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Matching Guide

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1 Introduction

Oracle Financial Services Customer Screening provides a flexible and customizable strategy for matching customer records to watch list records. **Sanctions screening** typically requires the business to employ tightly-defined, zero-tolerance matching policies that will identify every possible match against a sanctions list. In these cases, the additional review work of lower probability matches will be necessary. By contrast, a business carrying out **PEP screening** may choose a strategy of finding and investigating only the most likely matches against the PEP list, and the additional work required to confirm or eliminate weaker matches may not be cost-effective for the business.

Oracle Financial Services Customer Screening employs a range of clustering strategies and matching rules. These can be enabled and disabled as needed, to tune the behavior of Oracle Financial Services Customer Screening to your requirements.

The matching rules are built around name matching. Other identifiers are also used in the matching rules, but their main purpose is to rank matches by strength, and thereby to enable a most-likely approach to review potential matches. Oracle Financial Services Customer Screening also includes an evaluation of the risk posed by the potential match, allowing both strength of match and risk profile to be used in prioritizing reviews. For example, strong matches to Sanctions lists should be regarded as the most urgent matches, requiring immediate attention. Strong matches to PEP records will require follow-up, but may not be so urgent. Looser matches to PEP records may not be worth the time and operational cost of review.

In general, the looser the match rule, the more likely it is to raise false positives. It is not possible to eliminate all false positives, especially if there is a requirement to identify all true matches. Tuning the matching strategy is, therefore, a trade-off between the proportion of true matches that are not detected and the work required to manually eliminate false positives. This will be evident in the examples in this document.

1.1 General matching strategy

This section provides a brief description of the general strategy used in Oracle Financial Services Customer Screening. It consists of three main components: identifier preparation, clustering, and matching.

Identifier preparation

There are some differences between the structure of data sets that always need to be normalized before clustering and matching, so that the matching process does not need to repeat the configuration of transformations on each comparison.

Identifier preparation is used to ensure that the records conform to a pre-defined data structure which can be used by the rest of the matching process, and also to eliminate common forms of variance between the records (such as spelling variants of given names and abbreviations of frequently-used tokens).

Clustering

Clustering is used to minimize the work that must be performed by the final stage of matching. It works by splitting the working and reference data into wide tranches (clusters), based on

similarities in significant data fields. Only subsets of the data which share similar characteristics, and will, therefore, be placed in the same cluster, will be compared on a record-by-record basis later in the matching process.

If very wide clusters are used, there will be a large number of records in each cluster. This means that there is a reduced risk that true matches will be missed, but also that a greater amount of processing power is required to compare all the clustered records by brute force. A tighter clustering strategy will result in smaller clusters, with fewer records per cluster. This results in reduced processing requirements for row-by-row comparisons but increases the likelihood that some true matches will not be detected.

Matching

Once the working and watch list records have been divided into clusters, the rows within each cluster are compared to one another according to the match rules defined for the matching processor. Each match rule defines a set of criteria, specified as comparisons, that the pair of records must satisfy in order to qualify as a match under that rule. The match rule also defines a decision to be applied to any records which satisfy the conditions of the rule. The majority of rules have a **Review** decision, meaning matches that hit the rule need to be reviewed. However, there are also elimination rules, where if the records being compared meet the rule's criteria, a **No Match** decision is reached and the two records will not be considered a match.

> **Note:**
>
> Oracle Financial Services Customer Screening does not use the **Match** decision as it never considers there to be an automatic match between two records that do not require review.

The rules are applied as a decision table, so if a pair of records qualifies as a match under a rule higher in the table, it will not be compared using any rules below that. All rules are configured to operate on a case-insensitive basis. Unless stated otherwise, all noise and whitespace characters are removed or normalized before matching.

1.2 Configuring Oracle Financial Services Customer Screening for different scenarios

As previously mentioned, Oracle Financial Services Customer Screening includes clusters and matching rules that are suited to various screening requirements. Tuning Oracle Financial Services Customer Screening to match your policies should be undertaken carefully and under the supervision of a risk and compliance expert, with knowledge of your business requirements and the relevant legislation.

The following general points may be useful when tuning the behavior of Oracle Financial Services Customer Screening:

- Some organizations use a zero-tolerance policy for individual name matches. Such a policy typically requires that all potential name matches must be manually reviewed, irrespective of the rest of the data associated with the record. If such a policy is in place, you should consider the following actions:
  - Disable all the elimination rules in the individual matching processors. If these rules are enabled, you run the risk of preventing close name matches from being detected by the remaining match rules.

  - Enable the conflict rules in the individual matching processors. These rules allow you to detect and manually review close name matches whose supporting information conflicts with the watch list records.

    > **Note:**
    >
    > The conflict rules raise possible matches when the individual name appears to match a given watch list record, but the supporting data (such as date of birth or nationality) is in conflict.

  - If the name only clusters are enabled, the Name and Country and Name and YOB clusters are redundant and therefore can be disabled for PEP and EDD screening. They are disabled by default for Sanctions screening.

- Country prohibition screening is enabled by default for Sanctions screening. To screen for prohibited countries during PEP and EDD screening, enable the relevant country prohibition clusters and match rules:
  - The clusters used for country prohibitions in entity screening are the Registration Country cluster and the Operating Country cluster.
  - The match rules used for country prohibitions in entity screening are the Country Prohibition – Registration Country and the Country Prohibition – Operating Country match rules.
  - The clusters used for country prohibitions in individual screening are the Nationality Prohibition and the Residency Prohibition clusters.
  - The match rules used for country prohibitions in individual screening are the Country Prohibition – Nationality and the Country Prohibition – Residency match rules.
- In general, using a loose clustering strategy will result in relatively few clusters, each containing many records. This reduces the potential for missing true matches and increases the chance of false positives. It is also expensive in terms of processing requirements, as every record in the cluster must be directly compared with every other record in that cluster.
- Conversely, a tight clustering strategy will result in a relatively large number of clusters, each containing fewer records. This increases the potential for missing true matches and decreases the chance of false positives. It also reduces the overall cost of the processing requirements, as relatively few direct comparisons are required.

2
Individual Matching

This section details the default configuration when matching individuals to Sanctions, PEP and EDD lists.

2.1 Identifier preparation

The following identifiers are prepared for use in the individual matching process.

Table 2-1 Identifier preparation

Identifier Description	Standard prepared attribute name	Summary of preparation logic
Given Names	dnGivenNames	A space-separated list of the first and middle names of the individual, after normalization (see the name normalization section, below).
Family Name	dnFamilyName	A normalized version of the family name (see the name normalization section, below).
Full Name	dnFullName	A concatenation of the given names and family name separated using spaces.
Original Script Name	dnOriginalScriptName	A whitespace normalized version of the original script name.
City	dnCity	A pipe-separated list of cities associated with the individual data.
Country Code	A space separated, duplicated and sorted superset of all country codes provided in dnAddressCountryCode, dnResidencyCountryCode, dnNationalityCountryCodes and dnCountryOfBirthCode.	A space-separated list of standard 2-character country codes.
Dateof Birth	dnDOB	A date attribute containing the date of birth of the individual.
Year of Birth	dnYOB	A string attribute containing a space-separated list of possible years of birth, in a four-digit format.

The following sections describe the data preparation strategy for each of these identifiers.

Name Normalization

The name identifiers map to the prepared attributes `dnGivenNames`, `dnFamilyName` and `dnFullName`. In all these fields, the following transformations are applied before matching:

- Standardization of accented characters.

- Replacement of non-alpha (A-Z or a-z) characters with spaces.

> **Note:**
>
> If matching data in the original language against original script names in watch lists, the appropriate character ranges should be removed from the Name Noise Characters Reference Data so that they are not replaced. If transliterating data before matching, transliteration must be done before the name normalization.

- Normalization of whitespace
- Conversion to upper case

The purpose of these transformations is not to create the most ‘correct’ name. For example, hyphens may be used in names in a number of ways, such as in a double-barreled surname, or as an alternative for a space when a surname has a qualifier (common in the World-Check data file).

In the former case, one might ideally want to preserve the hyphen, and in the latter case replace it with a space. In general, however, additional spaces in names will not cause names to miss matching, whereas different characters could.

Examples

Table 2-2 Input data and Identifiers

Input data- Fore-name	Input data- Sur-name	Identifiers-dnGivenNames	Identifiers-dnFamilyName	Identifiers-dnFullName
Carmelo	Raschellà	CARMELO	RASCHELLA	CARMELO RASCHELLA
Darwen	MANN`A	DARWEN	MANNA	DARWEN MANN A
Badrbin Saud bin Harib	AL-BUSAIDI	BADRBIN SAUD BIN HARIB	ALBUSAIDI	BADRBIN SAUD BIN HARIB AL BUSAIDI
A.Arnaldo G.	TAVEIRA	A ARNALDOG	TAVEIRA	AARNALDO G TAVEIRA
JoseMardônio	DACOSTA**	JOSE MARDONIO	DA COSTA	JOSE MARDONIO DA COSTA

City and country identifiers

City and country values are derived from the source data wherever possible. There may be multiple possible cities or countries associated with an individual, perhaps because an individual resides in more than one country, has dual nationality, or resides in a different country from his/her nationality.

Country values are prepared as a space-separated list of two-character country codes in the `dnAllCountryCodes` attribute.

City values (which may contain spaces, for example, ‘New York’) are prepared as a pipe separated list of cities in the `dnCity` attribute.

Date of birth and Year of birth identifiers

A formal Date attribute holds the date of birth, where known. The year of birth is stored as a string and is either derived from the date of birth or may be derived from other data. The year

of birth may include several possible years. This is most likely to occur when a reference source lists the age of individuals as of a given date, which may lead to two possible years of birth.

For example, if an individual is listed as 27 years old on 01/05/2007, the year of birth could either be 1980 (if born before 1st May) or 1979 (if born after 1st May). In this case, both possible years are derived and added to a list of possible years of birth. The year of birth comparison in matching looks for a common year of birth between the two records being compared.

2.2 Clustering

Oracle Financial Services Customer Screening provides eleven clusters for matching individuals to watch lists during Sanctions screening, and nine clusters for PEP and EDD screening:

Table 2-3 Cluster Methods

Cluster Method	SAN	PEP	EDD
Family Name	Y	N	N
Full Name Metaphone	Y	N	N
Given Names	Y	N	N
Full Name Trim	Y	N	N
Nationality Prohibition	Y	N/A	N/A
Residency Prohibition	Y	N/A	N/A
Name and Country	N	Y	Y
Name and YoB	N	Y	Y
First and Last Name	N	Y	Y
Original Script Name	N	N	N
First Initial Last Name	N	N	N

> **Note:**
>
> This table shows the default configuration of both Batch and RealTime screening processes, but these may be customized independently of one another.

The data used to create the clusters is created before matching by the preparation process. In all cases, the clusters use the prepared and normalized name attributes `dnGivenNames`, `dnFamilyName`, `dnFullName`, and `dnOriginalScriptName`. For further information see Name Normalization.

Family Name Cluster (dnClusterFamilyName)

The Family Name cluster provides a backup to the full name clusters. This is especially important where the given name data is incomplete, making it difficult to form a complete cluster key for two names. For example, the following three example records do not share any Full Name cluster keys, due to the initials in the second record and the spacing and spelling variations seen throughout:

Table 2-4 Example of Full Name Cluster (dnFullName)

dnFullName	dnFullName	Name tokens and trimmed values	Cluster Keys	dnClusterFull NameTrim	dnClusterFull NameTrim
STEPHEN NKOMO	JEQE	JEQE NKOMO STEPHEN	JEQ NKO STE	JEQNKO JEQSTE NKOSTE	JEQNKO |JEQ STE |NKOSTE
SJ NKOMO	-	S NKOMO J	S NKO J	NKO	NKO
STEPHEN KOMO	JEKEN	JEKE KOMO N STEPHEN	JEK KOM N STE	JEKKOM JEKSTE KOMSTE	JEKKOM|JEK STE|KOMSTE

Clustering only on the family name circumvents this issue but results in large clusters and a concomitant increase in the processing required to cross-check all the records.

The **Family Name** cluster builder counters spacing and punctuation differences by generating **Metaphone** keys for all tokens of the family name, AND the whole of the family name after all white space is trimmed. This is to ensure that family names such as those in the last two records in the example table below are all clustered together despite the spacing differences.

The default logic of the cluster builder is as follows:

- Trim all white space from the normalized family name
- Apply the Metaphone transformation to the result, outputting a key with a length of up to 4 characters
- Strip common name qualifiers from the normalized family name, e.g. Abd, Al.
- Split the family name into several name tokens, using a space delimiter.

> **Note:**
>
> Many other punctuation and noise characters are normalized to spaces before generating the cluster. For further information see Name Normalization.

- Apply the **Metaphone** transformation to each name token, outputting a key with a length of up to 4 characters. If there were no tokens remaining after stripping common name qualifiers, then apply the Metaphone transformation to each name token of the original normalized family name.
- Concatenate all the generated **Metaphone** keys
- Deduplicate the list of keys

Example

Table 2-5 Example of Family Name Cluster (dnFamilyName)

dnFamilyName	Tokensderived from dnFami- lyName	Metaphonetrans-formations	dnClusterFamilyName
ZHONG	ZHONG	JNK	JNK
XIAOJIAN	XIAOJIAN	SJN	SJN
ABACHE	ABACHE	APX	APX
ABANDA	ABANDA	APNT	APNT
ABDAL HAFIZ	HAFIZABDALHAFIZ	HFSAPTL	HFS|APTL
ALBUTHE	BUTHE ALBUTHE	P0ALP0	P0|ALP0
AL	AL	AL	AL
SOLEIMANHAMAD	SOLEIMANHAMAD SOLEIMANHAMAD	SLMNHMT SLMN	SLMN|HMT
GOODRIDGE	GOODRIDGE	KTRJ	KTRJ
GOODRICHSR	GOODRICHSR GOODRICHSR	KTRXSR KTRK	KTRX|SR|KTRK
NKOMO	NKOMO	NKM	NKM
NKOMO	NKOMO NKOMO	NKM NKM	N|KM|NKM

Full Name Metaphone Pairs Cluster (dnClusterFullNameMeta)

The **Full Name Metaphone Pairs** cluster uses the normalized full name for the individual to generate a cluster key for every pair of names within the full name. The default logic of this is as follows:

- Split the normalized full name into several name tokens, using space as a delimiter.

> **Note:**
>
> Many other punctuation and noise characters are normalized to spaces before generating the cluster. For further information see Name Normalization.

- Sort the name tokens alphabetically.
- Apply the Metaphone transformation (the standard double-metaphone algorithm) to each name token, outputting a key with a length of up to three characters.
- Concatenate the Metaphone values, generating a final key value for each distinct pair of tokens.
- Deduplicate the list of keys.

Example

Table 2-6 Full Name Metaphone Pairs Cluster

dnFullName	Name tokens and Metaphone values	Name tokens and Metaphone values	Distinct Cluster Keys	dnClusterFullNam e Meta
XIAO JIAN ZHONG	JIAN	JN	JNS JNJNK SJNK	JNS|JNJNK|SJNK
	XIAO	S		
	ZHONG	JNK		
ZHONG XIAOJIAN	XIAOJIAN	SJN	SJNJNK	SJNJNK

Table 2-6 (Cont.) Full Name Metaphone Pairs Cluster

dnFullName	Name tokens and Metaphone values	Name tokens and Metaphone values	Distinct Cluster Keys	dnClusterFullName Meta
	ZHONG	JNK		
MOHAMMED SANI ABACHE	ABACHE	ABX	APXMHM APXSN MHMSN	APXMHM|APXSN|MHMSN
	MOHAMMED	MHMT		
	SANI	SN		
JOSEPH TSANGA ABANDA	ABANDA	APNT	APNJSF APNTSN JSFTSN	APNJSF|APNTSN|J SFTSN
	JOSEPH	JSF		
	TSANGA	TSNK		
ABD AL WAHAB ABD AL HAFIZ	ABD	APT	APTAPT APTAL APTHFS APTAHP ALAL ALHFS ALAHP HFSAHP	APTAPT|APTAL|APTHFS|APTAHP|ALAL|ALHFS|ALAHP|HFSAHP
	ABD	APT		
	AL	AL		
	AL	AL		
	HAFIZ	HFS		
	WAHAB	AHP		
SULIMAN HAMD SULEIMAN AL BUTHE	AL	AL	ALP0 ALHMT ALSLM P0HMT P0SLM HMTSLM SLMSLM	ALP0|ALHMT|ALSL M|P0HMT|P0SLM|HMTSLM|SLMSLM
	BUTHE	P0	-	-
	HAMD	HMT	-	-
	SULEIMAN	SLMN	-	-
	SULIMAN	SLMN	-	-
AL BUTHE SOLEIMAN HAMAD	AL	AL	ALP0 ALHMT ALSLM P0HMT P0SLM HMTSLM	ALP0|ALHMT|ALSL M|P0HMT|P0SLM|HMTSLM
	BUTHE	P0	-	-
	HAMAD	HMT	-	-
	SOLEIMAN	SLMN	-	-
REGINALD B GOODRIDGE	B	P	KTRRJN **Note**: Initials are ignored by default when generating cluster keys	KTRRJN
	GOODRIDGE	KTRJ	-	-
	REGINALD	RJNLT	-	-
REGINALD B SR GOODRICH	B	P	KTRRJN KTRSR RJNSR **Note**: Initials are ignored by default when generating cluster keys	KTRRJN|KTRSR|RJ NSR
	GOODRIDGE	KTRJ	-	-
	REGINALD	RJNLT	-	-
	SR	SR	-	-

Table 2-6 (Cont.) Full Name Metaphone Pairs Cluster

dnFullName	Name tokens and Metaphone values	Name tokens and Metaphone values	Distinct Cluster Keys	dnClusterFullNam e Meta
STEPHEN JEQE NKOMO	JEQE	JK	JKNKM JKSTF NKMSTF	JKNKM|JKSTF|NK MSTF
	NKOMO	NKM	-	-
	STEPHEN	STFN	-	-
S J NKOMO	J	J	NKM **Note**: Initials are ignored by default when generating cluster keys	NKM
	NKOMO	NKM	-	-
	S	S	-	-
STEPHEN JEKE N KOMO	JEKE	JK	JKKM JKSTF KMSTF	JKKM|JKSTF| KMST F
	KOMO	KM	-	-
	N	N	-	-
	STEPHEN	STFN	"-	-

Given Names Cluster (dnClusterGivenNames)

The **Given Names** cluster provides a further backup to the remaining clusters, especially to deal with cases where names are not necessarily well structured into family and given names.

> **Note:**
>
> Depending on the quality and culture of the name information, this cluster will often not be required. You can test the number of additional alerts identified by the cluster by running matching with this cluster disabled, and then running with it enabled. Comparing the new relationships against the old will highlight the relationships identified by using this cluster.

The default logic of the cluster builder is as follows:

- Split the normalized full name into several name tokens, using space as a delimiter.

  > **Note:**
  >
  > Many other punctuation and noise characters are normalized to spaces before generating the cluster. For further information see Name Normalization.

- Standardize the normalized given names before clustering. This ensures that names such as 'William' and 'Bill' will be clustered together, although their raw Metaphone values are not the same. A space delimiter is used to split the name before standardizing.
- Apply the Metaphone transformation to the whole of the given names value after token standardization, outputting a key with a length of up to 4 characters.

Example

Table 2-7 Given Names Cluster

dnFullName	Name tokens and trimmed values	Name tokens and trimmed values	Cluster Keys	dnClusterFullNameTrim
XIAO JIAN ZHONG	JIAN XIAO ZHONG	JIA XIA ZHO	JIAXIA JIAZHO XIAZHO	JIAXIA|JIAZHO|XIAZHO
ZHONG XIAOJIAN	XIAOJIAN ZHONG	XIA ZHO	XIAZHO	XIAZHO
MOHAMMED SANI ABACHE	ABACHE - - SANI	ABA MOH MOHAMM ED SAN	ABAMOH ABASAN MOHSAN	ABAMOH|ABASAN|MOHSAN
JOSEPH TSANGA ABANDA	ABANDA JOSEPH TSANGA	ABA JOS TSA	ABAJOS ABATSA JOSTSA	ABAJOS|ABATSA|JOSTSA
ABD AL WAHAB ABD AL HAFIZ	ABD	ABD	ABDABD ABDAL ABDHAF ABDWAH ALAL ALHAF ALWAH HAFWAH	ABDABD|ABDAL|ABDHAF|ABDWAH|ALAL|ALHAF |ALWAH|HAFWAH
-	ABD	ABD	-	-
-	AL	AL	-	-
-	AL	AL	-	-
-	HAFIZ	HAF	-	-
-	WAHAB	WAH	-	-
SULIMAN HAMD SULEIMAN AL BUTHE	AL	AL	ALBUT ALHAM ALSUL ALSUL BUTHAM BUTSUL HAMSUL SULSUL	ALBUT|ALHAM|ALSUL| BUTHAM|BUTSUL| HAMSUL|SULSUL
-	BUTHE	BUT	-	-
-	HAMD	HAM	-	-
-	SULEIMAN	SUL	-	-
-	SULIMAN	SUL	-	-
AL BUTHE SOLEIMAN HAMAD	AL	AL	ALBUT ALHAM ALSOL BUTHAM BUTSOL HAMSOL	ALBUT|ALHAM|ALSOL| BUTHAM|BUTSOL |HAMSOL
-	BUTHE	BUT	-	-
-	HAMAD	HAM	-	-
-	SOLEIMAN	-	-	-
REGINALD B GOODRIDGE	B	B	GOOREG **Note**: Initials are ignored by default when generating cluster keys	GOOREG

Table 2-7 (Cont.) Given Names Cluster

dnFullName	Name tokens and trimmed values	Name tokens and trimmed values	Cluster Keys	dnClusterFullNameTrim
-	GOODRID GE	GOO	-	-
-	REGINALD	REG	-	-
REGINALD B SR GOODRICH	B	B	GOOREG GOOSR REGSR	GOOREG|GOOSR|REGSR
-	GOODRIC H	GOO	-	-
-	REGINALD	REG	-	-
-	SR	SR	-	-
STEPHEN JEQE NKOMO	JEQE	JEQ	JEQNKO JEQSTE NKOSTE	JEQNKO|JEQSTE|NKOSTE
-	NKOMO	NKO	-	-
-	STEPHEN	STE	-	-
S J NKOMO	S	S	NKO **Note**: Initials are ignored by default when generating cluster keys	NKO
-	NKOMO	NKO	-	-
STEPHEN JEKE N KOMO	JEKE	JEK	JEKKOM JEKSTE KOMSTE **Note**: Initials are ignored by default when generating cluster keys	JEKKOM|JEKSTE|KOMSTE

Nationality Prohibition (Nationality Code)

This cluster uses the space-delimited list of nationality country codes to generate cluster keys by generating an array of the component country codes.

Residency Prohibition (Residency Code)

This cluster uses the space-delimited list of residency country codes to generate cluster keys by generating an array of the component country codes.

Name and Country (dnClusterNameCountry)

The **Name and Country** cluster provides a backup using more detailed information about names and combining them with country information. The cluster is used to compare very similar names that are located over the same countries.

The default logic of the cluster builder is as follows:

- Split the normalized Full Name into name tokens, using space as a delimiter.

> **Note:**
>
> Many other punctuation and noise characters are normalized to spaces before generating the cluster. For further information see Name Normalization.

- Apply the **Metaphone** transformation to each name token, outputting a key with a length of up to twelve characters.
- Sort the **Metaphone** values alphabetically.
- For each country code associated with the record:
  - Concatenate the country code with the full set of **Metaphone** values, using an underscore as a separator.
  - If more than two **Metaphone** values are present, then iterate through all groups of **Metaphone** values which have exactly one value from the set missing, concatenating the country code onto the front of the **Metaphone** value set.
  - If the overall length of the `dnClusterNameCountry` field has exceeded 1000 characters, discard the last key and stop key generation.

Example

Table 2-8 Name and Country

dnFullName	Country Codes	Name tokens and Metaphone values	Name tokens and Metaphone value	Cluster Keys	dnClusterNameCountry
MOHAMMED SANI	ES GB	MOHA MMED SANI	MHMT SN	ES_MHMT_SN GB_MHMT_SN	ES_MHMT_SN| GB_MHMT_SN
SULIMAN HAMD SULEIMAN	ES TH GB	HAMD SULEI MAN SULIM AN	HMT SLMN SLMN	**ES_HMT_SLMN_S LMN** **ES_SLMN_SLMN** **ES_HMT_SLMN** **ES_HMT_SLMN** **TH_HMT_SLMN_ SLMN** **TH_SLMN_SLMN** **TH_HMT_SLMN**	ES_HMT_SLMN_SLMN| ES_SLMN_SLMN| ES_HMT_SLMN| ES_HMT_SLMN| TH_HMT_SLMN_SLMN| TH_SLMN_SLMN|TH_HMT_SLMN| TH_HMT_SLMN| GB_HMT_SLMN _SLMN| GB_SLMN_SLMN| GB_HMT_SLMN| GB_HMT_SLMN

Table 2-8 (Cont.) Name and Country

dnFullName	Country Codes	Name tokens and Metaphone values	Name tokens and Metaphone value	Cluster Keys	dnClusterNameCountry
-	-	-	-	TH_HMT_SLMN GB_HMT_SLMN_ SLMN GB_SLMN_SLMN GB_HMT_SLMN GB_HMT_SLMN	-

Name and YOB (dnClusterNameYOB)

The Name and YOB cluster provides a backup using more detailed information about names and initials combining them with years of birth.

The default logic of the cluster builder is as follows:

- Standardize dnGivenNames and dnFamilyName;
- Apply transliteration followed by the Metaphone transformation to the standardized given name, outputting a key with a length of up to four characters;
- Apply transliteration followed by the Metaphone transformation to the standardized family name, outputting a key with a length of up to four characters;
- Extract and uppercase the first letter of the standardized dnGivenName;
- Extract and uppercase the first letter of the standardized dnFamilyName;
- Extract the first two years of birth from dnYOB to generate two values (referred to as 'First YOB' and 'Second YOB' in the remainder of this example);
- Create up to four cluster keys by concatenating the following combinations of elements, using the underscore character:
  - First YOB + dnFamilyName (uppercased initial) + dnGivenNames (Metaphone).
  - First YOB + dnGivenNames (uppercased initial) + dnFamilyNames (Metaphone).
  - Second YOB + dnFamilyName (uppercased initial) + dnGivenNames (Metaphone).
  - Second YOB + dnGivenNames (uppercased initial) + dnFamilyNames (Metaphone).

    > **Note:**
    >
    > If any of the required data elements are missing, then the corresponding cluster key will not be generated.

  - Deduplicate the list of keys.

Example

Table 2-9 Name and YOB

dnGivenNames, dnFamilyName	dnYOB	Name tokens and Metaphone values	Name tokens and Metaphone values	Cluster Keys	dnClusterNameYOB
MOHAMMED, SANI	1969 1970 1971	MOHAMMED	MHMT	1969_S_MHMT 1969_M_SN 1970_S_MHMT 1970_M_SN	1969_S_MHMT | 1969_M_SN| 1970_S_MHMT | 1970_M_SN
SULIMAN HAMD, SULEIMAN	1980 1981 1982	HAMD	HMT	1980_S_SLMN 1981_S_SLMN	1980_S_SLMN| 1981_S_SLMN
-	SULEIMAN	SLMN	-	-	-
-	SULIMAN	SLMN	-	-	-

First and Last Name (dnClusterFirstLast)

The First and Last Name cluster provides a tighter name only clustering method that relies on the first given name and last family name matching after standardization and allows for variation in any of the name tokens in-between.

The default logic of the cluster builder is as follows:

- Strip initials from the normalized given name and family name.
- Strip all common name qualifiers from the normalized given names and family name, e.g. Al, Bin, Von.
- Extract the first token from the stripped given names. If all tokens were stripped in steps 1 and 2, then extract the first token from the original normalized given names.
- Extract the last token from the stripped family name. If all tokens were stripped in steps 1 and 2, then extract the last token from the original normalized family name.
- Trim the extracted values to a maximum length of 4 characters.
- Sort the trimmed values alphabetically and concatenate to generate the final key value.

Example

Table 2-10 First and Last Name

dnGivenNames	dnFamilyName	Extracted Values	Extracted Values	dnClusterFirstLast
OSVALDO ANTONIO	CASTELLVALDEZ	OSVALDO	VALDEZ	OSVAVALD
ABU MAHDI	ALMUHANDIS	MAHDI	MUHANDIS	MAHDMUHA
ABU	NIDAL	ABU	NIDAL	ABUNIDA
V U	SHEIMAN	V	SHEIMAN	SHEIV

OriginalScript Name (dnClusterOriginalScript)

TheOriginal Script Name cluster provides a clustering method for matching names represented in non-Latin writing systems. The cluster builder generates a key for each token in the name.

> **Note:**
>
> A single cluster value of "Myanmar" is generated for original script names written in the Burmese alphabet irrespective of the name. This is needed because token splitting is not possible for the Myanmar writing system as it does not use a space character between words. As a result, all original script namesin the Burmese script will be compared during matching. This should not cause performance issues during screening provided there are a low number of customer records using this writing system.

Thedefault logic of the cluster builder is as follows:

- Split the original script name into several name tokens, using a space character as the delimiter.
- Trim each name token to a maximum of 5 characters.
- Concatenate all of the trimmed token values with a pipe separator.
- Deduplicate the list of keys.

Example

Table 2-11 Original Script Name

dnOriginalScriptName	dnClusterOriginalScript
І в а н А н т о н а в і ч Ш ч у р о к	І в а н|А н т о н|Ш ч у р о
[illegible]	[illegible]
[illegible]	Myanmar
[illegible]	[illegible]

First Initial Last Name (dnClusterInitials)

The First Initial Last Name cluster provides a clustering method to group together names that share the same first name initial and last name and allows some variation for transposed names.

The default logic of the cluster builder is as follows:

- Split the normalized given names into several name tokens, using a space character as the delimiter.
- Split the normalized family name into several name tokens, using a space character as the delimiter.
- Generate the cluster key value as follows:
  - If there are two or more characters in the last token of the family name, then concatenate the first character of the given name with the last token of the family name.

  - If the last token of the family name is a single initial, then concatenate that character with the first token of the given name.
- Trim the cluster key to a maximum of 12 characters.

Examples

Table 2-12 First Initial Last Name

dnGivenNames	dnFamilyName	dnClusterFirstLast
MARTIN	JONES	MJONES
MARTIN PETER	JONES	MJONES
MARTIN	MORGAN JONES	MJONES
JONES	M	MJONES

2.3 Matching

Oracle Financial Services Customer Screening uses different approaches to matching for different use cases. For Sanctions screening, a zero-tolerance approach to matching is assumed, where secondary data such as dates and years of birth, and nationalities cannot necessarily be assumed to be correct. In this case, it may be important to present matches where there is a level of name match even if other data would indicate that a match is unlikely. When screening against lists of Politically Exposed Persons (PEPs) or other individuals on watch lists (Enhanced Due Diligence matching), where the occasional 'false negative' may be tolerable from a business perspective, match rules are generally 'tighter' and demand at least one item of secondary data (such as a nationality, year of birth or date of birth) matches as well as a name of match. However, the screening rules for each screening process can, and should, be tailored according to the business appetite to risk. Oracle Financial Services Customer Screening also provides separate processes for Batch and Real-Time screening, as these may be subject to different matching strategies.

The following general notes describe the approach to matching:

- Matches are ranked according to how well the name matches. An exact name match rates as a match at the highest level, with the lowest level being represented by two loosely possible name matches with a different name structure. Further ranking is imposed by how well additional information (such as city or country information, and date of birth information) matches between the records.
- Oracle Financial Services Customer Screening allows for various levels of name match, including, but not limited to:
  - Name variation recognition. This is carried out by name standardization. For example, all variations of Mohammed (Muhamad, Mohammad, Mohamed and so on) are substituted with ‘Mohammed’ when matching. This is particularly used for given names, though also applied when matching whole names. For example, more than 20 variations of the name ‘Mohammed’ are recognized and considered to be the same name.
  - Allowances for name abbreviation and initials. For example, ‘Pete’ is a possible match to ‘Peter’, and ‘J’ is a possible match to ‘John’.
  - Allowances for typographical errors and transliteration differences. For example, ‘Abdool’ is a possible match to ‘Abdul’, even if the variants are not standardized.
  - Allowances for names being out of order or structured differently. For example, ‘Mohammed Abbas Al-Tikriti’ can be matched with ‘Mohammed Al-Tikriti Abbas’.

  - Allowance for additional names. For example, ‘Juan Carlos Ferreira’ can be matched with ‘Juan Ferreira’.
  - Allowance for names being split differently. For example, ‘Xiao Jian’ is a match to ‘Xiaojian’.
- Oracle Financial Services Customer Screening attempts to prevent false positives by various means, including, but not limited to, the following methods:
  - Backing up typo tolerance with Metaphone matching. For example, ‘Mary’ and ‘Mark’ are not considered a match, although they are only one character different.
  - Backing up typo tolerance with consideration of the percentage of characters that are different. For example, the initials ‘A’ and ‘E’ are not considered a match, even though they are only one character different.
  - Considering the different significance and commonality of name tokens. For example, if name qualifiers such as ‘Al’ are shared between two Arabic names, this is not as significant as if an uncommon name such as ‘Abbas’ is shared.
- It is advisable to configure the set of match rules that are activated. In particular, you may wish to activate or deactivate some of the lower match rules in the list, which lead to the weakest name matches. Factors affecting the usefulness of these rules include:
  - The policies of the organization;
  - The quality of the customer data;
  - The provenance of the customer data.

For example, Asian and Arabic names may be subject to more typographical and name ordering issues than other names. Where the data contains many of these names, the lower strength rules may identify more possible matches. The organization may want to review some or all of these as a matter of policy, or it may consider the matches too weak to review.

The required rules are easily activated or deactivated as needed in Oracle Financial Services Customer Screening.

Match Rules

The following match rules are involved in Individual Screening:

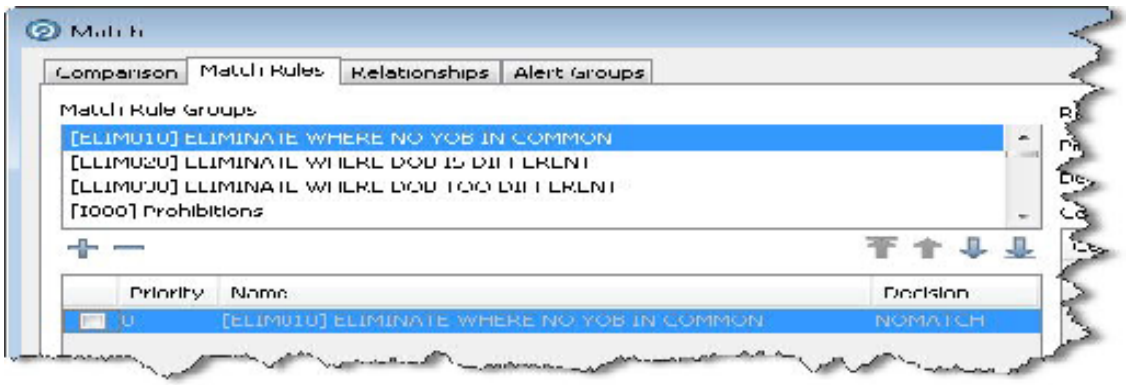
- The elimination rules. These are used in various positions in the rule templates to eliminate any records that have conflicting supporting data. The elimination rules may be moved up and down in order to change when they are applied during the matching process.
- The name matching rules. These are organized by the level of name match, with the strongest name matching rules placed at the top of the decision table.

> **Note:**
>
> – Match rules are not ordered by strength across all identifiers. For example, a weaker name match that is strengthened by matches on date of birth, city, and country is likely to be a stronger overall match than a strong name with strongly contradictory data in the other fields.
>
> – Oracle Financial Services Customer Screening includes many match rules for each level of name match, reflecting the match strength of any additional information, particularly date of birth and location data. The last rule in each set is a 'conflict' rule, and in many cases will be disabled by default. These rules allow records that fulfill the specified level of name match but have conflicting supporting data fields indicating that a true match is unlikely.

- The loose name matching rules. These are also based around name matching, but identify looser matches and are not enabled by default. These rules are likely to result in a large number of false-positive matches and are most likely to be of use when screening against sanctions lists, where it is important that no true matches are missed.

For the sake of clarity, match rules are divided into groups, as shown below:

Figure 2-1 Match Rules



As each group is selected, the match rules it contains are displayed in the window below.

The priority of the groups can be changed using the arrows below the Match Rules Group list. When a group is highlighted, you can:

- Click to move it up one place on the list.
- Click to move it down one place on the list.
- Click to move it to the top of the list.
- Click to move it to the bottom of the list.

The remainder of this section describes the matching rules that are present in Oracle Financial Services Customer Screening in greater detail.

Prohibition Rules

The Prohibition rules check for country information in an individual's record against the list of prohibited countries and nationalities maintained in List Management.

Table 2-13 Prohibition Rules

Group Code	Matching Rule	Summary of Rule Logic
I000A	Country prohibition - Residency	The country of residence given matches a prohibited country.
I000B	Country prohibition - Nationality	The nationality given matches a prohibited nationality.

Elimination Rules

Table 2-14 Elimination Rules

Elimination Rule	Summary of Rule Logic	Enabled by default?
ELIMINATE WHERE NO YOB INCOMMON	This rule will eliminate pairs of records if both YOB fields are populated and there is no value in common.	Yes
ELIMINATEWHERE DOB IS DIFFERENT	This rule will eliminate pairs of records if both DOB fields are populated and there is no value in common.	No
ELIMINATE WHERE DOB TOODIFFERENT	This rule will eliminate pairs of records if the date of birth differs too greatly between the two records. Pairs are eliminated if there are 6 or more years difference between DoBs, and one typographical error, and one typographical error in a month.	No
ELIMINATE WHERE GENDER IS DIFFERENT AND BOTH DERIVED OR BOTH STATED	This rule will eliminate pairs of records if the genders are different, and EITHER both records had the gender specified as part of the input record, OR both records have a gender value which was derived from other fields.	Yes
ELIMINATE WHERE NO COUNTRYSHARED AND ALL SAFE	This rule will eliminate pairs of records if there are no countries in common in the Country fields, AND if all countries listed are on the Safe list. The Safe list is maintained in the Match - Individual Safe Countries ISO Codes Reference Data.	Yes
ELIMINATE WHERE NO NATIONALITIES IN COMMON	This rule will eliminate pairs of records if the Nationality fields contain no common entries.	Yes

Table 2-14 (Cont.) Elimination Rules

Elimination Rule	Summary of Rule Logic	Enabled by default?
ELIMINATE WHERE LIST OCCUPATION IS SAFE	This rule will eliminate pairs of records if the List Occupation field contains only values in the Match - Safe Occupations Reference Data.	Yes
ELIMINATE WHERE CUSTOMERRISK SCORE BELOWTHRESHOLD	This rule will eliminate pairs of records if the Customer Risk Score is below a threshold specified in the corresponding screening process.	No
ELIMINATE WHERE LIST RISK SCORE BELOW THRESHOLD	This rule will eliminate pairs of records if the List Risk Score is below a threshold specified in the corresponding screening process.	No
ELIMINATE WHERE LIST PEP RISKSCORE BELOW THRESHOLD	This rule will eliminate pairs of records if the List PEP Risk Score is below a threshold specified in the corresponding screening process.	No

Note:

No elimination rules are enabled by default for Sanction records.

2.3.1 Name Matching Rules

Table 2-15 Name Matching Rules

Group Code	Matching Rule	Logic Summary	Example Matching Data	Example Matching Data
I010	Exact name	Given names and family name match exactly.	**Given Names**	**Family Name**
			JOSEPH	TSANGA
			JOSEPH	T'SANGA
I020	Original script name exact	The original script Name fields match exactly.	**Original Script Name**	**Original Script Name**
			А Л Е К С А Н Д Р О С О К И Н	А Л Е К С А Н Д Р О С О К И Н
I030	Standardized given name	Given names match after name standardization using Given name map.	**Given Names**	**Family Name**
		Family name matches exactly.	BILL	JONES
		-	WILLIAM	JONES
I040	Full name	The full name matches exactly, after	**Full Names**	-

Table 2-15 (Cont.) Name Matching Rules

Group Code	Matching Rule	Logic Summary	Example Matching Data	Example Matching Data
		standardization of all name tokens using the Given Name Map.	JOHN MIKE SMITH JOHN MICHAEL SMITH	- -
I050	Full name without titles	The full name matches exactly, after standardization of all name tokens using the Given Name Map and removal of titles.	**Full Names** DR DOUGLAS BAKER DOUGLAS BAKER	- - -
I060	Abbreviated standardized given name	Given names match using a 'Starts With' comparison, after name standardization using the Given Name Map. Family name matches exactly.	**Given Names** JOSEPH ABANDA JOSEPH	**Family Name** TSANGA - T'SANGA
I070	Given name similar and sounds like	Given name matches with an Edit Distance of 1 or 2 after name standardization. At least one of the given names, excluding initials, must match by a 4-character Metaphone key. Family name matches exactly	**Given Names** JOSEPH JOSEPH	**Family Name** ABANDA ABANDA
I080	First name similar and sounds like	The first given name matches with an Edit	**Given Names** AMER MOHAMMAD RASHEED AMIR RASHID MOHAMMED	**Family Name** AL UBAIDI AL UBAIDI
I090	Additional given names	All name tokens from the given names field with fewest tokens must be present in the other given names field. Family name matches exactly.	**Given Names** MOHAMMED DIN MOHAMED	**Family Name** HANIF HANIF
I100	Additional names	All name tokens from the full name with fewest tokens	**Full Name** LOTFI RIHANI	- -

Table 2-15 (Cont.) Name Matching Rules

Group Code	Matching Rule	Logic Summary	Example Matching Data	Example Matching Data
		must be present in the other full name. At least 2 name tokens must match with the same matching logic; that is, if a name only has one token it is not considered a match. At least 2 name tokens must exist in the Full Name. Note: Word Match Count may return >1 if a single name matches twice in a longer name string. For example, 'ABDUL' matches 'ABDUL ABDUL' with a Word Match Count of 2.	LOTFI BEN ABDUL HAMID BEN ALI RIHANI	- -
I110	Original script name in any order	All names in the original script name fields match, regardless of order.	**Original Script Name** Καρλος Μολινα	**Original Script Name** Μολινα Καρλος
I120	Original script name with typos	Original script name fields match with an	**Original Script Name** Καρλος Μολινα	**Original Script Name** Καρλος
I130	All names in any order	All names in the full name match (using a Word Edit Distance of 0) after name token standardization, in any order. A single typo (1 character edit) is allowed in each name token.	**Full Name** ABDUL JABBER OMARI OMARI ABDUL JABBER	- - -
I140	Abbreviated given name	Given names match using a 'Starts With' comparison. Family name is a close Metaphone match.	**Given Names** CHRIS CHRISTOPHER	**Family Name** HUNT HUNTER
I150	Abbreviated given name and family name typos	Given names match using a 'Starts With' comparison, after name standardization using Given Name	**Given Names** IBRAHIM ABDUL SALAM	**Family Name** MOHAMED BOYASSEER

Table 2-15 (Cont.) Name Matching Rules

Group Code	Matching Rule	Logic Summary	Example Matching Data	Example Matching Data
		Map. Family name matches with an edit difference of 1-2. At least one of the family name tokens, excluding initials, must match by a 4character Metaphone key.	IBRAHIM	BOYASEER
I160	Abbreviated given name without titles and family name with typos	The first given name matches with a "Starts With" match, after name token standardization and stripping titles. Family name matches with an edit difference of 12. At least one of the family name tokens, excluding initials, must match by a 4character Metaphone key.	**Given Names** SAHIR DR SAHIR MUSA	**Family Name** BARHAN BERHIN
I170	Original script name in any order with typos	All names in the original script name fields match, regardless of order, with each name requiring an 80%+ Character Match Percentage score.	**Original Script Name** Хасан Ченгиһ	**Original Script Name** Ченгиһ Хассан
I180	First name and full name similar and sounds like	The full name matches with a Character Match Percentage of 80% or above, after name token standardization. At least one of the family name tokens, excluding initials, must match by a 4-character Metaphone key.	**Given Names** MOHAMMAD HUSAYN MOHAMMAD HASSAN	**Family Name** MASTASAEED MASTASAEED
I190	Given name similar and family names and sounds like	The given name matches with an Edit Distance of 1 or 2, after name	**Given Names**	**Family Name**

Table 2-15 (Cont.) Name Matching Rules

Group Code	Matching Rule	Logic Summary	Example Matching Data	Example Matching Data
		standardization. The given name matches by 4-character Metaphone key, after name standardization. The family name matches with an Edit Distance of 1-2. The family name matches by 4-character Metaphone key.	AMER	AL UBAIDI
I200	Abbreviated given name and family name similar	The first given name matches with a "Starts With" match, after name token standardization. The family name matches with an Edit Distance of 1 or 2. The family name matches by 4-character Metaphone key.	**Given names** VIKTOR ANATOLYEVIC H VICTOR	**Family name** BOUT BOOT
I210	Original script name additional names	All names in one original script name field must be fully contained within the other field, provided there are at least two names in each field.	**Original Script Name** Миленко Врачар	**Original Script Name** Миленко
I220	Additional names typo tolerant	All name tokens from the full name with fewest tokens must be present in the other full name. A character error tolerance of 20% is allowed (that is, one character edit every 5 characters). At least 2 name tokens must match with the same matching logic. If a name contains only one token it is not considered a match according to this rule. Note: Word	**Full Name** ABDUL WAHED SHAFIQ	- -

Table 2-15 (Cont.) Name Matching Rules

Group Code	Matching Rule	Logic Summary	Example Matching Data	Example Matching Data
		Match Count may return >1 if a single name matches twice in a longer name string. For example, 'ABDUL' matches 'ABDUL ABDUL' with a Word Match Count of 2.	ABDUL WAHAD	-
I230	Full name contained and multiple names in common	The full name matches with a 'Contains' match, after standardization of all name tokens using the Given Name Map. At least 2 name tokens must match in the full name.	**Full Name** ABU BAKAR ABU BAKAR BA'ASYI	- - -
I240	Full name characters longer	The full name matches with a Longest Common Substring Sum Percentage of 90% +, relating to the longer string, and considering substrings of 5 characters or more in length, after name standardization.	**Full Name** MOHAMMEDAL GHABRA ALGHABRA MUHAMAD RAMATULLAH WAHIDYAR FAQIR MOHAMMAD WAHIDYAR RAMA TULLAH	- - - -
I250	Original script name additional names with typos	All names in one original script name field must be fully contained within the other field, provided there are at least two names (all of which have an 80%+Character Match Percentage) in each field.	**Original Script Name** Юри Неёлов - -	**Original Script Name** Юрий Васильевич Неёлов
I260	Abbreviated first name	The first given name matches with a "Starts With" match, after name token standardization. Family name matches exactly.	**Given Names** KHADAF ABUBAKAR KHADAFFI	**Family Name** JANJALANI - JANJALANI

Table 2-15 (Cont.) Name Matching Rules

Group Code	Matching Rule	Logic Summary	Example Matching Data	Example Matching Data
I270	Additional names in any order	All name tokens from the full name with fewest tokens must be present in the other full name. At least 2 name tokens must match with the same matching logic. If a name contains only one token it is not considered a match according to this rule. Note: Word Match Count may return >1 if a single name matches twice in a longer name string. For example, 'ABDUL' matches 'ABDUL ABDUL' with a Word Match Count of 2. Matching is not order-sensitive.	**Full Name** HA THI NGUYEN THI HA	- - -
I280	Additional names in any order typo tolerant	All name tokens from the full name with fewest tokens must be present in the other full name. A character error tolerance of 20% is allowed (that is, one character edit every 5 characters). At least 2 name tokens must match with the same matching logic. If a name contains only one token it is not considered a match according to this rule. **Note**: Word Match Count may return >1 if a single name matches twice in a longer name string. For example, 'ABDUL' matches 'ABDUL ABDUL'	**Full Name** STEPHENS MARTIN	- -

Table 2-15 (Cont.) Name Matching Rules

Group Code	Matching Rule	Logic Summary	Example Matching Data	Example Matching Data
		with a Word Match Count of 2. Matching is not order-sensitive.	MARRTIN JOHN STEPHENS	-

2.3.2 Loose Name Matching Rules

Table 2-16 Loose Name Matching Rules

Group Code	Matching Rule	Summary of Rule Logic	Example Matching Data
I290	Full name characters shorter	The full name matches with a Longest Common Substring Sum Percentage of 90%, relating to the shorter string, and considering substrings of 5 characters or more in length, after name standardization. At least 2 name tokens must exist in the full name.	Full Name
-	-	-	ABU BAKAR
-	-	-	ABU BAKAR BA'ASYI
I300	Full name no initials match with initials in any order relating to shorter	All initials in one Full Name field must be fully contained within the initials of the other Full Name field; AND the standardized Full Name field without initial must be fully contained within the other standardized Full Name field without initials; AND both fields must contain at least two names.	Full Name
-	-	-	CARL J FISHER
-	-	-	J C FISHER

Table 2-16 (Cont.) Loose Name Matching Rules

Group Code	Matching Rule	Summary of Rule Logic	Example Matching Data
I310	Full name contained, last initial same, primary list is single token	The Full Name field from the watch list record contains only one name, which is fully contained within the record being screened; AND the initial of the last name in the record being screened must match the initial of the name in the watch list record.	Full Name
-	-	-	JANINE CHERRY
-	-	-	CHERRY

2.3.3 Deprecated Name Matching Rules

The following rules are assigned the Rule Group Code I990. These are legacy rules that are superseded by the Deprecated Name Matching Rules set, and are included here to assist existing Customer Screening customers with the transition to the current version.

Table 2-17 Deprecated Name Matching Rules (Given name in common)

Name matching rule	Summary of rule logic	Example matching data	Example matching data
Given name in common	At least one given name is found in common, after name standardization. Family name matches exactly.	**Given Name** HASS AN ALI IBRAH IM HASS AN	**Family Name** AL TIKRIT I AL TIKRIT I

Table 2-18 Deprecated Name Matching Rules

Name matching rule	Summary of rule logic	Example matching data	-
Full name similar and family name sounds like	Full name matches with a Character Match Percentage of 80% or more after name standardization. At least one of the family name tokens (excluding initials) must match by a 4character Metaphone key.	Full Name AKHYAR MOHAMMED MANSOUR AKHTAR MUHAMED MANZUR	- - -
Similar first name	The first given name matches with an edit distance of between 1 and 2 after name standardization, and with	**Given Name** MIKO LAI	**Family Name** METELITSA

Table 2-18 (Cont.) Deprecated Name Matching Rules

Name matching rule	Summary of rule logic	Example matching data	-
	a Character Match Percentage of 66% or more. Family name matches exactly.	NIKOL AI TIMO FEEVI CH	METELITSA
Similar first name and family name	The first given name matches with an edit distance of between 1 and 2 after name standardization, and with a Character Match Percentage of 66% or more. Family name matches with a Character Match Percentage of 66% or more. At least one of the family name tokens (excluding initials) must match by a 4-character Metaphone key.	**Given Name** GENN ADY GENN ADIY	**Family Name** NEVYGLAS NYAVIGLAS
Given names in common and similar family name and sounds like	At least one given name is found in common,after name standardization. The family name matches with a Character Edit Distance of 1-2. The family name matches by 4-character Metaphone key.	**Given Names** ABDUL JABBAR FAROUK ABDUL	**Family Name** OMAI RI OMAR I
Abbreviated standardized given name and family name contained	Given names match using a 'Starts With' comparison, after name standardization using the Given Name Map. Family name matches using 'Contains' comparison after token standardization.	**Given Name** A ABDU L	**Family Name** RAHIMI RAHIM
Similar given name	The given name matches with a Character Edit Distance of between 1 and 2 after name standardization. Family name matches exactly.	**Given Name** NAY NYAW	**Family Name** WIN WIN
Full name contained	The full name matches with a 'Contains' match, after standardization of all name tokens using the Given Name Map.	**Full Name** CHARNI KOKO KOKO	- - -
Full name similar	The full name matches with a Character Match	**Full Name**	-

Table 2-18 (Cont.) Deprecated Name Matching Rules

Name matching rule	Summary of rule logic	Example matching data	-
	Percentage of 80% or above, after name token standardization.	JUAN LOIS RUBENACHROIG	-
		JUAN LOIS RUBENACH ROIZ	-
Abbreviated first name and similar family name	The first given name matches with a 'Starts With' match, after name token standardization. The family name matches with a Character Edit Distance of 1-2.	**Given Name**	**Family Name**
		A	UMARI
		ABU	OMAR
Given name in common and similar family name	At least one given name is found in common,after name standardization. The family name matches with a Character Edit Distance of 1-2. The family name matches by 4-character Metaphone key.	**Given Name**	**Family Name**
		NURJ AMAN	ISAMUDIN
		RIDUA N	
		RIDUA N	ISOMUDDIN
		REGIN ADL	GOODRIDGE
		REGIN ALD	GOODRICH

2.3.4 Ranking matches within Name rules

Table 2-19 Ranking matches within Name rules

Match Rule	Summary of Matching Logic	Example Matching Data	Example Matching Data	Example Matching Data
[Name rule], city, DoB	At least one city matches. The date of birth matches exactly.	**DoB**	**City**	-
		01/11/1963	London	-
		01/11/1963	New York| London	-
[Name rule], country, DoB	At least one country matches. The date of birth matches exactly.	**DoB**	**Country**	-
		25/01/1959	PK IN US	-
		25/01/1959	PK	-
[Name rule], DoB	The date of birth matches exactly.	**DoB**	-	-
		19/09/1968	-	-
		19/09/1968	-	-
[Name rule], city, YoB, no DoB	At least one city matches. Year of birth matches. No date of birth provided.	**YoB**	**City**	**DoB**
		1978	Lahore| Mumbai	-
		1978	Lahore	-
[Name rule], country, YoB, no DoB	At least one country matches. Year of birth matches. No date of birth provided.	**YoB**	**Country**	**DoB**
		1962	IQ US	-
		1962	IQ	-

Table 2-19 (Cont.) Ranking matches within Name rules

Match Rule	Summary of Matching Logic	Example Matching Data	Example Matching Data	Example Matching Data
[Name rule], YoB, no DoB	Year of birth matches. No date of birth provided.	**YoB**	**DoB**	-
		1975	-	-
		1975	-	-
[Name rule], city, DoB similar Match Rule	At least one city matches. Dates of birth are a close match, according to one of the following parameters only: DD and MM values are transposed, but YYYY matches exactly. DD and MM match, YYYY does not. DD and YYYY match, MM does not. DD values differ by 5 or less.	DoB	City	-
		08/04/1967	Riyadh	-
		04/08/1967	Riyadh	-
[Name rule], country, DoB similar	At least one country matches. Dates of birth are a close match, according to one of the following parameters only: DD and MM values are transposed, but YYYY matches exactly. DD and MM match, YYYY does not. DD and YYYY match, MM does not. DD values differ by 5 or less.	**DoB**	**Country**	-
		08/04/1967	SA	-
		08/04/1977	SA	-
[Name rule], DoB similar	Dates of birth are a close match, according to one of the following parameters only: DD and MM values are transposed, but YYYY matches exactly. DD and MM match, YYYY does not. DD and YYYY match, MM does not. DD values differ by 5 or less.	**DoB**	-	-
		19/06/1967	-	-
		16/06/1967	-	-

Table 2-19 (Cont.) Ranking matches within Name rules

Match Rule	Summary of Matching Logic	Example Matching Data	Example Matching Data	Example Matching Data
[Name rule], city, YoB (DoB conflict)	At least one city matches. Year of birth matches. Dates of birth do not match.	**YoB**	**City**	**DoB**
		1978	Lahore| Mumbai	13/04/1978
		1978	Lahore	04/08/1978
[Name rule], country, YoB (DoB conflict)	At least one country matches. Year of birth matches. Dates of birth do not match.	**YoB**	**Country**	**DoB**
		1962	IQ	05/07/1962
		1962	IQ	04/11/1962
[Name rule] YoB (DoB conflict)	Year of birth matches. Dates of birth do not match.	**YoB**	**DoB**	-
		1962	05/07/1962	-
		1962	04/11/1962	-
[Name rule], city	At least one city matches.	**City**	-	-
		Lahore| Mumbai	-	-
		Lahore	-	-
[Name rule], country	At least one country matches.	**Country**	-	-
		IQ PK	-	-
		IQ	-	-
[Name rule] only	The name rule returns a match. No data in other fields.	**Name**	**Country**	**DoB**
		J SMITH	-	-
		J SMITH	-	-
[Name rule] (conflict)	The name rule returns a match. Data in other fields do not match.	**Name**	**Country**	**DoB**
		J SMITH	IQ	05/07/1962
		J SMITH	UK	04/11/1974

Table 2-20 Ranking matches within Name rules

Group Code	Match Rule	Summary of Matching Logic	Example Matching Data
E040	Name without suffixes exact	The entity names match exactly after number cardinal and ordinal standardization, and after common company prefixes and suffixes are removed.	CAPITAL DIRECT LTD CAPITAL DIRECT AG
E050	Name without business words similar and sounds like	The entity names match with a Word Match Percentage of 80% after number cardinal and ordinal standardization, and after common company prefixes,	PARAGON UK

Table 2-20 (Cont.) Ranking matches within Name rules

Group Code	Match Rule	Summary of Matching Logic	Example Matching Data
		suffixes and other words are removed. The first word of each name has the same 4-character Metaphone key.	PARAGON INVESTMENT CORPORATION
E060	Name without business words exact	The entity names match exactly after number cardinal and ordinal standardization, and after common company prefixes, suffixes and other words are removed.	LIFE HEALTHCARE GROUP HOLDINGS LTD LIFE HEALTH CARE INC
E070	Name without business words has all words out-oforder	All remaining words in each entity name match exactly, but in any order, after number cardinal and ordinal standardization, and after common company prefixes, suffixes and other words are removed.	EDUCATION FOR HEALTH HEALTH EDUCATION SERVICES
E080	Name without suffixes 'Starts With' and multiple names in common	The entity names are a 'Starts With' match after number cardinal and ordinal standardization, and after common company prefixes and suffixes are removed. There are at least two significant words (not common business words) in common between the two names. The listed name is not an acronym alias of a longer primary entity name.	BAE SYSTEMS (LANCASTER HOUSE) LIMITED BAE SYSTEMS PLC
E090	Name without business words has all words with typos	All remaining words in each entity name match with a Character Match Percentage of 80 or more, after number cardinal and ordinal	GERBERA ASSOCIATES LTD

Table 2-20 (Cont.) Ranking matches within Name rules

Group Code	Match Rule	Summary of Matching Logic	Example Matching Data
		standardization, and after common company prefixes, suffixes and other words are removed.	BERBERA
E100	Original script name in any order	All words in the Original Script Names match exactly, in any order.	О А О Н И А Э П Н И А Э П О А О
E110	Original script name with typos	The Original Script Names match with a Character Match Percentage of 80% or more.	Е π α ν α σ τ α τ ι κ ħ А ρ ι σ τ ε ρ ħ Е π α ν α σ τ α ι κ ħ А ρ ι σ τ ε ρ ħ
E120	Name without business words with typos, and sounds like	The entity names match with a Character Match Percentage of 80 ore more after number cardinal and ordinal standardization, and after common company prefixes, suffixes and other words are removed. The first word of each name has the same 4-character Metaphone key and the first three letters of each name are the same.	GOLDSTREAM PROPERTIES LTD GOLDSTEIN PROPERTIES INC
E130	Name without suffixes contains, similar and multiple names in common	The entity names are a 'Contains' match and the Word Edit Distance is no more than one between the names (where each word matches with a Character Match Percentage of 80 or more), after number cardinal and ordinal standardization, and after common company prefixes and suffixes are	HAMPSHIRE HERITAGE DEVELOPMENTS LTD

Table 2-20 (Cont.) Ranking matches within Name rules

Group Code	Match Rule	Summary of Matching Logic	Example Matching Data
		removed. There are at least two significant words (not common business words) in common between the two names.	HERITAGE DEVELOPMENT CORPORATION
E140	Name has additional words, sounds like and multiple names in common	All words in the shorter entity name exist in the longer entity name (in order) after number cardinal and ordinal standardization, and after common company prefixes and suffixes are removed. There are at least two significant words (not common business words) in common between the two names. The list name is not an acronym alias of a longer primary entity name.	MOSCOW CITY CENTER PLC MOSCOW CENTER
E150	Name without business words contains, sounds like and multiple names in common	The entity name is a 'Contains' match with a listed entity name, after number cardinal and ordinal standardization, and after common company prefixes, suffixes and other words are removed. There are at least two significant words (not common business words) in common between the two names. The first word of each name has the same 4-character Metaphone key.	HI-TECH RECRUITMENT LTD HI TECH GROUP
E160	Original script name in any order with typos	All words in the original script name match with a Character Match Percentage of 80 or more, in any order.	M α τ h p o ς Σ ε π τ h μ β ρ η ς Σ ε π τ h μ β ρ η ς M α τ h p o ς ς

Table 2-20 (Cont.) Ranking matches within Name rules

Group Code	Match Rule	Summary of Matching Logic	Example Matching Data
E170 Group Code	Name without business words has most words out-oforder	The entity names match (in any order) with a Word Match Percentage of between 75 and 99, after number cardinal and ordinal standardization, and after common company prefixes, suffixes and other words are removed. The list name is not an acronym alias of a longer primary entity name.	BACK TO HEALTH CLINICS LIMITED BACK TO HEALTH CHIROPRACTIC
E180	Name without business words, similar, sounds like, with multiple names and a residual token in common	All words in the shorter entity name exist in the longer entity name (in order) after number cardinal and ordinal standardization, and after common company prefixes, suffixes and other words are removed. There are at least two significant words (not common business words) in common between the two names, and at least one of these is not a word in the English dictionary or a very common word in Watchlist name data. The list name is not an acronym alias of a longer primary entity name.	CHARLES ASH UK LTD CHARLES F ASH CONSTRUCTION CO INC
E190	Name without business words, similar with typos, sounds like, with multiple names and residual token in common.	All words in the shorter entity name match with a Character Match Percentage of 80 or more in the longer entity name (in order) after number cardinal and ordinal	CLARKS HOME BAKERY LTD

Table 2-20 (Cont.) Ranking matches within Name rules

Group Code	Match Rule	Summary of Matching Logic	Example Matching Data
		standardization, and after common company prefixes, suffixes and other words are removed. There are at least two significant words (not common business words) that match with a Character Match Percentage of 80 or more, and at least one of these is not a word in the English dictionary or a very common word in Watchlist name data. The list name is not an acronym alias of a longer primary entity name. The group name differs from the rule name.	CLARK HOMES INC
E200	Name without business words, similar, sounds like, and residual token in common	All words in the shorter entity name match in the longer entity name (in order) after number cardinal and ordinal standardization, and after common company prefixes, suffixes and other words are removed. The names match with a Word Match Percentage of 50 or more when common business words are not stripped. There are at least two significant words (not common business words) that match. The first word of each name has the same 4-character Metaphone key. The list name is not an acronym alias of	AMERICAN MILITARY SUPPLY

Table 2-20 (Cont.) Ranking matches within Name rules

Group Code	Match Rule	Summary of Matching Logic	Example Matching Data
		a longer primary entity name.	AMERICAN SUPPLY CO
E210	Name has additional words tolerant, sounds like and multiple names in common	All words in the shorter entity name match in the longer entity name (in order) with a Character Match Percentage of 80 or more after number cardinal and ordinal standardization. There are at least two significant words (not common business words) in common between the two names. The list name is not an acronym alias of a longer primary entity name.	GENERAL ATOMICS GENERAL BUREAU OF ATOMIC ENERGY GBAE
E220	Name without suffixes contains, similar and residual token in common	The entity names are a 'Contains' match and the Word Edit Distance is no more than one between the names (where each word matches with a Character Match Percentage of 80 or more), after number cardinal and ordinal standardization, and after common company	ACCLAIM ACM LTD ACM
E230	Name without suffixes 'Starts With' and residual token in common	The entity names are a 'Starts With' match after number cardinal and ordinal standardization, and after common company prefixes and suffixes are removed. There is at least one significant word in common (not a common business word, a word in the English dictionary	ENRON METALS BROKERS LTD

Table 2-20 (Cont.) Ranking matches within Name rules

Group Code	Match Rule	Summary of Matching Logic	Example Matching Data
		or a very common word in Watchlist name data). The listed name is not an acronym alias of a longer primary entity name.	ENRON CORP
E240	Name without suffixes 'Starts With' and substring in common	The entity names are a 'Starts With' match, and there is a common substring at least 8 characters in length, after number cardinal and ordinal standardization, and after common company prefixes and suffixes are removed. The listed name is not an acronym alias of a longer primary entity name.	ACCURATE SECTION BENDERS LTD ACCURATE
E250	Name without suffixes contains, residual token in common and significant overlap	The entity names are a 'Contains' match and the Word Match Percentage is 50 or more, after number cardinal and ordinal standardization, and after common company prefixes and suffixes are removed. There is at least one significant word in common (not a common business word, a word in the English dictionary or a very common word in Watchlist name data).	NON EMERGENCY TRANSPORT INC ACTION NON EMERGENCY TRANSPORTATIO N
E260	Name without common tokens exact, and multiple residual tokens in common	The entity names match exactly, with at least two words matching, after number cardinal and ordinal standardization, and after common	LIFE CARE CENTER PUNTA GORDA

Table 2-20 (Cont.) Ranking matches within Name rules

Group Code	Match Rule	Summary of Matching Logic	Example Matching Data
		company prefixes, suffixes, and other words, and all English dictionary and common Watchlist name words are removed.	PORT OF PUNTA GORDA
E270	Original script name has additional names	All words in the shorter original script name match in the longer original script name (in order), and there are at least two matching words.	Въоръжена ислямска група Въоръжена група
E280	Name without suffixes contains, multiple names in common and significant overlap	The entity names are a 'Contains' match and the Word Match Percentage is 50 or more, after number cardinal and ordinal standardization, and after common company prefixes and suffixes are removed. There is at least two significant words (not common business words) that match with a Character Match Percentage of 80 or more.	CITY TRANS LTD CAPITAL CITY TRANS SERV INC
E290	Name without business words	The entity names match with a Character Match Percentage of between 80 and 99 after number cardinal and ordinal standardization, and after	IBERIA AIRLINES IBERAIR LINES
E300	Name without business words similar with typos, sounds like and significant overlap	All words in the shorter entity name match with a Character Match Percentage of 80 or more in the longer entity name (in order) after number cardinal and ordinal	MED CLINIC LTD

Table 2-20 (Cont.) Ranking matches within Name rules

Group Code	Match Rule	Summary of Matching Logic	Example Matching Data
		standardization, and after common company prefixes, suffixes and other words are removed. The names match with a Word Match Percentage of 50 or more when common business words are not stripped. There are at least two significant words (not common business words) that match with a Character Match Percentage of 80 or more. The first word of each name has the same 4character Metaphone key. The list name is not an acronym alias of a longer primary entity name.	MED AMERICA CLINICS INC
E310	Name has additional words, sounds like and residual token in common	All words in the shorter entity name exist in the longer entity name (in order) after number cardinal and ordinal standardization. There is at least one significant word (not a common business word, an English dictionary word or a word or a common Watchlist name word) in common between the two names. The list name is not an acronym alias of a longer primary entity name.	DJ CASE AND ASSOCIATES INC DJ AND ASSOCIATES INC
E320	Name has additional words with typos, sounds	All words in the shorter entity name match with a Character Match	GARLOCK

Table 2-20 (Cont.) Ranking matches within Name rules

Group Code	Match Rule	Summary of Matching Logic	Example Matching Data
	like and residual token in common	Percentage of 80 or more in the longer entity name (in order) after number cardinal and ordinal standardization. There is at least one significant word (not a common business word, an English dictionary word or a word or a common Watchlist name word) that matches with a Character Match Percentage of 80 or more. The list name is not an acronym alias of a longer primary entity name.	GARLICK HELICOPTERS INC
E330	Name has additional words, sounds like and substring in common	All words in the shorter entity name exist in the longer entity name (in order) after number cardinal and ordinal standardization. There is a common substring of at least 8 characters in length between the two names after number cardinal and ordinal standardization, and after common company prefixes, suffixes and other words are removed. The list name is not an acronym alias of a longer primary entity name.	NATIONWIDE SECRETARIAL SERVICES LTD NATIONWIDE SERVICES
E340	Name without business words, similar, sounds like and multiple names in common	All words in the shorter entity name match in the longer entity name (in order) after number cardinal and ordinal standardization, and after common company prefixes,	CENTRAL OKLAHOMA FAMILY MEDICAL CENTER

Table 2-20 (Cont.) Ranking matches within Name rules

Group Code	Match Rule	Summary of Matching Logic	Example Matching Data
		suffixes and other words are removed. There are at least two significant words (not common business words) that match. The first word of each name has the same 4-character Metaphone key. The list name is not an acronym alias of a longer primary entity name.	CENTRAL MEDICAL INC
E350	Name without business words, similar with typos, sounds like and multiple names in common	All words in the shorter entity name match with a Character Match Percentage of 80 or more in the longer entity name (in order) after number cardinal and ordinal standardization, and after common company prefixes, suffixes and other words are removed. There are at least two significant words (not common business words) that match with a Character Match Percentage of 80 or more. The first word of each name has the same 4-character Metaphone key. The list name is not an acronym alias of a longer primary entity name.	BLACK CHAIR LTD BLACK WORLD COLLEGE OF HAIR DESIGN
E360	Name without business words has typos and sounds like	The entity names match with a Character Match Percentage of between 80 and 99 after number cardinal and ordinal standardization, and after common company prefixes,	BOURNE CHIROPRACTIC LTD

Table 2-20 (Cont.) Ranking matches within Name rules

Group Code	Match Rule	Summary of Matching Logic	Example Matching Data
		suffixes and other words are removed. The first word of each name has the same 4-character Metaphone key.	BARNO CHIROPRACTIC
E370	Name without suffixes contains with typos and multiple names in common	The entity names are a "Contains" match where each word matches with a Character Match Percentage of 80 or more after number cardinal and ordinal standardization, and after common company prefixes and suffixes are removed. There are at least two significant words (not common business words) that match.	NEW ORLEANS MEDICAB OF METRO NEW ORLEANS
E380	Name without suffixes contains, similar, and multiple words in common	The entity names are a 'Contains' match and the Word Edit Distance is no more than one between the names (where each word matches with a Character Match Percentage of 80 or more), after number cardinal and ordinal standardization, and after common company prefixes and suffixes are removed. There are at least two significant words (not common business words) that match with a Character Match Percentage of 80 or more.	GROSVENOR NURSING SERVICES NURSING SERVICES INC
E390	Original script name has additional names with typos	All words in the shorter original script name match in the longer	А р а б с к и р е в о л ю ц и о н н и б р и г а д и

Table 2-20 (Cont.) Ranking matches within Name rules

Group Code	Match Rule	Summary of Matching Logic	Example Matching Data
		original script name (in order) with a Character Match Percentage of 80 or more, and there are at least two matching words.	А р а б с к и р е в о л ю ц и о н и
E400	Name has additional words and sounds like	All words in the shorter entity name exist in the longer entity name (in order) after number cardinal and ordinal standardization.	ATRIUM INCORPORATORS WORLDWIDE LTD ATRIUM
E410	Name has additional words with typos and sounds like	All words in the shorter entity name match in the longer entity name (in order) with a Character Match Percentage of 80 or more after number cardinal and ordinal standardization. The first word of each name has the same 4-character Metaphone key.	BRILLIANT GENERAL BUILDING CONTRACTOR LTD BRILLIANCE
E420	Name without business words loose match and full name sounds like	The entity names match with a Character Match Percentage of between 60 and 79 after number cardinal and ordinal standardization, and after common company prefixes, suffixes and other words are removed. The names have the same Metaphone key.	BRC PRC

2.3.5 Loose Entity Matching Rules

Table 2-21 Loose Entity Matching Rules

Group Code	Name Matching Rule	Summary of Rule Logic	Example Matching Data
E430	Name without business words contains, sounds like, and residual token in common	The entity names are a 'Contains' match after number cardinal and ordinal standardization, and after common company prefixes, suffixes and other words are removed. There is at least one significant word (not a common business word, and an English dictionary word or a very common word in Watchlist name data) in common between the two names. The first word of each name has the same 4-character Metaphone key. The list name is not an acronym alias of a longer primary entity name.	HENDERSON EQUITY PARTNERS GP LTD
-	-	-	HENDERSON MANAGEMENT GROUP INC
E440	Name without business words contains, sounds like, and substring in common	The entity names are a 'Contains' match and there is a common substring at least 8 characters in length after number cardinal and ordinal standardization, and after common company prefixes, suffixes and other words are removed. The first word of each name has the same 4-characterMetaphone key. The list name is not an acronym alias of a longer primary entity name.	HAMILTON NEWS
-	-	-	HAMILTON INVESTMENT CORP

Table 2-21 (Cont.) Loose Entity Matching Rules

Group Code	Name Matching Rule	Summary of Rule Logic	Example Matching Data
E450	Name without suffixes 'Starts With'	The entity names are a 'Starts With' match after number cardinal and ordinal standardization, and after common company prefixes and suffixes are removed. The list name is not an acronym alias of a longer primary entity name.	JACOB
-	-	-	JACOBSON MANAGEMENT CO
E460	Name without business words has additional words and sounds like	All words in the shorter entity name exist in the longer entity name (in order) after number cardinal and ordinal standardization, and after common company prefixes, suffixes and other words are removed. The first word of each name has the same 4-character Metaphone key. The list name is not an acronym alias of a longer primary entity name.	IDEAL SOLUTION ESTATES MANAGEMENT LTD
-	-	-	IDEAL ENTERPRISES INC
E470	Name without business words has additional words with typos and sounds like	All words in the shorter entity name match with a Character Match Percentage of 80 or more in the longer entity name (in order) after number cardinal and ordinal standardization, and after common company prefixes, suffixes and other words are removed. The first word of each name has the same 4-character Metaphone key. The list name is not an acronym alias of a longer primary entity name.	AVANT GARD LTD
-	-	-	AVANTI ENTERPRISES INC

Table 2-21 (Cont.) Loose Entity Matching Rules

Group Code	Name Matching Rule	Summary of Rule Logic	Example Matching Data
E480	Name without business words contains and sounds like	The entity names are a 'Contains' match after number cardinal and ordinal standardization, and after common company prefixes, suffixes and other words are removed. The first word of each name has the same 4-character Metaphone key. The list name is not an acronym alias of a longer primary entity name.	MOREXTRADING LTD
-	-	-	MOREXPRESS SA DECV
E490	Name without suffixes' Starts With' and allows acronyms	The entity names are a 'Starts With' match after number cardinal and ordinal standardization, and after common company prefixes and suffixes are removed.	INTERTRADE CLASSICLTD
-	-	-	INTER
E500	Name without suffixes contains, significant overlap and multiple words in common	The entity names are a 'Contains' match, there are at least two words that match with a Character Match Percentage of 80 or more, and the two entity names match with a Word Match Percentage of 50 or more after number cardinal and ordinal standardization, and after common company prefixes and suffixes are removed.	EGANDG TECHNICAL SERVICESINC
-	-	-	TECHNICAL SERVICES
E510	Name contains with typos and multiple words in common	The entity names are a "Contains" match where each word matches with a Character Match Percentage of 80 or more after number cardinal and ordinal standardization, and after common company prefixes and suffixes are removed. There are at least two words (not prefixes or suffixes) that match.	FIRSA INTERNATIONAL LTD

Table 2-21 (Cont.) Loose Entity Matching Rules

Group Code	Name Matching Rule	Summary of Rule Logic	Example Matching Data
-	-	-	FIRST INTERNATIONAL COMMERCE BANK LTD

2.3.6 Ranking matches within Entity Name rules

For each entity or vessel name matching rule, matches are ranked according to how much and how strongly additional data matches between the customer record and the watch list:

Table 2-22 Ranking matches within Entity Name rules

Match Rule	Summary of Matching Logic	Example Matching Data	Example Matching Data	Example Matching Data
[Entity name rule], city, country	At least one city matches. At least one country matches.	**City**	**Country**	-
		New York|London	GB	-
		London	GBUS	-
[Entity name rule], city	At least one city matches.	**City**	-	-
		Paris| London	-	-
		Paris	-	-
[Entity name rule], country	At least one country matches.	**Country**	-	-
		US	-	-
		PKIN US	-	-
[Entity name rule] only	The entity name rule returns a match. No data in other fields.	**Name**	**Country**	**City**
		A C M	-	-
		A C M	-	-
[Entity name rule] (conflict)	The entity name rule returns a match. Data in other fields do not match.	**Name**	**Country**	**City**
		A C M	UK	London
		A C M	FR	Paris
[Vessel name rule] country	At least one country matches.	**Country**	-	-
		US	-	-
		PKIN US	-	-
[Vessel name rule] only	Vessel name rule returns a match. No data in other fields.	**Name**	**Country**	**City**
		Dynasty	-	-
		Dynasty	-	-
[Vessel name rule] (conflict)	Vessel name rule returns a match. Data in other fields do not match.	**Name**	**Country**	**City**
		Dynasty	U K	London
		Dynasty	F R	Paris

3
Entity Matching

This section details the default configuration when matching entities to Sanctions, PEP and EDD lists. In general, and by default, the matching strategy for entities in Oracle Financial Services Customer Screening will raise a possible match if there is an exact match or a fuzzy name match to a normal (non-acronym) entity name, or if there is an exact match to an acronym entity name.

The fuzzy entity name matching algorithms include the following techniques (amongst others):

- Standardizing entity names (for example, different forms of company name suffixes are standardized to a common form)
- Ignoring insignificant name tokens
- Typo tolerance
- Allowance for missing name tokens
- Allowance for different tokenization of the name

3.1 Identifier Preparation

The following identifiers are prepared for use in the entity matching process:

Table 3-1 Identifier Preparation

Identifier	Summary of preparation logic
Original Entity Name	The original entity name, after Name Normalization. See section 3.1.1 "Name Normalization" below.
Standardized Entity Name	A standardized version of the entity name, with common entity name suffixes standardized. The standardization process may be amended by changing the Reference Data used to standardize tokens (such as LTD) and phrases (such as FIN SERVS).
Original Script Name	A whitespace normalized version of the original script name.
City	A pipe-separated list of cities.
Country Codes	A space-separated list of standard 2-character country codes.

Name Normalization

Entity names are normalized using the following logic:

- Standardization of accented characters.
- Removal of apostrophes.
- Replacement of all other characters apart from alpha (A-Z or a-z), numeric (0-9) or ampersand (&) characters with spaces.

> **Note:**
>
> If matching data in the original language against original script names in watch lists, the appropriate character ranges should be removed from the Name Noise Characters Reference Data so that they are not replaced. In addition, if transliterating data before matching, transliteration must be done before the name normalization.

- Normalization of whitespace.
- Conversion to upper case.

3.2 Clustering

Oracle Financial Services Customer Screening provides three different clustering strategies for matching entities: Entity Name Tokens, Name Metaphone, and Name Trimmed. Any of the clusters may be activated or deactivated, as required, and different cluster limits can be configured.

Entity Name Tokens (dnClusterNameTokens)

This cluster uses the standardized entity name to generate cluster keys. The default logic is as follows:

- Remove initials.
- Remove common name tokens, such as Limited, or Corporation.
- Normalize whitespace.
- Convert space characters to pipe characters.

Examples

Table 3-2 Entity Name Tokens

dnEntityName	Name with initials and common name tokens stripped	dnClusterNameTo- kens
ANGLOCARIBBEAN CO LTD	ANGLOCARIBBEAN	ANGLO|CARIBBEAN
GUAMATUR S A	GUAMATUR	GUAMATUR

Name Metaphone (dnClusterLongName)

This cluster uses the standardized entity name to generate cluster keys. The default logic is as follows:

- Remove initials.
- Remove common name tokens, such as Limited, or Corporation.
- Normalize whitespace. Remove common business words, such as Company, or Association.
- Transliterate any non-Latin characters into Latin.
- Apply the Metaphone transformation (the standard double-Metaphone algorithm) outputting a key with a length of up to eight characters.

Table 3-3 Name Metaphone

dnEntityName	Name with initials,common name tokens and common business words stripped	dnCluster- LongName
HAVANA INTERNATIONAL BANK LTD	HAVANA BANK	HFNPNK
CIMEXS A	CIMEX	SMKS
LAEMPRESA CUBANA DE FLETES	EMPRESACUBANA FLETES	AMPRSKPN

Name Trimmed (dnClusterShortName)

This cluster uses the standardized entity name to generate cluster keys. The default logic is as follows:

- Remove all whitespace.
- Left-trim the value to a maximum of 4 characters.

Example

Table 3-4 Name Trimmed

dnEntityName	dnClusterShortName
HAVANA INTERNATIONAL BANK LTD	HAVA
CIMEXS A	CIME
LAEMPRESA CUBANA DE FLETES	LAEM

Registration Country Prohibition (Registration Country Code)

This cluster uses the space-delimited list of registration country codes to generate cluster keys by generating an array of the component country codes.

Operating Country Prohibition (Operating Country Code)

This cluster uses the space-delimited list of operating country codes to generate cluster keys by generating an array of the component country codes.

Start/End Name Tokens (dnClusterStartEndNameTokens)

This clustering method is designed as a looser version of the Entity Name Tokens cluster and allows for variation in entity names by creating clusters for the first five and last five characters of each name token.

The default logic is as follows:

- Remove initials.
- Remove common name tokens, such as Limited, or Corporation.
- Normalize whitespace.
- For each token that is longer than five characters, replace with two new tokens that are:
  - The first five characters of the token.
  - The last five characters of the token.

Table 3-5 Start or End Name Tokens

dnEntityName	Name with initials and common name tokens stripped	dnClusterStartEndNameTokens
HAVANA INTERNATIONAL BANK LTD	HAVANA INTERNATIONAL BANK	HAVAN|AVANA|INTER|IONAL|BANK
CIMEXS A	CIMEX	CIMEX
LA EMPRESA CUBANA DE FLETES	LAEMPRESA CUBANA FLETES	LA|EMPRE|PRESA|CUBAN|UBANA|FLETE|LET ES

Original Script Name (dnClusterOriginalScript)

The Original Script Name cluster provides a clustering method for matching names represented in non-Latin writing systems. The cluster builder generates a key for each token in the name.

> **Note:**
>
> A single cluster value of "Myanmar" is generated for original script names written in the Burmese alphabet irrespective of the name. This is needed because token splitting is not possible for the Myanmar writing system as it does not use a space character between words. As a result, all original script name in Burmese will be compared during matching. This should not cause performance issues during screening provided there are a low number of customer records using this writing system.

The default logic of the cluster builder is as follows:

- Split the original script name into several name tokens, using a space character as the delimiter.
- Trim each name token to a maximum of 5 characters.
- Concatenate all of the trimmed token values with a pipe delimiter
- Deduplicate the list of keys.

Table 3-6 Original Script Name

dnOriginalScriptName	dnClusterOriginalScript
Черен септември	Черен|септе
北京首都师范大学	北|京|首|都|师|范|大|学
ဗုဒ္ဓဘာသာ	Myanmar

3.3 Matching

Entity matching is centered on entity names. Other items of data, such as associated countries and cities, are used to strengthen a possible match.

Match Rules

The match rules in Oracle Financial Services Customer Screening are organized by the level of entity name match, with the strongest name matching rules at the top of the decision table.

Optional elimination rules exist that allow lower risk matches to be suppressed.

The following match rules are involved in entity screening:

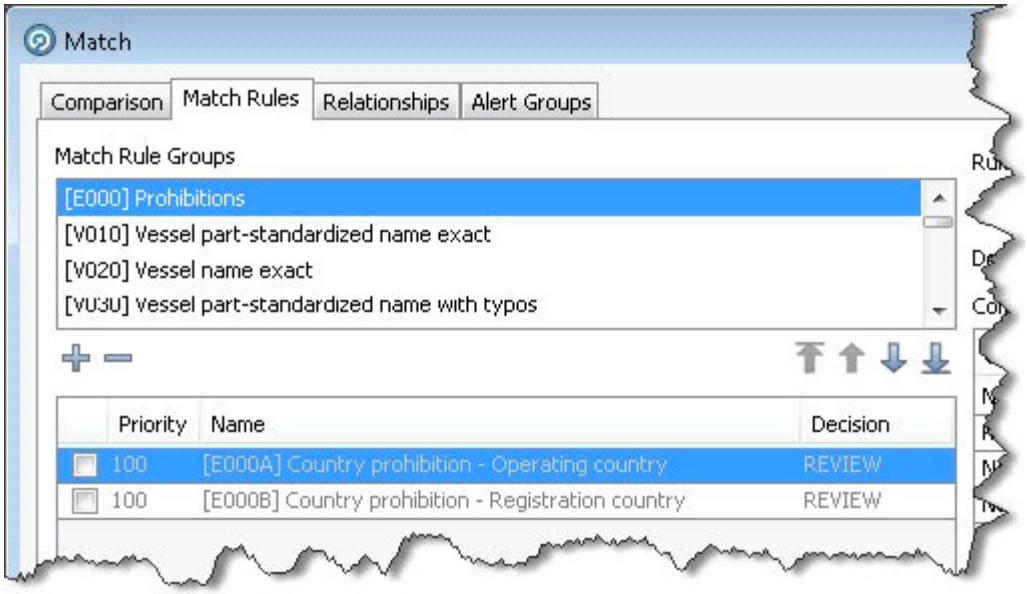
- The elimination rules, which are used in the rule templates to suppress the generation of lower risk matches - for example, low quality matches against list records with a low-risk score. The elimination rules may be moved up and down in order to change where they apply.
- The entity name matching rules. Entity name matching rules are organized by the level of entity name match, with the strongest matching rules placed at the top of the decision table.

> **Note:**
>
> This means that the match rules are not ordered by strength across all identifiers. For example, a weaker match rule that is strengthened by matches on City and Country is likely to be a stronger overall match than a strong match rule with strongly contradictory data in the other fields.

- The loose entity matching rules. These are also based around entity name matching, but identify looser matches and are not enabled by default. These rules are likely to result in a large number of false-positive matches and are most likely to be of use when screening against sanctions lists, where it is important that no true matches are missed.

For the sake of clarity, match rules are divided into groups, as shown below:

Figure 3-1 Match Rules



As each group is selected, the match rules it contains are displayed in the window below.

The priority of the groups can be changed using the arrows below the Match Rules Group list. When a group is highlighted, you can:

- Click to move it up one place on the list.
- Click to move it down one place on the list.
- Click to move it to the top of the list.
- Click to move it to the bottom of the list.

The remainder of this section describes the matching rules that are present in Oracle Financial Services Customer Screening in greater detail.

Prohibition Rules

The Prohibition rules check for country information in an entity's record against the list of prohibited countries and nationalities maintained in List Management.

Table 3-7 Elimination Rules

Group Code	Matching Rule	Summary of Rule Logic
E000A	Country prohibition - Operating country	The country or countries of operation given match at least one prohibited country.
E000B	Country prohibition - Registration country	The country or countries of registration given match at least one prohibited country.

Elimination Rules

Table 3-8 Elimination Rules

Elimination Rule	Summary of Rule Logic	Enabled by default?
ELIMINATE WHERE NO COUNTRYSHARED AND ALL SAFE	This rule will eliminate pairs of records if there are no countries in common in the Country fields, AND if all countries listed are on the Safe list. The Safe list is maintained in the Match - Entity Safe Countries ISO Codes Reference Data.	Yes
ELIMINATE WHERE CUSTOMERRISK SCORE BELOWTHRESHOLD	This rule will eliminate pairs of records if the Customer Risk Score is below a threshold specified in the corresponding screening process.	No
ELIMINATE WHERE LIST RISK SCORE BELOW THRESHOLD	This rule will eliminate pairs of records if the List Risk Score is below a threshold specified in the corresponding screening process.	No
ELIMINATE WHERE LIST PEP RISK SCORE BELOW THRESHOLD	This rule will eliminate pairs of records if the List PEP Risk Score is below a threshold specified in the corresponding screening process	Yes

Note:

No elimination rules are enabled by default in Sanctions screening.

3.3.1 Entity Matching Rules

All entity matching rules use a standardized form of the entity name. The strongest rules use the 'part-standardized name', meaning the entity names match after only simple global standardizations (such as considering 'AND', 'and', '&' as the same) are applied. Other rules apply additional rules for standardization as noted in the table below.

Note:

Wherever the term 'word' is used below, this means that there is a space-delimited token in the prepared names.

Table 3-9 Entity Matching Rules

Group Code	Name Matching Rule	Summary of Rule Logic	Example Matching Data
V010	Vessel part standardized name exact	The part-standardized entity name matches the name of a listed vessel exactly.	DYNASTY
-	-	-	DYNASTY
V020	Vessel name exact	The entity name matches the name of a listed vessel after number cardinal and ordinal standardization.	4THOCEAN
-	-	-	FOURTHOCEAN
V030	Vessel part standardized name with typos	The part-standardized entity name matches the name of a listed vessel with a Character Match Percentage of 80-99%.	RAHIM
-	-	-	RAHIM3
V040	Vessel name with typos	The entity names match with a Character Match Percentage of 80-99% after number cardinal and ordinal standardization.	RAHUM3
-	-	-	TRAHIMTHREE
E010	Part-standardized name exact	The part-standardized entity name matches a listed entity name exactly.	HUMANAPPEAL INTERNATIONAL
-	-	-	HUMANAPPEAL INTERNATIONAL
E020	Name exact	The entity names match exactly after number cardinal and ordinal standardization.	NOVEMBER17
-	-	-	NOVEMBER SEVENTEEN
E030	Original script name exact	The original script names match exactly.	Н И А Э П О А О
-	-	-	Н И А Э П О А О
E040	Name without suffixes exact	The entity names match exactly after number cardinal and ordinal standardization, and after common company prefixes and suffixes are removed.	CAPITAL DIRECT LTD
-	-	-	CAPITAL DIRECT AG

Table 3-9 (Cont.) Entity Matching Rules

Group Code	Name Matching Rule	Summary of Rule Logic	Example Matching Data
E050	Name without business words similar and sounds like	The entity names match with a Word Match Percentage of 80% after number cardinal and ordinal standardization, and after common company prefixes, suffixes and other words are removed. The first word of each name has the same 4-character Metaphone key.	PARAGON UK
-	-	-	PARAGON INVESTMENT CORPORATION
E060	Name without business words exact	The entity names match exactly after number cardinal and ordinal standardization, and after common company prefixes, suffixes and other words are removed.	LIFEHEALTHCARE GROUPHOLDINGS LTD
-	-	-	LIFE HEALTH CARE INC
E070	Name without business words has all words out-of order	All remaining words in each entity name match exactly, but in any order, after number cardinal and ordinal standardization, and after common company prefixes, suffixes and other words are removed.	EDUCATION FOR HEALTH
-	-	-	HEALTH EDUCATION SERVICES
E080	Name without suffixes 'Starts With' and multiple names in common	The entity names are a 'Starts With' match after number cardinal and ordinal standardization, and after common company prefixes and suffixes are removed. There are at least two significant words (not common business words) in common between the two names. The listed name is not an acronym alias of a longer primary entity name.	BAE SYSTEMS (LANCASTER HOUSE) LIMITED

Table 3-9 (Cont.) Entity Matching Rules

Group Code	Name Matching Rule	Summary of Rule Logic	Example Matching Data
-	-	-	BAESYSTEMS PLC
E090	Name without business words has all words with typos	All remaining words in each entity name match with a Character Match Percentage of 80 or more, after number cardinal and or dinalstandardization, and after common company prefixes, suffixes and other words are removed.	GERBERA ASSOCIATES LTD
-	-	-	BERBERA
E100	Original script name in any order	All words in the Original Script Names match exactly, in any order.	О А О Н И А Э П
-	-	-	Н И А Э П О А О
E110	Original script name with typos	The Original Script Names match with a Character Match Percentage of 80% or more.	Е π α ν α σ τ α τ ι κ ħ А ρ ι σ τ ε ρ ħ
-	-	-	Е π α ν α σ τ α ι κ ħ А ρ ι σ τ ε ρ ħ
E120	Name without business words with typos, and sounds like	The entity names match with a Character Match Percentage of 80 ore more after number cardinal and ordinal standardization, and after common company prefixes, suffixes and other words are removed. The first word of each name has the same 4-character Metaphone key and the first three letters of each name are the same.	GOLDSTREAM PROPERTIESLTD
-	-	-	GOLDSTEIN PROPERTIESINC

Table 3-9 (Cont.) Entity Matching Rules

Group Code	Name Matching Rule	Summary of Rule Logic	Example Matching Data
E130	Name without suffixes contains,similar and multiple names in common	The entity names are a 'Contains' match and the Word Edit Distance is no more than one between the names (where each word matches with a Character Match Percentage of 80 or more), after number cardinal and ordinal standardization, and after common company prefixes and suffixes are removed. There are at least two significant words (not common business words) in common between the two names.	HAMPSHIRE HERITAGE DEVELOPMENTS LTD
-	-	-	HERITAGE DEVELOPMENT CORPORATION
E140	Name has additional words, sounds like and multiple names in common	All words in the shorter entity name exist in the longer entity name (in order) after number cardinal and ordinal standardization, and after common company prefixes and suffixes are removed. There are at least two significant words (not common business words) in common between the two names. The list name is not an acronym alias of a longer primary entity name.	MOSCOWCITY CENTER PLC
-	-	-	MOSCOWCENTER

Table 3-9 (Cont.) Entity Matching Rules

Group Code	Name Matching Rule	Summary of Rule Logic	Example Matching Data
E150	Name without business words contains, sounds like and multiple names in common	The entity name is a 'Contains' match with a listed entity name, after number cardinal and ordinal standardization, and after common company prefixes, suffixes and other words are removed. There are at least two significant words (not common business words) in common between the two names. The first word of each name has the same 4-character Metaphone key.	HI-TECH RECRUITMENTLTD
-	-	-	HITECH GROUP
E160	Original script name in any order with typos	All words in the original script name match with a Character Match Percentage of 80 or more, in any order.	M α ħ p o S Σ ε π τ ħ μ β ρ η S
-	-	-	Σ ε π τ ħ μ β ρ η S M α ħ p o S S
E170	Name without business words has most words out-oforder Name Matching Rule	The entity names match (in any order) with a Word Match Percentage of between 75 and 99, after number cardinaland ordinal standardization, and after common company prefixes, suffixes and other words are removed. The list name is not an acronym alias of a longer primary entity name. Summary of Rule Logic	BACKTO HEALTH CLINICSLIMITED
-	-	-	BACKTO HEALTH CHIROPRACTIC
-	-	-	Example Matching Data

Table 3-9 (Cont.) Entity Matching Rules

Group Code	Name Matching Rule	Summary of Rule Logic	Example Matching Data
E180	Name without business words, similar, sounds like, with multiple names and a residual token in common	All words in the shorter entity name exist in the longer entity name (in order) after number cardinal and ordinal standardization, and after common company prefixes, suffixes and other words are removed. There are at least two significant words (not common business words) in common between the two names, and at least one of these is not a word in the English dictionary or a very common word in Watchlist name data. The list name is not an acronym alias of a longer primary entity name.	CHARLESASH UK LTD
-	-	-	CHARLES F ASH CONSTRUCTIONCO INC
E190	Name without business words, similar with typos, sounds like, with multiple names and residual token in common.	All words in the shorter entity name match with a Character Match Percentage of 80 or more in the longer entity name (in order) after number cardinal and ordinal standardization, and after common company prefixes, suffixes and other words are removed. There are at least two significant words (not common business words) that match with a Character Match Percentage of 80 or more, and at least one of these is not a word in the English dictionary or a very common word in Watchlist name data. The list name is not an acronym alias of a longer primary entity name. The group name differs from the rule name.	CLARKSHOME BAKERY LTD

Table 3-9 (Cont.) Entity Matching Rules

Group Code	Name Matching Rule	Summary of Rule Logic	Example Matching Data
-	-	-	CLARKHOMES INC
E200	Name without business words, similar, sounds like,and residual token in common	All words in the shorter entity name match in the longer entity name (in order) after number cardinal and ordinal standardization, and after common company prefixes, suffixes and other words are removed. The names match with a Word Match Percentage of 50 or more when common business words are not stripped. There are at least two significant words (not common business words) that match. The first word of each name has the same 4- character Metaphone key. The list name is not an acronym alias of a longer primary entity name.	AMERICAN MILITARY SUPPLY
-	-	-	AMERICANSUPPLY CO
E210	Name has additional words tolerant, sounds like and multiple names in common	All words in the shorter entity name match in the longer entity name (in order) with a Character Match Percentage of 80 or more after number cardinal and ordinal standardization. There are at least two significant words (not common business words) in common between the two names. The list name is not an acronym alias of a longer primary entity name.	GENERALATOMICS
-	-	-	GENERAL BUREAU OF ATOMIC ENERGY GBAE

Table 3-9 (Cont.) Entity Matching Rules

Group Code	Name Matching Rule	Summary of Rule Logic	Example Matching Data
E220	Name without suffixes contains, similar and residual token in common	The entity names are a 'Contains' match and the Word Edit Distance is no more than one between the names (where each word matches with a Character Match Percentage of 80 or more), after number cardinal and ordinal standardization, and after common company prefixes and suffixes are removed. There is at least one significant word in common (not a common business word, a word in the English dictionary or a very common word in Watchlist name data).	ACCLAIMACM LTD
-	-	-	ACM
E230	Name without suffixes 'Starts With' and residual token in common	The entity names are a 'Starts With' match after number cardinal and ordinal standardization, and after common company prefixes and suffixes are removed. There is at least one significant word in common (not a common business word, a word in the English dictionary or a very common word in Watchlist name data). The listed name is not an acronym alias of a longer primary entity name.	ENRONMETALS BROKERSLTD
-	-	-	ENRONCORP

Table 3-9 (Cont.) Entity Matching Rules

Group Code	Name Matching Rule	Summary of Rule Logic	Example Matching Data
E240	Name without suffixes 'Starts With' and substring in common	The entity names are a 'Starts With' match, and there is a common substring at least 8 characters in length, after number cardinal and ordinal standardization, and after common company prefixes and suffixes are removed. The listed name is not an acronym alias of a longer primary entity name.	ACCURATE SECTION BENDERSLTD
-	-	-	ACCURATE
E250	Name without suffixes contains, residual token in common and significant overlap	The entity names are a 'Contains' match and the Word Match Percentage is 50 or more, after number cardinal and ordinal standardization, and after common company prefixes and suffixes are removed. There is at least one significant word in common (not a common business word, a word in the English dictionary or a very common word in Watchlist name data).	NONEMERGENCY TRANSPORTINC
-	-	-	ACTION NON EMERGENCY TRANSPORTATION
E260	Name without common tokens exact, and multiple residual tokens in common	The entity names match exactly, with at least two words matching, after number cardinal and ordinal standardization, and after common company prefixes, suffixes, and other words, and all English dictionary and common Watchlist name words are removed.	LIFECARE CENTER PUNTA GORDA
-	-	-	PORTOF PUNTA GORDA

Table 3-9 (Cont.) Entity Matching Rules

Group Code	Name Matching Rule	Summary of Rule Logic	Example Matching Data
E270	Original script name has additional names	All words in the shorter original script name match in the longer original script name (in order), and there are at least two matching words.	Въоръжена ислямска група
-	-	-	Въоръжена група
E280	Name without suffixes contains, multiple names in common and significant overlap	The entity names are a 'Contains' match and the Word Match Percentage is 50 or more, after number cardinal and ordinal standardization, and after common company prefixes and suffixes are removed. There is at least two significant words (not common business words) that match with a Character Match Percentage of 80 or more.	CITYTRANS LTD
-	-	-	CAPITAL CITY TRANS SERVINC
E290	Name without business words similar and full name sounds like	The entity names match with a Character Match Percentage of between 80 and 99 after number cardinal and ordinal standardization, and after common company prefixes, suffixes and other words are removed. The names share the same metaphone key after number cardinal and ordinal standardization.	IBERIAAIRLINES
-	-	-	IBERAIRLINES

Table 3-9 (Cont.) Entity Matching Rules

Group Code	Name Matching Rule	Summary of Rule Logic	Example Matching Data
E300	Name without business words similar with typos, sounds like and significant overlap	All words in the shorter entity name match with a Character Match Percentage of 80 or more in the longer entity name (in order) after number cardinal and ordinal standardization, and after common company prefixes, suffixes and other words are removed. The names match with a Word Match Percentage of 50 or more when common business words are not stripped. There are at least two significant words (not common business words) that match with a Character Match Percentage of 80 or more. The first word of each name has the same 4character Metaphone key. The list name is not an acronym alias of a longer primary entity name.	MEDCLINIC LTD
-	-	-	MED AMERICA CLINICSINC
E310	Name has additional words, sounds like and residual token in common	All words in the shorter entity name exist in the longer entity name (in order) after number cardinal and ordinal standardization. There is at least one significant word (not a common business word, an English dictionary word or a word or a common Watchlist name word) in common between the two names. The list name is not an acronym alias of a longer primary entity name.	DJCASE AND ASSOCIATES INC
-	-	-	DJAND ASSOCIATES INC

Table 3-9 (Cont.) Entity Matching Rules

Group Code	Name Matching Rule	Summary of Rule Logic	Example Matching Data
E320	Name has additional words with typos, sounds like and residual token in common	All words in the shorter entity name match with a Character Match Percentage of 80 or more in the longer entity name (in order) after number cardinal and ordinal standardization. There is at least one significant word (not a common business word, an English dictionary word or a word or a common Watchlist name word) that matches with a Character Match Percentage of 80 or more. The list name is not an acronym alias of a longer primary entity name.	GARLOCK
-	-	-	GARLICK HELICOPTERS INC
E330	Name has additional words, sounds like and substring in common	All words in the shorter entity name exist in the longer entity name (in order) after number cardinal and ordinal standardization. There is a common substring of at least 8 characters in length between the two names after number cardinal and ordinal standardization, and after common company prefixes, suffixes and other words are removed. The list name is not an acronym alias of a longer primary entity name.	NATIONWIDE SECRETARIAL SERVICESLTD
-	-	-	NATIONWIDE SERVICES

Table 3-9 (Cont.) Entity Matching Rules

Group Code	Name Matching Rule	Summary of Rule Logic	Example Matching Data
E340	Name without business words, similar, sounds like and multiple names in common	All words in the shorter entity name match in the longer entity name (in order) after number cardinal and ordinal standardization, and after common company prefixes, suffixes and other words are removed. There are at least two significant words (not common business words) that match. The first word of each name has the same 4- character Metaphone key. The list name is not an acronym alias of a longer primary entity name.	CENTRAL OKLAHOMA FAMILY MEDICALCENTER
-	-	-	CENTRALMEDICAL INC
E350	Name without business words, similar with typos, sounds like and multiple names in common	All words in the shorter entity name match with a Character Match Percentage of 80 or more in the longer entity name (in order) after number cardinal and ordinal standardization, and after common company prefixes, suffixes and other words are removed. There are at least two significant words (not common business words) that match with a Character Match Percentage of 80 or more. The first word of each name has the same 4- character Metaphone key. The list name is not an acronym alias of a longer primary entity name.	BLACKCHAIR LTD
-	-	-	BLACK WORLD COLLEGEOF HAIR DESIGN

Table 3-9 (Cont.) Entity Matching Rules

Group Code	Name Matching Rule	Summary of Rule Logic	Example Matching Data
E360	Name without business words has typos and sounds like	The entity names match with a Character Match Percentage of between 80 and 99 after number cardinaland ordinal standardization, and after common company prefixes, suffixes and other words are removed. The first word of each name has the same 4-character Metaphone key.	BOURNE CHIROPRACTIC LTD
-	-	-	BARNO CHIROPRACTIC
E370	Name without suffixes contains with typos and multiple names in common	The entity names are a "Contains" match where each word matches with a Character Match Percentage of 80 or more after number cardinal and ordinal standardization, and after common company prefixes and suffixes are removed. There are at least two significant words (not common business words) that match.	NEWORLEANS
-	-	-	MEDICABOF METRO NEW ORLEANS
E380	Name without suffixes contains, similar,and multiple words in common	The entity names are a 'Contains' match and the Word Edit Distance is no more than one between the names (where each word matches with a Character Match Percentage of 80 or more), after number cardinal and ordinal standardization, and after common company prefixes and suffixes are removed. There are at least two significant words (not common business words) that match with a Character Match Percentage of 80 or more.	GROSVENOR NURSINGSERVICES
-	-	-	NURSINGSERVICES INC

Table 3-9 (Cont.) Entity Matching Rules

Group Code	Name Matching Rule	Summary of Rule Logic	Example Matching Data
E390	Original script name has additional names with typos	All words in the shorter original script name match in the longer original script name (in order) with a Character Match Percentage of 80 or more, and there are at least two matching words.	Арабски революционни бригади
-	-	-	Арабски революциони
E400	Name has additional words and sounds like	All words in the shorter entity name exist in the longer entity name (in order) after number cardinal and ordinal standardization.	ATRIUM INCORPORATORS WORLDWIDELTD
-	-	-	ATRIUM
E410	Name has additional words with typos and sounds like	All words in the shorter entity name match in the longer entity name (in order) with a Character Match Percentage of 80 or more after number cardinal and ordinal standardization. The first word of each name has the same 4-character Metaphone key.	BRILLIANT GENERAL BUILDING CONTRACTOR LTD
-	-	-	BRILLIANCE
E420	Name without business words loose match and full name sounds like	The entity names match with a Character Match Percentage of between 60 and 79 after number cardinaland ordinal standardization, and after common company prefixes, suffixes and other words are removed. The names have the same Metaphone key.	BRC
-	-	-	PRC

3.3.2 Loose Entity Matching Rules

Table 3-10 Loose Entity Matching Rules

Group Code	Name Matching Rule	Summary of Rule Logic	Example Matching Data
E430	Name without business words contains, sounds like, and residual token in common	The entity names are a 'Contains' match after number cardinal and ordinal standardization, and after common company prefixes, suffixes and other words are removed. There is at least one significant word (not a common business word, and an Englishdictionary word or a very common word in Watchlist name data) in common between the two names. The first word of each name has the same 4-character Metaphone key. The list name is not an acronym alias of a longer primary entity name.	HENDERSON EQUITY PARTNERS GP LTD
-	-	-	HENDERSON MANAGEMENT GROUPINC
E440	Name without business words contains, sounds like, and substring in common	Theentity names are a 'Contains' match and there is a common substring at least 8 characters in length after number cardinal and ordinal standardization, and after common company prefixes, suffixes and other words are removed. The first word of each name has the same 4-characterMetaphone key. The list name is not an acronym alias of a longer primary entity name.	HAMILTON NEWS
-	-	-	HAMILTON INVESTMENT CORP

Table 3-10 (Cont.) Loose Entity Matching Rules

Group Code	Name Matching Rule	Summary of Rule Logic	Example Matching Data
E450	Name without suffixes 'Starts With'	The entity names are a 'Starts With' match after numbercardinal and ordinal standardization, and after common company prefixes and suffixes are removed. The list name is not an acronym alias of a longer primary entity name.	JACOB
-	-	-	JACOBSON MANAGEMENT CO
E460	Name without business words has additional words and sounds like	All words in the shorter entity name exist in the longer entity name (in order) after number cardinal and ordinal standardization, and after common company prefixes, suffixes and other words are removed. The first word of each name has the same 4-character Metaphone key. The list name is not an acronym alias of a longer primary entity name.	IDEAL SOLUTION ESTATES MANAGEMENT LTD
-	-	-	IDEAL ENTERPRISES INC
E470	Name without business words has additional words with typos and sounds like	All words in the shorter entity name match with a Character Match Percentage of 80 or more in the longer entity name (in order) after number cardinal and ordinal standardization, and after common company prefixes, suffixes and other words are removed. The first word of each name has the same 4-character Metaphone key. The list name is not an acronym alias of a longer primary entity name.	AVANT GARD LTD
-	-	-	AVANTI ENTERPRISES INC

Table 3-10 (Cont.) Loose Entity Matching Rules

Group Code	Name Matching Rule	Summary of Rule Logic	Example Matching Data
E480	Name without business words contains and sounds like	The entity names are a 'Contains' match after number cardinal and ordinal standardization, and after common company prefixes, suffixes and other words are removed. The first word of each name has the same 4-character Metaphone key. The list name is not an acronym alias of a longer primary entity name.	MOREXTRADING LTD
-	-	-	MOREXPRESS SA DECV
E490	Name without suffixes' Starts With' and allows acronyms	The entity names are a 'Starts With' match after number cardinal and ordinal standardization, and after common company prefixes and suffixes are removed.	INTERTRADE CLASSICLTD
-	-	-	INTER
E500	Name without suffixes contains, significant overlap and multiple words in common	The entity names are a 'Contains' match, there are at least two words that match with a Character Match Percentage of 80 or more, and the two entity names match with a Word Match Percentage of 50 or more after number cardinal and ordinal standardization, and after common company prefixes and suffixes are removed.	EGANDG TECHNICAL SERVICESINC
-	-	-	TECHNICAL SERVICES
E510	Name contains with typos and multiple words in common	The entity names are a "Contains" match where each word matches with a Character Match Percentage of 80 or more after number cardinal and ordinal standardization, and after common company prefixes and suffixes are removed. There are at least two words (not prefixes or suffixes) that match.	FIRSA INTERNATIONAL LTD

Table 3-10 (Cont.) Loose Entity Matching Rules

Group Code	Name Matching Rule	Summary of Rule Logic	Example Matching Data
-	-	-	FIRST INTERNATIONAL COMMERCE BANK LTD

3.3.3 Ranking matches within Entity Name rules

For each entity or vessel name matching rule, matches are ranked according to how much and how strongly additional data matches between the customer record and the watch list:

Table 3-11 Ranking matches within Entity Name rules

Match Rule	Summary of Matching Logic	Example Matching Data	Example Matching Data	Example Matching Data
[Entity name rule], city, country	At least one city matches. At least one country matches.	**City**	**Country**	-
		New York |London	GB	-
		London	GBUS	-
[Entity name rule], city	At least one city matches.	**City**	-	-
		-	Paris| London	-
-	-	Paris	-	-
[Entity name rule], country	At least one country matches.	Country	-	-
		US	-	-
		PKIN US	-	-
[Entity name rule] only	The entity name rule returns a match. No data in other fields.	**Name**	**Country**	**City**
		A C M	-	-
		A C M	-	-
[Entity name rule] (conflict)	The entity name rule returns a match. Data in other fields do not match.	**Name**	**Country**	**City**
		ACM	UK	London
		ACM	FR	Paris
[Vessel name rule] country	At least one country matches.	**Country**	-	-
		US	-	-
		PKIN US	-	-
[Vessel name rule] only	Vessel name rule returns a match. No data in other fields.	**Name**	**Country**	**City**
		Dynasty	-	-
		Dynasty	-	-
[Vessel name rule] (conflict)	Vessel name rule returns a match. Data in other fields do not match.	**Name**	**Country**	**City**
		Dynasty	U K	London
		Dynasty	F R	Paris

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