

Cloudbridge DM Batching and Non-Batching

Technical Guide

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# 1. Overview

This section provides a high-level summary of the recent ETL process enhancement, highlighting both Batching and Non-Batching approaches.

## 1.1. Batching

## Batching, within the context of ETL (Extract, Transform, Load), involves collecting and processing data in chunks or batches rather than individually. This optimization enhances processing efficiency and resource utilization. The efficiency gains arise from reduced overhead associated with transactional operations when dealing with records collectively. Additionally, batching is crucial for managing substantial data volumes, allowing for parallel processing and horizontal scalability to accommodate increased data loads.

## 1.2. Non-Batching

"Non-Batching" describes a data processing method wherein individual records are processed one at a time without being grouped into batches. This implies that each record undergoes independent extraction, transformation, and loading, rather than being part of a larger collection. For scenarios with relatively small data volumes and manageable overhead in processing individual records, a non-batching approach may suffice.

# Design Flow

This section outlines the Design Flow Diagram of Maximise DM Batching and Non-Batching process, illustrating how the data is displayed according to the provided input.

A diagram of a flowchart

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# Configuration

The following configurations must be set up for both Batching and Non-Batching.

## 3.1. Batching

* Verify that Batch\_Load column is ‘Y’ in the **XXMX\_MIGRATION\_METADATA**  table.
* For Finance, the details regarding batching can be located in the **LOAD\_BATCH** column of both the STG and XFM tables.
* Whereas for HCM, the details regarding batching can be located in the **BATCH\_NAME** column of both the STG and XFM tables.
* Ensure that the **COMMON\_LOAD\_COLUMN** in the **XXMX\_XFM\_TABLES** is updated for the corresponding business entity and sub-entity.
* Utilize the **Lookup\_Data\_Migration\_Extracts** OIC lookup to specify the desired batch count of records in the extract\_batch\_count field for extracting data in batches.
* Ensure that the below tables are populated.
* XXMX\_STG\_TABLES
* XXMX\_STG\_TABLE\_COLUMNS
* XXMX\_XFM\_TABLES
* XXMX\_XFM\_TABLE\_COLUMNS

## 3.2. Non-Batching

* Verify that Batch\_Load column is ‘N’ in the **XXMX\_MIGRATION\_METADATA** table.
* Ensure that the below tables are populated.
* XXMX\_STG\_TABLES
* XXMX\_STG\_TABLE\_COLUMNS
* XXMX\_XFM\_TABLES
* XXMX\_XFM\_TABLE\_COLUMNS

# Technical Specification

This section outlines the technical specifications for batching and non-batching.

# 4.1. Batching

## 4.1.1. Extract

During the extraction phase, batching for the extraction process is enabled and initiated if **BATCH\_FLAG** is set to 'Y' based on the data from **xxmx\_migration\_metadata** for the corresponding Business Entity and Sub entity.

* The extraction process triggers **xxmx\_utilities\_pkg.batch\_extract\_data**, considering parameters such as the application suite, business entity, sub-entity, batch count, and phase. After the extraction is completed and data being transferred to STG tables.
* To determine the desired batch count of records for extracting data in batches, the batch count is retrieved from the OIC lookup named **Lookup\_Data\_Migration\_Extracts**, specifically from the extract\_batch\_count field.
* The process checks the sub\_entity\_sequence from the xxmx\_migration\_metadata table and checks whether sub\_entity\_seq1 is batched or not.
* If the flag is set to ‘Y’, it batches the sub\_entity\_seq1.
* Once the batches are completed for the sub\_entity\_seq, Load\_batch column for finance and Batch\_name column for HCM will be updated with batches.
* If sub\_entity\_seq1 is batched, it then batches the remaining sub\_entity\_sequences.
* If sub\_entity\_seq1 is not batched, an exception is thrown in the xxmx\_module\_message table, indicating that batching must be completed for sub\_entity\_seq1 before proceeding further. Until this is done, further batching cannot be done.
* The table below provides a list of tables, procedures, and description for each detailing their functionalities.

|  |  |
| --- | --- |
| Key | Description |
| BATCH\_EXTRACT\_DATA | This procedure handles the batching of extracted data. |
| XXMX\_DM\_FILE\_BATCH | This table stores information such as the table name, batch name, batch column, and sequence batch of the sub\_entity\_sequence. |
| XXMX\_MIGRATION\_METADATA | Table holds details of Business Entity and Sub Entity. Extract packages, Staging, Transformation and External Tables. Client can enable and disable any business entity or sub entity for Extract, Transform or Load. |
| XXMX\_MODULE\_MESSAGES | This table has log messages for each phase – Extract, Transform and Load |
| XXMX\_UTILITIES\_PKG | Maximise Core utility package |
| XXMX\_DYNAMIC\_SQL\_PKG | Maximise Package for Transformation, Extract and Load |
| XXMX\_FIN\_STG\_EXTRACT\_PKG | Maximise Generic Package for Finance Extract and Transformation. |
| XXMX\_HCM\_STG\_EXTRACT\_PKG | Maximise Generic Package for HCM Extract and Transformation. |
| XXMX\_FUSION\_LOAD\_GEN\_PKG | Maximise Generic Package for Load file generation. |
| LOAD\_BATCH | This column holds the batched records for Finance. |
| BATCH\_NAME | This column holds the batched records for Finance. |

## 4.1.2. Transform

The Transform approach remains consistent, with data being moved from STG to XFM through transform routines in alignment with the batching processes carried out during the extract phase.

## 4.1.3. Load

Following the completion of the extract and transform stages, the subsequent phase entails batching for the load process.

1. Integration to populate load data in the XXMX\_CSV\_FILE\_TEMP/XXMX\_HDL\_FILE\_TEMP

**INTDM999004 Data Migration Load File Generation V2**

1. Once the Integration run is completed, go, and check the below table.
2. Table to check the load status :
   1. **XXMX\_LOADFILE\_STATUS\_LOG**
      1. Status : R means Load data is generated in the temp tables and is ready to generate the file.
      2. Status : I means that record is being processed and is in progress. If this does not change to G, even after half an hour, probably it might have errored. Please check the tracking instance for the error details.
      3. Status : G means Load data file is generated in the dB server and is ready to be moved from DB server to FTP server.
      4. Status : Z means zipping of the file is in progress.
      5. Status : C means Load data file is moved to the FTP server and same can be checked in the business entity folder.
3. Below are the two scheduled integration which run in every 15 minutes:
   1. Below Integration will check the **R status** in status log table and process further.
      1. **INTDM999015 DM Write Load File to DB Server:** Writes the Load data populated in database table into DB server as a Zip file.
   2. Below Integration will check the **G status** in status log table and process further.
      1. **INTDM999017 Moves Load File from DB Server to FTP:** Moves Load File which is generated in DB server to FileZilla.
4. Once, the status is C, which means load is completed and file can be checked in FTP server in the business entity folder.

# 4.2. Non-Batching

## 4.2.1. Extract

The non-batching process mirrors the approach used in the previous version of Maximise, where no batching procedures are invoked in this exception case. In this scenario, the Load\_Batch column for finance and Batch\_Name column for HCM are left null, indicating the absence of created batches. Consequently, files are then visible in a sequential single-file format within the FTP folder.

## 4.2.2. Transform

The Transform approach remains consistent, with data being moved from STG to XFM through transform routines in alignment with the non-batching processes carried out during the extract phase.

## 4.2.3. Load

# 4. Batching and Non-Batching Snippets

* The Batching process for Fixed Assets appears as follow in a sequential order of batches shown below.

A screenshot of a computer

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* The Non-Batching process for Supplier Site Assignments is represented below in a sequential single-file format.

A white screen with black text

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