenticators	Experimental	v3.1.0
cm_password_reset_tokens	Password Reset Tokens	Obsolete as of v4.1.0	v4.0.0
cm_passwords	Passwords	Experimental	v3.1.0
cm_permissions	Permissions for COordinate	Not Implemented	
cm_privacy_idea_authenticators	Privacy IDEA Authenticators	Experimental	v4.0.0
cm_regex_identifier_validators	Regex Identifier Validator configurations	Tentative	v2.0.0
cm_salesforce_sources	Salesforce Organizational Identity Sources	Experimental	v3.1.0
cm_servers	Servers	Tentative	v3.2.0
cm_service_eligibilities	Service Eligibilities	Experimental	v4.1.0
cm_service_eligibility_enrollers	Service Eligibility Enrollers	Experimental	v4.1.0
cm_service_eligibility_settings	Service Eligibility Enroller Settings	Experimental	v4.1.0
cm_sponsor_manager_settings	Sponsor Manager Settings	Experimental	v4.1.0
cm_sql_servers	SQL Servers	Tentative	v3.2.0
cm_sql_sources	SQL Organizational Identity Sources	Experimental	v4.1.0
cm_ssh_key_authenticators	SSH Key Authenticators	Tentative	v3.3.0
cm_ssh_keys	SSH keys	Stable	v0.9
cm_telephone_numbers	Telephone numbers	Stable	v0.2
cm_test_enrollers	Test Enrollers	Experimental	v4.0.0

cm_totp_tokens	TOTP Tokens	Experimental	v4.0.0
cm_unix_cluster_accounts	Unix Cluster Accounts	Tentative	v3.3.0
cm_unix_cluster_groups	Unix Cluster Groups	Tentative	v3.3.0
cm_unix_clusters	Unix Clusters	Tentative	v3.3.0
cm_urls	URLs	Tentative	v3.1.0
cm_vetting_requests	Vetting Requests	Experimental	v4.1.0
cm_vetting_results	Vetting Results	Experimental	v4.1.0
cm_vetting_steps	Vetting Steps	Experimental	v4.1.0
cm_visual_compliance_vetters	Visual Compliance Vетters	Experimental	v4.1.0

- View [All Tables](#) in a list
- View data model as a high level [ERD](#).