



Decide with Confidence

**DUNSRight[®] Entity Matching:
A D&B Guide to
Helping You Define
Auto-Decisioning Thresholds**

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1 Introduction

The purpose of this document is to give you, our customers, an overview of our matching process and a strong foundation in how to exercise our Best Demonstrated Practices in setting up your own Auto Decisioning process for matching.

2 D&B Patented Entity Matching Three Entity Matching Processing Components

2.1.1 Cleansing, Parsing & Standardization

Cleansing removes special characters and other noise from the inquiry information. Address Postal cleansing also takes place to “correct” customer input content. While this information is used to maximize candidate retrieval and match results, the “corrected” customer address content is not returned to the customer.

Parsing receives the inquiry information and places it in appropriate fields. For example, the street number is parsed out of the address field and placed in the street number field. The mail address is recognized as such and mapped to the mail address from the D&B Reference Database.

Standardization replaces parts of the inquiry like the business legal entity type (inc., co., etc.) within the standardized business name.

2.1.2 Candidate Retrieval

Candidate Retrieval is the process by which D&B records are identified as potential matches to the inquiry. The candidate retrieval process can be thought of as a large net, thrown out over all of the match reference database and where records meeting any of a number of match indices (match keys) are retrieved for match consideration.

2.1.3 Evaluation & Decisioning

The goal of Evaluation & Decisioning is to retrieve the best match for the inquiry. During this phase of Entity Matching, candidates are prioritized by match indices (key) to narrow down the candidate pool. Finally, the best match record is identified based on the assignment of MatchGrades and Confidence Code. *In batch Entity Matching, only, the candidate with the highest Confidence Code is returned. Where there is more than one candidate in the highest Confidence Code, tiebreaker rules are applied to return only one record. (D&B's transactional version of Entity Matching can return up to a user-specified number of top candidates, allowing for review and selection of the best match.)*

MatchGrade Reporting & Feedback

A major competitive advantage D&B brings to its customers is the ability to specify at which level they will accept a match and where, when that match has been accepted. D&B provides a series of measurements designed to understand *why* the match was made as well as *how* the customer should feel about the quality of that match. Oftentimes, customers will set their match threshold based on which business application (i.e., marketing, sales, risk, or supplier evaluation) they are using this enriched information to support. Feedback on why and how well the inquiry matched is provided in the form of three measurements:



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Confidence Code (CC)	A two-digit code used to group similar quality matches. Many MatchGrades relate to one (1) Confidence Code.
MatchGrade (MG)	A 7- or 11-digit code used to measure how alike or different the match <i>elements are, compared to your data</i> . Many MatchGrades relate to one (1) Confidence Code.
Match Data Profile (MDP)	A series of 7 or 11 2-digit codes used to define the source of the matched record — the kind of data to which the record was matched, within the D&B Match Reference File.

MatchGrade

An eleven (11) or seven (7) position score¹ designed to help the customer develop their auto-decisioning rules defining acceptable matches. Customer record content is compared to D&B content on these 11 components, always in the same sequence.

The MatchGrade compares the normalized (i.e., cleansed, parsed, standardized) customer input record to the D&B match reference database, which has been normalized in exactly the same manner.

There are four values to the score assigned to each of the specific components of the MatchGrade. See the table below for each of the eleven (11) or seven (7) components.

MatchGrade Values

Value	Description	Example
A	Content is the same	ABC Mfg Co vs. ABC Manufacturing Company
B	Content is similar	ABC Widget Mfg vs. ABC Manufacturing
F ²	Content is different	ABC Widget Mfg vs. XYZ Manufacturing
Z	One or both components are null or missing	

¹ In certain countries, a 7 digit MatchGrade is provided. To see a list a list of countries currently supporting an 11 position MatchGrade go to Section 9 of this document.

² It is important to note that while F does represent difference in the input data to the reference data, upon visual review it could be determined to be a “good” match even though an F was assigned.



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MatchGrade Defined

MG Component	Data Element	Comments
1	Company Name	Maps one (1) customer input "Business Name" field to the following D&B elements: <ul style="list-style-type: none">• Current or former Business Name or Tradestyle ("Doing Business As") Business name (up to 5)• Registered Company Name (non-US, only)• Current Primary or Additional Contact (owner/CEO/key exec)
2	Street Number	The input Street Address Number is matched to the current or former business address, or an additional address (i.e., home address) of a key executive
3	Street Name	The input Street Name is matched to the current or former business address, or an additional address (i.e., home address) of a key executive. Bear in mind that a Street Name may be a number, such as "3 rd Ave."
4	City Name	The input City is matched to the current or former business address, or an additional city (i.e., home city) of a key executive
5	US = State; Canada = Province; Other = Country	The input State/Province or Country is matched to the current or former business address, or an state/province (i.e., home state/province) of a key executive
6	Mail Address/PO Box	The input PO Box number is matched to the current or former PO Box number
7	Telephone Number	The input Phone Number, including area code, is matched to the current or former Phone Number
8	ZIP Code	The standardized and corrected input ZIP Code is matched to the current or former ZIP Code, or an additional ZIP code (i.e., home address) of a key executive
9	Density	A score based on the number of businesses per square mile within a specific ZIP Code.
10	Uniqueness	A = Inquiry name has only 1 record in the match reference database within State B = Inquiry name has only 2-3 records in the match reference database within State F = Inquiry name has more than 3 records in the match reference database within State



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MG Component	Data Element	Comments
11	Industry	A score is defined based on line of business (Standard Industrial Classification, or SIC) imputed from words in the inquiry Business Name. This imputed SIC is compared for similarity to the up to six SIC codes D&B has assigned to its candidate record

Note: There are almost 17,000 seven (7) digit MatchGrades and almost 4.2 million eleven (11) digit MatchGrades.

MatchGrade map to Confidence Codes

A Confidence Code is a two-digit code used to group similar quality matches. Many MatchGrades relate to one (1) Confidence Code.

Confidence Codes are used to aid users in the evaluation of match results and for creating auto-decisioning rules. All MatchGrades are mapped to one of the 10 MatchGrades, with the highest/best matches categorized as 10 and non-matches categorized as 00.

Confidence Code Summary Report

Confidence Code Summary						
		Matched and Non-matched			Matched Records Only	
		Frequency	% of Cumulative	File Cumulative	% of Matched	File Matched
Confidence Code	10	112,303	44.9	44.9	47.5	47.5
Confidence Code	9	19,157	7.7	52.6	8.1	55.7
Confidence Code	8	9,466	3.8	56.4	4.0	59.7
Confidence Code	7	7,882	3.2	59.5	3.3	63.0
Confidence Code	6	14,414	5.8	65.3	6.1	69.1
Confidence Code	5	9,708	3.9	69.2	4.1	73.2
Confidence Code	4	63,274	25.3	94.5	26.8	100.0
Confidence Code	3	0	0.0	94.5	0.0	100.0
Confidence Code	2	0	0.0	94.5	0.0	100.0
Confidence Code	1	0	0.0	94.5	0.0	100.0
Confidence Code	0	13,796	5.5	100.0	N/A	N/A
Total Matched Confidence		236,204	94.5	94.5		
Total Confidence Codes		250,000	100.0	100.0	100.0	100.0

Match Data Profile (MDP)

The Match Data Profile is a series of seven - 2-digit codes used to define the source of the matched record within the D&B Match Reference File. The MDP provides specific detail for each of the first seven (7) positions of the MatchGrade and describes the type of D&B Reference Database record to which the input record matched. At a high level, record type categories can be described as:

- Current/Primary
- Former
- Additional
- Not Available

Matched Elements	MDP Notation
Name Matches	Digits 1-2
Primary Name	00-xx-xx-xx-xx-xx-xx
Registered Name*	01-xx-xx-xx-xx-xx-xx
Tradestyle	02-xx-xx-xx-xx-xx-xx
CEO Name	03-xx-xx-xx-xx-xx-xx
Additional Executive	04-xx-xx-xx-xx-xx-xx
Former Business Name	05-xx-xx-xx-xx-xx-xx
Former Tradestyle	06-xx-xx-xx-xx-xx-xx
Former CEO	07-xx-xx-xx-xx-xx-xx
Former Executive	08-xx-xx-xx-xx-xx-xx
Short Name ¹	09-xx-xx-xx-xx-xx-xx
Brand ¹	11-xx-xx-xx-xx-xx-xx
Primary Name – not available	98-xx-xx-xx-xx-xx-xx
Physical Address Matches	Digits 3-10
Physical Address	xx-00-00-00-00-xx-xx
Registered Address*	xx-01-01-01-01-xx-xx
Former Physical Address	xx-02-02-02-02-xx-xx
Additional (EHA/DDM)Address	xx-03-03-03-03-xx-xx
Physical Address – not available	xx-98-98-98-98-xx-xx
Mail Address Matches	Digits 11-12



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Matched Elements	MDP Notation
Mail Address	xx-xx-xx-xx-xx-00-xx
Registered Mail Address*	xx-xx-xx-xx-xx-01-xx
Former Mail Address	xx-xx-xx-xx-xx-02-xx
EHA/DDM Mail Address	xx-xx-xx-xx-xx-03-xx
Mail Address – not available	xx-xx-xx-xx-xx-98-xx
Phone Matches	Digits 13-14
Current Phone	xx-xx-xx-xx-xx-xx-00
Registered Phone*	xx-xx-xx-xx-xx-xx-01
Former Phone	xx-xx-xx-xx-xx-xx-02
Current Phone – not available	xx-xx-xx-xx-xx-xx-98
* for non-US applications ¹ Not yet populated	

2.2 Appending Match Elements

The following data elements are available for every match job:

Match Indicator	<p>A single digit indicator of whether the record matched or did not match.</p> <p>A=Matched C=Did not match</p> <p>If a match threshold is included within the match job, any record not meeting this threshold is coded as a “C”.</p>
Eleven (11) Digit MatchGrade	Per definition above
Confidence Code	Per definition above
Match Data Profile	Per definition above
BEMFAB Indicator (available only in US)	<p>BEMFAB, available on US records, only, is a single digit field indicating the “activity” of a record. Values include:</p> <p>M = Marketable N = Not Matched O = Possibly Out of Business A = Name & Address combination is Undeliverable</p>



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S = SIC 9999 or Unknown (Currently, a record with a missing SIC or SIC 9999, is considered Marketable on the DMI file, but Non-Marketable on WorldBase (WB) – WB BEMFABs are defined somewhat differently than in DMI, and distinguish between Active and Marketable records. On DMI, Active = Marketable.) D = Delist. Company has asked that their data not be included in D&B's marketing file for prospecting. Delisted records, and D&B data, are returned on Entity Match projects.

X = Miscl.

3 Standard Reports Available


The purpose of this section of the document is to provide an overview of the standard result reports provided with every match job sent through Entity Matching. It will be with these reports and the actual match result files that will help you create your auto-decisioning rules.

3.1.1 Pre-Match Audit

The Pre-Match Audit provides an overview of the quality of your input file. Statistics are provided for your data elements that were input to match. These reports can provide statistics by number of input records and dollar amounts (if provided).

In addition to presence/absence statistics, information is also provided on whether the information contained in the specific field is valid content for that field.

The information provided in this report is extremely important, because the availability of complete and accurate input information is crucial to generating a successful match result.

PreMatch Audit Report - Domestic		
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	Count	%
Total Records Processed	1,065	100
Audit Results		
Country Audit:		
Country, Non-U.S.	0	0
Country, U.S.	1,065	100
Country, Blank	NA	NA
Country, Unknown	NA	NA
Match Eligibility:		
Eligible	1,049	98
Not Eligible	16	2
Name Summary (Eligible Records):		
Name Style, Business	1,036	99
Name Style, Personal	13	1
Name Present	1,049	100
Address Summary (Eligible Records):		
Address, Valid Format	1,037	99
Address, Invalid Format	12	1
Address Present	441	42
Address, Blank	608	58
Blank Physical & Postal	9	1



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3.1.2 MatchGrade Confidence Code Report

The MatchGrade Confidence Code Report contains two reports. The first report provides an overview of match results by Confidence Code and the second report provides an overview of match results by MatchGrade. The most highly populated seven (7) digit MatchGrade strings within each Confidence Code are presented with statistics provided on the twenty-five (25) most highly populated eleven (11) digit MatchGrade strings.

MatchGrade Confidence Code Report: Confidence Code Summary

Confidence Code Summary						
	Frequency	Matched and Non-matched		Matched Records Only		
		% of Cumulative	File Cumulative	% of Matched	File Matched	
Confidence Code 10	103,985	24.9	24.9	27.2	27.2	
Confidence Code 9	29,025	7.0	31.9	7.6	34.8	
Confidence Code 8	92,022	22.1	53.9	24.1	58.9	
Confidence Code 7	26,696	6.4	60.3	7.0	65.9	
Confidence Code 6	28,326	6.8	67.1	7.4	73.3	
Confidence Code 5	48,621	11.7	78.8	12.7	86.0	
Confidence Code 4	53,528	12.8	91.6	14.0	100.0	
Confidence Code 3	0	0.0	91.6	0.0	100.0	
Confidence Code 2	0	0.0	91.6	0.0	100.0	
Confidence Code 1	0	0.0	91.6	0.0	100.0	
Confidence Code 0	35,025	8.4	100.0	N/A	N/A	
Total Matched Confidence	382,203	91.6	91.6			
Total Confidence Codes	417,228	100.0	100.0	100.0	100.0	

The Confidence Code Summary provides a quick overview of the match results including,

- Frequency = the number of records
- % results for all records (in this example: 417,228)

Section 1.01 % of total file

Section 1.02 Cumulative % of total File

- % results for matched records only (in this example: 382,203)

Section 1.03 % of matched records

Section 1.04 Cumulative % of matched records



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MatchGrade Confidence Code Report: MatchGrade Summary

Match Grade Summary					
Confidence	MatchGrade	Accuracy	Frequency Total	% of File	% Matched
10	AAAAAZF		46,930	11.2	12.3
	AAAAAZFAZFZ	0.9940	4863	1.2	1.3
	AAAAAZFAZZZ	0.9940	3475	0.8	0.9
	AAAAAZFABFZ	0.9940	3112	0.7	0.8
	AAAAAZFAZFA	0.9940	3008	0.7	0.8
	AAAAAZFAAZZ	0.9940	2489	0.6	0.7
	AAAAAZFAAFZ	0.9940	2437	0.6	0.6
	AAAAAZFABZZ	0.9940	2417	0.6	0.6
	AAAAAZFAZZF	0.9940	2399	0.6	0.6
	AAAAAZFABFA	0.9940	1818	0.4	0.5
	AAAAAZFAZBZ	0.9940	1483	0.4	0.4
	AAAAAZFAAFA	0.9940	1473	0.4	0.4
	AAAAAZFAZZA	0.9940	1406	0.3	0.4
	AAAAAZFAFZZ	0.9940	1344	0.3	0.4
	AAAAAZFAZFF	0.9940	1333	0.3	0.3
	AAAAAZFAZAZ	0.9940	1193	0.3	0.3

The Match Grade Summary provides details at a 7- and 11-digit MatchGrade level. Only the most frequently populated 25 eleven (11) digit MatchGrades are displayed within that 7 digit MatchGrade.

- Frequency = the number of records
- % results for all records (in this example: 417,228)

Section 1.05 % of total file

Section 1.06 Cumulative % of total File


Both the MatchGrade Confidence Code Report and the MatchGrade Sample Report (described next) are extremely valuable tools for D&B customers to use to define their auto-decisioning rules.

3.1.3 MatchGrade Sample Report

The MatchGrade Sample Report provides a side-by-side comparison of you input record and the record to which D&B matched it.

This detailed report provides samples of most highly populated MatchGrade strings. This report shows your input record, the D&B record it matched to and the D&B record as it exists in the match reference database. For each sample record shown, the MatchGrade value (i.e., A, B, F, Z), the corresponding MatchGrade score (0-100) and the Match Data Profile are displayed.

MatchGrade Sample Report

MatchGrade Samples - Domestic					
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Confidence Code = 10		Total =		Percentage of File =	
Accuracy Percentage = 0.9940				Cumulative Percentage =	
				Cumulative Accuracy = 0.9940	
Frequency: 246		Percent of File: 0.1		Record Number: 6	
Customer Supplied Record			D&B Record		
Account #:			DUNS #: 113730829 Seq #: 00000840		
DREAMLIFE INVESTMENTS			DREAMLIFE INVESTMENTS INC		
1700 STANDIFORD AVE STE 240			1700 STANDIFORD AVE STE 240		
MODESTO			MODESTO		
CA 95350-0000			CA 95350-6536		
2096320075			(209) 550-0200		
			*** D&B Trade Style ***		
			DREAMLIFE FINANCIAL		
			DREAMLIFE REALTY		
Type	Match Reference Record	Matched to	Grade	Score	MDP
Business Name	DREAMLIFE INVESTMENT	Business Name	A	100.0	00
Street Number	1700	Street Number	A	100.0	00
Street Name	STANDIFORD	Street Name	A	100.0	00
City/Town/Post	MODESTO	City	A	100.0	00
State/Prov	CA	State	A	100.0	00
PO Box			Z	-1.0	98
Phone			F	0.0	98
Zip	95350-6536	Zip	A	100.0	00
Density		Density	Z	-1.0	98
Uniqueness		Uniqueness	F	25.0	00
Industry - SIC		Industry - SIC	A	100.0	00

The sections of the MatchGrade Sample Summary report are:

Article I. Customer Supplied record

D&B Match record

D&B Match record as it is represented in the Match Reference database

Confidence Code

11 or 7 digit MatchGrade

Match Data Profile indicating to which type of source record the inquiry was matched.



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3.1.4 Match Data Profile Report

The Match Data Profile Report provides a statistical summary of match results by each unique MDP combination present on the file, presented in high to low frequency sequence within Confidence Code.

The Match Reference Database contains multiple representations of a business including not only current active and inactive records, but also additional related records including:

- History (former) of Business Names & Trade Style Names (up to 2 years)
- History (former) known addresses for this business (up to 2 years)
- Additional addresses for the business, such as the home address of the senior executives of the business.

D&B's ability to match to these records provides significant improvement to a project's results particularly in light of the fact that customer records are not frequently maintained and so may come in to match with outdated information. Finally, the MDP provides full detail documenting from which "source" the match was generated.

	Match Data Profile	Confidence Code	Record Count	Running Total	Percent of Total	Running Percent
1)	00-00-00-00-00-98-98	10	1,313	1,313	2.63%	2.63%
2)	01-00-00-00-00-00-00	10	837	2,150	1.67%	4.30%
3)	00-00-00-00-00-00-00	10	588	2,738	1.18%	5.48%
4)	98-00-00-00-00-00-00	10	462	3,200	0.92%	6.40%
5)	01-00-00-00-00-00-98	10	193	3,393	0.39%	6.79%
6)	01-00-00-00-00-98-98	10	183	3,576	0.37%	7.15%
7)	02-00-00-00-00-98-98	10	140	3,716	0.28%	7.43%
8)	00-00-00-00-00-00-98	10	132	3,848	0.26%	7.70%
9)	01-00-00-00-00-98-00	10	127	3,975	0.25%	7.95%
10)	02-00-00-00-00-00-00	10	106	4,081	0.21%	8.16%
11)	98-00-00-00-00-00-98	10	64	4,145	0.13%	8.29%
12)	02-00-00-00-00-00-98	10	52	4,197	0.10%	8.39%
13)	03-00-00-00-00-00-00	10	41	4,238	0.08%	8.48%
14)	02-00-00-00-00-98-00	10	19	4,257	0.04%	8.51%



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4 Helping You Define Your Auto-Decisioning Rules (Match Thresholds)

Earlier, we introduced the meanings of the MatchGrade, Confidence Code and Match Data Profile. In this section, we will help you to understand how you should use this information to define your auto-decisioning rules for accepting and/or rejecting matches.

4.1 *Match Threshold is Defined by Your Business Application*

D&B customers use the enriched information provided to them to drive many business applications within their business. When you think of the customer lifecycle as a continuum, there are many points at which D&B information is relied upon to make “better” decisions. Some examples are listed here.

Marketing

- Identify target markets
- Develop “go to market strategy”
- Define distribution channels

Sales

- Define sales channels/territories
- Acquire new customers
- Identify opportunities for up-sell/cross-sell
- Develop account penetration strategies

Risk Management

- Develop financial arrangements between buyer & seller to maximize sales and minimize risk
- Manage overall risk of your customer portfolio

Supplier Management

- Understand your supplier base and understand inter and intra-relationships between suppliers.
- Monitor the supply base for changes in risk profiles.
- Identify ownership for risk management and define processes when supplier risk increases.
- Consider technologies that allow for transparent and predictive monitoring of the supply base.

Compliance

- Assure you are not doing business with terrorists or money launderers
- Assure your businesses are compliant with their countries’ regulations such as the Patriot Act, Sarbanes-Oxley, Basel II and the Bank Secrecy Act
- Assure you can confidently certify your financial statements because they have consistent credit policies across their business enterprise and have monitored business relationships for material events
- Assure you not over-exposed to losses should one of your customers, vendors, security holdings, or counter parties fail



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4.2 **Setting the Match Threshold**

Depending upon the application(s) you are supporting with this information, the match threshold tiers may require a “tighter” or “looser” definition. If your input file was complete, accurate and up to date, there wouldn’t be a need for a “loose” condition. It is our experience though that this is very, very rarely the case.

Looser – Where the auto-accept rules are set to get a higher rate of match with a willingness to accept a slightly higher level of false matches while greatly increasing the total number of matches.

Tighter – Where the auto-accept rules are set to keep the level of false matches to a minimum. Typically, a tighter match will result in fewer matches particularly where you input information is not of high quality or completeness.

For instance, if you are incorporating the information into a credit or risk decisioning platform or you are bringing the information into a sales force automation application, you will probably want to use a tighter definition. On the other hand, if you are supporting a marketing effort or industry compliance application a looser definition is probably acceptable.

4.3 How to Define Match Threshold Tiers

By using the D&B's decisioning feedback that D&B provides through our reports, you are able to define very specifically which records are suitable for categorizing groups of records into any of the "tiers" listed below.

You may have more than these three tiers, but to keep things simple we'll work with these three:

Match Threshold Tier	Description	Example
1. Accept	Any record meeting specific criteria where, when this criterion is met, the customer will automatically accept the match. This category can sometimes be referred to as Auto-decisioning.	Any record with a confidence code of 8 or higher or where the MG pattern meets a defined requirement.
2. Manual Review (can be defined in more than one (1) tier)	<p>Through an evaluation of actual match results, records falling into this category have a much higher incidence of good match versus bad match. In this category, the customer manually reviews records either to accept them or to reject them as a valid match.</p> <p>Through a Manual Review process a customer might determine that the review process has shown that all records meeting specific criteria (e.g., a specific Confidence Code and MatchGrade pattern) should be included in their auto-accept criteria.</p> <p>The content to define this category would oftentimes contain specific Confidence Codes, MatchGrades and/or Match Data Profile patterns.</p>	Where the company name fails, but all of the physical address components match perfectly (i.e., FAAAAZA)
3. Reject	<p>While some of the records contained in this category may be good matches, too many of them are not good and the records do not warrant further effort or expense to resolve them.</p> <p>Where records have been rejected, but the customer deems them to be important (e.g., high-value customers), the customer may want to provide D&B with alternate input information</p>	Records not meeting the criteria for the "Accept" and "Manual Review" categories above.

4.3.1 How to define match threshold – Example 1

We have included here an example of a process a customer might go through to define their auto-decisioning rules. In this example, let us define the business application as a marketing application where the customer wants to understand the make-up of their customer base.

- What industry are they in?

- What size are they?
- In which industries are they doing really well?

This can be referred to as a “customer segmentation analysis”.

Step 1: Review Match Results by Confidence Code

You want to start by reviewing the results by Confidence Code. This information is contained in the MatchGrade Confidence Code report described in section:

MatchGrade Confidence Code Report: Confidence Code Summary

Confidence Code Summary						
		<i>Matched and Non-matched</i>			<i>Matched Records Only</i>	
		<i>Frequency</i>	<i>% of Cumulative</i>	<i>File Cumulative</i>	<i>% of Matched</i>	<i>File Matched</i>
Confidence Code	10	103,985	24.9	24.9	27.2	27.2
Confidence Code	9	29,025	7.0	31.9	7.6	34.8
Confidence Code	8	92,022	22.1	53.9	24.1	58.9
Confidence Code	7	26,696	6.4	60.3	7.0	65.9
Confidence Code	6	28,326	6.8	67.1	7.4	73.3
Confidence Code	5	48,621	11.7	78.8	12.7	86.0
Confidence Code	4	53,528	12.8	91.6	14.0	100.0
Confidence Code	3	0	0.0	91.6	0.0	100.0
Confidence Code	2	0	0.0	91.6	0.0	100.0
Confidence Code	1	0	0.0	91.6	0.0	100.0
Confidence Code	0	35,025	8.4	100.0	N/A	N/A
Total Matched Confidence		382,203	91.6	91.6		
Total Confidence Codes		417,228	100.0	100.0	100.0	100.0

Many D&B customers set their Auto-Accept threshold to contain records with a Confidence Code 8 or 7, so let’s review the results at this level.

A quick scan of this report shows that almost 54% of the records matched at a Confidence Code of 8 or higher, and just over 60% matched at a Confidence Code of 7 or higher.

Step 2: Review Match Results by MatchGrade, by counts and by samples to determine Auto-Accept rules by Confidence Code

At a minimum, review 2-3 examples of records (from the MatchGrade Sample Report) in the top three (3) or four(4) 7-digit MatchGrades in Confidence Code 8 or 7 and higher so that you can concur with this auto-accept recommendation. Another way to determine which MatchGrades to present is by choosing the most frequently populated MatchGrade strings representing 60%-70% of all of the records in that Confidence Code. See this concept demonstrated below in the Confidence Code 9 Review.

Auto-Accept Rules by Confidence Code Summary

Having reviewed the sample records provided in the MatchGrade Sample report, what are the Confidence Codes you are comfortable with auto-accepting? Many customers set this threshold at Confidence Code 8 and above or 7 and above.



Decide with Confidence

Logic behind selecting records within specific MatchGrade strings for auto-accept, manual review or reject

- Look first at the MatchGrade strings with the highest counts. If there is an acceptable MatchGrade pattern in a highly populated string, a greater number of records will be resolved.
- Be aware of known data quality issues in the input file, which would cause match results to be lower. Is there something you can do to correct these records or is this the best information you can provide? In the dataset used in this example:
 - There was a known issue with input telephone numbers causing a higher than normal bad telephone number match.
 - There were many input records missing important address information.

Confidence Code 10 Review

We see in this example that 46,930 records out of the 417,228 total file resulted in the 7 digit MatchGrade AAAAAZF. The same 7-digit MatchGrade is repeated in the report with a count of 38,006, so the total count of records in this MG7 is 84,936 or 82% of all CC 10's. (i.e., $84,936/103,985 = 82\%$). MatchGrade AAAAAZF is interpreted as an extremely good match. The only differences are the mail address is missing (Z) and the telephone number is different (F).



Decide with Confidence

MatchGrade Confidence Code Report: Match Grade Summary

Match Grade Summary					
Confidence	MatchGrade	Accuracy	Frequency Total	% of File	% Matched
10	AAAAAZF		46,930	11.2	12.3
	AAAAAZFAZFZ	0.9940	4863	1.2	1.3
	AAAAAZFAZZZ	0.9940	3475	0.8	0.9
	AAAAAZFABFZ	0.9940	3112	0.7	0.8
	AAAAAZFAZFA	0.9940	3008	0.7	0.8
	AAAAAZFAAZZ	0.9940	2489	0.6	0.7
	AAAAAZFAAFZ	0.9940	2437	0.6	0.6
	AAAAAZFABZZ	0.9940	2417	0.6	0.6
	AAAAAZFAZZF	0.9940	2399	0.6	0.6
	AAAAAZFABFA	0.9940	1818	0.4	0.5
	AAAAAZFAZBZ	0.9940	1483	0.4	0.4
	AAAAAZFAAFA	0.9940	1473	0.4	0.4
	AAAAAZFAZZA	0.9940	1406	0.3	0.4
	AAAAAZFAFZZ	0.9940	1344	0.3	0.4
	AAAAAZFAZFF	0.9940	1333	0.3	0.3
	AAAAAZFAZAZ	0.9940	1193	0.3	0.3

Continuing with this example, rather than provide screenshots for all of the MatchGrade Summary Report pages, we reviewed the report and entered in the table below the top four (4) 7-digit MatchGrades. Further, in this document, we will show one example for each Confidence Code.

	Company Name	Street #	Street Name	City	State	Mail Address	Telephone Number		
MG7	1	2	3	4	5	6	7		
CC								Count	% CC
10	A	A	A	A	A	Z	F	84,936	82%
10	A	A	A	A	A	Z	A	9,349	9%
10	A	A	A	A	A	Z	Z	5,209	5%
10	A	A	A	A	A	Z	B	2,945	3%

MatchGrade Sample Report: CC10/MG7: AAAAAZF (82% of CC10³)

³ The % shown represents the sample file used for this document and is not indicative of individual customer results



Decide with Confidence

Frequency: 246	Percent of File:0.1	Record Number: 6																																																																								
Customer Supplied Record		D&B Record																																																																								
Account #: DREAMLIFE INVESTMENTS 1700 STANDIFORD AVE STE 240 MODESTO CA 95350-0000 2096320075		DUNS #: 113730829 Seq #: 000000840 DREAMLIFE INVESTMENTS INC 1700 STANDIFORD AVE STE 240 MODESTO CA 95350-6536 (209) 550-0200 *** D&B Trade Style *** DREAMLIFE FINANCIAL DREAMLIFE REALTY																																																																								
<table border="1"><thead><tr><th>Type</th><th>Match Reference Record</th><th>Matched to</th><th>Grade</th><th>Score</th><th>MDP</th></tr></thead><tbody><tr><td>Business Name</td><td>DREAMLIFE INVESTMENT</td><td>Business Name</td><td>A</td><td>100.0</td><td>00</td></tr><tr><td>Street Number</td><td>1700</td><td>Street Number</td><td>A</td><td>100.0</td><td>00</td></tr><tr><td>Street Name</td><td>STANDIFORD</td><td>Street Name</td><td>A</td><td>100.0</td><td>00</td></tr><tr><td>City/Town/Post</td><td>MODESTO</td><td>City</td><td>A</td><td>100.0</td><td>00</td></tr><tr><td>State/Prov</td><td>CA</td><td>State</td><td>A</td><td>100.0</td><td>00</td></tr><tr><td>PO Box</td><td></td><td></td><td>Z</td><td>-1.0</td><td>98</td></tr><tr><td>Phone</td><td></td><td></td><td>F</td><td>0.0</td><td>98</td></tr><tr><td>Zip</td><td>95350-6536</td><td>Zip</td><td>A</td><td>100.0</td><td>00</td></tr><tr><td>Density</td><td></td><td>Density</td><td>Z</td><td>-1.0</td><td>98</td></tr><tr><td>Uniqueness</td><td></td><td>Uniqueness</td><td>F</td><td>25.0</td><td>00</td></tr><tr><td>Industry - SIC</td><td></td><td>Industry - SIC</td><td>A</td><td>100.0</td><td>00</td></tr></tbody></table>	Type	Match Reference Record	Matched to	Grade	Score	MDP	Business Name	DREAMLIFE INVESTMENT	Business Name	A	100.0	00	Street Number	1700	Street Number	A	100.0	00	Street Name	STANDIFORD	Street Name	A	100.0	00	City/Town/Post	MODESTO	City	A	100.0	00	State/Prov	CA	State	A	100.0	00	PO Box			Z	-1.0	98	Phone			F	0.0	98	Zip	95350-6536	Zip	A	100.0	00	Density		Density	Z	-1.0	98	Uniqueness		Uniqueness	F	25.0	00	Industry - SIC		Industry - SIC	A	100.0	00		
Type	Match Reference Record	Matched to	Grade	Score	MDP																																																																					
Business Name	DREAMLIFE INVESTMENT	Business Name	A	100.0	00																																																																					
Street Number	1700	Street Number	A	100.0	00																																																																					
Street Name	STANDIFORD	Street Name	A	100.0	00																																																																					
City/Town/Post	MODESTO	City	A	100.0	00																																																																					
State/Prov	CA	State	A	100.0	00																																																																					
PO Box			Z	-1.0	98																																																																					
Phone			F	0.0	98																																																																					
Zip	95350-6536	Zip	A	100.0	00																																																																					
Density		Density	Z	-1.0	98																																																																					
Uniqueness		Uniqueness	F	25.0	00																																																																					
Industry - SIC		Industry - SIC	A	100.0	00																																																																					

Observation: This is a great match! We see in this example that each component of the company name and address are the same. Only the telephone numbers are different.

For our example case, this customer decides to auto-accept Confidence Code 10.

Confidence Code 9 Review

The top three MatchGrade strings in CC9 represent 74% of all records in CC9.

	Company Name	Street #	Street Name	City	State	Mail Address	Telephone Number		
	1	2	3	4	5	6	7		
CC	MG7							Count	% CC
9	A	Z	Z	A	A	A	F	14,656	50%
9	B	A	A	A	A	Z	A	5,173	18%
9	B	F	F	A	A	Z	A	1,769	6%

MatchGrade Sample Report: CC9/MG7: AZZAAAF (50% of CC9⁴)

In this example dataset, the most frequently populated MG7 in CC9 is AZZAAAF representing just over 50% of all CC9 matches.

Frequency: 161	Percent of File: 0.1	Record Number: 22			
Customer Supplied Record		D&B Record			
Account #: JONES LANG LASALLE POB 2358 SAN FRANCISCO CA 94126-0000 4087201738		DUNS #: 042951181 Seq #: 000002808 JONES LANG LASALLE AMERICAS, INC 1 S VAN NESS AVE FL 6 SAN FRANCISCO CA 94103-1286 (415) 241-4949 *** D&B Trade Style *** (FORMERLY COMPASS MANAGEMENT & LEASING)			
Type	Match Reference Record	Matched to	Grade	Score	MDP
Business Name	JONES LANG LASALLE AMERICA	Business Name	A	80.0	00
Street Number			Z	-1.0	98
Street Name			Z	-1.0	98
City/Town/Post	SAN FRANCISCO	City	A	100.0	00
State/Prov	CA	State	A	100.0	00
PO Box	2358	Address	A	100.0	00
Phone			F	0.0	98
Zip	94103-1286	Zip	Z	-1.0	00
Density		Density	Z	-1.0	98
Uniqueness		Uniqueness	F	5.0	00
Industry - SIC		Industry - SIC	Z	-1.0	00

Observations: Also, a great match, this example shows a perfect match on company name and mail address with different telephone numbers. Notice that D&B's PO Box is displayed within the Match Reference Record.

For our example case, this customer decides to auto-accept Confidence Code 9.

⁴ The % shown represents the sample file used for this document and is not indicative of individual customer results

Confidence Code 8 Review

The top three MatchGrade strings in CC8 represent 87% of all records in CC8.

	1 Company Name	2 Street #	3 Street Name	4 City	5 State	6 Mail Address	7 Telephone Number		
CC	MG7							Count	% CC
8	B	A	A	A	A	Z	F	57,534	63%
8	B	Z	Z	A	A	A	Z	17,741	19%
8	A	F	A	A	A	Z	F	4,493	5%

MatchGrade Sample Report: CC8/MG7: BAAAZF (63% of CC8)⁵

Frequency: 195		Percent of File: 0.9		Record Number: 39	
Customer Supplied Record			D&B Record		
Account #: ADT SECURITY SYSTEMS 86 ASHLEY AVE W SPRINGFIELD MA 01089-0000 2032210653			DUNS #: 196223197 Seq #: 000000050 TYCO FIRE PRODUCTS LP 86 ASHLEY AVE WEST SPRINGFIELD MA 01089-1302 (413) 452-5042 *** D&B Trade Style ***		
Type	Match Reference Record	Matched to	Grade	Score	MDP
Business Name	ADT SECURITY INSTALLATION	Former Business Name	B	46.0	05
Street Number	86	Street Number	A	100.0	00
Street Name	ASHLEY	Street Name	A	100.0	00
City/Town/Post	WEST SPRINGFIELD	City	A	100.0	00
State/Prov	MA	State	A	100.0	00
PO Box			Z	-1.0	98
Phone			F	0.0	98
Zip	01089-1302	Zip	A	100.0	00
Density		Density	Z	-1.0	98
Uniqueness		Uniqueness	A	100.0	00
Industry - SIC		Industry - SIC	A	100.0	00

Observations: Upon comparison of the input to the D&B record, the company names are vastly different. Upon further review though, we can see that this is also a great match.

In this example, we see a match to the Former Business Name – Notice that the MDP value is 05. The Match Reference record shows that the business name this record matched to was ADT Security Installation. Storing current, former and additional names in the Match Reference Database is a

⁵ The % shown represents the sample file used for this document and is not indicative of individual customer results

something only D&B provides and is great way for you to understand why two seemingly dissimilar records matched with a high confidence code.

For our example case, this customer decides to auto-accept Confidence Code 8.

Step 3: Expand the Auto-Accept Tier by Specific MatchGrades (*and then Manual Review*)

Are there other records that can also be auto-accepted? The goal of this next step is to identify groups of records that are below the “auto-accept” tier, but where review of a sampling of records within specific 7-digit (or 11-digit) MatchGrades show a very high incidence of good matches. By reviewing the MatchGrade Confidence Code Statistics report, you want to look at MatchGrade patterns containing the highest number of records.

Confidence Code 7 Review

The top 3 MatchGrade strings in CC7 represent 73% of all records in CC7.

It is especially important to do a thorough job of reviewing examples in Confidence Code 7, because in CC7’s and below there is a higher level of difference between the inquiry and the D&B record. Yet, we frequently see very good match results in MatchGrades as shown in the examples below.

	Company Name	Street #	Street Name	City	State	Mail Address	Telephone Number		
	1	2	3	4	5	6	7		
CC	MG7							Count	% CC
7	A	Z	Z	A	A	Z	F	8,682	33%
7	A	F	F	A	A	Z	F	5,740	21%
7	A	Z	F	A	A	Z	F	5,160	19%
7	B	Z	Z	A	A	Z	A	2,208	8%
7	B	A	F	A	A	Z	F	617	2%
7	B	F	F	A	A	Z	F	389	1%



Decide with Confidence

MatchGrade Sample Report: CC7/MG7: AZZAAZF (33% of CC7)⁶

Frequency: 180		Percent of File:0.8		Record Number: 60	
Customer Supplied Record			D&B Record		
Account #: FACTSET RESEARCH SYSTEMS INC			DUNS #: 189740558 Seq #: 000000864		
NORWALK CT FC 06851-0000 2032517944			FACTSET RESEARCH SYSTEMS, INC. 601 MERRITT 7 NORWALK CT 06851-1091 (203) 810-1000 *** D&B Trade Style ***		
Type	Match Reference Record	Matched to	Grade	Score	MDP
Business Name	FACTSET RESEARCH SYSTEM	Business Name	A	100.0	00
Street Number	601		Z	-1.0	98
Street Name	MERRITT 7		Z	-1.0	98
City/Town/Post	NORWALK	City	A	100.0	00
State/Prov	CT	State	A	100.0	00
PO Box			Z	-1.0	98
Phone			F	0.0	98
Zip	06851-1091	Zip	A	100.0	00
Density		Density	Z	-1.0	98
Uniqueness		Uniqueness	F	25.0	00
Industry - SIC		Industry - SIC	F	0.0	00

Observations: D&B frequently receives input records from customers with no street address information. In these situations where neither a physical or mail address is provided, the best MatchGrade possible is AZZ*. (where * = any values) In addition to containing no street address, the Customer-Supplied Record contains two additional flaws:

- The State abbreviation appears as FC rather than CT.
- The city name field also contains the state abbreviation.

Both of these errors are corrected during the pre-match processing D&B performs on the input records. Further, the MatchGrade scores are derived from the corrected information and not the original flawed data and so the values for City and State both show "A".

For our example case, this customer decides to auto-accept CC7/MG: AZZAAZF.

⁶ The % shown represents the sample file used for this document and is not indicative of individual customer results



Decide with Confidence

MatchGrade Sample Report: CC7/MG7: AFFAAZF (19% of CC7)⁷

Frequency: 144	Percent of File: 0.1			Record Number: 68	
Customer Supplied Record		D&B Record			
Account #: CO OF RIVERSIDE 4095 COUNTY CIR DR RIVERSIDE CA 92503-0000 3352531747		DUNS #: 878007343 Seq #: 000002515 M2 COLLISION CENTERS INC 11740 STERLING AVE RIVERSIDE CA 92503-4978 (951) 358-1280 *** D&B Trade Style *** SOUTHERN CALIFORNIA COLLISION RIVERSIDE OFFICE RIVERSIDE			
Type	Match Reference Record	Matched to	Grade	Score	MDP
Business Name	RIVERSIDE	TradeStyle	A	100.0	02
Street Number	11740	Street Number	F	0.0	00
Street Name	STERLING	Street Name	F	0.0	00
City/Town/Post	RIVERSIDE	City	A	100.0	00
State/Prov	CA	State	A	100.0	00
PO Box			Z	-1.0	98
Phone			F	0.0	98
Zip	92503-4978	Zip	A	100.0	00
Density		Density	Z	-1.0	98
Uniqueness		Uniqueness	F	8.0	00
Industry - SIC		Industry - SIC	Z	-1.0	00

Observations: The Match Data Profile shows that the address on this record matched to a Tradestyle Business Name but the street addresses are different.

This does **not** look like a good match. Even though the company name shows an “A” match, the content of that company name is only one word – Riverside, also the city name and the county name. The inquiry record is most likely for the “County of Riverside”, where in this case “Co” stands for County (and not Company). The D&B record is for M2 Collision Centers, which also carries a Tradestyle of “Riverside”.

Having seen a bad match in this MatchGrade should we categorize this MatchGrade in the Reject, Manual Review, or Accept category? To make this decision, you would need to see more examples.

⁷ The % shown represents the sample file used for this document and is not indicative of individual customer results



Decide with Confidence

MatchGrade Sample Report: CC7/MG7: AFFAAZF (19% of CC7)⁸

Frequency: 52	Percent of File:0.2				Record Number: 63
Customer Supplied Record		D&B Record			
Account #: PFIZER INC 144 N BEVERWYCK RD LAKE HIAWATHA NJ 07034-0000 2032991096		DUNS #: 943955690 Seq #: 000001742 PFIZER INC 400 WEBRO RD PARSIPPANY NJ 07054-2826 (973) 952-7600 *** D&B Trade Style *** PFIZER PFIZER/CONSUMER HEALTH CARE PFIZER/CHC/SALES			
Type	Match Reference Record	Matched to	Grade	Score	MDP
Business Name	PFIZER	Business Name	A	100.0	00
Street Number	95	Additional Street Number	F	0.0	03
Street Name	VAN WYK	Additional Street Name	F	0.0	03
City/Town/Post	LAKE HIAWATHA	Additional City	A	100.0	03
State/Prov	NJ	Additional State	A	100.0	03
PO Box			Z	-1.0	98
Phone			F	0.0	98
Zip	07054-2826	Zip	A	100.0	00
Density		Density	A	85.0	00
Uniqueness		Uniqueness	F	2.0	00
Industry - SIC		Industry - SIC	Z	-1.0	00

Observations: The first example of MG AFFAAZF was not a good match. This second example does appear to be a good match.

The Match Data Profile shows that the address on this record most closely matched to an additional address (e.g., home address), where the street addresses are different, however the city is a match.

Further investigation into the inquiry address identified it as the reseller’s address. Pfizer is not located at the inquiry address at all. Where the D&B customer sells through independent distribution channels, having match results where the address does not match (AFF*) is extremely common.

During the review of several records in MG7 AFFAAZF, the customer would determine whether all records in this particular MatchGrade would be acceptable, or if they would prefer to manually review these records.

For our example case, after reviewing several records in this group where the matches did appear to be good enough for the marketing analysis, the customer decides to auto-accept CC7/MG: AFFAAZF.

⁸ The % shown represents the sample file used for this document and is not indicative of individual customer results



Decide with Confidence

Step 4: Define record groups for manual review (and then reject)

Use this process if you are interested in reviewing and resolving your most important records first or if you do not have the resources to review all of the records defined in the manual review tier. By doing so, you can narrow down the set of records your own criteria. This selection can be based on any number of customer-defined variables, such as:

- Amount spent in the previous year
- Major Accounts
- Recency of last purchase
- A combination of multiple criteria

Confidence Code 6 Review

There is a much lower percentage of records in individual MatchGrades in CC6 than there was in CC7 and higher. The seven (7) MatchGrades below represent 71% of all records in Confidence Code 6.

	Company Name	Street #	Street Name	City	State	Mail Address	Telephone Number		
	1	2	3	4	5	6	7		
CC	MG7							Count	% CC
6	A	Z	Z	A	A	Z	F	5,342	19%
6	A	F	F	A	A	Z	F	4,832	17%
6	A	Z	Z	Z	A	Z	F	2,613	9%
6	A	Z	F	A	A	Z	F	2,236	8%
6	F	A	A	A	A	Z	A	1,664	6%
6	A	Z	Z	Z	A	Z	Z	1,731	6%
6	A	F	F	F	A	Z	F	1,614	6%



Decide with Confidence

MatchGrade Sample Report: CC6/MG7: AZZAAZF (19% of CC6)

Frequency: 82	Percent of File:0.4			Record Number: 78	
Customer Supplied Record		D&B Record			
Account #: ENTERPRISE COMPUTER SYSTEMS		DUNS #: 603892055 Seq #: 000000131 ENTERPRISE COMPUTER SYSTEMS INC 1 INDEPENDENCE POINTE GREENVILLE SC 29615-4545 (864) 234-7676 *** D&B Trade Style ***			
GREENVILLE SC FC 29602-0000 2032250400					
Type	Match Reference Record	Matched to	Grade	Score	MDP
Business Name	ENTERPRISE COMPUTER SYSTEM	Business Name	A	100.0	00
Street Number	1		Z	-1.0	98
Street Name	INDEPENDENCE POINTE		Z	-1.0	98
City/Town/Post	GREENVILLE	City	A	100.0	00
State/Prov	SC	State	A	100.0	00
PO Box			Z	-1.0	98
Phone			F	0.0	98
Zip	29615-4545	Zip	B	80.0	00
Density		Density	Z	-1.0	98
Uniqueness		Uniqueness	F	25.0	00
Industry - SIC		Industry - SIC	F	0.0	00

Observations: The input record contains no street address information and three additional flaws, 1) The State abbreviation appears as FC rather than SC, 2) The city name field also contains the state abbreviation, 3) Connecticut area code for a South Carolina record.

This MG7 also appeared in our CC7 example as the most frequently populated MG7 within CC7. The difference between CC6 records and CC7 records is the last four positions of the 11-digit MatchGrade.

It is important to understand that in countries providing the 11-digit MatchGrade, one (1) 11-digit MatchGrade maps to only one (1) Confidence code, however, one (1) 7-digit MatchGrade maps to multiple Confidence Codes. In countries where only the 7-digit MatchGrade is provided, one (1) 7-digit MatchGrade maps to one (1) Confidence Code.

For our example case, this customer decides to auto-accept CC6/MG: AZZAAZF.



Decide with Confidence

MatchGrade Sample Report: CC6/MG7: FAAAAZA (6% of CC6)

Frequency: 1743	Percent of File:0.7				Record Number: 75
Customer Supplied Record		D&B Record			
Account #:		DUNS #: 037228180	Seq #: 000000040		
MELBA CORNELL		SEA-3 INC			
1111 BAGBY ST STE 1910		1111 BAGBY ST STE 1910			
HOUSTON		HOUSTON			
TX 77002-0000		TX 77002-2545			
7138506520		(713) 650-6520			
		*** D&B Trade Style ***			
Type	Match Reference Record	Matched to	Grade	Score	MDP
Business Name	SEA 3	Business Name	F	0.0	00
Street Number	1111	Street Number	A	100.0	00
Street Name	BAGBY	Street Name	A	100.0	00
City/Town/Post	HOUSTON	City	A	100.0	00
State/Prov	TX	State	A	100.0	00
PO Box			Z	-1.0	98
Phone	7138506520	Phone	A	100.0	00
Zip	77002-2545	Zip	A	100.0	00
Density		Density	A	88.0	00
Uniqueness		Uniqueness	Z	-1.0	98
Industry - SIC		Industry - SIC	Z	-1.0	00

Observations: The address and telephone number are perfect matches, but the company name is not a match. Notice that the input company name is a person's name. Did this customer enter their contact's name instead of the company's name? This may very well be a good match.

Depending on the quality of you input file, this MatchGrade pattern frequently contains very good matches.

This MG7 indicates a perfect match on address and phone number but a different business name. Some reasons this might occur are:

- The business name could be so abbreviated that it is not recognized as a match
- The business name is of the customer but the address is of a dealer/distributor
- The business name is of the dealer/distributor, but the address is of the customer
- The business name is a Tradestyle that is not recognized in the D&B reference file
- The address is a business suite sharing administrative resources

In this case, the correct business is the Sea-3, which is the name in the D&B Record. The following was taken from <http://www.transammonia.com/e/offices/northamerica.html>.

Sea-3, Inc. / Houston 1111 Bagby, Suite 1910 Houston, TX 77002 Fax: +1 (713) 650-3504	Tel: +1 (713) 650-6520
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For our example case, this customer decides not to auto-accept CC6/MG: FAAAAZA. Instead, this group will be defined within the Manual Review tier.



Decide with Confidence

Confidence Code 5 Review

The five (5) MatchGrades below represent 75% of all records in Confidence Code 5. When reviewing CC5 MatchGrade strings, the decision is usually between Manual Review and Reject. There are not many situations where customers would auto-accept a CC5.

	Company Name	Street #	Street Name	City	State	Mail Address	Telephone Number		
	1	2	3	4	5	6	7		
CC	MG7							Count	% CC
5	B	F	F	A	A	Z	Z	15,295	31%
5	A	F	F	F	A	Z	Z	12,226	25%
5	F	F	F	A	A	Z	A	4,583	9%
5	B	F	F	A	A	Z	F	3,475	7%
5	B	Z	Z	A	A	Z	F	2,012	4%

MatchGrade Sample Report: CC5/MG7: BFFAAZZ (31% of CC6)

Frequency: 1282	Percent of File: 0.5	Record Number: 108			
Customer Supplied Record		D&B Record			
Account #:	BUSINESS AND FINANCIAL CONSULTANTS INC	DUNS #: 124234508 Seq #: 000000207			
3303 DEER CREEK ST	SAN ANTONIO	BUSINESS FINANCIAL GROUP LLC			
SAN ANTONIO	TX 78230-0000	400 N LOOP 1804 E STE 110			
		SAN ANTONIO			
		TX 78232-1244			
		(210) 495-8474			
		*** D&B Trade Style ***			
Type	Match Reference Record	Matched to	Grade	Score	MDP
Business Name	BUSINESS FINANCIAL GROUP	Business Name	B	57.0	00
Street Number	400	Street Number	F	0.0	00
Street Name	LOOP 1804	Street Name	F	0.0	00
City/Town/Post	SAN ANTONIO	City	A	100.0	00
State/Prov	TX	State	A	100.0	00
PO Box			Z	-1.0	98
Phone			Z	-1.0	98
Zip	78232-1244	Zip	B	80.0	00
Density		Density	B	79.0	00
Uniqueness		Uniqueness	Z	-1.0	98
Industry - SIC		Industry - SIC	A	100.0	00

Observations: The Company Name is similar, however, upon inspection, the words making up the business name are very common, and are not necessarily the same business.



Decide with Confidence

For our example case, this customer decides not to auto-accept CC5/MG: BFFAAZZ. Instead, this group will be defined within the Manual Review tier.

MatchGrade Sample Report: CC5/MG7: AFFFAZZ (25% of CC6)

Frequency: 840	Percent of File:0.3	Record Number: 101	
Customer Supplied Record		D&B Record	
Account #:	PAFCO	DUNS #:	946858727 Seq #: 00000271
2100 N CENTRAL AVE STE 225	PHOENIX	PHILIP A FALLEK CO LTD	950 W BIRCHWOOD AVE STE 8
AZ 85004-0000		MESA	AZ 85210-8447
		(480) 844-5011	*** D&B Trade Style ***
		PAFCO	

Type	Match Reference Record	Matched to	Grade	Score	MDP
Business Name	PAFCO	TradeStyle	A	100.0	02
Street Number	950	Street Number	F	0.0	00
Street Name	BIRCHWOOD	Street Name	F	0.0	00
City/Town/Post	MESA	City	F	0.0	00
State/Prov	AZ	State	A	100.0	00
PO Box			Z	-1.0	98
Phone			Z	-1.0	98
Zip	85210-8447	Zip	F	0.0	00
Density		Density	Z	-1.0	98
Uniqueness		Uniqueness	B	50.0	00
Industry - SIC		Industry - SIC	Z	-1.0	00

Observations: The Company Name is a perfect match to the D&B Tradestyle Name. The street address and city are different. This may be a situation where one record contains the home address and the other record contains the business address. The Uniqueness grade is a "B" meaning that only two (2) or three (3) businesses have the same business name in that state.

For our example case, this customer decides not to auto-accept CC5/MG: AFFFAZZ. Instead, this group will be defined within the Manual Review tier.

MatchGrade Sample Report: CC5/MG7: BFFAAZF (7% of CC6)

Frequency: 13	Percent of File:0.1	Record Number: 116	
Customer Supplied Record		D&B Record	
Account #:	FORSTER K CHEN & K HLTECHNIK	DUNS #:	482239386 Seq #000006654
BUSINESS UNIT FORSTER K CHEN	ARBON	FORSTER KUCHEN- & KUHLTECHNIK	37 EGNACHERSTRASSE PO BOX 600
CH, 9320		ARBON	CH, 9320
071 4474196		714474650	*** D&B Trade Style ***

	Grade	Score
Name:	B	88.0
Street #:	F	0.0
Str name:	F	21.0
City/Town/Post:	A	100.0
State/Prov:	A	100.0
PO Box:	Z	-1.0
Phone:	F	0.0

Observations: The most populated MG7 in CC5 was BFFAAZZ. In that this MG7: BFFAAZF is slightly worse than BFFAAZZ, our threshold decision will be either the same or worse than our decision above.

The company names are very similar. The only differences may be the special characters contained in the inquiry record. This appears to be a good match.



Decide with Confidence

For our example case, as was the decision for BFFAAZZ, the customer decides not to auto-accept CC5/MG: BFFAAZF. Instead, this group will be defined within the Manual Review tier.

Confidence Code 4 Review

The five (5) MatchGrades below represent 71% of all records in Confidence Code 4. When reviewing CC5 MatchGrade strings, the decision is usually between Manual Review and Reject. There are not many situations where customers would auto-accept a CC4.

	Company Name	Street #	Street Name	City	State	Mail Address	Telephone Number		
	1	2	3	4	5	6	7		
CC	MG7							Count	% CC
4	F	A	A	A	A	Z	F	15,295	31%
4	B	Z	Z	Z	A	Z	Z	6,236	12%
4	A	F	F	F	A	Z	F	6,159	12%
4	A	Z	Z	F	A	Z	F	4,833	9%
4	B	F	F	A	A	Z	F	3,475	7%

Step 5: Define record groups to be rejected (or for manual review)

MatchGrade Sample Report: CC4/MG7: FAAAAZF (31% of CC6)

Frequency: 888	Percent of File:0.7	Record Number: 112			
Customer Supplied Record		D&B Record			
Account #: EDNA E WEISS 8820 BURNET RD STE 506 AUSTIN TX 78757-0000 5122388929		DUNS #: 002469265 Seq #: 000000037 FELT, RON T 8820 BURNET RD STE 504 AUSTIN TX 78757-7060 (512) 454-9956 *** D&B Trade Style *** FASTSIGNS R J SIGNS			
Type	Match Reference Record	Matched to	Grade	Score	MDP
Business Name	FELT RON T	Business Name	F	0.0	00
Street Number	8820	Street Number	A	100.0	00
Street Name	BURNET	Street Name	A	100.0	00
City/Town/Post	AUSTIN	City	A	100.0	00
State/Prov	TX	State	A	100.0	00
PO Box			Z	-1.0	98
Phone			F	0.0	98
Zip	78757-7060	Zip	A	100.0	00
Density		Density	A	86.0	00
Uniqueness		Uniqueness	Z	-1.0	98
Industry - SIC		Industry - SIC	Z	-1.0	00

Observations: While there may be some good matches found in MG FAAAAZF, with the business name **and** telephone number different, there is a lessened chance of them being the same company. In the example above, we can see that they are two different entities. This does not appear to be a good match.

For our example case, the customer decides to reject CC4/MG: FAAAAZF.

Step 6: Consolidation of Threshold Rules

The final step in the process is to consolidate all of the rules so that they can be applied to the match results for this file and future files (i.e., if their make-up is consistent with this file)

Final Threshold Rules: Accept/Manual Review/Reject

Threshold Tier	D&B Match Feedback Attribute	Confidence Code Value	MatchGrade Value	Manual Review Condition
Accept	Confidence Code	10	All	
Accept	Confidence Code	9	All	
Accept	Confidence Code	8	All	
Accept	Confidence Code & MatchGrade	7	AZZAAZF	
Accept	Confidence Code & MatchGrade	7	AFFAAZF	
Accept	Confidence Code & MatchGrade	7	AZFAAZF	
Accept	Confidence Code & MatchGrade	7	BZZAAZA	
Manual Review	Confidence Code & MatchGrade	7	All Else (CC7)	
Accept	Confidence Code & MatchGrade	6	AZZAAZF	
Manual Review	Confidence Code & MatchGrade	6	FAAAAZA	
Manual Review	Confidence Code & MatchGrade	6	All Else (CC6)	High Value & Medium Value
Manual Review	Confidence Code & MatchGrade	5	BFFAAZZ	High Value & Medium Value
Manual Review	Confidence Code & MatchGrade	5	AFFFAZZ	High Value & Medium Value
Manual Review	Confidence Code &	5	FFFAAZA	High Value &



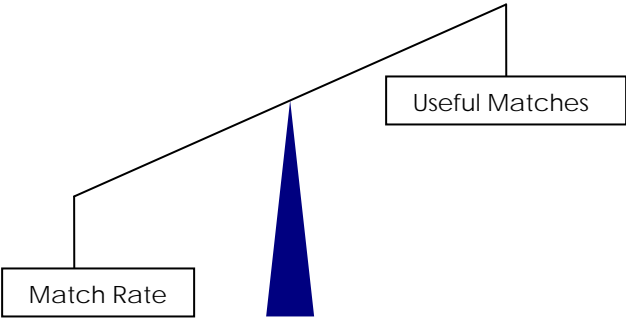
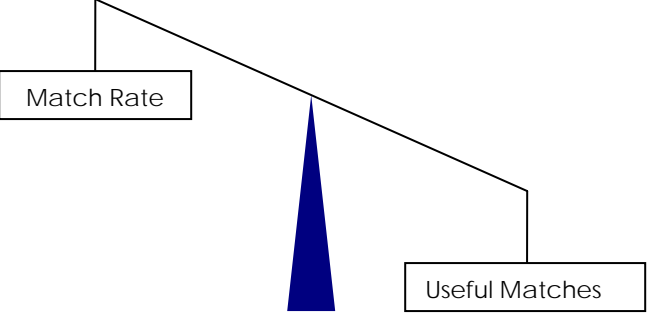
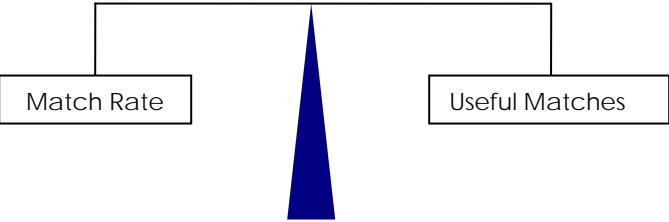
Decide with Confidence

Threshold Tier	D&B Match Feedback Attribute	Confidence Code Value	MatchGrade Value	Manual Review Condition
	MatchGrade			Medium Value
Manual Review	Confidence Code & MatchGrade	5	BFFAAZF	High Value & Medium Value
Manual Review	Confidence Code & MatchGrade	5	All Else (CC5)	High Value
Manual Review	Confidence Code & MatchGrade	4	BZZAZZ	High Value
Reject	Confidence Code	4	All, except MG7's noted above	

5 Summary

While it might be the most important ingredient in many of our customers' business applications, "getting the data right" is not as simple as black and white.

Maintaining the balance between **maximizing match rate** and **maximizing useful matches** is a challenge all customers face when they proceed with a matching project.

<p>Taken to an extreme, a customer could accept only perfect matches, where the inquiry record is a character for character match to the D&B record, but this would not make good business sense.</p>	
<p>On the other extreme would be accepting all of the matches regardless of the match quality. Again, this, too, would be a bad business decision.</p>	
<p>D&B Entity Matching supports the balance customers need to achieve because it takes into account the three important components that affect the ability to match – Customer Inquiry Quality, Match Reference Database and the Match Engine.</p>	

The power of D&B Entity Matching is through the match feedback – Confidence Code, MatchGrade, Match Data Profile – you have the tools to achieve this balance as you define it.

When you match your file against the D&B file, we want you to feel confident that when you accept certain matches with a high confidence, the match is to the correct business entity. Using the match scores we return, including MatchGrade, Confidence Code, and Match Data Profile, you can define under which conditions you are willing to automatically accept the match or to automatically reject the match. How these measurements are set should be based on the Business Application for which this data will be used.



Business Application	Threshold Guideline	Example
Marketing		
Identify target markets	Looser – 1	The value of achieving a higher match rate outweighs the potential negative impact from a higher rate of potential false matches. It is not likely that an industry will appear as a high opportunity industry because of some amount of false matches.
Develop “go to market strategy”	Looser – 1	
Define distribution channels	Looser – 2	
Sales		
Define sales channels/territories	Looser – 2	
Acquire new customers, excluding current customers	Looser – 2	The impact to increasing matches where some non-customers may be included is the opportunity cost to not including them in the new customer acquisition programs.



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Business Application	Threshold Guideline	Example
		It could be considered more important to be sure to exclude existing customers from new account prospecting programs, than potentially missing a few non-customers
Identify opportunities for up-sell/ cross-sell	Tighter – 4	Where matched information will be widely distributed within the customers' organization, a tighter definition may be more appropriate. While the great majority of records in a looser definition are good matches, there is some level of explanation or insight that might be needed, so, a tighter definition is more easily defended.
Develop account penetration strategies	Tighter – 4	
Optimize sales force performance with targeted customer & prospect information	Tighter – 4	
Risk Management		
Manage overall risk of their customer portfolio	Tighter – 3	
Develop financial arrangements between buyer & seller to maximize sales and minimize risk	Tighter – 4	
Supplier Management		
Understand their supplier base and understand inter and intra-relationships between suppliers.		
Monitor the supply base for changes in risk profiles.		
Identify ownership for risk management and define processes when supplier risk increases.		
Consider technologies that allow for transparent and predictive monitoring of the supply base.		



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Business Application	Threshold Guideline	Example
Compliance		
They are not doing business with terrorists or money launderers	Tighter – 5	
They can confidently certify their financial statements because they have consistent credit policies across their business enterprise and have monitored business relationships for material events		
They are not over-exposed to losses should one of their customers, vendors, security holdings, or counter parties fail	Looser – 3	
Their businesses are compliant with their countries' regulations such as the Patriot Act, Sarbanes-Oxley, Basel II and the Bank Secrecy Act	Depending on the specific requirement could be tighter or looser	



Decide with Confidence

6 Appendix A: Countries where 11 digit MatchGrade is available

- US
- CANADA
- UNITED KINGDOM
- BENELUX (Belgium, Netherlands, Luxembourg)
- PORTUGAL
- SPAIN
- ANDORRA
- TAIWAN
- JAPAN
- CHINA



Decide with Confidence

Notes: