

## QuickStart Guide 3 - Matching

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This document provides an overview and Step-by-Step implementation instructions for the clearMDM Matching MDM operation.

The document Appendices also provide additional reference materials.

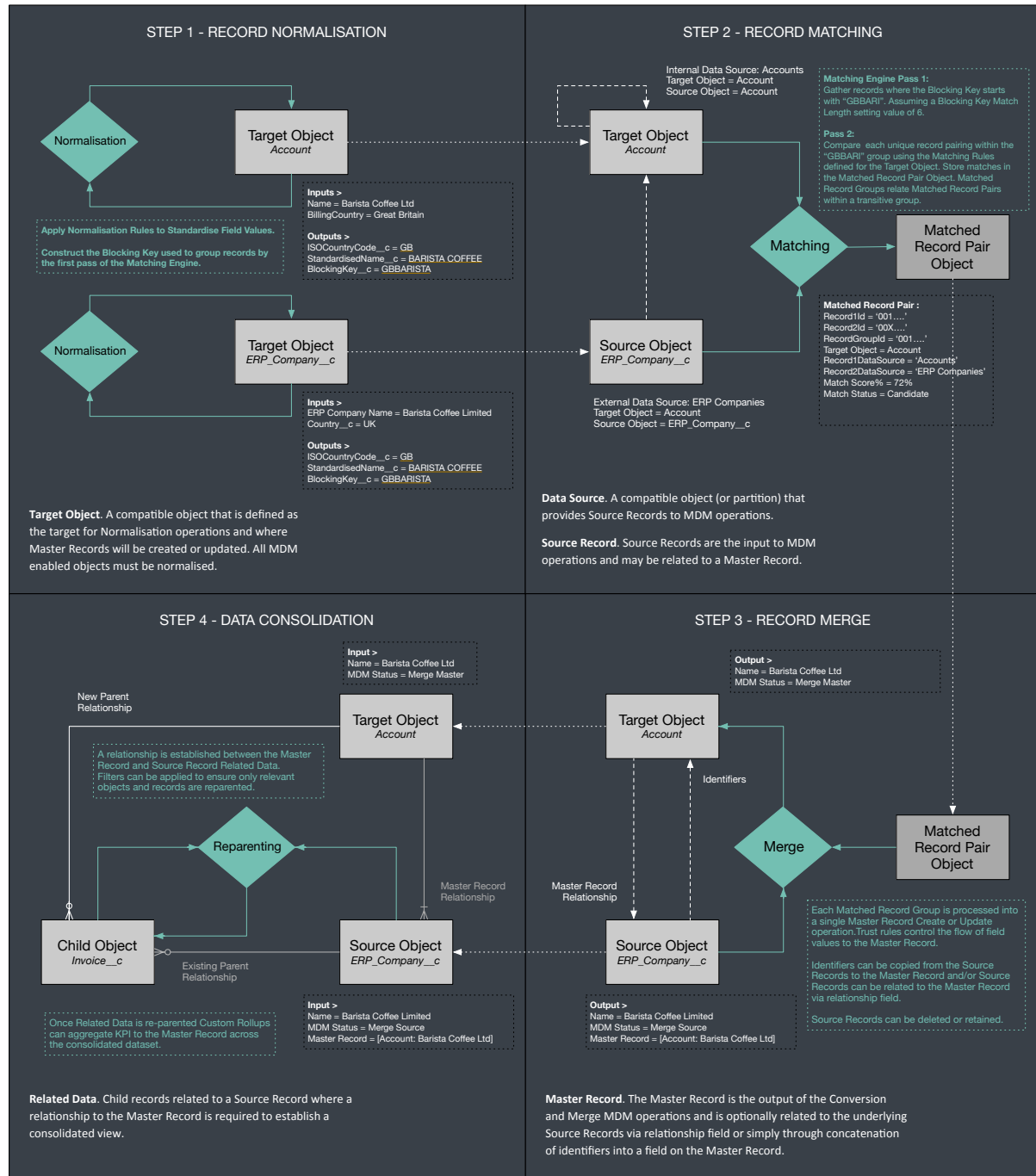
For practitioner guidance in respect to the implementation of clearMDM please refer to the Implementation Model documentation provided on the website, or upon request.

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## MDM Process Overview

The diagram below provides an overview of the core MDM operations in sequence. This document relates to STEP2 – RECORD MATCHING.



## Matching Introduction

### Definition

Record Matching is the process of identifying potential duplicate records within the Salesforce dataset. In summary, the Matching MDM operation applies Matching Rules (Fuzzy, Exact, Key etc.) to identify groupings where each record has a common **Blocking Key Match Value**. Within a given record grouping every record is matched against every other record (i.e. the Cartesian product) by **Matching Rules** and a matching score is calculated for each record pair. If the matching score for a given pair of records is above the matching threshold setting value (for the Target Object), then a **Matched Record Pair** record (MatchedRecordPair\_\_c) is created with the Match Status set to “Candidate”. If the matching score for a given pair of records is above the auto-accept threshold setting value (for the Target Object), then a **Matched Record Pair** record is created with the Match Status set to “Accepted”. **Matching Record Groups** are created where multiple records for the same Blocking Key Match Value match in a transitive manner, i.e. record A matches to B and record B matches to record C; the resultant **Matched Record Group** will contain both **Matched Record Pairs**. The RecordGroupId\_\_c field on MatchedRecordPair\_\_c object is populated with the Matched Record Group Id. The Merge MDM operation processes each individual **Matched Record Group** into either a **Master Record** create or update operation; **Matched Record Groups** that contain “Candidate” status **Matched Record Pairs** are skipped; such groups require stewarding before merge processing.

For further information in relation to the **Blocking Key** and related concepts please refer to the document *clearMDM – QuickStart Guide 2 – Normalisation*.

### Key Concepts

Concept	Definition
Target Objects	<p>A compatible object that is defined as the target for Matching operations and where Master Records will be created or updated. Account, Contact, Lead Standard Objects are typically configured as Target Objects, where duplicate records may exist directly in the object or indirectly in a separate object.</p> <p>A broad range of <b>Standard Objects</b> (including Person Accounts) are supported as both Target Objects and Data Sources. <b>Custom Objects</b> are also supported.</p>
Data Sources	<p>A compatible object that provides data to MDM operations. Each Data Source has a Source Object and a Target Object setting.</p> <p>Internal Data Sources expose data held in the Target Object. <b>Data Source (Account) &gt; Target Object (Account)</b></p> <p>External Data Sources expose data held in a different object. <b>Data Source (ERP Companies) &gt; Target Object (Account)</b></p> <p><b>Partition Data Sources</b> enable a single object to support multiple Data Sources with distinct settings. Partition Data Sources are typically used to group records relating to an external system (e.g. SAP, Sage X3) or to isolate records at different quality grades (e.g. High, Medium and Low).</p>

	<p><b>Master Record Data Sources</b> allow Master Records to be exposed to MDM operations via a distinct Data Source with appropriate settings such as elevated merge field priorities. A Master Record Partition data source is implemented as a partition data source that references the record MDM status value.</p> <p><b>Check-only Data Sources</b> support cross-object matching between standard objects. The primary use case for Check Only Data Sources is duplicate checking across Leads, Contacts and/or Person Accounts. For example, Lead creation (file import, UI data entry etc.) can be blocked where the Lead matches to an existing Contact.</p>
Master Records	<p>The <b>Master Record</b> is the output of MDM processing and is optionally related to the underlying Source Records (or duplicates) via relationship field or simply through the concatenation of record identifiers into a field on the Master Record.</p> <p>Most typically a Master Record is a de-duplicated Account, Person Account, Contact or Lead record enriched with data from its related Source Records.</p> <p><b>Where Source Records (or duplicates) are not removed, it is typical to use the Salesforce sharing model to restrict Salesforce end-user record access to Master Records exclusively.</b></p>
Source Records	<p><b>Source Records</b> are the input to MDM operations and may be related to a Master Record. Source Records can be retained (persistent model) or deleted (transient model). Source Records can be considered as the underlying duplicates that are often hidden from view for Salesforce end-users or deleted entirely once processed.</p>
Matching Settings	<p>Matching is configured per Target Object on the Target Object Settings page and also at the Data Source level on the Data Source settings page.</p> <p>A setting by setting definition for the Matching Settings is provided in <a href="#">Appendix A</a>.</p>
Matched State	<p>A given Source Record is either exposed to the Matching Engine or not.</p> <p>The <b>[Is Active for Matching?]</b> field (record-level flag) is typically configured to express this key activation state value.</p> <p>The Matching MDM operation will set the flag to False on completion, unless Auto Matching is applied (where the record-level flag is ignored). Where Auto Matching is not used the record-level flag is used to isolate records that require matching, i.e. only records where the flag is true are processed.</p> <p>clearMDM can be configured ("Check Matching State on Save?") to manage the flag value; record modifications are evaluated to determine whether a Matching significant change has occurred, i.e. any field referenced in the</p>

	<p>settings or rule definitions has changed. If such a change occurs the flag is set to True, i.e. the record has changed materially and requires either re-Matching or Synchronisation.</p>
Blocking Key Match Value	<p>The <b>Blocking Key</b> is constructed from characters taken from up to 3 input fields – the selected fields must have a high population percentage, be static data i.e. not subject to frequent change (non-volatile) and in combination cover no more than approximately 250 records across the dataset. The Blocking Key is populated by the Normalisation MDM operation.</p> <p>The <b>Blocking Key Match Value</b> is a defined subset of the full <b>Blocking Key</b> populated by the Normalisation MDM operation. The number of characters used controls the selectivity of the matching behaviour.</p> <p>The Blocking Key Match Value (or Matching Key) provides the initial grouping of records to which Matching Rules are applied.</p> <p>For example;          Blocking Key = GBFEDEXSW          Blocking Key Match Value Length = 5          Blocking Key Match Value = GBFED</p> <p>In the above case, records only require the first 5 characters to be common, enabling matching between records that have GBFEDEXSW and GBFEDCONE blocking keys – for example. Where the GBFED group size exceeds the configured processing limit, additional characters will be added to create sub-groupings i.e. GBFEDE and GBFEDC. Auto-adjustment of this type can be applied automatically by the Matching engine and requires the full Blocking Length to be greater than the Blocking Key Match Value Length.</p> <p>Records without a complete Blocking Key are not matched at all, records must share a common Blocking Key Match Value to be matched together; the Blocking Key structure is therefore a critical decision point when configuring clearMDM that requires understanding of the population characteristics of the target dataset.</p>
Matching Algorithm	<p><b>Phase 1: Blocking Key Match Value</b></p> <ul style="list-style-type: none"> <li>Group Source Records by Blocking Key Match Value (BKMV) – where the Data Source setting <b>[Auto Match Records?]</b>=True, or the record-level flag <b>[Is Active for Matching?]</b>=True.</li> <li>For each BKMV add Master Records where the Data Source setting <b>[Master Record Active for Matching?]</b>=True.</li> </ul> <p><b>Phase 2: Matching Rules</b></p> <ul style="list-style-type: none"> <li>For each BKMV group attempt to match together each distinct pairing of records (Cartesian product).</li> <li>Where the Match Score is above the configured Match Score % create a <b>MatchedRecordPair__c</b> record at “Candidate” or “Accepted” status.</li> <li>Structure the <b>MatchedRecordPair__c</b> records into Matched Record Groups via the RecordGroupId__c field, where a</li> </ul>

	<p>transitive relationship exists. <b>Note, a single Source Record can exist in one Matched Record Group only.</b></p> <ul style="list-style-type: none"> <li>Reset the <b>[Is Active for Matching?]</b> flag to False, if the Data Source setting <b>[Auto Match Records?]=False.</b></li> <li>Set the record level <b>MDM Status</b> field to “Matched” or “No Match” depending on whether matches have been identified for the record – finally update the <b>Last Matching Date</b> field.</li> </ul> <p><b>Note, Source Records with a completely unique Blocking Key Match Value are skipped by the Matching Engine and will retain a blank MDM Status.</b></p>
Matching Rules	<p>Matching Rules take an input field, apply a rule and calculate a direct outcome (Key Match or Deterministic Fail) or field-level fuzzy score. Field-level fuzzy scores are aggregated to the record level to determine the record level matching score against which the configured score threshold is compared to determine the match outcome (Match=Candidate, Match=Auto Accepted, No Match).</p> <p>The supported Matching Rule types are defined in the following subsection.</p>
Matching Results	<p>Each matched record pair is recorded in the <b>MatchedRecordPair__c</b> object.</p> <p>For each record the following attributes are stored:</p> <ul style="list-style-type: none"> <li>Record 1 Id + Name + Data Source</li> <li>Record 2 Id + Name + Data Source</li> <li>Target Object</li> <li>Threshold Match Score %</li> <li>Actual Match Score %</li> <li>Match Status (Candidate, Rejected, Accepted)</li> <li>Blocking Key Match Value</li> <li>Match Data (Field by Field Score Calculations)</li> <li>Record Group Id (Matched Record Group)</li> </ul> <p>The Merge MDM operation processes each Matched Record Group into either a <b>Master Record</b> create or update operation. However, Matched Record Groups that contain “Candidate” status pairings will be skipped. It is therefore a key <b>Data Stewarding</b> requirement that Candidate matches are reviewed and either Accepted or Rejected in order for the group to be processed. Auto-acceptance settings provide control over the level of manual intervention required.</p>
Auto Acceptance	<p>To provide control over the level of effort required for manual Data Stewarding, auto-acceptance can be implemented. A second (higher) threshold score % is defined, Matched Record Pairs that score above this level will be set to Accepted (rather than Candidate).</p> <p>In the example below, matches above 65% and below 75% will require manual data stewarding.</p> <p>Fuzzy Match Threshold % = 65%</p>

	Auto Accept Match Threshold % = 75%
Match Rejection	The record Id pairing within <b>Matched Record Pairs</b> that are explicitly set to the status "Rejected" are recorded in the <b>RejectedRecordPair__c</b> object. This object is referenced by the Matching Engine to ensure the pairing is not matched again.
Internal Matching	<p>In cases where a large volume of existing records must be processed (in excess of 1 million) a specialised matching job is provided that can scale to 50 million records in a single operation. The Internal Matching job must be run with a process count equal to 1 at record levels beyond 1 million.</p> <p>Internal Matching references the internal Data Source settings for the given Target Object; external and partition data sources are ignored. Cross-object matching is also not implemented.</p>

## Matching Rule Types

Matching Rules are defined **per-field** on the Target Object and applied one-at-a-time to each record pair comparison for a given Blocking Key Match Value.

Matching Rules are evaluated individually and return one of the following outcomes;

- 1) The Record Pairing is confirmed as a **Match** (due to a commonality of field values for a particularly discriminating field such as Social Security Number or Mobile Phone Number).
- 2) The Record Pairing is confirmed as a **No Match** (due to the absence of commonality of a required field value across both records, for example Gender).
- 3) A Field Level Score is returned and added to the Record Level Match Score.

The supported rule types are outlined in the table below.

Rule Type	Order	Definition
Key	1	<p>If the two field values (on the record pair) are equal then the record pairing is deemed to be Key match at 100%.</p> <p>Key rules can be used on single fields or formula fields that concatenate a number of inputs to return a Key Matching Value upon which a Key rule is applied.</p> <p>Key rules run before Deterministic and Fuzzy rules.</p> <p>Note, where field values contains a pipe ( ) delimited list then matching will be applied to each individual value.</p>
Deterministic	2	If the two field values (on the record pair) are not equal then the record pairing is deemed to be a Non-match.

		<p>Deterministic rules provide a means to rule-out matches before the application of Fuzzy rules.</p> <p>Gender is often a good example for the Deterministic rule type.</p>
Fuzzy	3	<p>The two field values (on the record pair) are evaluated through the Edit distance algorithm to determine a field-level matching score which is a % of the Max Field Score setting based on the number of edit operations required to align the values from the total possible operations. Where one or both values are blank the Null Field Score setting value is returned.</p> <p>The field-level fuzzy (and exact) matching scores are aggregated to the record-level to return an overall record matching score for the record pair.</p>
Exact	3	<p>The two field values (on the record pair) are evaluated for an exact match, where this is the case the Max Field Score setting is returned. Where one or both values are blank the Null Field Score setting value is returned.</p>
Ignore	0	<p>Fields that are relevant to Merge but have no Matching significance should be set with the Ignore type. Conversely fields that are Matching significant but must not be merged are should be set with the “Matching Only?” flag equal to True.</p>

## Matching Methods

The table below outlines the supported methods for invocation of the Matching MDM Operation. Setting references refer to the Target Object Matching settings.

Method	Definition
Batch Job	<p>The clearMDM Jobs page can be used to schedule the Matching MDM operation to run for a given Target Object immediately or on a scheduled basis.</p> <p>The <b>[Auto Match Records?]</b> Data Source setting controls whether all records are matched, irrespective of Matched State, or whether just records that require matching are processed.</p> <p>Where a daily batch processing model is implemented for MDM processing, the Matching MDM operation will typically be the third job and will invoke the next job in the sequence using the job chaining Target Object settings e.g. Merge Settings section, <b>[Is Invoked by Matching Job?]</b> flag.</p> <p>In addition to the standard Matching job, a second matching job named “<b>Internal Matching</b>” can be enabled (via Target Object Matching Settings). This job is intended for processing large data volumes (multiple million records) during initial migration and is limited to processing records in a single object only. This job applies the internal Data Source settings for the specific Target Object only, partition Data Sources are ignored. Note, the process count for this</p>



	<p>job must be set to 1 at record volumes greater than 1 million. Cross-object matching rules are not processed by the Internal Matching job.</p>
On Record Create	<p>Records can be Matched on creation to prevent creation of duplicate records.</p> <p>This method requires the <b>[Check for Matches on Record Creation?]</b> Target Object setting to be set to <b>True</b> and the Application Settings – <b>[Is Triggers Active?]</b> setting to be set to <b>True</b> also.</p> <p>This behaviour can be bypassed for specific field conditions or user profiles.</p>
On Record Save	<p>Records can be Matched on save to prevent creation of a duplicate via record modification.</p> <p>This method requires the field specified by the <b>[Matching Check on Save Field Name]</b> Target Object setting to be set to <b>True</b> on each record and the Application Settings – <b>[Is Triggers Active?]</b> setting to be set to <b>True</b>.</p> <p>This behaviour can be bypassed for specific field conditions or user profiles.</p>
Action	<p>Records can be Matched by Process Builder as part of a custom process automation.</p> <p>To configure a Process Builder Action for this purpose, add an Action with properties set as below.</p> <ol style="list-style-type: none"> <li>1. Action Type = Apex</li> <li>2. Apex Class = "Match Records Action"</li> <li>3. Record ID parameter = Reference [Object Id field].</li> </ol> <p>The Action can also be implemented within a Visual Workflow (or Flow).</p>
API	<p>Records can be Matched by a custom action exposed via the standard Force.com REST API; endpoint below.</p> <pre>/services/data/vXX.0/actions/custom/apex/clearmdm__RecordMatchingAction</pre> <p>The API operation takes a single recordId parameter. Further details can be found in the clearMDM API Guide.</p> <p>A second API operation "Quick Matching" extends point-of-entry checking out to external systems in a distributed MDM model.</p> <pre>/services/apexrest/clearmdm/1.0/QuickMatching</pre> <p>The API operation takes record attributes such as Name and Address to enable matching plus the list of fields to return on matched results.</p> <p>Further details can be found in the <i>clearMDM API Guide</i>.</p>
UI	<p>Record Matching can be applied manually via the 2 pages below.</p> <p><b>FindMatches</b></p>

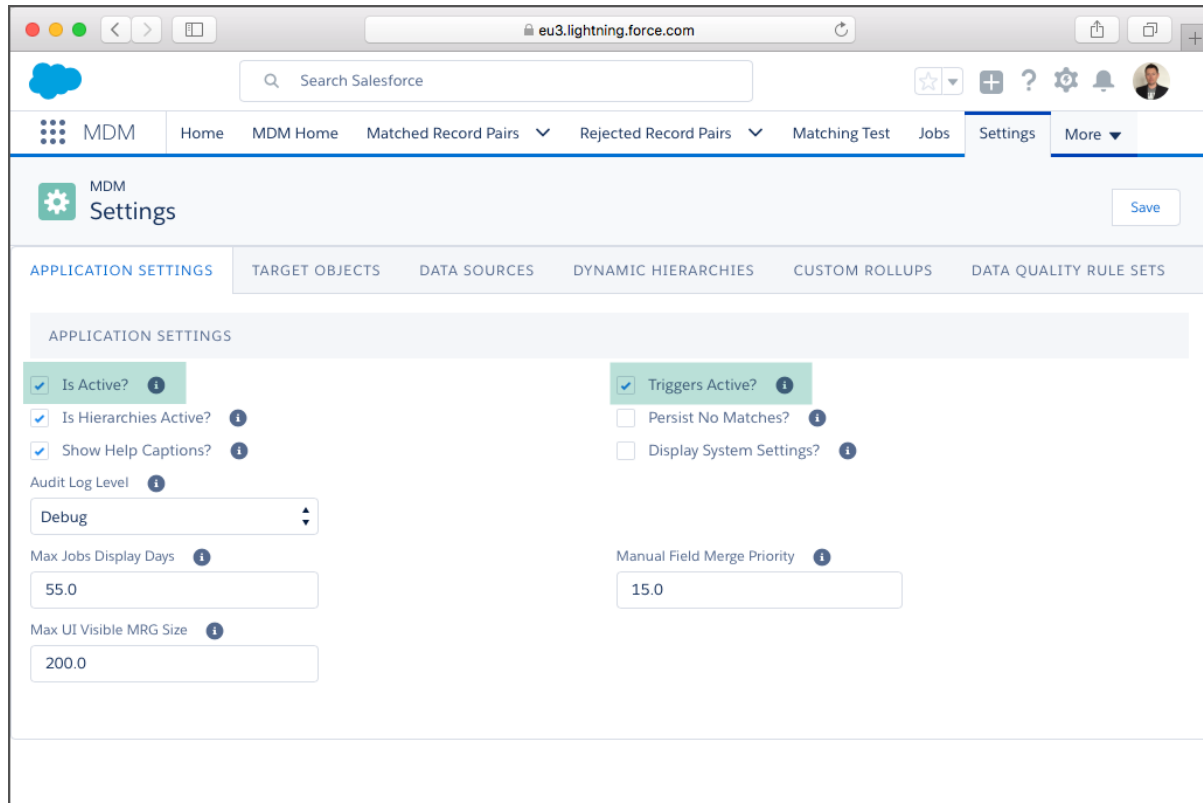
	<p>The “Find Matches” page is invoked via Url with the format below. The clearMDM packaged layouts for Account, Contact and Lead contain Custom Buttons for convenient access.</p> <p><code>/apex/FindMatches?id=[recordId]</code></p> <p>The Find Matches page supports 2 real-time search scenarios:</p> <ol style="list-style-type: none"> <li>1. “Find”: Find matches that are a direct match to the given record.</li> <li>2. “Find All”: Find all matches for the given record’s Blocking Key Match Value.</li> </ol> <p>Matching results can be manually saved as <b>Matched Record Pairs</b> within <b>Matched Record Groups</b>. Such groups will be processed by the next Merge MDM operation job or can be manually merged via the Merge page.</p> <p><b>Matching Test</b>  The “Matching Test” page is accessed via a tab in the MDM app. A record search can be performed (across data sources) using a compound field filter. Two records from the search results can be selected and compared using the current matching settings for the Target Object. The Matching Test page allows the settings to experimented with using exemplar records; refined settings can be applied directly to the Target Object settings. The two selected records can also be manually merged irrespective of the Blocking Key commonality or matching score.</p>

## Step 1 – Configure Application Settings

Pre-requisite: clearMDM must be set to Active via the Application Settings page.

Pre-requisite: clearMDM must be set with Triggers Active via the Application Settings page.

To complete this step, first navigate to the MDM App, open the Settings tab, tick the two fields highlighted below and click the Save button.



The screenshot shows the Salesforce MDM Settings page. The 'APPLICATION SETTINGS' tab is selected. The 'Is Active?' and 'Triggers Active?' checkboxes are highlighted in green. The 'Save' button is visible in the top right corner. The page also includes a search bar, navigation tabs, and various configuration options.

Setting	Value
Is Active?	<input checked="" type="checkbox"/>
Is Hierarchies Active?	<input checked="" type="checkbox"/>
Show Help Captions?	<input checked="" type="checkbox"/>
Audit Log Level	Debug
Max Jobs Display Days	55.0
Max UI Visible MRG Size	200.0
Triggers Active?	<input checked="" type="checkbox"/>
Persist No Matches?	<input type="checkbox"/>
Display System Settings?	<input type="checkbox"/>
Manual Field Merge Priority	15.0

## Step 2 – Activate the Target Object for Matching

To complete this step, first navigate to the MDM App, open the Settings tab, select the Target Objects tab and click the Edit link next to the required Target Object. Note, for Lightning Experience the Edit menu is accessible via the Dropdown menu in the rightmost table column.

Next, set the [Is Active?] flag equal to true in the Matching Settings section (or Matching Settings tab in Lightning Experience) and ensure the relevant settings are configured correctly. [Appendix A](#) provides a Settings reference. Click Save to store the changes.

The screenshot shows the Salesforce MDM interface. The browser address bar is 'eu3.lightning.force.com'. The top navigation bar includes 'MDM', 'Home', 'MDM Home', 'Matched Record Pairs', 'Rejected Record Pairs', 'Matching Test', 'Jobs', 'Settings', and 'More'. The 'Settings' tab is active, showing 'TARGET OBJECT SETTING' for 'Person Account'. Below this is a 'Save', 'Delete', and 'Cancel' button bar. A note states: 'Target Object settings control the behaviour of normalisation, matching, merge and conversion operations. Hover the mouse over each field to view field-specific inline help. Please note - all related Data Sources must be reviewed and re-saved whenever Target Object field settings are modified.'

The 'Target Object' dropdown is set to 'Person Account'. Below this are tabs for 'NORMALISATION SETTINGS', 'DATA QUALITY SETTINGS', 'SYNCHRONISATION SETTINGS', 'MATCHING SETTINGS' (which is selected), 'MERGE SETTINGS', and 'CONVERSION SETTINGS'.

**Matching Settings**

- ☒ Is Active? ⓘ
- ☐ Check for Matches on Record Creation? ⓘ
- Matching Check On Save Field Name ⓘ: Matching on Save?
- Blocking Key Match Length ⓘ: 5
- Fuzzy Match Threshold % ⓘ: 65.0 %
- Matching Manager Apex Class Name ⓘ: StandardMatchingManager
- ☐ Is Internal Matching Active? ⓘ
- ☒ Auto Adjust Blocking Key Match Value? ⓘ
- Matching Check Override Field Name ⓘ: -- Select --
- Date Matching Tolerance ⓘ: 0

**Auto Accept Behaviour**

- ☒ Auto Accept Matches? ⓘ
- Auto Accept Match Threshold % ⓘ: 75.0 %

**Batch Job Chaining**

- ☐ Is Invoked by Normalisation Job? ⓘ
- ☐ Is Invoked by Synchronisation Job? ⓘ

## Step 3 – Configure Matching Rules

To complete this step, first navigate to the MDM App, open the Settings tab, select the Target Objects tab and click the Edit link next to the required Target Object. Note, for Lightning Experience the Edit menu is accessible via the Dropdown menu in the rightmost table column. On the Target Object settings page click the Fields tab.

Next, set the [Is Active?] flag equal to true next to the relevant field and select the required Matching Rule type (e.g. Key). For the Fuzzy and Exact rule types a Max Score and Null Score value must be entered.

Finally click the Save button.

Target Object Setting  
Person Account

Target Object settings control the behaviour of normalisation, matching, merge and conversion operations. Hover the mouse over each field to view field-specific inline help. Please note - all related Data Sources must be reviewed and re-saved whenever Target Object field settings are modified.

Target Object  
Person Account

NORMALISATION SETTINGS DATA QUALITY SETTINGS SYNCHRONISATION SETTINGS MATCHING SETTINGS MERGE SETTINGS CONVERSION SETTINGS REPARING SETTINGS FIELDS

Please specify the behaviour of the fields on the target object.

TARGET FIELD	DISPLAY #	DEFAULT?	OVERRIDE	ACTIVE?	MATCH TYPE	MAX SCORE	NULL SCORE	NORMALISED?	RULE TYPE	REFERENCE SETTING	LOOKUP FIELD	REFERENCE FIELD	TARGET FIELD
Account Description	-- Nor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-- None			<input type="checkbox"/>	-- Nor	-- None --	-- Select --	-- Select --	-- Select --
Account Fax	-- Nor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-- None			<input type="checkbox"/>	-- Nor	-- None --	-- Select --	-- Select --	-- Select --
Account Phone	-- Nor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-- None			<input type="checkbox"/>	-- Nor	-- None --	-- Select --	-- Select --	-- Select --
Account Source	-- Nor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-- None			<input type="checkbox"/>	-- Nor	-- None --	-- Select --	-- Select --	-- Select --
Account Type	-- Nor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-- None			<input type="checkbox"/>	-- Nor	-- None --	-- Select --	-- Select --	-- Select --
Address Quality Score	-- Nor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Ignore								
Address Quality Status	-- Nor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-- None			<input type="checkbox"/>	-- Nor	-- None --	-- Select --	-- Select --	-- Select --
Annual Revenue	-- Nor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Ignore								
Assistant	-- Nor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-- None			<input type="checkbox"/>	-- Nor	-- None --	-- Select --	-- Select --	-- Select --
Asst. Phone	-- Nor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-- None			<input type="checkbox"/>	-- Nor	-- None --	-- Select --	-- Select --	-- Select --
Billing City	-- Nor	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Fuzzy	30	15	<input type="checkbox"/>	-- Nor	-- None --	-- Select --	-- Select --	-- Select --
Billing Country	-- Nor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-- None			<input type="checkbox"/>	-- Nor	-- None --	-- Select --	-- Select --	-- Select --
Billing Geocode Accuracy	-- Nor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-- None			<input type="checkbox"/>	-- Nor	-- None --	-- Select --	-- Select --	-- Select --

## Step 4 – Activate the Data Source for Matching

To complete this step, first navigate to the MDM App, open the Settings tab, select the Data Sources tab and click the Edit link next to the required Data Source. Note, for Lightning Experience the Edit menu is accessible via the Dropdown menu in the rightmost table column.

Next, set the [Is Active?] flags equal to true in the Data Source Settings and Matching Settings sections (or tabs in Lightning Experience) and ensure the relevant settings are configured correctly. Click Save to store the changes.

[Appendix A](#) provides a Settings reference.

The screenshot shows the Salesforce MDM Settings page for the 'PersonAccount' data source. The page is titled 'DATA SOURCE SETTING PersonAccount' and includes a 'Save' button. Below the title, there is a descriptive text: 'An external data source defines a source object to target object mapping, field mappings must be specified. For each object an internal data source can be defined to enable object records to be processed by matching and merging logic. Hover the mouse over each field to view field-specific inline help.'

The settings are organized into several sections:

- DATA SOURCE SETTINGS** (Active):
  - Name: PersonAccount
  - ☒ Is Active? (highlighted in green)
  - ☐ Is Active for Synchronisation?
  - Target SObject Type: Person Account
  - MDM Status Field Name: MDM Status
- MATCHING SETTINGS** (Inactive):
  - ☐ Is External?
  - Source SObject Type: -- Select --
- REPARING SETTINGS** (Inactive):
  - Is Active For Reparenting Field Name: Is Active for Reparenting?
  - ☐ Reset Reparenting Flag?
- PARTITIONING** (Inactive):
  - ☐ Is Partition?
  - Partition Field Name: -- Select --
  - Partition Field Value:

The screenshot shows the CLEARMDM web application interface. The browser address bar displays 'eu3.lightning.force.com'. The top navigation bar includes a search bar and a user profile icon. The main navigation menu has tabs for 'MDM', 'Home', 'MDM Home', 'Matched Record Pairs', 'Rejected Record Pairs', 'Matching Test', 'Jobs', 'Settings', and 'More'. The 'Settings' tab is active, showing the 'DATA SOURCE SETTING' for 'PersonAccount'. Below this, a descriptive text states: 'An external data source defines a source object to target object mapping, field mappings must be specified. For each object an internal data source can be defined to enable object records to be processed by matching and merging logic. Hover the mouse over each field to view field-specific inline help.' The 'MATCHING SETTINGS' tab is selected, displaying various configuration options:

- Is Active?** (checked)
- Auto Match Records?** (unchecked)
- Check Matching State On Save?** (unchecked)
- Is Active For Matching Field Name:** Is Active For Matching?
- Last Matching Date Field Name:** Last Matching Date
- Master Records Active for Matching?** (checked)
- Reset Source Record Matching Flag?** (checked)
- Master Record Flag Field Name:** Is Master Record?

NOTE: The Master Record Flag Field Name is not set by default.

## Step 5 – Run the Matching Job

To complete this step, first navigate to the MDM App, open the Jobs tab, select the Matching Job type and the required Target Object. Finally select the required Job Schedule and click the “Schedule Job” button. This will display in the scheduled jobs tab until complete.

eu3.lightning.force.com

Search Salesforce

MDM Home MDM Home Matched Record Pairs Rejected Record Pairs Matching Test **Jobs** Batch Job Runs More

**Jobs**  
Monitor and Run

Refresh Schedule Job

View active and completed Jobs. Run jobs immediately or schedule future job executions.

**Schedule**

Job: Matching

Object: PersonAccount

Data Sources: Corporate Customers, ECommerce Customers, PersonAccount, Ticketing Customers

Process Count: 5

Schedule: Now

**RUNNING JOBS** COMPLETED JOBS - LAST 5 DAYS SCHEDULED JOBS

JOB TYPE	OBJECT	STATUS	TOTAL BATCHES	PROCESSED BATCHES	SUBMITTED	COMPLETION TIME	ACTION
No records to display.							

Run script "void(0);"



## Step 6 – View Matching Results

To complete this step, first navigate to the MDM App, open the Matched Record Pairs tab and then open a Matched Record Pair record by clicking on the hyperlink in the Matched Record Pair Number column. On the Matched Record Pair detail page navigate to the Matched Record Group via the “View Matched Record Group” button (or dropdown menu option in Lightning Experience).

The screenshots below show a Matched Record Group created by the Matching MDM operation.

The screenshot shows the 'Matched Record Group' page in Salesforce Lightning Experience. The page title is 'Matched Record Group'. Below the title, there are buttons for 'Back', 'Save', 'Delete', and 'Merge'. A descriptive text block explains that the page displays all Matched Record Pairs within a parent Matched Record Group. Below this, the 'Matched Record Group Information' section shows the following details:

- Matched Record Group (Target Object): a00w0000009buPAAQ46877 (PersonAccount)
- Blocking Key Match Value: GATZF
- Matching Date: 2017-05-13 06:12
- Match Score Threshold %: 65.00 %

The 'MATCHED RECORD PAIRS' tab is selected, displaying a table with the following data:

ACTION	MATCH TYPE	MATCH SCORE %	MATCH STATUS	RECORD 1 NAME	RECORD 1 DATA SOURCE	RECORD 2 NAME	RECORD 2 DATA SOURCE
Match Analysis	Key	100.00	Accepted	E0000\1813	ECommerce Customers	FAN-9986	Ticketing Customers
Match Analysis	Key	100.00	Accepted	E0000\1813	ECommerce Customers	FAN-9986	Corporate Customers
Match Analysis	Key	100.00	Accepted	WEB1014	Web Registrants	FAN-9986	Ticketing Customers
Match Analysis	Key	100.00	Accepted	WEB1014	Web Registrants	E0000\1813	ECommerce Customers

The screenshot shows the 'Matched Record Group' page in Salesforce Lightning Experience, with the 'MATCHED RECORDS' tab selected. The page title is 'Matched Record Group'. Below the title, there are buttons for 'Back', 'Save', 'Delete', and 'Merge'. A descriptive text block explains that the page displays all Matched Record Pairs within a parent Matched Record Group. Below this, the 'Matched Record Group Information' section shows the following details:

- Matched Record Group (Target Object): a00w0000009buPAAQ46877 (PersonAccount)
- Blocking Key Match Value: GATZF
- Matching Date: 2017-05-13 06:12
- Match Score Threshold %: 65.00 %

The 'MATCHED RECORDS' tab is selected, displaying a table with the following data:

CORPORATE CUSTOMERS						
ACTION	MATCH COUNT	FIRST NAME	LAST NAME	CITY	EMAIL	PHONE 1
View	1	Fredda	Gatza	Llandudno Community	fredda.gatza@gmail.com	01544-602204

ECOMMERCE CUSTOMERS						
ACTION	MATCH COUNT	FIRST NAME	LAST NAME	CITY	EMAIL	PHONE 1
View	3	Fredda	Gatza	Llandudno Community	fredda.gatza@gmail.com	01544-602204

TICKETING CUSTOMERS						
ACTION	MATCH COUNT	FIRST NAME	LAST NAME	CITY	EMAIL	PHONE 1
View	2	Fredda	Gatza	Llandudno Community	fredda.gatza@gmail.com	01544-602204

WEB REGISTRANTS						
ACTION	MATCH COUNT	FIRST NAME	LAST NAME	CITY	EMAIL	PHONE 1
View	2	Fredda	Gatza	Llandudno Community	fredda.gatza@gmail.com	01544-602204

The screenshot below shows the Matching MDM fields displayed on an example record. Placement of MDM fields on layouts for administrators, data stewards and end-users is a key implementation decision.

The screenshot displays the CLEARMDM interface within a Salesforce environment. The top navigation bar includes the CLEARMDM logo and a search bar. The main navigation menu shows 'MDM' as the active section, with sub-tabs for 'Home', 'MDM Home', 'Matched Record Pairs', 'Rejected Record Pairs', 'Matching Test', 'Jobs', 'Batch Job Runs', 'Audit Log Entries', and 'Settings'. The record being viewed is 'FAN-9986'. The 'MDM Information' section is expanded, showing various fields for configuration and status. A green highlight is placed over the 'Last Matching Date' and 'Last Merged Date' fields.

Field	Value
Postal Code	LL30 3PH
Website	<a href="http://www.mcintoshthomasjesq.co.uk">http://www.mcintoshthomasjesq.co.uk</a>
<b>MDM Information</b>	
Normalise on Save?	<input type="checkbox"/>
Is Normalised?	<input type="checkbox"/>
Is Blocking Key Complete?	<input checked="" type="checkbox"/>
Last Normalised Date	13/05/2017 18:00
Blocking Key	GATZFRED
Blocking Key Group	GAT
Normalised First Name	FREDDA
Normalised Last Name	GATZA
Email Domain	
Account	
Matching on Save?	<input type="checkbox"/>
Is Active For Matching?	<input type="checkbox"/>
Last Matching Date	13/05/2017 12:00
Last Merged Date	
Is Active for Reparenting?	<input type="checkbox"/>
Is Active for Conversion?	<input type="checkbox"/>
MDM Status	Matched
Is Standalone Record?	<input type="checkbox"/>
Created By	Mark Cane, 02/10/2016 17:17
Last Modified By	Mark Cane, 13/05/2017 18:15

## Step 7 – Manual Matching – Find Matches

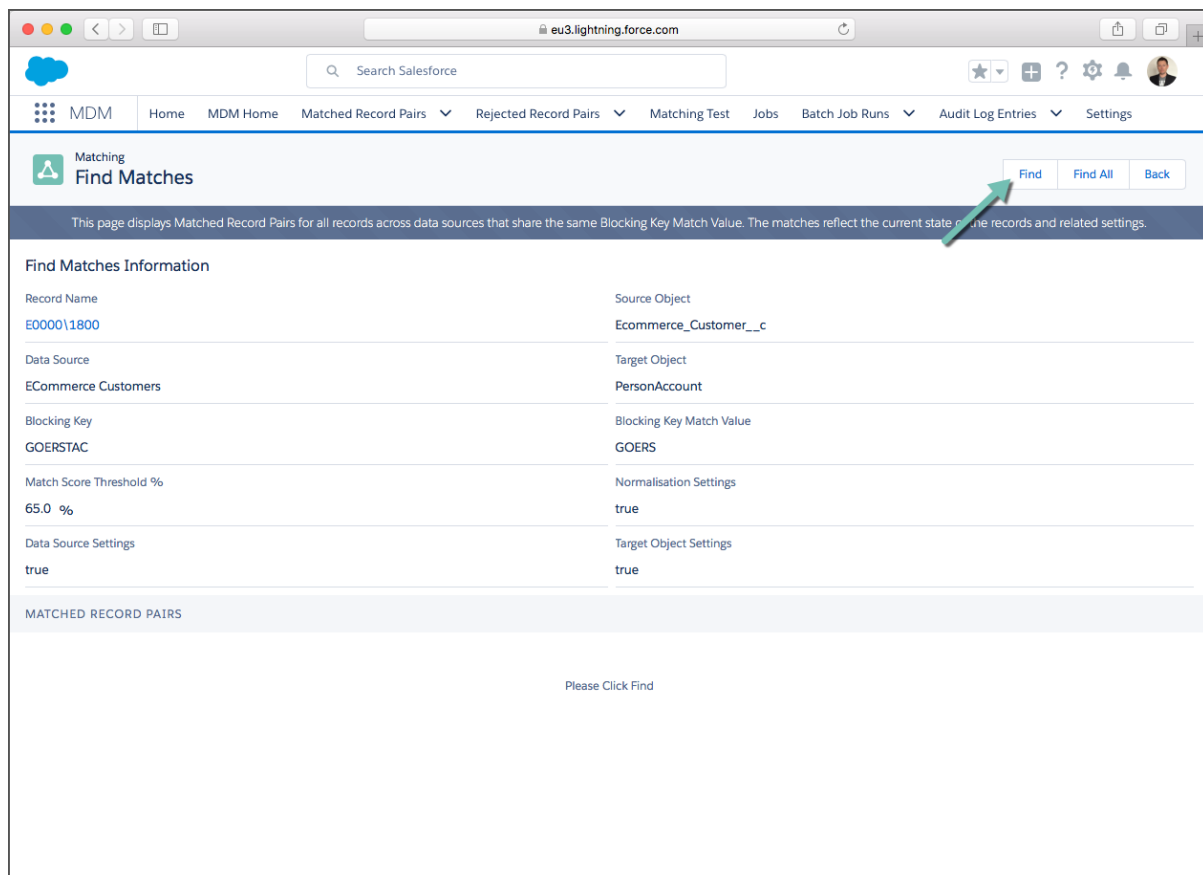
The screenshots below show the steps of the “Find Matches” feature that allows real time matching to be invoked from a button or link displayed on the record detail page.

Open a Source Record and click the “Find Matches” button or link. The “Find Matches” Custom Button for Account provides a template that can be copied for other objects. In Salesforce classic this is displayed as a button.

The screenshot shows the Salesforce Lightning interface for an 'ECOMMERCE CUSTOMER' record with ID 'E0000\1800'. The record details are displayed in a table format. The 'Clone' button in the top right corner is highlighted, and its dropdown menu is open, showing the 'Find Matches' option. A green arrow points to the 'Find Matches' option in the dropdown menu.

RELATED	DETAILS
Ecommerce Customer Id E0000\1800	Owner Mark Cane
First Name Stacie	
Last Name Goerlitz	
Email staceygoerlitz@goerlitz.co.uk	
Phone 1 01246-100061	
Phone 2 01664-520471	
Address 45 Jamieson Street	
City Cray Meadows Ward	
County London	
Company Name Von Lehsten Inc	
Postal Code DA14 5HX	

Run script "void(0);"



The screenshot shows the CLEARMDM web interface. The browser address bar displays 'eu3.lightning.force.com'. The Salesforce navigation bar includes a search bar and various icons. The main navigation menu shows 'MDM' as the active section, with sub-menus for 'Home', 'MDM Home', 'Matched Record Pairs', 'Rejected Record Pairs', 'Matching Test', 'Jobs', 'Batch Job Runs', 'Audit Log Entries', and 'Settings'.

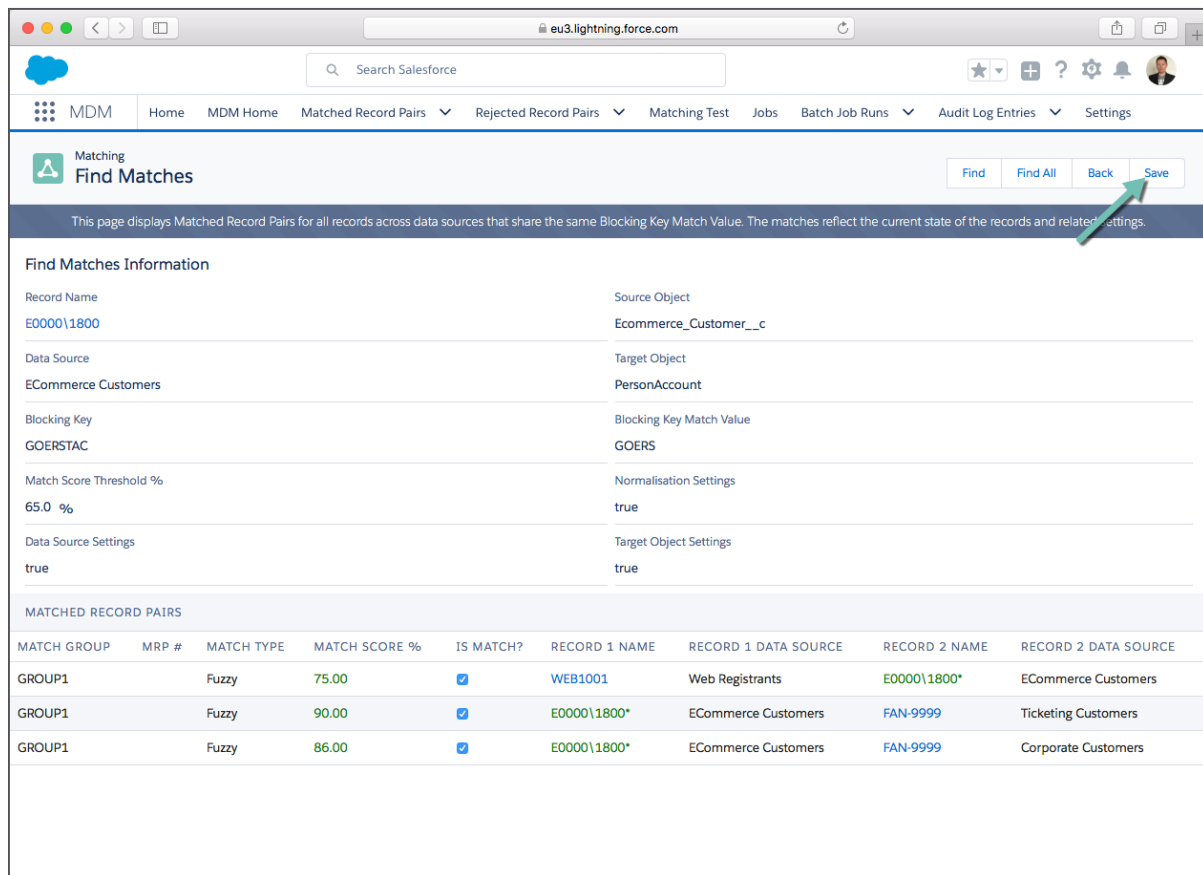
The 'Find Matches' page is displayed. It features a header with the title 'Find Matches' and three buttons: 'Find', 'Find All', and 'Back'. A green arrow points to the 'Find' button. Below the header, a message states: 'This page displays Matched Record Pairs for all records across data sources that share the same Blocking Key Match Value. The matches reflect the current state of the records and related settings.'

The 'Find Matches Information' section contains the following details:

Record Name	Source Object
E0000\1800	Ecommerce_Customer__c
Data Source	Target Object
ECommerce Customers	PersonAccount
Blocking Key	Blocking Key Match Value
GOERSTAC	GOERS
Match Score Threshold %	Normalisation Settings
65.0 %	true
Data Source Settings	Target Object Settings
true	true

Below the information section, there is a section titled 'MATCHED RECORD PAIRS' which currently displays 'Please Click Find'.

Next click the Find button (direct matches to the record) or Find Matches button (all matches for the blocking key match value) to perform a real-time matching operation.



The screenshot shows the CLEARMDM interface within a Salesforce browser window. The page title is 'Find Matches'. Below the title bar, there's a description: 'This page displays Matched Record Pairs for all records across data sources that share the same Blocking Key Match Value. The matches reflect the current state of the records and related settings.' The 'Find Matches Information' section shows details for a specific match, including Record Name (E0000\1800), Data Source (ECommerce Customers), Blocking Key (GOERSTAC), Match Score Threshold % (65.0 %), and various settings. Below this, the 'MATCHED RECORD PAIRS' table lists three groups of matches, each with a Match Group, MRP #, Match Type, Match Score %, Is Match? checkbox, Record 1 Name, Record 1 Data Source, Record 2 Name, and Record 2 Data Source. A green arrow points to the 'Save' button in the top right corner of the page.

MATCH GROUP	MRP #	MATCH TYPE	MATCH SCORE %	IS MATCH?	RECORD 1 NAME	RECORD 1 DATA SOURCE	RECORD 2 NAME	RECORD 2 DATA SOURCE
GROUP1		Fuzzy	75.00	<input checked="" type="checkbox"/>	WEB1001	Web Registrants	E0000\1800*	ECommerce Customers
GROUP1		Fuzzy	90.00	<input checked="" type="checkbox"/>	E0000\1800*	ECommerce Customers	FAN-9999	Ticketing Customers
GROUP1		Fuzzy	86.00	<input checked="" type="checkbox"/>	E0000\1800*	ECommerce Customers	FAN-9999	Corporate Customers

Next click the Save button to create a Matched Record Group for pairings that have the [Is Match?] column ticked. Note, this value can be overridden manually.

**Find Matches**

This page displays Matched Record Pairs for all records across data sources that share the same Blocking Key Match Value. The matches reflect the current state of the records and related settings.

**Find Matches Information**

Record Name	E0000\1800	Source Object	Ecommerce_Customer__c
Data Source	ECommerce Customers	Target Object	PersonAccount
Blocking Key	GOERSTAC	Blocking Key Match Value	GOERS
Match Score Threshold %	65.0 %	Normalisation Settings	true
Data Source Settings	true	Target Object Settings	true

**MATCHED RECORD PAIRS**

MATCH GROUP	MRP #	MATCH TYPE	MATCH SCORE %	IS MATCH?	RECORD 1 NAME	RECORD 1 DATA SOURCE	RECORD 2 NAME	RECORD 2 DATA SOURCE
<a href="#">GROUP1</a>	MATCH00000179	Fuzzy	75.00	<input checked="" type="checkbox"/>	WEB1001	Web Registrants	E0000\1800*	ECommerce Customers
<a href="#">GROUP1</a>	MATCH00000180	Fuzzy	90.00	<input checked="" type="checkbox"/>	E0000\1800*	ECommerce Customers	FAN-9999	Ticketing Customers
<a href="#">GROUP1</a>	MATCH00000181	Fuzzy	86.00	<input checked="" type="checkbox"/>	E0000\1800*	ECommerce Customers	FAN-9999	Corporate Customers

Next open the Matched Record Group via the hyperlink shown above.

**Matched Record Group**

This page displays all Matched Record Pairs within a parent Matched Record Group. All record pairs share the same Blocking Key Match value and match to at least one other record in the group. Matched Record Groups contain transitive matches meaning if A=B and B=C then A=C. When matches are rejected that break the chain it is possible to Split the group into sub-groups using the "Split and Save" button.

**Matched Record Group Information**

Matched Record Group (Target Object)	a00w000000i9buCAAQ42339 (PersonAccount)	Blocking Key Match Value	GOERS
Matching Date	2017-05-13 06:24	Match Score Threshold %	65.00 %

**MATCHED RECORD PAIRS**

ACTION	MATCH TYPE	MATCH SCORE %	MATCH STATUS	RECORD 1 NAME	RECORD 1 DATA SOURCE	RECORD 2 NAME	RECORD 2 DATA SOURCE
<a href="#">Match Analysis</a>	Fuzzy	90.00	Accepted	E0000\1800	ECommerce Customers	FAN-9999	Ticketing Customers
<a href="#">Match Analysis</a>	Fuzzy	86.00	Accepted	E0000\1800	ECommerce Customers	FAN-9999	Corporate Customers
<a href="#">Match Analysis</a>	Fuzzy	75.00	Accepted	WEB1001	Web Registrants	E0000\1800	ECommerce Customers

Finally the Matched Record Group enables Match Analysis of individual pairing and the option to manually merge the group.

## Step 8 – Manual Matching – Match Analysis

The screenshots below show the “Matched Record Group” and “Match Analysis” features. Note, the features are applicable to all Matched Record Groups irrespective of whether the grouping was created by manual, batch job or API matching.

**Matched Record Group**

This page displays all Matched Record Pairs within a parent Matched Record Group. All record pairs share the same Blocking Key Match value and match to at least one other record in the group. Matched Record Groups contain transitive matches meaning if A=B and B=C then A=C. When matches are rejected that break the chain it is possible to Split the group into sub-groups using the "Split and Save" button.

**Matched Record Group Information**

Matched Record Group (Target Object)	Blocking Key Match Value
a00w000000i9buCAAQ42339 (PersonAccount)	GOERS
Matching Date	Match Score Threshold %
2017-05-13 06:24	65.00 %

**MATCHED RECORD PAIRS**

ACTION	MATCH TYPE	MATCH SCORE %	MATCH STATUS	RECORD 1 NAME	RECORD 1 DATA SOURCE	RECORD 2 NAME	RECORD 2 DATA SOURCE
<a href="#">Match Analysis</a>	Fuzzy	90.00	Accepted	E0000\1800	ECommerce Customers	FAN-9999	Ticketing Customers
<a href="#">Match Analysis</a>	Fuzzy	86.00	Accepted	E0000\1800	ECommerce Customers	FAN-9999	Corporate Customers
<a href="#">Match Analysis</a>	Fuzzy	75.00	Accepted	WEB1001	Web Registrants	E0000\1800	ECommerce Customers

**Match Analysis**

Please note, the analysis presented may differ from the Matched Record Pair, as the matching status is re-evaluated based on the current state of the records and the configured matching settings.

**Matched Record Pair Information**

Record Group Id (Target Object)	Blocking Key Match Value
a00w000000i9buCAAQ42339 (PersonAccount)	GOERS
Matching Date	Match Status
2017-05-13 06:24	Accepted
Record 1 Name (Data Source)	Record 2 Name (Data Source)
E0000\1800 (ECommerce Customers)	FAN-9999 (Corporate Customers)

**MATCH ANALYSIS**

PERSON ACCOUNT FIELD	E0000\1800 (ECommerce Customers)	FAN-9999 (Corporate Customers)	FIELD MATCH TYPE	FIELD MATCH MAX SCORE	FIELD MATCH NULL SCORE	ACTUAL FIELD SCORE
<b>Combination 1</b>	GOERLITZSTACIESTACEY.GOERLITZ@GOERLITZ.CO.UK	GOERLITZSMITHSTACEYSTACEY.GOERLITZ@GOERLITZ.CO.UK	Key			
<b>Email</b>	stacey.goerlitz@goerlitz.co.uk	stacey.goerlitz@goerlitz.co.uk	Fuzzy	90	45	90
<b>First Name</b>	Stacie	Stacey	Fuzzy	30	15	21
<b>Last Name</b>	Goerlitz	Goerlitz-Smith	Fuzzy	30	15	18
<b>Mailing City</b>	Cray Meadows Ward	Cray Meadows Ward	Fuzzy	30	15	30
<b>Mailing State/Province</b>	London	Greater London	Fuzzy	20	10	5
<b>Mailing Street</b>	45 Jamieson Street	45 Jamieson St	Fuzzy	50	25	39
<b>Mobile</b>	01246-100061	01246-100061	Fuzzy	90	45	90
				<b>340</b>		<b>293</b>

**Compare Results**

Match Type  
Fuzzy

Match Score %  
86.00 %

Match Score Threshold %  
65.00 %

## Step 9 – Manual Matching – Matching Test

The screenshots below show the “Matching Test” feature that allows two arbitrary records to found, compared and potentially merged. The feature is intended to enable an exploratory approach to the definition of the optimal set of Matching Rules.

eu3.lightning.force.com

Search Salesforce

MDM Home MDM Home Matched Record Pairs Rejected Record Pairs **Matching Test** Jobs Batch Job Runs More

Matching Test  
Compare 2 Records

Search

Step 1. Select a Target Object and search for records across related Data Sources. Select 2 records then click the Next button. Step 2. Compare the records with the configured Matching rules.

Target Object  
Person Account

SEARCH CRITERIA

PERSON ACCOUNT FIELD	FIELD VALUE
First Name	Stacey
Mailing City	Cray

AND OR Remove Filter

Add Filter

No defined data sources.

A compound filter can be defined using Starts With or Contains predicates. The Search buttons runs the defined query to return any matching records across all active Data Sources for the selected Target Object.



Step 1. Select a Target Object and search for records across related Data Sources. Select 2 records then click the Next button. Step 2. Compare the records with the configured Matching rules.

Target Object  
Person Account

SEARCH CRITERIA

PERSON ACCOUNT FIELD FIELD VALUE

First Name ☒ STARTS WITH ☐ CONTAINS Stacey ☒ AND ☐ OR Remove Filter

Mailing City ☐ STARTS WITH ☒ CONTAINS Cray

Add Filter

CORPORATE CUSTOMERS SEARCH RESULTS

SELECT	ACTION	FIRST NAME	LAST NAME	CITY	EMAIL	PHONE 1
<input checked="" type="checkbox"/>	<a href="#">View</a>	Stacey	Goerlitz-Smith	Cray Meadows Ward	<a href="mailto:stacey.goerlitz@goerlitz.co.uk">stacey.goerlitz@goerlitz.co.uk</a>	01246-100061

ECOMMERCE CUSTOMERS SEARCH RESULTS

SELECT	ACTION	FIRST NAME	LAST NAME	CITY	EMAIL	PHONE 1
No records to display.						

PERSONACCOUNT SEARCH RESULTS

SELECT	ACTION	FIRST NAME	LAST NAME	MAILING CITY	EMAIL	MOBILE
No records to display.						

TICKETING CUSTOMERS SEARCH RESULTS

SELECT	ACTION	FIRST NAME	LAST NAME	CITY	EMAIL	PHONE 1
<input checked="" type="checkbox"/>	<a href="#">View</a>	Stacey	Goerlitz	Cray Meadows Ward	<a href="mailto:stacey.goerlitz@goerlitz.co.uk">stacey.goerlitz@goerlitz.co.uk</a>	01246-100061

WEB REGISTRANTS SEARCH RESULTS

From the returned Search Results, 2 records can be selected and the Next button clicked to proceed to the Compare page.

The screenshot shows the CLEARMDM web application interface. The top navigation bar includes a search bar and several menu items: MDM, Home, MDM Home, Matched Record Pairs, Rejected Record Pairs, Matching Test (selected), Jobs, Batch Job Runs, Audit Log Entries, and Settings. The main content area is titled 'Matching Test' and 'Compare 2 Records'. It displays a comparison of two records from different data sources. The table below shows the field matching scores for various fields.

PERSON ACCOUNT FIELD	CORPORATE CUSTOMER-FAN-9999	TICKETING CUSTOMER-FAN-9999	FIELD MATCH TYPE	FIELD MATCH MAX SCORE	FIELD MATCH NULL SCORE	ACTUAL FIELD SCORE
Combination 1	GOERLITZSMITHSTACEYSTACEY.GOERLITZ@GOERLITZ.CO.UK	???? GOERLITZSTACEYSTACEY.GOERLITZ@GOERLITZ.CO.UK	Key	-- None --	-- None --	
Email	stacey.goerlitz@goerlitz.co.uk	stacey.goerlitz@goerlitz.co.uk	Fuzzy	90	45	90
First Name	Stacey	Stacey	Fuzzy	30	15	30
Last Name	Goerlitz-Smith	Goerlitz	Fuzzy	30	15	18
Mailing City	Cray Meadows Ward	Cray Meadows Ward	Fuzzy	30	15	30
Mailing State/Province	Greater London	Greater London	Fuzzy	20	10	20
Mailing Street	45 Jamieson St	45 Jamieson St	Fuzzy	50	25	50
Mobile	01246-100061	01246-100061	Fuzzy	90	45	90
				340		328

**Compare Results**

Match Type  
Fuzzy

Match Score %  
96.00 %

Match Score Threshold %  
65.00 %

Auto Accept Enabled?  
Yes at 75.0%

Auto Accept Status  
Accepted

The compare page allows Matching Rule changes to be applied and the Matching Score to be recalculated.

## Appendix A - Matching Settings Reference

Target Object Matching Settings are configured on the Target Object settings page.

Setting	Definition
Is Active?	If set to <b>False</b> the Target Object will be excluded from all Normalisation MDM operation.
Is Internal Matching Active?	If set to True the <b>Internal Matching</b> job is available for selection on the Jobs page.
Check for Matches on Record Creation?	If set to <b>True</b> then Matching will run for new records at the time of creation – where matches are found the record creation will be blocked.
Is Deterministic Rules First?	If set to <b>True</b> , deterministic rules are processed before key rules by the Matching engine.
Auto Adjust Blocking Key Match Value?	<p>If set to <b>True</b> then Matching engine will increase the length of the <b>Blocking Key Match Value</b> to allow processing of groups that exceed the current settings.</p> <p>Auto-adjustment is only possible where the overall size of the Blocking Key (Input lengths 1,2 and 3 combined) exceeds the current Blocking Key Match Length.</p>
Matching Check on Save Field Name	<p>If set to <b>True</b> then Matching will run for modified records at the time of save – where matches are found the record modification will be blocked.</p> <p>This behaviour can prove too restrictive in certain circumstances (Admin profiles etc.) – as such the Matching Check can be bypassed using the Matching Check Override Field Name setting.</p>
Matching Check Override Field Name	<p>A checkbox formula field on the Target Object that returns true for a given record where the Matching Check on Save behaviour should be bypassed.</p> <p>The formula expression can encapsulate logical conditions (such as particular record types etc.) and access scenarios (User profile etc.).</p>
Blocking Key Match Length	<p>The length of the <b>Blocking Key Value</b> used for the initial grouping of records before <b>Matching Rules</b> are applied.</p> <p>It is best practice to define a Blocking Key length in the 8-10 range and use the first 6 or 7 characters for grouping. Where large groupings are encountered the Matching engine can add the 8<sup>th</sup>, 9<sup>th</sup> or 10<sup>th</sup> character to decompose the group into small subgroupings.</p>
Date Matching Tolerance	The number of days difference between 2 compared Date or Datetime field values that constitutes a match. Where this value is Zero dates must be the same day, where the tolerance is 1 then the dates can be one day apart and still be considered a match.
Fuzzy Match Threshold %	The match score % that constitutes a Candidate match. Compared record pairs that score beneath this threshold are non-matches and are not recorded in the <b>Matched Record Pair</b> object.
Matching Manager Apex Class Name	The name of ApexClass to which the matching engine delegates the matching algorithm. The StandardMatchingManager default implements the Edit Distance or Levenshtein algorithm. Custom algorithms can be implemented using the Apex language.
Auto Accept Matches?	If set to <b>True</b> then compared record pairs may be set to Accepted status automatically if the score value is sufficiently high.

Auto Accept Match Threshold	The match score % that constitutes an Accepted match. Compared record pairs that score on or above this threshold are auto-accepted.
Is Invoked by Normalisation Job?	If set to <b>True</b> then Normalisation jobs will invoke a Matching job for the same Target Object upon completion.
Is Invoked by Synchronisation Job?	If set to <b>True</b> then Synchronisation jobs will invoke a Matching job for the same Target Object upon completion.

Data Source Settings are configured on the Data Source settings page.

Setting	Definition
Data Source Settings	
Is Active?	If set to <b>False</b> the Data Source will be excluded from all Matching MDM operations.
Is External?	If set to <b>True</b> then the Data Source is of the external type and a Source Object must be specified. If set to <b>False</b> then the Data Source is of the internal type and only the Target Object must be specified as the Source Object will be the same value.
Name	A unique name for the Data Source. Examples below.  Accounts Master Accounts Excluded Contacts High Quality Leads SAP Companies Ecommerce Customers
Source SObject Type	<b>External Data Sources Only.</b> The name of the object this Data Source exposes records from.
Target SObject Type	The name of the Target Object to which this Data Source relates.  The Matching MDM operation runs for a given Target Object; records are gathered from all Data Sources (internal and external) for the Target Object.
MDM Status Field Name	A text field on the Source Object into which the MDM status is set, e.g. Matched, No Match, Merge Source.
Is Active for Synchronisation?	If set to <b>True</b> then the Data Source will expose Source Records to the Synchronisation MDM operation. Synchronisation allows field value changes to efficiently flow across an existing linkage between a Source Record and a Master Record without the requirement to re-match and merge the modified Source Record. The Synchronisation MDM operation processes <b>Source Records</b> that have the [Is Active for Matching flag] set to true.
Is Active for Reparenting Field Name	A checkbox field on the Source Object that returns <b>True</b> where a Source Record has been merged and child records should be re-parented. The flag is set to <b>True</b> by the Merge operation and subsequently set to <b>False</b> by the Reparenting MDM operation. Where child records retain a relationship to the Source Record (Custom Objects) and are subject to ongoing change – the parent Source Record flag must be set to True to allow a relationship to the Master Record to be established. Process Builder provides an efficient means to address this requirement.

	The Reparenting MDM operation consolidates child records parented by merged Source Records to the related Master Record. This operation is key in providing a consolidated (360°) view.
Reset Reparenting Flag?	If set to <b>True</b> then the Matching MDM operation will set the [Is Active for Reparenting?] record level flag equal to false for all matched records in anticipation of the Merge MDM operation setting the same flag to true for merged records.
Is Partition?	If set to <b>True</b> then the Data Source exposes the subset of the Source Object records as defined by the partition filter.
Partition Field Name	<b>Is Partition = True only.</b> A custom text field on the Source Object upon which returns the partition filter value.  <b>Best Practice:</b> A text formula field can be implemented to return the required partition value based on logic encapsulated in the expression. Alternatively the Data Quality MDM operation can populate the defined field with the partition value.
Partition Field Value	<b>Is Partition = True only.</b> A text value that defines the filter logic applied to the partition; external system name or region or quality grade etc.
Data Source Matching Settings	
Is Active?	If set to <b>False</b> the Data Source will be excluded from all Matching MDM operations.
Auto Match Records?	If set to <b>True</b> then all Source Records for the Source Object (subject to partition filtering) are exposed to the Matching MDM operation irrespective of the setting of the record-level [Is Active for Matching?] flag. Auto matching is typically used only when an existing dataset is matched for the first time – or during exploratory testing.
Master Records Active for Matching?	<b>Auto Match Records = False Only.</b> If set to <b>True</b> then all Master Records for the Source Object (subject to partition filtering) are exposed to the Matching MDM operation irrespective of the setting of the record-level [Is Active for Matching?] flag. This flag enables new or modified Source Records to be matched against the full set of existing Master Records for the same Blocking Key Match Value.  If set to <b>False</b> then Source Records are matched against records that have the record-level [Is Active for Matching?] flag equal to true only.
Check Matching State on Save?	<b>Auto Match Records = False Only.</b> If set to <b>True</b> then record modifications will be evaluated to determine whether a matching significant field has changed, if this is the case then the [Is Active for Matching?] flag is set to true to expose the record to the next Synchronisation or Matching MDM operation.
Reset Source Record Matching Flag?	<b>Auto Match Records = False Only.</b> If set to <b>True</b> then the Matching MDM operation will set the record-level [Is Active for Matching?] flag equal to false once a record has been processed. This flag is key to ensuring that records are only processed once unless subsequent matching significant field changes are applied.
Is Active for Matching Field Name	<b>Auto Match Records = False Only.</b> A checkbox field on the Source Object that is populated with a true value when a record should be exposed to the Matching MDM operation.
Master Record Flag Field Name	<b>Auto Match Records = False &amp;</b>

	<p><b>Master Records Active for Matching = True Only.</b> A checkbox field on the Source Object that is populated with a true value when a record is to considered a Master Record. If no field reference is set then the definition of a Master Record is taken from the MDM Status being equal to 'Merge Master' or 'Conversion Master'.</p> <p><b>Best Practice:</b> In many cases standalone records that have no MDM Status are also considered to be a Master Record. To support this a formula field can be implemented that returns true when a record's MDM Status is not 'Merge Source' or 'Conversion Source'. The formula field will be set to control determination of Master Record state in this setting.</p>
Last Matching Date Field Name	A datetime field on the Source Object that will be populated with the processing timestamp.
Source to Target Field Settings	
Target Field	A Target Object field that is active for Matching and Merge.
Source Field	<p><b>External Data Sources only.</b> A Source Object field that is mapped to the Target Field.</p> <p>MDM operations process data across object using a dynamic field map comprised of Source to Target field mappings.</p>
Cross Field Matching	Additional fields on the Source Object where the Target Field value may exist. The Matching MDM operation will evaluate the best score for the Target Field across both the primary field and the secondary fields specified by this setting.

## Appendix B – Troubleshooting

All clearMDM MDM operations log activity (Start and End times etc.) and errors to the Audit Log Entry object. The MDM application includes an **Audit Log Entry** tab to provide convenient access to this data. Each Audit Log Entry record is time-stamped and related to the parent Batch Job Run record: all MDM operations that run via the Job Method created a Batch Job Run record that records job statistics and status. Monitoring of the Audit Log should be a frequent activity performed by the Administrator or Data Steward responsible for the clearMDM implementation.

**Best Practice:** Salesforce Reporting Notifications provide a proactive means of reporting on errors generated by clearMDM operations. In this model a standard report is used to return data from the Audit Log Entry object where required conditions are met. Only when records meet the criteria is a report sent to the Administrator or Data Steward responsible.

### Matching Log Types

Rule Type	Definition
Group Size Limit Reached - Source Records Will Be Ignored [XXXXX] 7451:5000.0	<p>The number of Source Records for the BKMV exceeds the setting value below.</p> <p>[System Settings] Max Records Per Iterable Cycle</p> <p>Where Data Sources exist that are configured with [Master Records Active for Matching?]=True then the actual limit applied to the Source Record count is reduced by the percentage specified in the setting below.</p> <p>[System Settings] Master Record Partition Allowance</p> <p>The above is necessary to limit the workload placed into each Batch Apex execute cycle such that CPU timeout errors are avoided.</p> <p>To mitigate this error, the BKMV can be made more selective by adding additional characters (increasing the BKMV length setting). Or, the System Settings below can be modified.</p> <p><b>Max Records Per Group</b> : Controls the maximum BKMV group size before auto-adjustment takes place. <i>Recommended Setting: 500</i></p> <p><b>Max Records Per Iterable Cycle</b> : Controls the maximum number of records that can be placed into the workload for a single Batch Apex execute cycle. <i>Recommended Setting: 2000</i></p>

	<p><b>Max Groups Per Iterable Cycle</b> : Controls the maximum number of BKMV groups that can be placed into the workload for a single Batch Apex execute cycle.  <i>Recommended Setting: 5 (this can be reduced down to 4,3,2 or 1 where limit issues are record as below)</i></p>
Blocking Key [XXXXXX] Group Size Limit Reached - Source Records Will Be Ignored	<p>The number of Source Records for the BKMV exceeds the setting value below – and auto adjustment is not enabled OR auto adjustment has been applied and the referenced BKMV is the full Blocking Key length and no further adjustment possible.</p> <p>[System Settings] Max Records Per Group</p>
Blocking Key [XXXXXX] Auto Adjustment - Source Records Will Be Ignored	<p>The referenced BKMV has been auto-adjusted but not all Source Records could be assigned to sub groupings within the size limit defined by the setting below.</p> <p>[System Settings] Max Records Per Group</p>
Cycle Processing Stopped - Processing Limit Exceeded (CpuTime, Heap or Dml Rows) bk:JOHNN cpu time:59708[59400.000] heap:689258[11880000.000] dml:isPersist=true:222[9999]	<p>The workload placed into the Batch Apex execute cycle reached processing limits and to avoid a hard platform exception processing has been stopped.</p> <p>To mitigate this error please refer to the preceding row.</p>
Missing or Inactive Target Object Matching settings	<p>This error can occur where the Target Object Matching settings are inactive, deleted or the Salesforce User does not have permissions to the object or fields referenced.</p>