Cool Data Mover ©

Release notes

by

CoolProfs

Rapid. Development. Partner.

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Version 2.7.11 April 17, 2024

- Hotfix on v2.7.10 for query issue in mediator.

Version 2.7.10 April 16, 2024

- Fixed an issue where the 'Type' dropdown on the StorageLocation popup incorrectly displayed the value 'Amazone S3' for network share locations.
- Added the possibility to run certain DB CPU intensive workers as a single thread for entities containing many rows. See the following site properties in CDM_Dispatcher
  - SingleThreading_Enabled
    When enabled, DB-CPU intensive workers will run single threaded meaning that when those workers run, no other workers are allowed to run. SingleThreading is to prevent that the CDM consumes high amounts of DB-CPU. Currently, single threading is available for export workers. It will be activated when the number of rows in the entity exceeds the value in SingleThreading_Threshold.
  - SingleThreading_Threshold
    Only applicable when SingleThreading is enabled. When the number of rows in an entity exceeds the value of this site property, DB-CPU intensive worker for that entity will run in SingleThreading mode.
- Added 'Show timings' checkbox to the WorkItem list in the Run logs. Checking this box will show detailed timing info regarding the creation, mediation, start and finish of the workers as well as the threading mode (normal or single).
- This detailed timing information is also available on the WorkItems tab on the run download spreadsheet.

Version 2.7.9 April 6, 2024

- Added site properties to allow slowing down certain internal (Determine*) worker processes to avoid very high DB CPU utilization.

Version 2.7.8 March 26, 2024

- Added the possibility to use any combination of filters; custom, entity and tenant.
- Removed the logging in the general log in case of ignorable errors because of duplicate inserts into the internal export key table.
- Fixed an issue with using large lookup tables resulting in aborted threads because of timeouts in the database.
- Fixed an issue in which the combination of custom filters and entity filters resulted in ignoring the entity filters.

Version 2.7.6 March 12, 2024

- Added Entity Filtering
An Entity filter limits the number of exported records by applying a filter to the respective entity during Export.
An Entity filter can be defined for every entity in the package by clicking the filter icon just before the entity name during package definition. The way Entity Filters are defined is similarly to the way existing custom filters are defined. An Entity Filter only applies to the selected entity.
- Enhanced the overview of entities on the export screen to include additional information that indicates whether and which type of filtering is applied to entities.
When hoovering over the icons in the overview, details on the filter are shown.

Version 2.7.5 February 27, 2024

- Fixed an issue in which the download of a run in the run logs only contained the first 2000 entries.
- Fixed an issue with an incorrect query which prevented restarts of runs.
- Fixed an issue in which the type of move was not shown in the monitoring list.
- Fixed unnecessary logging in the general log (Unknown MonitoringProgressStatus id 0).
- Fixed an issue in which only the first 50 packages were shown in the home screen.

Version 2.7.3 January 9, 2024

- When using anonymization during export, empty fields (empty string, null date, null date time, null) are no longer anonymized.
- Fixed an issue (introduced in 2.7.2) in which during export, the import directory was removed.
- Fixed an issue in which an error occurred on the export overview screen when using tenant filtering.

Version 2.7.2 January 2, 2024

- Fixed an issue with deleting large amounts of datafiles from the package directory upon Export.

Version 2.7.1 December 18, 2023

- Internal rework to reduce the Application Object footprint of the CDM.
- Fixed an issue in which a non-lookup FK-attribute in a lookup entity caused a deadlock.

- Removed modules
  - CDM_StaticMigrator

Version 2.7.0 December 5, 2023

Important: Version 2.7.0 is a mandatory upgrade version and cannot be skipped. This version contains a conversion timer which will convert the internal database structure of the Cool Data Mover. So, if you are upgrading the Cool Data Mover on your environment(s) from v2.6.10 or earlier then v2.7.0 is mandatory and needs to be installed before upgrading to any version later than v2.7.0. Conversion will be done automatically after installation via the Timer_Conversion timer in the CDM_StaticMigrator module.
The above does not apply if you're installing the Cool Data Mover for the first time on an environment (and therefore no upgrade is necessary).

- Changed the internal structure of the CDM in preparation of the reduction of the number of Application Objects consumed by the Cool Data Mover in future releases.
- Added two new modules
  - CDM_Statics
  - CDM_StaticMigrator
- Removed three modules
  - CDM_CreateDeleteScript
  - CDM_Mediator
  - CDM_Scheduler
  During installation warnings might appear that the mentioned modules 'may have incompatible dependencies'. These warnings can be ignored, and the mentioned modules can be manually removed from your environments via ServiceCenter.
- Removed cyclic dependencies between the Cool Data Mover modules

Version 2.6.10 August 29, 2023

- Added an improved summary of the progress of an import-, export- and delete run. This is shown during the execution of the run and on the monitoring page for that run.

Version 2.6.9 August 15, 2023

- Fixed an issue with handling circular dependencies which resulted in an infinity loop while importing or deleting. In the previous version the CDM (falsely) assumed that within a circular dependency chain there is always one dependency that is optional. However, there is also another possibility. Namely that all dependencies within the chain are mandatory and that the delete rule for at least one the of dependencies is set to 'Ignore'.

Version 2.6.8 August 8, 2023

- Fixed an issue with deletion of files and (binary) directories on storage locations when re-exporting. During export the files and directories of previous export are deleted. For large exports this sometimes resulted in a timeout.

Version 2.6.7 June 22, 2023

- Added a CDM_Viewer role which allows read only access to package definitions, monitoring and run logs. To allows users to only have read only access to those screens grant the CDM_User (=base role) and CDM_Viewer role.
- Added the CDM_RunLogs.CleanupRunLogs timer to cleanup old run logs. This timer uses the site property CDM_Runlogs.NrDaysToKeepRunLogs (default value 14). When run, the timer will delete all run logs 'older' than indicated by the site property. The timer has no default schedule.
- Fixed an issue with displaying progress information in the run logs when package runs are 'flagged for cleanup'
- Renamed the CDM_RunTablesViewer module to CDM_RunLogs

Version 2.6.6 June 1, 2023

- Added the option to delete monitoring data for all runs.
- Fixed an issue with deleting monitoring data for an individual run
- Fixed an issue in which filenames and file sizes where not displayed in the FileExplorer when using an SMB storage location
- Fixed an issue in which performing an import using matching on autonumber id's resulted in an error.

Version 2.6.5 May 11, 2023

- Added the site property DeletesPerQueryForCleanup in the CDM_Dispatch_BL module to control the number of records deleted in a single query during internal cleanup.
- Added retry functionality to overcome temporary network errors for SMB-storage locations. To fine tune the retry mechanism the following site properties are introduced in the CDM_FileSystemServices module.
  - SMB_MaxNrOfAttempts
    The maximum number of attempts the CDM will perform for SMB operations that resulted in a 'Thread was being aborted'. Default 3.

- o SMB_NrMilliSecWaitBetweenAttempts

  The average number of milliseconds to wait between SMB retry attempts. Default 3000.
- Fixed an issue with removing a module or entity from a package and subsequently re-adding the same module or entity to the package when entity tracking is set.
- Fixed an issue with the cleanup (deletion) of records from the internal CDM run tables.
- Fixed an issue with an CoolDataMover rest API in the CDM_API module which was not set to 'Internal Network Only'

Version 2.6.4 April 11, 2023

- Fixed an issue in which the network connections to the SMB-server were not properly closed.

Version 2.6.3 March 30, 2023

- Added support for using the Cool Data Mover in 'Internal Access Only' mode. All webflows and web services have been secured by setting their Internal Access Only property to True.

  - If you define (or already have defined) an internal network in Service Center then the Cool Data Mover will only be accessible from the defined network addresses.

  - If you have not defined an internal network then this change will have no effect and the Cool Data Mover will be available as before.

  Important note: If you have defined an internal network but want to access screens or web services of the Cool Data Mover from outside this internal network, please contact CoolProfs support at CoolDesk@coolprofs.com

- Added support for customers to implement their own login/logout flows, thus enabling the use of third party identify providers

  In the CDM_Base module three site properties are added:
  - o *LoginLogout_UseSeparateApp*

    Set to true to enable the use of external app(s) to Login and Logout
  - o Login_AppURL

    The URL to which a user is redirected in case that user is not logged on. The idea is that a CDM customer implements/uses their own app to authenticate a user using their preferred method of authentication. After authentication the app should redirect back to the CDM.

- o Logout_AppURL

    The URL to which a user is redirected in case that user clicks the logout icon in the right upper corner of any Cool Data Mover screen.
- Fixed an issue which resulted in an incorrect import validation message. This occurred when a static entity record was deleted and a new records was created with the same (non autonumber) id.

    This situation also led to an incorrect number of records being exported.

Version 2.6.2 March 16, 2023

- Fixed an issue in which the cleanup of a run resulted in an error

Version 2.6.1 January 20, 2023

- Added native support for SMB file shares. A storage location of type 'SMB' can be defined with which it is possible to store data files on file shares using the Server Message Blocks protocol. The difference with the existing file share option is that the SMB option uses the SMB2/3 protocol whereas the file share option uses the SMB1 protocol (which is blocked for security reasons when used from an Outsystems PaaS environment).
- Removed warnings issued during installation of the Cool Data Mover.

Version 2.6.0 November 4, 2022

- Added native support for Azure File Shares. A storage location of type 'Azure File Share' can be defined, thus enabling storing data on Azure.
- Added automatic restarting for deletes in case a delete runs into a 'temporary' error.
- Updated the list of available Amazon regions.
- Fixed an issue on the home screen where the name of the import- and export storage locations was no longer displayed.
- Fixed an issue where during upload the name of the application (shown after the module) on the modules tab was not displayed

Version 2.5.28 October 23, 2022

- Fixed an issue in which the internal ImportKey table ran out of available Id's (max integer). Changed the datatype of the Id from Integer to LongInteger.

- Fixed an issue in which a query timeout occurred when trying to import a large number of users using the 'Move referenced users' option.

Version 2.5.26 September 9, 2022

- Fixed an issue in which the 'select Roles' popup couldn't be opened when a large number of roles was selected.
- Fixed an issue in which the description of a filter was limited to 20 characters.
- Fixed an issue regarding moving users. When using the 'Move referenced users' option ánd also including the user/group authorizations, the CDM also exported non-referenced users which were assigned the selected roles and/or part of groups.

Version 2.5.25 August 4, 2022

- Fixed an issue in which ServiceCenter entities (Role, User_Role, Group, User_Group, Group_Role) were inadvertently removed from the package when using the package setting 'Move referenced users' without moving the related authorizations.

Version 2.5.24 August 1, 2022

- Fixed an issue in which changing an entity's type from Move to Lookup or vice versa resulted in an 'Index 4 out of range' error

Version 2.5.22 July 7, 2022

- Added a new powerful anonymization option: Random Formatted text
  This option allows you to compose a formatted (conform your specification) text which consists of generated text combined with fixed text.
  The format of the randomly generated text is specified by formatters. A formatter starts with the a '{' and ends with a '}'.
  The CDM supports formatters for generating:
    o A number between a specified minimum and maximum
    o A number prefixed with 0's between a specified minimum and maximum.
    o Uppercase, lowercase and Digits and any combination of them.
  All characters not included in a token are considered fixed text.
- Added a new bulk user mapping option to map unmapped users to one specific selected user thereby reducing the need to map these users individually.
- Fixed an issue with using Date, Time or DateTime attributes in filters on Oracle.
- Fixed an issue with calling the Custom Anonymization webservice using the correct protocol.

- Fixed an issue in which the last byte of a binary was not exported correctly in case the length of the binary was the ChunkSize + 1.

Version 2.5.21 March 18, 2022

- Moved the option to select the roles for moving user authorization to the package settings screen, enabling the setup of moving user data during package creation.
- Changed the option from 'show all roles' to 'show roles in package modules' on the role selection screen.
- Disabled the selection check box on an entity when managed by user authorization.
- Improved the messages on the upload definition window when comparing the uploaded data model to the actual data model.
- Improved the message in the 'Handing during import' and 'Which records to export' columns on the import/export overview screens for entities handled by the 'move referenced users' option.
- Added the option to send the API Key in a separate header when using the CDM API.
- Improved the CDM API documentation by adding examples.
- Removed the option to dismiss upload messages.
- Removed the anonymizations tabs from the environment screen and package screen.
- Fixed an issue which resulted in 'Failed to upload a new package definition'.
- Fixed an issue that was introduced in v2.5.20 in which matching was performed while no matching (and no matching attribute) was specified. This resulted in the insert of the first record and all subsequent records were matched to that first one.

Version 2.5.20 February 25, 2022

- Fixed an issue that was introduced in 2.5.18 regarding the compatibility of different Cool Data Mover versions.
- Added the option to show all roles vs the roles used in the package on the role selection screen for user authorization.
- Added the option to use the 'Ignore import validations' in combination with the 'Migrate user authorization' option on entities in ServiceCenter.
- Added the user authorization options to the shown options on the import and export screens.
- Enlarged the package description field in the package settings.
- Added a description field for filters.
- Added the user authorization options to the run download.
- Improved the test filter popup so the difference is clear between not having executed the test filter and having executed it with 0 results.
- The filter value now is retained when the operator is changed.
- Improved the prompt in the filter value field to show which values are accepted
- Refined the presentation of the progress of process deletes. Progress is now shown per 100 deleted process instances.

- Moved the 'Include user authorization' and 'Include group authorization' options to the package settings screen.
- Fixed an issue with bulk mapping of users when the Tenant_id of the users' tenants was not the same in the source and target environment.
- Fixed an issue in which a user attribute with name Tenant_Id was incorrectly seen as an internal tenant identifier op Outsystems.
- Fixed an issue in which Group_User records were incorrectly included in the export.
- Fixed an issue in which users were not matched when using the 'Migrate user authorization' option and the package setting was set to 'Always insert new record'.
- Fixed an issue in bulk mapping in which users were mapped case-sensitive instead of case insensitive.
- Fixed an issue in which the user of the creator of a Group was not exported.
- Fixed an issue in which creation of a filter without selecting an entity resulted in an error.

Version 2.5.19 February 9, 2022

- Fixed an issue that was introduced in 2.5.18 regarding the compatibility of different Cool Data Mover versions.

Version 2.5.18 February 8, 2022

- Added the option to define storage locations in a multi-Front-end server environment. This overcomes the issue whereby the CDM connects to a load-balancer, is 'randomly' routed to one of the FE's, and the files are read/written to different Front-end servers. Now, those calls are rerouted to the correct Front-end. In multi-Front-end server environments the information to which Front-end the files are written is shown on the Storage Locations tab in the Environment settings.
- Fixed an issue with exporting a large number of process instances.
- Fixed an issue whereby data-inconsistencies were incorrectly reported when exporting entities with a foreign key to the ServiceCenter entities Activity or Process.

Version 2.5.17 February 2, 2022

- Added the option to define entities that are referenced from BPT Input and Output parameters as lookup entities. This enables the use of (for instance) User Id's as BPT input parameters, define the User entity as lookup and only export the referenced users.
- Fixed an issue whereby old versions of already deleted processes were shown.
- Fixed an issue whereby process instances could not be deleted when their topId attribute value was 0.
- Fixed an issue in which runs that were scheduled because another one was already running were not picked up correctly.

Version 2.5.16 January 21, 2022

- Added the Cool Data Mover API to be able to start package runs automatically and retrieve information on packages and runs. A detailed description of this API is made available on the CoolProfs site.
- Added the feature to define and use variables in filter definitions. This enables the creation of a filter in which the actual value to filter on can be specified the moment the run is started (via the screens, scheduler, or API).
- Fixed an issue in which incorrect counts were reported during an export with filters.

Version 2.5.15 December 17, 2021

- Added a new feature for moving user authorization data.
  In the package settings the option to move user authorization data is added. Using this option and including the User table in the package brings up a new screen in which Roles can be selected. Authorizations (user specific and/or per group) related to the selected Roles will be exported and imported; thus, allowing for an intuitive manner to move user authorizations.
- Added a filter to the packages screen to filter on package name.
- Added filter options to the overview screens for import, export and delete to filter on the type of entity and the name of the entity or module.
- Fixed an issue in which lookup records that were only referenced by soft keys were not exported
- Fixed an issue in which lookup records referenced by skipped foreign or soft key were still exported

Version 2.5.14 December 14, 2021

- Added support for foreign keys to the BPT tables Process and Activity (in combination with migrating the concerned Processes).
- Added the Environment key to the Environment screen
- Fixed an issue with matching on Time attributes
- Fixed an issue in which a directory was deleted when the export directory contained a space
- Fixed an issue in which bulk matching resulted in an unique index error message
- Removed reporting of duplicate data-inconsistencies

Version 2.5.13 November 18, 2021

- Fixed an issue with matching on DateTime attributes when the attribute value contains milliseconds
- Fixed an issue with UserMapping when trying to map to an inactive user

Version 2.5.12 November 8, 2021

- Added the option to delete BPT-processes based on specified selection criteria
- Fixed an issue with downloading spreadsheets from the File Explorer. Spreadsheets now have the extension .xlsx Instead of .xls
- Added a 'select all' option to the file explorer
- Added the 'move binaries only' option for internal use only
- Added the 'CDM_CreateDeleteScript' module to the Cool_Data_Mover solution

Version 2.5.11 October 22, 2021

- Fixed an issue in which not all binaries were exported in case the database did not return the Id's of the records in the order of the Primary Key.

Version 2.5.10 October 5, 2021

- Fixed an issue which prevented the creation of new packages

Version 2.5.9 October 1, 2021

- Redesigned the File Explorer
  - The CDM_Files module is deprecated and has been replaced by the CDM_FileExplorer module.
- Added the option to view data files
- Added the option to convert selected data file into CSV or XLS files
- Introduced the CDM_Files.BrowseOnly site property which, when set to True, only allows browsing the directory structure in the File Explorer but prevents any viewing or downloading of exported data.

- Removed the explicit save action when defining filters. They are now saved automatically
- Added the user mapping feature. This feature can be enabled on the import settings. It allows creating custom mappings between exported users and the users in the database. This is particularly useful when users can't be looked up uniquely based on match attributes or when a custom mapping is required.

Version 2.5.8 July 30, 2021

- Fixed an issue with exporting an entity without a primary key with a skipped binary
- Added the option to access the Data Inconsistencies screen while the cleanup (not delete) of a run is ongoing.
- Added the option to use the 'Truncate Table' SQL statement during data deletes. Since this requires additional rights for the runtime database user, this option is made available via a site property of the CDM_SqlConstructor module.
- Improved the performance of nullifies (during deletes with cyclic dependencies) by avoiding an initial count query.
- A running move action is now made visible on the Packages screen.

End of Mainstream support for CDM versions on OutSystems v10
This means that new features and bugfixes will only be released for OutSystems v11. We recommend upgrading to OutSystems v11. Please, contact CoolProfs support in case you require additional information.

Version 2.5.7 July 18, 2021

- Fixed an issue with matching static entity records. Deleted records from the static entity which were still present in the entity_record table were matched on sskey
- Added explanatory information icons on the package setting screen.

Version 2.5.6 June 2, 2021

- Added the option to automatically restart a run in case of failure. For long running runs, an infrastructural failure can be overcome by automatically restarting the failed

run. Currently, this functionality needs to be enabled via the site property AutomaticRestart in the CDM_Mediator.

- Fixed an issue with the deletion of data. A timeout could occur when nullifying optional foreign keys in tables with a large number of records. This worker process has been split up into multiple smaller workers
- Fixed an issue which resulted from specifying a replacement value for a foreign key to a lookup table. In that case only the lookup records denoted by the replacement value need to be exported.

Version 2.5.5 May 18, 2021

- Fixed an issue whereby the package directory was deleted when performing an export to an AWS S3 bucket

Version 2.5.4 May 12, 2021

- Fixed an issue with exporting binaries that have an underlying database type of 'Image'

Version 2.5.3 May 5, 2021

- Fixed an issue in which entities that are only referenced from other modules are not inserted into the internal ImportKeys table. This resulted in records being skipped or attributes being nullified for the entity/attribute that referenced the aforementioned entity.

Version 2.5.2 May 4, 2021

- Fixed an issue in which the delete ran into a query-error

Version 2.5.1 April 29, 2021

- Added the feature which, during upload, compares the actual data model against the newly uploaded definition. An overview of the differences is shown; after which the actual upload can be done.

- Added the feature that the number of rows with which an export was done, is used during import. Thereby making the import independent from the 'import rows' package setting.
- Added the feature to replace the value of a foreign key with a given value during export. The given value must be a valid one in the export environment.
- Optimized the import process to only store Id's in the importKey table when necessary.
- Fixed a bug which resulted in http error 413 (Request Entity Too Large) when transferring large text files. The site property RestHttpDataLimit in CDM_FileSystemServices denotes the limit over which the CDM will start to 'chunk' the file. This value should reflect the IIS setting which is specified during the Outsystems installation.
- Introduced new icons for foreign key attributes that are ignorable and for softkeys. Both icon now contain the letters IGN (short for IGNORE). This is to signal that the referential integrity is not guaranteed by Outsystems and/or the database and could potentially lead to data inconsistencies during moves.
- Fixed an issue in the scheduler which resulted in a Max Recursion error.
- The file explorer now shows more detailed information about the file size and the number of files in a directory. Also it is now possible to navigate back to previous directories by clicking on the subdirectory name in the path.

Version 2.5.0 March 19, 2021

- Added a new popup for uploading package definitions. Before uploading the new definition a comparison between the actual data model and the definitions in the uploaded file is presented.
- Added two new anonymization options. An option to generate GUIDs and an option to generate Belgian social security numbers (rijksregisternummer).
- Redesigned the data inconsistencies screen in the run logs. Also redefined the messages shown for clarity.
- Added an overview screen of data-inconsistencies which groups inconsistencies together based on data model constructs. Allow fast switching between the detail screen and the overview screen
- When there have been data inconsistencies during import an improved message is shown

- Added new items on the settings tab in the excel that can be downloaded in the run logs for a particular run
- Added a new validation which signals entities without a primary key that contain a binary attribute
- Redefined the meaning of the log level in the run logs.
  Full=All available logging
  Progress=Only the progress log and data inconsistencies
  Data inconsistencies=Only data inconsistencies
- Fixed the number of reported data inconsistencies and skipped records after an import.
- Fixed an issue whereby during the upload of a package definition, the entities and modules that do not exist in the environment were incorrectly added to the package
- Fixed an issue with a SQL query involving Entities without a Primary Key
- Fixed an issue whereby modules without entities where shown on the modules tab
- Fixed an issue whereby directly after an import, the run logs show the run as 'being deleted'. Now, directly after an import the run is shown as 'Flagged for cleanup' or 'Cleaning up'.
- Fixed an issue whereby the import does not get past the validation stage (although all validations are ok).
- Fixed an issue whereby uploaded a data/xml file in the file explorer caused the removal of the UTF-8 encoding which led to problems with diacritics.
- Fixed in issue on the Progress Log screen in the run logs when retrieving a large amount of records
- Fixed in issue on the data inconsistencies screen in the run logs when retrieving a large amount of records
- Removed the generate WS Key timer from CDM_Base

Known issues:
- When an entity is part of a circular dependency and the FK (which is also part of the circular dependencies) is nullified during the import or delete, a unique index violation can occur when that FK is part of a unique index

Version 2.4.26 January 14, 2021

- Fixed an issue with the generation of binary hashes which resulted in an empty catalog name in the query.

Version 2.4.25 December 3, 2020

- Fixed an issue when there is a difference in the collation settings of the system database and the OutSystems main database
- Fixed an issue when the FrontEnd server time is different from the Database server time.

Version 2.4.24 November 5, 2020

- Fixed the number of records processed in the real-time monitoring which in some situation displayed incorrect numbers
- Beta release of option to restart an import

Version 2.4.23 October 16, 2020

- Fixed an issue with the timezone conversion. No timezone conversion will take place when the timezone info is not present in the export. An appropriate message is displayed on the import screen

Version 2.4.22 October 15, 2020

- Redesigned deletion of CDM internal run data to prevent deadlocks
- Fixed an issue with a query that used unquoted identifiers

Version 2.4.21 July 15, 2020

- Added the name of the export storage location on the export screen.
- Added the name of the import storage location on the import screen.
- Made the default selection of the filtering checkboxes on the export screen dependent on whether (custom or tenant) filtering is allowed.
- Added an message to the progress log to indicate that a 'Validation only' import was performed.
- Added the option to mark a foreign key attribute that refers to an external entity, as a soft key

- Fixed an issue with incorrectly trying to translate cdm$null values that resulted in unfairly reported entries in the progresslog.
- Fixed an issue whereby the deletion of part of a filter was not reflected correctly on the screen.
- Fixed an issue on Oracle with the retrieval of the ProgressLog
- Fixed an issue with recognizing that a foreign key refers to an entity that was imported using an extension

Version 2.4.20 July 9, 2020

- Added the option to include referenced Users, Tenants and Espaces (when used as lookup) outside the selected tenant when using a tenant filter
- Added the name of the application to the modules on the Modules-tab when defining a package
- Filtering on the modules tab now allows to also filter on application name.
- Added a Apply and Clear buttons (to apply and clear the filter) on the package definition screen for Modules and for Entities
- Fixed an issue with replacing binaries. When the option 'replace' was chosen for a binary, the original binary was still exported. Now, when this option is chosen a null-binary is exported and imported.

Version 2.4.19 July 5, 2020

- Added the package report options to the main screen. A reports with the content per package, as well as a report on environment level indicating which entities are part of which package.
- Added the option to 'Check match attributes' to the package. This allow for non-import matching packages to skip the checking of the validity of the match attributes.
- Fixed an issue with duplicate import reporting for lookup entities when multiple records in the import files could not be matched.

Version 2.4.18 July 1, 2020

- Added support for foreign keys to external entities in extension.

Version 2.4.17 June 17, 2020

- Added the option to apply time zones conversion during import
- Added additional information on the import screen
- Added time zone settings in the excel file
- Added filtering functionality on 'Entity' level in the package edit section
- Fixed an issue with incorrect sort order of the files during import

Version 2.4.16 June 10, 2020

- Fixed an issue on the export screen which prevented the export when using a filter
- Fixed an issue where during move actions the environment default indicator on the used storage location was reset
- Fixed an issue with retrieving the progress log data for large moves

Version 2.4.15 June 4, 2020

- Fixed an issue whereby files were not imported when using a binary match attribute
- Added additional details to the progress log

Version 2.4.14 May 8, 2020

- Fixed issue with accessing network shares with the correct credentials.
- Fixed an issue with exporting binaries whereby the site property MaxBinariesInExportWorker was smaller than site property BinLengthCalc_MaxPerQuery
- Fixed an issue with exporting binaries whereby in some situations the binaries were not correctly distributed over the workers.
- Introduced the distribution of binaries using their individual ID instead of ranges.

Version 2.4.13 Mar 26, 2020

- Improved the performance of deleting the data files from the directory prior to performing an export.
- Fixed the import process which got stuck on entities with circular dependencies.

Version 2.4.12 Mar 26, 2020

- Fixed exporting an entity without a Primary key when the entity is split over multiple files

Version 2.4.11 Mar 24, 2020

- Added the option to move non-standard entities from Service Center.
- Added the feature to explicitly export NULL values and thereby being able to make the distinction between empty and NULL.
- Fixed an issue with the export of a static entity that referred to itself
- Fixed an issue with exporting files without primary key. Introduces paging using the OFFSET FETCH NEXT construct. For SQL Server this requires MSSQL2012.
- Fixed an issue with timing during with exporting lookups
- Fixed an issue with deleting records from entities with binaries because too much records where being deleted at once. Added the 'DeletesPerQuery' site property.
- Fixed an issue with reporting errors during import validation

Version 2.4.9 Mar 19, 2020

- Fixed an issue with determining the number of bytes to mediate. Added the correct values into the packagerun.
- Removed the LifeTime Plugin setings from the packagerun when started manually
- Removed the where 'IS NOT NULL' clause from the binary queries

Version 2.4.8 Mar 18, 2020

- Added settings- and workitem info to the package run download option in the Run Logs
- Added additional logging for exporting binaries

Version 2.4.7 Mar 16, 2020

- Added the package run download option in the Run Logs
- Fixed an issue with retrieving the number of binaries to export
- Fixed an issue with applying the tenant filter during export of referenced lookups
- Added the CDM_SupportingFunctions extension to the solution

Version 2.4.6 Mar 12, 2020

- Fixed an issue with tenant filtering whereby the tenant filter was not applied during

record determination

- Fixed an issue with transferring large ExportOverview.cdm files. Caused by conversion from SOAP to REST.
- Fixed an issue where the elapsed and time columns were missing from the download of the progress log

Version 2.4.5 Mar 11, 2020

- Changed the download of *.cdm files to Text
- Improved the performance of calculating the lengths of binaries.
- Fixed an issue whereby when filtering on tenant, the generated SQL included an clause related to custom filtering
- Fixed an issue with deleting the ExportOverview.cdm during export
- Fixed an issue with deleting a directory from a share

Version 2.4.4 Mar 6, 2020

- Fixed an issue whereby for an export of a single-tenant entity, with tenant filtering, the message was displayed that only the records for the selected tenant were exported. Corrected this to signal that all records would be exported
- Fixed an issue with overloading the database when calculating the length of multiple binary attributes simultaneously

Version 2.4.3 Mar 4, 2020

- Added the 'Filter on Tenant' option that supports the *export* of data for a selected tenant. By using this option, data from multitenant entities is filtered using the selected tenant, data from single-tenant entities is exported in full. Before the export, the export screen will show an overview detailing which records will be exported.
- Added the 'Filter on Tenant' option that supports the *delete* of data for a selected tenant. By using this option, data from multitenant entities is deleted using the selected tenant, data from single-tenant entities will not be deleted. Before deletion, the delete screen will show an overview detailing which records will be deleted.

- Added icons for the multitenant versions of move entities and lookup entities. Removed the multi-tenancy indicator column from the entity list. Multi-tenancy is now indicated by the icon.
- Added a warning message after a successful import to signal the existence of reporting messages regarding skipped records and/or nullified FKs.
- Added the package directory and storage location name to the package screen
- Added the feature to Force an Abort of a run. This option is present on the Package Runs screen in the Run Logs. This will forcefully terminate all running CDM processes for the selected run.
- Redesigned how the CDM prevents the execution of triggered BPT-processes. The BPT processes will no longer be locked during import. Instead, the records in the OSEVT* tables are temporarily modified to prevent the insertion of records into the system Event and Event_Queue tables.
- Added a warning to the package screen in case a package contains suspended processes. Also, the processes can be resumed from the package screen.
- Removed the unused extension CDM_Convert from the Cool Data Mover solution
- Added extra logging in the Run Logs for the mediator for loop detection

Version 2.4.1 Feb 19, 2020

- Added the option to verify and optionally create the base directory (for local drives and network shares) on the detail popup of the storage locations.
- Fixed an issue with locking with the bulk insert of keys referencing lookup tables.
- Fixed an issue whereby, when an entity contained multiple optional foreign keys that needed to be nullified, multiple nullify workers were created. Now optimized to just one worker.
- Fixed an issue with the 'Create new package' button. Now only enabled for users with the role CDM_Packager.
- Added 'sort by clicking on column header' to the import overview.
- Added an overview of records to export to the export screen
- Added an overview of records to delete to the delete screen
- Fixed an issue with incorrect formatting (group separator and decimal separator) of numbers. The separator is now defined as site properties in the CDM_Base module. Those values are used across the complete CDM.
- Fixed an issue with showing incorrect anonymization options

Version 2.4.0 Feb 12, 2020

- Added the CDM Scheduling option. This option facilitates scheduling individual move action or a sequence of move actions. Schedules are defined and executed from the new Cool Data Mover LifeTime plugin. Schedules can be executed ad-hoc or on regular daily/weekly/monthly intervals. This new feature also supports executing move actions on different environments in sequence. Thus, enabling the straight-through processing of performing an export from environment A and subsequently importing the data in environment B.

- Added storage locations. Added a tab on the environment screen to specify storage locations. These are definitions of locations where the CDM stores package data. Storage location replaces the repeated specification of hostnames and main directories in the environment and within each package. A conversion is done on the environment and on each package to create appropriate storage locations.

- Added the option to import data from any storage location. Previously data could only be imported from the Main Data Mover server in the same environment. Importing data from any storage location facilitates the use of a central storage location on which to store all data.

- We have added native support for Amazon S3 buckets. A storage location can be of the type 'AWS S3 Bucket', thus enabling storing data using Amazon S3 Cloud storage.

- Added support for soft keys (SK). Within the CDM, it is now possible to mark an attribute that is not an FK as an SK. By allowing the specification to which entity the SK 'points', we've enabled the possibility to translate the SK's correctly when importing.

- Added a filter option to the module selection screen

- Fixed an issue with writing more than 2000 characters into the OutSystems General Log. Now split up in multiple entries, each < 2000 characters.

- We have fixed an issue with validating the package where the validation message became too large.

- Fixed an issue with detecting the insert of duplicate records in the internal CDM key tables on Oracle

- Fixed an issue with simultaneously deleting BPM events while inserting into the trigger table.

Version 2.3.24 Jan 22, 2020

- Fixed an issue with deleting records from entities that refer to each other in a loop. The delete process did not continue. Resolved by taking into account that the 'loop' was broken before by doing an update (to NULL) of the optional Foreign Keys.
- We have fixed an issue with inserting incorrect import keys for extension tables.
- Added the CDM version number to the description of the 'Cool Data Mover' and 'Cool Data Core' OutSystems applications. The version of the CDM is now visible in ServiceCenter.
- Added a check to prevent duplicate package names.
- Enlarged the 'Export to directory' field on the package definition screen
- Fixed an issue whereby the value of the 'Ignore inactive system records' and 'Skip Import validation' checkboxes was lost when uploading the package definition.
- Added the CDM_AWSS3 extension to the Cool Data Mover solution in preparation for native support for Amazon S3 Buckets.

Version 2.3.23 Jan 8, 2020

- Reduced the necessary size of the transaction log for importing binaries
- Fixed an issue with exporting binaries whereby the first chunk was missing 4 bytes.
- Fixed the return link on the error page

Version 2.3.22 Dec 17, 2019

- Fixed an issue with timeouts during the export of binaries
- Added the elapsed time of a work item to the work item list in the run logs
- During the preparation phase of the export, the 'determine export files' work item is utilized.
- Made the 'determine export files' work item restartable
- Added a reminder (have indexes on match attributes) to the import screen.
- Changed the CDM internal web services from SOAP to REST

Version 2.3.21 Dec 11, 2019

- Redesign of the cleaning process of Package Runs and related items.

- Split the preparing phase of the Import and Export process to accommodate low performing environments.
- Fixed an issue to avoid suspending BPT processes being launched from entities which were not selected in the CDM but where the module was selected
- Redesign of the way BPT events are cleaned during import to accommodate deleting events in parallel with the inserts of new records.

Version 2.3.20 Nov 28, 2019

- Fixed an issue with processing binaries from a catalog that has a "-" in the name.

Version 2.3.19 Nov 27, 2019

- Fixed an issue with the import of time fields whereby the 'datepart' of the database field was incorrectly populated with the current date instead of the OutSystems NullDate.
- Fixed an issue with incorrect number of records shown in the monitoring of the delete action.

Version 2.3.18 Nov 25, 2019

- Improved the performance of Entities tab of the package detail screen

Version 2.3.17 Nov 19, 2019

- Fixed an issue whereby the export of binaries failed when no binaries were found with a length under the max binary size limit.
- Rewrote the Delete functionality using (Light)BPT instead of timers.
- Removed the unused option Exclude Binaries
- Added a package option to prevent the launch of new BPT processes during an import. Also removed the new events generated by OutSystems from the event queue.
- 'Duplicate insert errors are ignored when retrying an ImportFilePart worker. This accommodates the possibility to retry the inserts when during previous executions inserts were already committed.

- Fixed a performance issue with retrieving the entities from a module which contains a large number of entities.
- Added the generation of correct IBANs for Netherlands, Belgium, France, Luxembourg, Denmark and Germany. When another country code is supplied, by default a dutch IBAN is returned.

Version 2.3.16 Oct 31, 2019

- Fixed an issue with an incorrect catalog name for the internal CDM tables when the CDM is installed in a separate catalog.
- Fixed an issue with replacing an attribute value during export
- Implemented a workaround to deal with a bug in some OutSystems platforms on MSSQL whereby the tables are not represented in the SYS.ALL_OBJECTS table.

Version 2.3.15 Oct 22, 2019

- Added a new delete validation warning for the situation that an entity A refers to an entity B in another catalog. In that case the referential integrity is not guaranteed by the database and the data of entity B can be deleted.
- Fixed an issue with retrieving the entity definition information when that entity resided in a different catalog than the CDM itself.
- Fixed an issue whereby data that referred to a removed record of a static entity with a non-auto number identifier resulted in an error.
- Added the option to Move the ServiceCenter tenant entity
- Fixed an issue by preventing the deletion of the initial records in the event tables (osevt*).

Version 2.3.14 Oct 3rd, 2019

- Fixed an issue with getting entities from the database based on System tables type = 'U'. In some situations, user tables have a NULL value. This prevented from opening the modules inside the packages

Version 2.3.13 Sep 25, 2019

- Fixed an issue whereby inserts in the export key table resulted in an error regarding data conversions from int32 to String.

Version 2.3.12 Sep 13, 2019

- Added prevention of overwrites of ServiceCenter user information. Also preventing overwrite of the Admin user of the Users Tenant.

Version 2.3.11 Sep 9, 2019

- Fixed an issue whereby exporting entities that Foreign keys to Lookup entities resulted in duplicates in the export keys.
- Added the Id of the package run to the import- and export key tables for future use.

Version 2.3.10 Sep 2, 2019

- Fixed an issue with exporting entities that contain Foreign keys to Lookup entities for which the delete rule is set to Ignore and which contain a reference to records that no longer exist.
- Fixed an issue with importing entities that contain binaries. The import was incorrectly split up into smaller binary file parts.
- Added more detailed logging for the number of rows imported/exported

Version 2.3.9 Aug 19, 2019

- Fixed an issue when the Cool Data Mover is installed in a different catalog then main
- Fixed an issue with incorrect logging in the general log
- Rewrote the filter mechanism for correctly retrieving data from entities that point to the Foreign key parent.
- Added a test filter result feature. Now you can check how many records are found based on the configured filter before doing an export.
- Changed the filter attribute selection so that you can select the same attribute multiple times while building a filter.

Version 2.3.8 Aug 12st , 2019

- Fixed an issue with the delete validations of tables (views) which are created when a process exposes its process entity.
- Fixed an issue with the package definition upload whereby unused entities where not deleted from the package
- Added the feature to preserve the anonymization options during download and upload of package definitions.
- Fixed an issue with deadlocks on the monitoring during the 'down' phase of a filtered export.
- Fixed an issue with the filtered export of whereby the filtering was not correctly applied to static entities during the writing of filtered records to the files.
- Fixed an issue with the timing of export-up process in relation to the insert of filter keys.

Version 2.3.7 Aug 5st , 2019

- Fixed an issue which caused an error on the User Interface when skipping an attribute from the validation messages
- Added the feature to delete the content of the related OSEVT* tables for entities which expose their process events.
- Automatically select all FK attributes of a link table as match attributes when that table only contains FK attributes.
- Fixed an issue that caused a crash when filtering on entities with long (>25chars) names
- Added sort order to the FilterDown process
- Fixed an issue that caused a crash when the anonymization process encountered non ascii characters.
- Removed the CDM_Metamodel module

Version 2.3.6 July 29, 2019

- Fixed an issue with the CDM_Crypto extension. Replaced with CDM_CryptoServices

Version 2.3.5 July 22, 2019

- Fixed an issue with the unavailability of the unzip button for zip file in the File Explorer

Version 2.3.4 July 15, 2019

- Added support for performing moves between servers with different default locales.
- Added a feature in which a default anonymization option is selected based upon the datatype and/or name of the attribute.
- Fixed an issue with generated filter queries incorrectly being ended by a semi-colon in Oracle.

Version 2.3.3 July 8, 2019

- Fixed an issue with an index on the hashkey table on Oracle. The index is now compatible with a default block size of 8192.

Version 2.3.2 June 24, 2019

- Added the option to use binary match attributes in lookup entities
- Added support for large binaries
- Removed the 'Max rows for binaries' option
- Added the option to replace attribute content with a specified value
- Fixed an issue with showing the latest 10 imports
- Adjusted the monitoring to show the active entities on top
- Fixed an issue with determining the correct Catalog name for CDM key tables.
- Fixed an issue with checking the existence of the export directory
- Fixed an issue with empty (but not NULL) binaries.

Important:
Version 2.3.2 contains breaking changes, meaning the export must be rerun in order to correctly import the data.
*Additionally for Oracle users please make sure the database user under which the CDM connects to the database (normally OSRUNTIME) is granted **execute** rights on the packages SYS.DBMS_CRYPTO and SYS.DBMS_LOB.*

Version 2.3.1 May 15, 2019

- Added the package option to perform updates on matched records
- Added the possibility to include an environment sticker
- Added the environment acronym and made is available in the title
- Fixed an issue with performing updates on discarded import records
- Refactored the Dispatcher modules. Added the CDM_Dispatcher_BL module.

Version 2.3.0 May 9, 2019

- Unmatched lookups during import validations will now be reported in the Run tables –> Report and ignored during the import. This results in all records related to the skipped lookup being ignored and not imported to keep the data consistent.
- Login restyled
- Added binary matching to export with filters
- Added new filter option to the Import Keys overview in the Run Logs
- Added the generation of hashes during import and/or export to the monitoring
- Fixed an issue with the record counts during import/export when an entity was processes multiple times (for example inserts as well as updates)
- Denied access to the File Explorer when the Main Data Mover directory in the Environment settings does not exist
- Fixed an issue with the records counts when deleting
- Added Skipped records to the import keys in the run logs
- Added entities with a Static key to the import keys in the run logs

Version 2.2.19 May 3rd, 2019

- Improved performance of hash calculations for binary matching. Added two new package settings to prevent database overload
- Added new feature to discard records which were added to the source environment at the time the export process was running. Discarded record can be viewed in the run logs.
- Improved performance of internal data cleanup
- Fixed an issue with the generation of binary hashes on Oracle

- Remove the dependency of Charts

Version 2.2.18 April 23, 2019

- Fixed query issue with delete validation on Oracle

Version 2.2.17 April 19, 2019

- Fixed an issue with creating new packages when the initial validation failed
- Fixed an issue were matching entities without a Primary Key resulted in an error
- Added support for updating matched records
- Added new anonymization option 'Random name' which generates both male and female names

Version 2.2.16 April 12, 2019

- Added support for FKs with delete rule set to 'Ignore'.
- Added the replacement of invalid XML characters and CDDATA blocks in the values of text attributes

Version 2.2.15 April 10, 2019

- Fixed an issue with determining the actual DB-datatype of binary fields
- Added a validation for the situation that the XML-datafile couldn't be parsed because of invalid XML characters

Version 2.2.14 April 5, 2019

- Fixed some styling issues
- Added additional logging upon errors in key translation
- Fixed an issue with refreshing the entities

Version 2.2.13 March 29, 2019

- Fixed an issue in which importing an entity with a non-key autonumber attribute resulted in an error

Version 2.2.12 March 29, 2019

- Added support for the deprecated SQL-Server datatype 'Image' which was used for storage of binaries
- Removed the "Skip '..' attribute" option in the export validations for lookup tables.
- During export, ignore FK's in lookup entities which are not used as match attributes
- Fixed an issue where the generated binary hashes where truncated to 30 characters

Version 2.2.11 March 27, 2019

- Added new hidden feature to bypass match validations for special circumstances (only available by request @CoolProfs)
- Added new package validation option to automatically set a FK to skip in order to not include the referenced entity

Version 2.2.10 March 25, 2019

- Added button the check the validity of match attributes
- Added button to re-validate the package
- Added an validation to check the validity of match attributes during import. The validation checks whether the match attributes uniquely identify the records the database
- Fixed an issue with using match attributes of datatype time
- Added a check during import process. If a valid FK value can't be translated correctly the import process stops.

Version 2.2.9 March 20, 2019

- Added progress logging
- Added the 'no filter' option during exports for packages with filtering

- Removed the matching attributes for static entities since matching is performed on internal sskey or name
- Removed the matching attributes for extension entities, matching is done on the originating entity.
- Removed the CDM_QueryBuilder module from the CDM solution
- Added the option to perform matching on binary attributes for SQL Server

Version 2.2.8 March 7, 2019

- Added the Cool Data Mover favicon
- Added additional logging in the import process upon Key translation
- Fixed an issue when the attributes.cdm could not be found

Version 2.2.7 March 6, 2019

- Added Import keys to the logs
- Fixed an issue with downloading empty files in the file explorer
- Added matching of statics entities on internal ss_key and name

Version 2.2.6 February 28, 2019

- Added the internal tableViewer to the Solution
- Made the file format for the XML data files independent of the attribute order
- Fixed an issue with skipping FK's which point to text identifiers
- Fixed an issue with the anonymization of phone numbers

Version 2.2.5 February 27, 2019

- Fixed an issue with matching on FK attributes that are NULL
- Added new package parameter to limit the size of binaries to export
- During import the definitions are no longer synchronized from the MetaModel.xml
- Added option to ignore Inactive Roles, Tenants and Espaces during export
- Fixed issue with creating the initial environment

Version 2.2.4 February 26, 2019

- Fixed an issue with the transport of data. Converted the text values to binary.
- Calculated the initial capacity of StringBuilder when exporting correctly.
- Added the option to disable validation during the editing of a package
- Added the WITH (NOLOCK) option to avoid deadlocks during reads
- Added automatic setting of Match attributes for non-Lookup entities
- Optimized the memory usage of handling large binaries during export
- Added new icons

Version 2.2.3 February 21, 2019

- Fixed an import validation issue where it gave invalid query error when checking for not found lookup/static values and it holds PK text values.

Version 2.2.2 February 15, 2019

- Added the feature to use import matching
- Added validation checks on import screen before actual import
- Fixed an issue with updates during deletes of table in separate catalogues
- Added site property to regulate commit frequency in Worker
- Added storing import validations per package run
- Added row-level locking compiler hint for updates during import
- Added site property to regulate the number of rows to delete per query
- Added delete runs to the monitoring
- Visual adjustments to the Interface
- Fixed issue with the order of attributes in the export files when exporting from SQLServer to Oracle and vice versa.
- Fix issue with the progressbar when the import has got an update stage
- Fix issue with the double record count when the import has got an update stage

Version 2.2.1 February 8, 2019

- Fixed an issue where uploading a package definition move entities were incorrectly converted into lookups

- Fixed an issue with a package name exceeding 20 characters
- Added the feature of matching statics on FK attributes
- The situation that multiple matches are found for inactive statics is not considered a duplicate. The first one found is considered the match.
- The result of import validations is being written to .err files in the package directory
- Added support for Statics with non-autonumber primary keys .
- Added the Validate Only option during Import

Version 2.2.0 February 5, 2019

- Added the feature to define and use filters during export
- Fix issue with reaching the maximum number of activities in a process
- Added import validations for missing or duplicate lookup values
- Added new progress Indicators to Monitoring
- Added new parameter on Environment & Package level for the number of rows per file for entities containing binaries
- Added new module CDM_SQL_Utils
- Added the option to explicitly change an entity from Move to Lookup and vice versa
- Added message on screen when for a lookup entity no match attributes are defined
- Added the feature to use Foreign Keys (to Lookup entities) as lookup attribute
- During export without filter, only the lookup records to which actually is being referred to are exported.
- System entities are initially added as Lookup
- Prevented systems entities to be changed to Move entities (excluding User, User_Role, Group, Group_Role and Group_User)
- Prevented records from system entites to be deleted. The CDM will never delete records from system entities.
- Added support for SQL Server 2008 R2
- Added the menu option to access the CDM File Explorer

Version 2.1.5 January 11, 2019

- Fix: Retrieve generated identify in MSSQL by using SCOPE_IDENTIFY() in CDM_SQL to avoid crash when the table has got active triggers and an OUTPUT INSERTED clause.
- Show referenced attribute when hoovering over an FK attribute

- Show attribute details when hoovering over an attribute
- Fixed issue where errors during export did not appear in the monitoring
- Fixed issue where in a select statement the apostrophs where missing for text attributes during export
- Fixed issue with saving the environment settings for the first time

Version 2.1.4 January 2, 2019

- Fix: Removed obsolete hardcoded license check in ImportXML module
- Show referenced table when hoovering over an FK attribute

Version 2.1.3 December 17, 2018

- Added the version number in the header
- Removed obsolete filter settings
- Removed obsolete export timer setting
- Removed old screens and webblock from the CDM_Filter_CS module
- Added the custom anonimisation option

Version 2.1.2 December 2018

- Replace the CMD separator ([CDM]) with an underscore in the export files for all text and email fields
- File size and time in CDM_Files
- Prefixed file sequenceNrs with zero's
- Added environment setting for HTTP/HTTPS
- Added package export setting for HTTP/HTTPS
- Removed all SSL from Flows, WebServices
- Fixed initial capacity bug (being 0) in StringBuilder
- Added customAnonimisation eSpace (not yet configurable via GUI)

Version 2.1.1 November 2018

- Parallele exports using Light BPT
- Export Monitoring

- Fix: Remove UNC-credentials for non-UNC
- Package definition download and upload

  Download = Generate MetaModel.xml + download

  Upload   = Upload van MetaModel.xml + Sync
- Download files in all subdirecorties (recursive) as zip
- Introduction of the main data mover directory
- CDM_Files only available for main data mover directory