

Quick Start Guide

MatchUp

Experience extraordinary merge/purge power



MELISSA DATA[®]

Your Partner in Data Quality

MatchUp

Quick Start Guide

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Welcome to MatchUp!

MatchUp is a one-stop solution from de-duping and merging database tables.

- Process up to 512 tables simultaneously.
- Work with dBase, ASCII, Excel, Access, ODBC, SQL, Oracle and DB/2 tables, even mixing different table types in the same operation.
- Mix tables with different field structures.
- Process up to 50 million records per hour.
- CASS Certified™ address verification [Optional].

System Requirements

MatchUp requires:

- Microsoft® Windows 98, Me, NT, 2000, 2003, XP or Vista.
- Intel Pentium III® or better.
- 64 MB of RAM minimum. 128 MB of RAM is recommended.
- 10 MB (1GB MB additional space with optional CASS™/DPV™ modules) of available hard disk space.

Installation

To install from a CD or DVD:

MatchUp is distributed on CD when purchased without the CASS option, DVD with the CASS option.

1. Insert the installation disk into your CD-ROM or DVD-ROM drive.
2. The installation program should start automatically and the install program will appear.
3. Follow the on-screen instructions.

If installation does not start automatically:

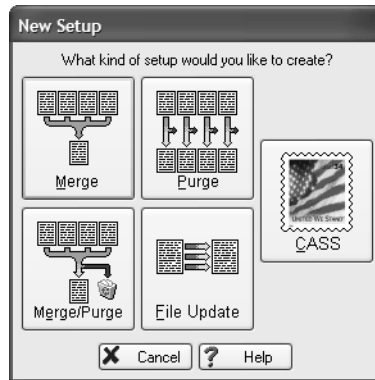
1. Click the **Start** button on the task bar.
2. Click **Run...**
3. Type **d:\setup.exe** (where d: is your CD-ROM or DVD-ROM drive letter).
4. Follow the on-screen instructions.

New Setup

A Setup is a collection of settings that points MatchUp to your database tables and instructs the application how to handle them.



There are four basic types of Setups available within MatchUp (Five, if you purchase MatchUp with the CASS option).



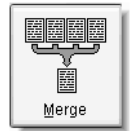
- **Merge** — Merge combines multiple data sources into a single output table, matching information to the correct database field even if they have different field names in their original input table.
- **Purge** — Purge takes one or more data sources and searches for duplicate records, either across all input tables or only within their own table. MatchUp can also eliminate any records also found in a “suppression” table or not found in an “intersection” table. Purge updates the input tables but can also write the results to new tables containing only the unique, non-suppressed records.
- **Merge/Purge** — As the name suggests, Merge/Purge combines Merge and Purge into a single operation, performing a Purge operation across many tables and then writing the unique, non-suppressed records to a new output tables.
- **File Update** — File update compares records between an output table and one or more input tables. If it finds matches between records, it updates the records in the output table with the information in the input table or tables.
- **CASS** — (Optional) A CASS setup compares your input table to the National postal database using the same CASS Certified technology found in Melissa Data’s Address Object and MAILERS+4 software, and verifies that your records represent actual deliverable addresses.

Merge

Merge will combine two or more database tables into a new output table, mapping fields that contain the same data type even if they have different names.

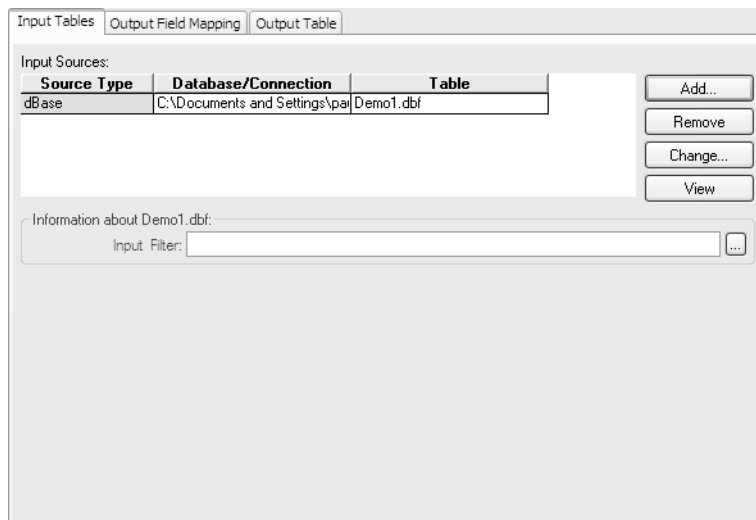
To create a Merge setup:

- Click **New Setup**, then click **Merge**.



Input Tables

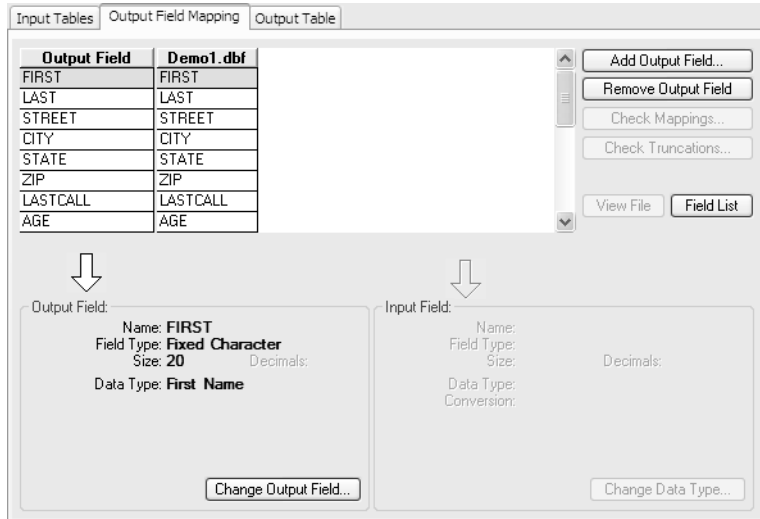
An input table is any data source that supplies the data for MatchUp to process. MatchUp works with dBase, FoxPro, ASCII files, Microsoft Access, Microsoft Excel and ODBC data sources. It will also work with SQL, Oracle and DB/2 if you have clients for those databases installed. If not, you can still use these file types via ODBC but processing will be slower



1. Click **Add...**
2. Select file (Dbase/FoxPro, ASCII, MSAccess/Excel, ODBC, SQL, Oracle, DB/2).
You can mix database tables of different types.
3. Repeat to add additional files.
4. Click **Next**.

Output Field Mapping

The **Output Field Mapping** tab displays a grid, showing how fields from the input table will be sent to the output table. The output fields will be in the left column while the matching fields from the input tables will be in the columns to the right.



MatchUp will attempt to determine which fields in the different input tables match each other and map those fields to the same field in the output table.

In some cases, such as when one table contains separate fields for city, state and ZIP Code and another includes a single string containing the entire last line of the address (such as “New York, NY 10012”), MatchUp will have to parse the data in one table to match the fields in another. These fields will be displayed with a pink background

To add an output field:

1. Click on the left hand column.
2. Click **Add Output Field**.

MatchUp displays the **Add New Output Field** dialog. This allows you to enter the name of the field, select the type of data (text, numeric, date, logical and so on), the size of the field, the number of decimal points and the type of data stored in the field (name, address, city and so on).

3. To add another field, click **Save & Add Another**. If you are finished, just click **OK**.

To change an output field:

1. Select that field from the left column and click **Change Output Field...**
MatchUp displays the **Change Output Field** dialog. This allows you to enter the name of the field, select the type of data, the size of the field, the number of decimal points and the type of data stored in the field (name, address, city and so on).
2. To change another field, click **Next** or **Previous**. When finished changing the output fields, click **OK**.
3. To modify the mapping of an input field, select that field on the grid and click **Change Data Type**. MatchUp displays a popup with a dropdown list that enables you to select the type of data contained in the input field.
4. Clicking the **Check Mappings...** button shows which fields have been mapped, which have been mapped multiple times and which input fields have not yet been mapped.
5. Click the **Previous** and **Next** to switch between input tables.
6. Click **Check Truncations...** MatchUp shows which input fields could be truncated during processing. This does not mean that any fields will be truncated but makes it simpler to check.
7. Click **View File** to browse the records in the currently selected input table.
8. Click **Field List** to show a list of the fields in the input tables. Currently mapped fields are shown in green. Field names can be dragged from this list to the grid to map or remap the selected input field to an output field.

Output Table

Use this tab to select or create a database file that will contain the merged records. In the case of text files, Excel files and dBase tables, MatchUp will create the specified table if it does not exist. If you select an already existing database table, that table will be overwritten with the merged data when this setup is processed.

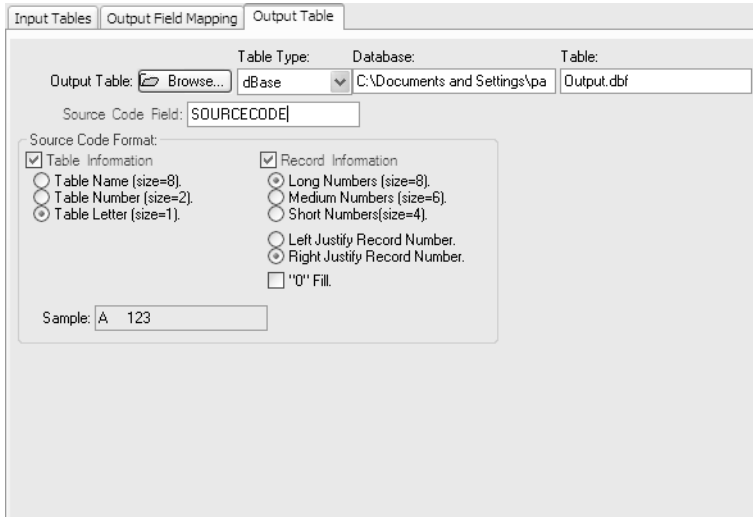
To specify an output table:

1. Select the table type from the drop down list.
2. Click the **Browse** button.

For an ODBC source:

1. Select the data source type from the dropdown list. MatchUp will fill in the connection string.

2. Select the database file and table. This will vary according to the database type selected.



3. Click **OK**.

For an MS Access database:

1. Select the database file to use.
2. Select an existing table or enter a new table name.
3. Click **OK**.

For an Excel file:

1. Select the directory containing the Excel spreadsheet you want to use (or a target directory if you are creating a new file).
2. Select an Excel file (or enter the name of a new Excel file).
3. Select the worksheet to use for the output (or enter a new name to create a new worksheet).
4. Click **OK**.

For a dBase file or ASCII file:

1. Select the directory containing the file you want to use (or a target directory if you are creating a new file).
2. Select a dBase or ASCII file (or enter the name of a new file if you want MatchUp to create one).

3. Click **OK**.

Source Code Field

If you enter any name in the **Source Code Field** box, MatchUp will add a text field to each record that will indicate which table the record came from, the record number or both.

For the table, you can select the table name, a two-digit number or a one-letter code (A, B, C).

The record number can be four, six or eight digits. If you select “Right Justify Record Number” you can check a box to have MatchUp fill the unused digits with zeroes.

Saving the Setup

1. Click **OK** to finish creating the new Merge setup.
2. You will be warned if some of the input fields may be truncated. Click **Yes** to confirm.
3. Click the **Save Setup** button.
4. Specify a directory and a file name for the new setup and click **OK**.

Other Uses for Merge

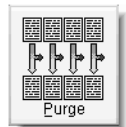
While you would normally use Merge to combine two or more tables into one, there are also ways to use Merge on a single file.

You could use the filter function to extract all records that match a certain criteria. For instance, Merge could build a new table containing only records from a certain state or a certain range of ZIP codes.

Also, if you start with a table that has a single “City/ST/ZIP” field, you could add output fields for CITY, STATE, ZIP and PLUS and thus use Merge to parse the last line information.

Purge

Purge will search one or more tables and eliminate duplicate records. You can set the application to match records based on any combination of fields. MatchUp has several common “match codes” preconfigured, but you can also create your own using the Matchcode Editor.



To create a Purge setup:

1. Click the **New Setup** button.
2. Click **Purge**.

General Tab

This is where you select the matchcode that MatchUp will use to match records in the files. A matchcode is a list of several combinations of data types that the program will use to match records. The more fields used, the more selective MatchUp will be in finding matches. In other words, if you use address only, MatchUp will find more matches than it would if you were using address and last name.

Matchcode: Matchcode Editor...

Address, Last Name:

Data Type	Size	Start	Fuzzy	Short/Empty	S...	1	2	3	4	5	6	7	8	9	10	11	12
Zip5	5	Left	Exact	Both Fields	None	X	X										
Last Name	10	Left	Exact	Both Fields	None	X	X										
Street Number	5	Left	Exact	Both Fields	None	X											
Street Name	10	Left	Exact	None	None	X											

Matching Rules:
 1: Z5+LN+S#+SN
 2: Z5+LN+POB

Ranking:
 MatchUp will select the best record.
 I will assign priorities or specify a priority field.
 Prioritization will be random for each record.
 A uniform distribution of records will be selected.
 Doesn't matter.

Order:
 Ascending ("A" has a higher priority than "B").
 A over B, 01 over 02, 3/10/68 over 4/10/68
 Descending ("A" has a lower priority than "B").
 B over A, 02 over 01, 4/10/68 over 3/10/68

When matching records have the same rank...
 the first record processed will be selected.
 the last record processed will be selected.
 a random record will be selected.

MatchUp has several of the most commonly used matchcodes already installed. Each is named according to field types used to match records. These pre-installed matchcodes cannot be edited, but you can create your own using the Matchcode Editor.

1. Select the **Matchcode** that you want to use from the dropdown list.

MatchUp shows the matchcode settings in a grid below. This grid shows the data types used in the present matchcode, with their individual settings, and a series of columns containing X's to the right of each component. Each column shows a different combination of components to be used, up to 16 combinations, to determine a match.

2. Select the **Ranking**.

This determines what priority to give records when it finds duplicates. The record that gets the highest priority will be kept, while the others will be rejected. "MatchUp will select the best record" instructs the software to keep the most complete record. This is probably the best for most situations. See the MatchUp User's Guide for information on the other options.

3. Click **Next**.

Input Tables

This is where you will select the tables to be used by this purge setup.

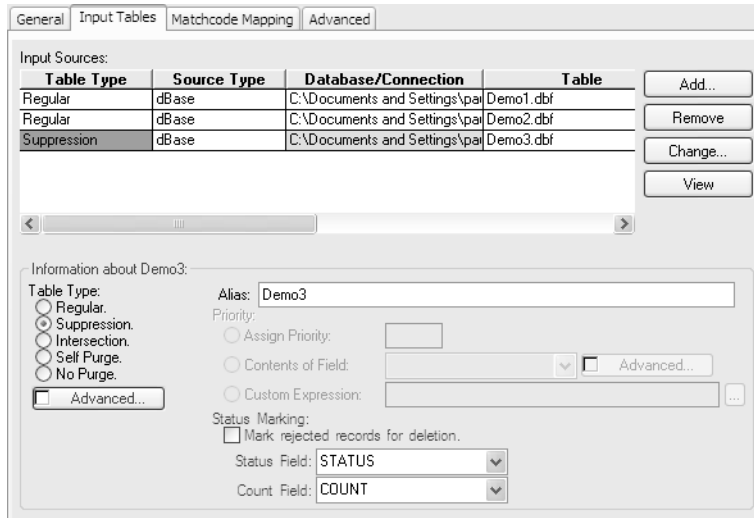


Table Type	Source Type	Database/Connection	Table
Regular	dBase	C:\Documents and Settings\pa\	Demo1.dbf
Regular	dBase	C:\Documents and Settings\pa\	Demo2.dbf
Suppression	dBase	C:\Documents and Settings\pa\	Demo3.dbf

Information about Demo3:

Table Type:

Regular.

Suppression.

Intersection.

Self Purge.

No Purge.

Advanced...

Alias: Demo3

Priority:

Assign Priority:

Contents of Field: Advanced...

Custom Expression: ...

Status Marking:

Mark rejected records for deletion.

Status Field: STATUS

Count Field: COUNT

To add Input Tables:

1. Click **Add...**
2. Select file (dBase/FoxPro, ASCII, MSAccess/Excel, ODBC, SQL, Oracle, DB/2).
It will also work with SQL, Oracle and DB/2 if you have clients for those databases installed. If not, you can still use these file types via ODBC but processing will be slower
You can mix database tables of different file types.
3. Repeat to add additional files.
If you enter a name in the Alias, MatchUp will use that name on subsequent screens and on reports. This is helpful if the file or table name is cryptic or otherwise unclear.
4. Select the **Table Type**. Tables in a Purge setup can be used five different ways”
 - **Regular** — Records in this and other Regular tables are compared to each other and duplicates are excluded from the output table.
 - **Suppression** — Records in Regular, No Purge and Self-Purge tables that match records in a Suppression table will be excluded from the output table. This is useful for applying “Do Not Mail” lists.

- **Intersection** — Records in Regular, No Purge and Self-Purge tables that do not match records in any Intersection tables will be excluded from the output table and marked as non-intersected.
 - **Self Purge** — Records in Self Purge tables are only checked against records in the same table to find duplicates. They are checked against Suppression and Intersection tables as normal.
 - **No Purge** — Records in No Purge tables are not checked for duplicates. They are checked against Suppression and Intersection tables as normal.
5. Repeat for each input table.

The Priority options are only enabled if you selected “I will assign priorities...” on the **General** tab. See the MatchUp User’s Guide for more information on these options.

Status Marking

1. Check “Mark rejected records for deletion” if you want duplicate records, Suppression table matches and Intersection table non-matches tagged for deletion from the input table.

These records will be deleted when you open this table in the browser and select **File Control > Pack Table**. This option is only available for dBase files.

2. Enter or select the name of a field to use as a **Count** field.

This will contain the number of duplicates found for each record. With dBase tables, you can enter a new field name and this field will be added to the input table during processing.

3. Enter or select the name of a field to use as a **Status** field.

This will contain the Status code for each record. See the MatchUp User’s Guide for more information on MatchUp status codes. With dBase tables, you can enter a new field name and this field will be added to the input file during processing.

4. Repeat for each input table.

If you do not use some form of Status Markup, then you will need to specify output files on the **Advanced** tab to know what files were not rejected during the purge process.

5. Click **Next**.

Matchcode Mapping

The Matchcode Mapping sets how fields from each input table are matched to the data types used by the selected matchcode. MatchUp attempts to intelligently match fields to the

correct data types. Fields that have to be parsed prior to matching are displayed with a pink background.

General | Input Tables | Matchcode Mapping | Advanced

Field Mapping for Matchcode: **Address, Last Name**

Component	Demo1	Demo2	Demo3
Zip5	ZIP	CITYSTZIP	ZIP
Last Name	LAST	NAME	LAST
Address Line 1	STREET	STREET	STREET
Address Line 2			SECONDARY
Address Line 3			

Matchcode Component: Zip5
 Data Type: Zip5
 Label:
 Size: 5
 Start: Left
 Match Strategy: Exact
 Short/Empty: Both Fields
 Swap: None

Input Field:
 Name:
 Field Type:
 Size:
 Data Type:
 Conversion:
 Decimals:

View File Field List

Change Data Type...

If you find that MatchUp has not assigned a field to the correct data type:

1. Click the **Field List** button.
2. MatchUp displays the field list. Fields that are already matched are displayed with a blue-green background.
3. Drag the field name to the correct square in the column for that input table.

To remove a field from the mapping:

1. Right click on the field on the **Field Mapping** table.
2. Click **Change Field** and select <none>.

To change a field mapping:

1. Right click on the field on the Field Mapping table.
2. Click **Change Field** and select the correct field name.

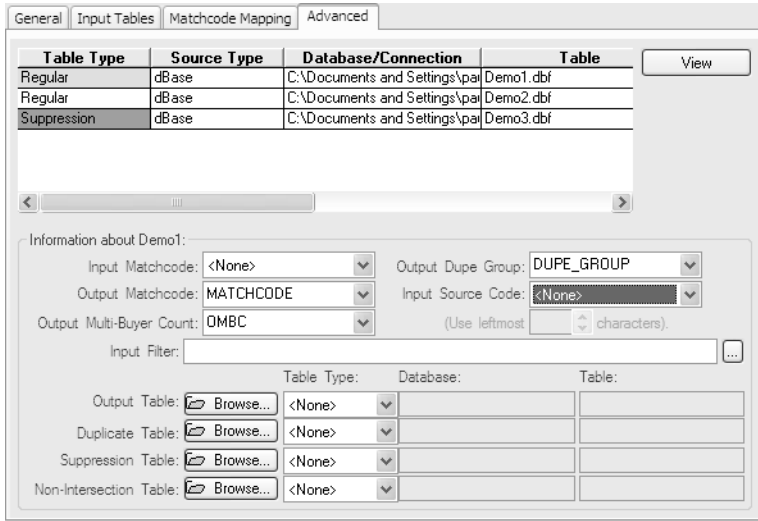
To change the data type of a field in an input table:

1. Click on the field.
2. Click the **Change Data Type** button.
3. Select the correct data type from the dropdown list.

When finished with the Matchcode Mapping, click **Next**.

Advanced

The **Advanced** tab is where you can specify output options for the current Purge Setup. You set each option separately for each input file.



- **Input Matchcode** — If you have previously run a Purge on this file and had MatchUp add an Output Matchcode field to the table (see next), you can select this field. Reusing the matchcode will speed processing because MatchUp does not have to regenerate the matchcode.

Only use this field if you had selected the exact same matchcode settings on the **General** tab when the existing matchcode was written to the table as you are using this time. Using an existing matchcode with different matchcode settings will have unpredictable effects that could damage your data.

- **Output Matchcode** — Select or enter a field name that MatchUp will use to store the matchcode for the current record. MatchUp can re-use this matchcode in the future to speed up processing when the same matchcode settings are used. During processing, MatchUp will write this information to the table, creating a new field in the table if necessary.
- **Output Multi-Buyer Count** — Select or enter a field name that MatchUp will use to store the Multi-Buyer count for the current record. This is the number of duplicate records found in other tables. If only purging a single table, this option has no effect. During processing, MatchUp will write this information to the table, creating a new field in the table if necessary.

- **Output Dupe Group** — Every unique record gets a unique identifying number. Duplicate records are assigned the same number as the record that is kept. This is the duplicate group number. Select or enter a field name that MatchUp will use to store this count. During processing, MatchUp will write this information to the table, creating a new field in the table if necessary.
- **Input Source Code** — If the input table has source code information, select the field that contains that data for it to appear on reports. See the section on Merge for more information on Source Codes.
- **Input Filter** — Enter a dBase expression to limit the records from the selected input table that will be processed. Click the “...” button to use the Expression Builder. See the MatchUp help file for more information on dBase syntax and the Expression Builder.

Create New Tables

Even though MatchUp can write the Purge information back to the input table(s), it can also create any of the following tables.

- **Output Table** — Use this option to create a table of the records from this input table that were not rejected due to duplication, suppression or non-intersection.
- **Duplicate Table** — Use this option to create a table of the records from this input table that were rejected due to duplication.
- **Suppression Table** — Use this option to create a table of the records from this input table that were rejected due to a match with a Suppression table. If no suppression table was specified, this table would be empty.
- **Intersection Table** — Use this option to create a table of the records from this input table that were rejected due to no match with an Intersection table. If no intersection table was specified, this table would be empty.

Each input table would have its own settings for output tables.

These tables can be of any file type that MatchUp supports (dBase, ASCII, Excel, Access or ODBC).

To specify an output table:

1. Select the table type from the dropdown list.
2. Click the **Browse** button

For an ODBC source:

1. Select the data source type from the dropdown list. MatchUp will fill in the connection string.

2. Select the database file and table. This will vary according to the database type selected.
3. Click **OK**.

For an MS Access database:

1. Select the database file to use.
2. Select an existing table or enter a new table name.
3. Click **OK**.

For an Excel file

1. Select the directory containing the Excel spreadsheet you want to use (or a target directory if you are creating a new file).
2. Select an Excel file (or enter the name of a new Excel file).
3. Select the worksheet to use for the output (or enter a new name to create a new worksheet).
4. Click **OK**.

For a dBase file or ASCII file:

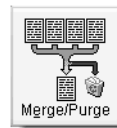
1. Select the directory containing the file you want to use (or a target directory if you are creating a new file).
2. Select a dBase or ASCII file (or enter the name of a new file if you want MatchUp to create one).
3. Click **OK**.

Saving the Setup

1. Click **OK** to finish creating the new Purge setup.
2. You will be warned if some of the input fields may be truncated. Click **Yes** to confirm.
3. Click the **Save Setup** button.
4. Specify a directory and a file name for the new setup and click **OK**.

Merge/Purge

As the name implies, Merge/Purge is a combination of both the merge and purge functions. MatchUp will purge two or more tables of duplicate records, suppressed records and non-intersection records and then write the remaining records to a single table, matching records with different structures to the correct fields.



If desired, MatchUp can also verify and code the output data, using the same CASS Certified™ technology found in Melissa Data's MAILERS+4 and Address Object.

General Tab

This is where you select the matchcode that MatchUp will use to match records in the files. A matchcode is a list of several combinations of data types that the program will use to match records. The more fields used, the more selective MatchUp will be in finding matches. In other words, if you use address only, MatchUp will find more matches than it would if you were using address and last name.

General | Input Tables | Matchcode Mapping | Output Field Mapping | Output Tables | Advanced

Matchcode:

Address, Last Name, First Name:

Data Type	Size	Start	Fuzzy	Short/Empty	S...	1	2	3	4	5	6	7	8	9	10	11	12	
Zip5	5	Left	Exact	Both Fields	None	X	X											
First Name	10	Left	Exact	Both Fields	None	X	X											
Last Name	10	Left	Exact	Both Fields	None	X	X											
Street Number	5	Left	Exact	Both Fields	None	X												

Matching Rules:

- 1: Z5+FN+LN+S#+SN
- 2: Z5+FN+LN+POB

Ranking:

MatchUp will select the best record.

I will assign priorities or specify a priority field.

Prioritization will be random for each record.

A uniform distribution of records will be selected.

Doesn't matter.

Order:

Ascending ("A" has a higher priority than "B").
A over B. 01 over 02. 3/10/68 over 4/10/68

Descending ("A" has a lower priority than "B").
B over A. 02 over 01. 4/10/68 over 3/10/68

When matching records have the same rank...

the first record processed will be selected.

the last record processed will be selected.

a random record will be selected.

MatchUp has several of the most commonly used matchcodes already installed. Each is named according to field types used to match records. These pre-installed matchcodes cannot be edited, but you can create your own using the Matchcode Editor.

1. Select the **Matchcode** that you want to use from the dropdown list.

MatchUp shows the matchcode settings in a grid below. This grid shows the field types used, in the order they will be compared, and a series of columns containing X's to the right of each field. Each column shows a different combination of field

types, up to 16 combinations, in the order that they will be used to determine a match.

2. Select the **Ranking**.

This determines what priority to give records when it finds duplicates. The record that gets the highest priority will be kept, while the others will be rejected.

“MatchUp will select the best record” instructs the software to keep the most complete record. This is probably the best for most situations. See the MatchUp User's Guide for information on the other options.

3. Click **Next**.

Input Tables

This is where you will select the tables to be used by this Merge/Purge setup.

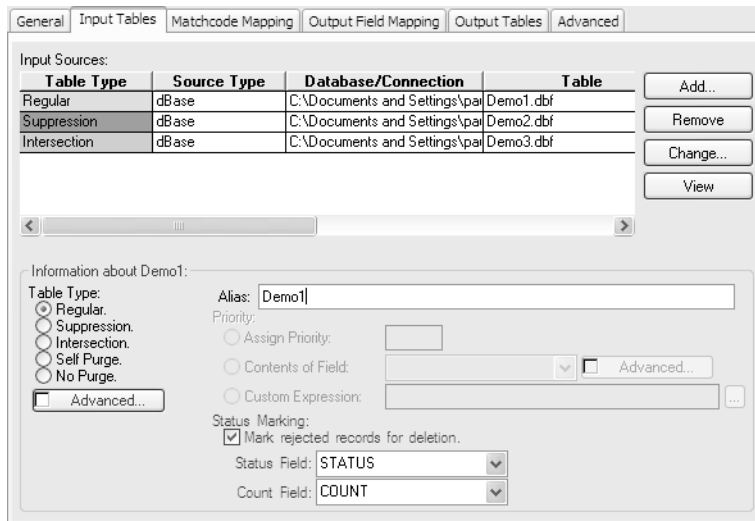


Table Type	Source Type	Database/Connection	Table
Regular	dBase	C:\Documents and Settings\pa\	Demo1.dbf
Suppression	dBase	C:\Documents and Settings\pa\	Demo2.dbf
Intersection	dBase	C:\Documents and Settings\pa\	Demo3.dbf

Information about Demo1:

Table Type:

Regular.

Suppression.

Intersection.

Self Purge.

No Purge.

Advanced...

Alias: Demo1

Priority:

Assign Priority: []

Contents of Field: [] [] Advanced...

Custom Expression: [] ...

Status Marking:

Mark rejected records for deletion.

Status Field: STATUS

Count Field: COUNT

To add Input Tables:

1. Click **Add...**

2. Select file (dBase/FoxPro, ASCII, MSAccess/Excel, ODBC, SQL, Oracle, DB/2).

MatchUp can use SQL Server, Oracle or DB/2 files directly if you have clients for those database systems installed. If not, you can still use those file types via ODBC but processing will be slower.

You can mix database tables of different file types.

3. Repeat to add additional files.

If you enter a name in the Alias, MatchUp will use that name on subsequent screens and on reports. This is helpful if the file or table name is cryptic or otherwise unclear.

4. Select the **Table Type**. Tables in a Merge/Purge setup can be used five different ways:
 - **Regular** — Records in this and other Regular tables are compared to each other and duplicates are excluded from the output table.
 - **Suppression** — Records in Regular, No Purge and Self-Purge tables that match records in a Suppression table will be excluded from the output table. This is useful for applying “Do Not Mail” lists.
 - **Intersection** — Records in Regular, No Purge and Self-Purge tables that do not match records in any Intersection tables will be excluded from the output table.
 - **Self Purge** — Records in Self Purge tables are only checked against records in the same table to find duplicates. They are checked against Suppression and Intersection tables as normal.
 - **No Purge** — Records in No Purge tables are not checked for duplicates. They are checked against Suppression and Intersection tables as normal.
5. Repeat for each input table.

The Priority options are only enabled if you selected “I will assign priorities...” on the **General** tab. See the MatchUp User's Guide for more information on these options.

Status Marking

If you want duplicate records, Suppression table matches and Intersection table non-matches tagged for deletion from the input table.

1. Check “Mark rejected records for deletion.”

These records will be deleted when you open this table in the browser and select **File Control > Pack Table**. This option is only available for dBase files.

2. Enter or select the name of a field to use as a **Count** field.

This will contain the number of duplicates found for each record. With dBase tables, you can enter a new field name and this field will be added to the input table during processing.

3. Enter or select the name of a field to use as a **Status** field.

This will contain the Status code for each record. See the MatchUp User's Guide for more information on MatchUp status codes. With dBase tables you can enter a new field name and this field will be added to the input file during processing.

4. Repeat for each input table.

If you do not use some form of Status Markup, then you will need to specify output files on either the Output or Advanced tabs to record what files were not rejected during the merge/purge process.

5. Click **Next**.

Matchcode Mapping

The Matchcode Mapping sets how fields from each input table are matched to the data types used by the selected matchcode. MatchUp attempts to intelligently match fields to the correct data types. Fields that have to be parsed prior to matching are displayed with a pink background.

Output Field	Demo1	Demo2	Demo3
FIRST	FIRST	NAME	FIRST
LAST	LAST	NAME	LAST
STREET	STREET	STREET	STREET
CITY	CITY	CITYSTZIP	CITY
STATE	STATE	CITYSTZIP	STATE
ZIP	ZIP	CITYSTZIP	ZIP
LASTCALL	LASTCALL	LASTCALL	LASTCALL
AGE	AGE	AGE	AGE

If you find that MatchUp has not assigned a field to the correct data type:

1. Click the **Field List** button.

MatchUp displays the field list. Fields that are already matched are displayed with a blue-green background.

2. Drag the field name to the correct square in the column for that input table.

To remove a field from the mapping:

1. Right click on the field on the **Field Mapping** table.
2. Click **Change Field** and select <none>.

To change a field mapping:

1. Right click on the field on the **Field Mapping** table.
2. Click **Change Field** and select the correct field name.

To change the data type of a field in an input table:

1. Click on the field.
2. Click the **Change Data Type** button.
3. Select the correct data type from the dropdown list.

When finished with the Matchcode Mapping, click **Next**.

Output Field Mapping

The **Output Field Mapping** tab displays a grid showing how fields from the input table will be sent to the output table. The output fields will be in the left column while the matching fields from the input tables will be in the columns to the right.

The screenshot shows the 'Output Field Mapping' tab with the following grid:

Output Field	Demo1	Demo2	Demo3
FIRST	FIRST	NAME	FIRST
LAST	LAST	NAME	LAST
STREET	STREET	STREET	STREET
CITY	CITY	CITYSTZIP	CITY
STATE	STATE	CITYSTZIP	STATE
ZIP	ZIP	CITYSTZIP	ZIP
LASTCALL	LASTCALL	LASTCALL	LASTCALL
AGE	AGE	AGE	AGE

Below the grid, the 'Output Field' configuration for 'FIRST' is shown:

- Name: **FIRST**
- Field Type: **Fixed Character**
- Size: **20** Decimals:
- Data Type: **First Name**
- Gather Method:

The 'Input Field' configuration for 'FIRST' is shown:

- Name: **FIRST**
- Field Type: **Fixed Character**
- Size: **20** Decimals:
- Data Type: **First Name**
- Conversion: Gather Scatter to this field Scatter to alternate field:
-

MatchUp will attempt to determine which fields in the different input tables match each other and map those fields to the same field in the output table.

In some cases, such as when one table contains separate fields for city, state and ZIP Code and another includes a single string containing the entire last line of the address (such as “New York, NY 10012”), MatchUp will have to parse the data in one table to match the fields in another. These fields will be displayed with a pink background.

To add an output field:

1. Click on the left hand column.
2. Click **Add Output Field**.

MatchUp displays the **Add New Output Field** dialog. This allows you to enter the name of the field, select the type of data (text, numeric, date, logical, etc.), the size of the field, the number of decimal points and the type of data stored in the field (name, address, city and so on).

3. To add another field, click **Save & Add Another**. If you are finished, just click **OK**.

To change an output field:

1. Select that field from the left columns and click **Change Output Field...**

MatchUp displays the **Change Output Field** dialog. This allows you to enter the name of the field, select the type of data (text, numeric, date, logical, etc), the size of the field, the number of decimal points and the type of data stored in the field (name, address, city and so on).

2. To change another field, click **Next** or **Previous**.
3. When finished changing the output fields, click **OK**.

To modify the mapping of an input field:

Select that field on the grid and click **Change Data Type**.

MatchUp displays a popup with a dropdown list that enables you to select the type of data contained in the input field.

To check your mappings:

1. Click the **Check Mappings...**

MatchUp shows which fields have been mapped, which have been mapped multiple times and which input fields have not yet been mapped.

Click the **Previous** and **Next** to switch between input tables.

2. Clicking **Check Truncations...**

MatchUp shows which input fields could be truncated during processing. This does not mean that the data in any fields will be truncated but makes it simpler to check.

3. Click **View File** to browse the records in the currently selected input table.
4. Click **Field List** to show a list of the fields in the input tables.

Currently mapped fields are shown in green. Field names can be dragged from this list to the grid to map or remap the select input field to an output field.

Output Tables

Use this tab to select or create the database files that will contain the merged records. In the case of text files, Excel files and dBase tables, this table does not have to exist. If you select an already existing database table, that table will be overwritten with the merged data when this setup is processed.

	Table Type:	Database:	Table:
Output Table:	Browse	dBase	mentation\MatchUp\Demos\output.dbf
Duplicate Table:	Browse	dBase	C:\Documents and Settings\duplicate.dbf
Suppression Table:	Browse	dBase	mentation\MatchUp\Demos\suppressed.dbf
Non-Intersection Table:	Browse	dBase	mentation\MatchUp\Demos\nonintersection.dbf

Status Field: STATUS

Output Matchcode Field: MATCHCODE

Multi-Buyer Count Field: MULTI-COUNT

Source Code Field: SOURCE

Count Field: COUNT

Dupe Group Field: DUPE_GROUP

Multi-Buyer Field: MULTI_BUY 10

Multi-Buyer Format...

Source Code Format...

CASS...

Unlike the Merge option, Merge/Purge can create up to four output tables, similar to ones created by the Purge option.

- **Output Table** — Use this option to create a table of the records from all input tables that were not rejected due to duplication, suppression or non-intersection.
- **Duplicate Table** — Use this option to create a table of the records from all input tables that were rejected due to duplication.
- **Suppression Table** — Use this option to create a table of the records from all input tables that were rejected due to a match with a Suppression table. If no suppression table(s) were specified, this table would be empty.
- **Intersection Table** — Use this option to create a table of the records from all input tables that were rejected due to no match with an Intersection table. If no intersection table(s) were specified, this table would be empty.

These tables can be of any file type that MatchUp supports (dBase, ASCII, Excel, Access, SQL, Oracle, DB/2 or ODBC). See the **Output Table** section under Merge setup on page 5 for more information on how to set up the different table types.

You can also designate fields in the output tables to contain match data.

- **Status Field** — This will contain the Status code for each record. Status codes indicate whether or not duplicates, suppression records or intersection records were found for the current record. See the MatchUp User's Guide for more information on MatchUp status codes.
- **Output Matchcode** — Enter a field name that MatchUp will use to store the matchcode for the current record. MatchUp can re-use this matchcode in the future to speed up processing when the same matchcode settings are used. During processing, MatchUp will write this information to the table, creating a new field in dBase tables if necessary.
- **Multi-Buyer Count Field** — Enter a field name that MatchUp will use to store the Multi-Buyer count for the current record. See **Tools | User Settings** in the help file for more information about setting how MatchUp calculates this field. During processing, MatchUp will write this information to the table, creating a new field in dBase tables if necessary.
- **Source Code Field** — If you enter any name in the Source Code Field box, MatchUp will add a text field to each record that will indicate which table the record came from, the record number or both. Click the **Source Code Format** button to indicate how to format this information. See the Merge section on page 3 for more information on Source Code formatting.
- **Count Field** — If you enter a name in the Count Field box, MatchUp will add a field to each record that will indicate how many duplicate records were found for the current record, including those found in the same table (the Multi-Buyer Count only counts duplicates found in different tables). During processing, MatchUp will write this information to the table, creating a new field in dBase tables if necessary.
- **Dupe Group Field** — Every unique record gets a unique identifying number. Duplicate records are assigned the same number as the record that is not rejected. This is the duplicate group number. Enter a field name that MatchUp will use to store this count. During processing, MatchUp will write this information to the table, creating a new field in dBase tables if necessary.
- **Multi-Buyer Field** — If you enter a name in the Count field box, MatchUp will add a field to each record that will indicate in which tables the duplicate records were found. Click **Multi-Buyer Format...** to control how MatchUp formats the Multi-Buyer information.

CASS the Output Table

Using the optional CASS module, MatchUp can verify and code the records in the output table using the same CASS Certified™ technology found in Melissa Data's MAILERS+4 software and Address Object.

Note: In order to assign output fields to CASS information, you must have already created those fields in the Output Field Mapping step (see page 19).

To validate the output table:

1. Click the **CASS** button.
2. MatchUp will display the **CASS** dialog.
3. Check **CASS the Output Table**. This will enable the options on the **CASS** dialog.
4. Select the output fields for the CASS information. For more information on setting up these fields, see the CASS section on page 32.
5. Click **OK**.

When you have finished setting up the Output Tables, click **Next**.

Advanced

Even though Merge/Purge writes the non-rejected records to a single new, merged output table, it can also update the input tables and can create additional output tables for each input table.

The screenshot shows the 'Advanced' tab of the MatchUp software. It features a table with the following data:

Table Type	Source Type	Database/Connection	Table
Regular	dBase	C:\Documents and Settings\pai	Demo1.dbf
Suppression	dBase	C:\Documents and Settings\pai	Demo2.dbf
Intersection	dBase	C:\Documents and Settings\pai	Demo3.dbf

Below the table, there are configuration options for 'Information about Demo1':

- Input Matchcode: <None>
- Output Matchcode: MATCHCODE
- Output Multi-Buyer Count: MULTI_COUN
- Input Filter: [Empty field]
- Output Dupe Group: DUPE_GROUP
- Input Source Code: <None>

At the bottom, there is a section for defining new output tables:

	Table Type:	Database:	Table:
Output Table:	dBase	entation\MatchUp\Demos\	demo1_output.dbf
Duplicate Table:	dBase	entation\MatchUp\Demos\	demo1_dupes.dbf
Suppression Table:	dBase	entation\MatchUp\Demos\	demo1_suppressed.dbf
Non-Intersection Table:	dBase	entation\MatchUp\Demos\	demo1_nonintersection.d

Navigation buttons at the bottom include: Previous, Next, OK, Cancel, and Help.

The **Advanced** tab is where you can specify output options for each input file.

- **Input Matchcode** — If you have previously run a Purge on this file and had MatchUp add an Output Matchcode field to the table (see next), you can select this field. Reusing the matchcode will speed processing because MatchUp does not have to regenerate the matchcode.

Only use this field if you had selected the exact same matchcode settings on the **General** tab when the existing matchcode was written to the table as you are using this time. Using an existing matchcode with different matchcode settings will have unpredictable effects on your data.

- **Output Matchcode** — Select or enter a field name that MatchUp will use to store the matchcode for the current record. MatchUp can re-use this matchcode in the future to speed up processing when the same matchcode settings are used. During processing, MatchUp will write this information to the table, creating a new field in the table if necessary.
- **Output Multi-Buyer Count** — Select or enter a field name that MatchUp will use to store the Multi-Buyer count for the current record. This is the number of duplicate records found in other tables. If only purging a single table, this option has no effect. During processing, MatchUp will write this information to the table, creating a new field in the table if necessary.
- **Output Dupe Group** — Every unique record gets a unique identifying number. Duplicate records are assigned the same number as the record that is kept. This is the duplicate group number. Select or enter a field name that MatchUp will use to store this count. During processing, MatchUp will write this information to the table, creating a new field in the table if necessary.
- **Input Source Code** — If the input table has source code information, select the field that contains that data for it to appear on reports. See the Output Field Mapping section under **Merge** on page 7 for more information on Source Codes.
- **Input Filter** — Enter a dBase expression to limit the records from the select input table that will be processed. Click the “...” button to use the Expression Builder. See the MatchUp help file for more information on dBase syntax and the Expression Builder.

Output Tables

Even though MatchUp will write the Purge information back to the input table(s), it can also create any of the following output tables.

- **Output Table** — Use this option to create a table of the records from this input table that were not rejected due to duplication, suppression or non-intersection.
- **Duplicate Table** — Use this option to create a table of the records from this input table that were rejected due to duplication.

- **Suppression Table** — Use this option to create a table of the records from this input table that were rejected due to a match with a Suppression table. If no suppression table was specified, this table would be empty.
- **Intersection Table** — Use this option to create a table of the records from this input table that were rejected due to no match with an Intersection table. If no intersection table was specified, this table would be empty.

Each input table would have its own settings for output tables.

These tables can be from any database that MatchUp supports (dBase, ASCII, Excel, Access, ODBC, SQL, Oracle or DB/2).

When finished with the Advanced Options, click **OK**.

Saving the Setup

1. Click **OK** to finish creating the new Merge/Purge setup.
2. You will be warned if some of the input fields may be truncated. Click **Yes** to confirm.
3. Click the **Save Setup** button.
4. Specify a directory and a file name for the new setup and click **OK**.

File Update

The File Update option will take two separate tables, both containing matching records but different kinds of data, and write the data from one table to matching records in another. In other words, you might have a table containing very complete customer records but no e-mail addresses, which are in another table. File Update can extract the e-mail addresses from the second table and write that information to matching records in the first.



There must be some overlap between the two tables, so there is enough information for MatchUp to find the matching records. File Update uses the same matchcodes used to determine matches in Purge and Merge/Purge operations. So the e-mail address table would also need name and address fields, for example, to match records in the master database.

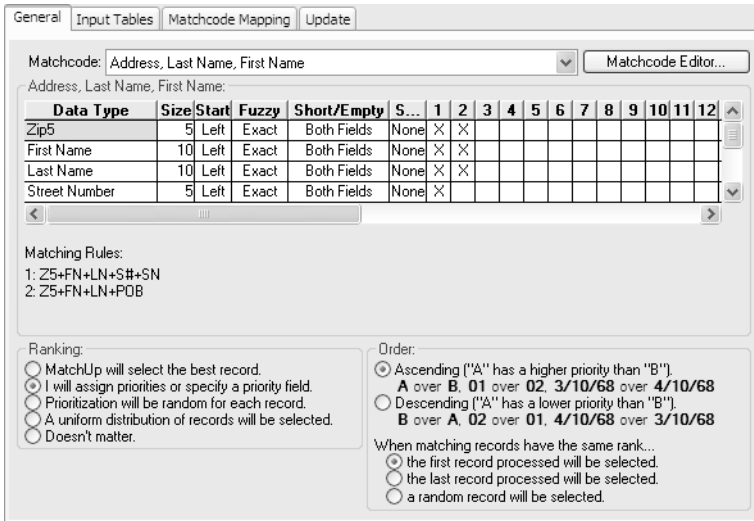
If MatchUp finds multiple matches to the same record, it can use a process called gathering to select the best record or even combine the contents of multiple records into a single field. In our e-mail address example, if MatchUp found multiple e-mail addresses matching the same physical address, it might take the e-mail address from the first matching record it encounters or it could join the e-mail addresses into a single string, separated by spaces.

To create a File Update setup:

1. Click **New Setup**.
2. Click **File Update**.

General Tab

This is where you select the matchcode that MatchUp will use to match records in the files. A matchcode is a list of several combinations of data types that the program will use to match records. The more fields used, the more selective MatchUp will be in finding matches. In other words, if you use address only, MatchUp will find more matches than it would if you were using address and last name.



MatchUp has several of the most commonly used matchcodes already installed. Each is named according to field types used to match records. These pre-installed matchcodes cannot be edited, but you can create your own using the Matchcode Editor.

1. Select the **Matchcode** that you want to use from the dropdown list.

MatchUp shows the matchcode settings in a grid below. This grid shows the data types used in the present matchcode, with their individual settings, and a series of columns containing X's to the right of each component. Each column shows a different combination of components to be used, up to 16 combinations, to determine a match.

2. Select the **Ranking**.

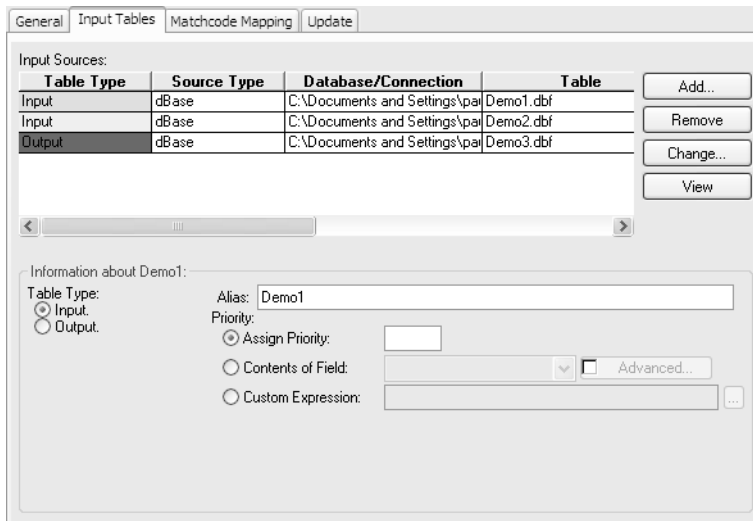
This determines what priority to give records when it finds duplicates. The record that gets the highest priority will be kept, while the others will be rejected. "MatchUp will select the best record" instructs the software to keep the most

complete record. This is probably the best for most situations. See the MatchUp User's Guide for information on the other options.

3. Click **Next**.

Input Tables

This is where you will select the tables to be used by this File Update setup.



To add an input table:

1. Click **Add...**
2. Select file (dBase/FoxPro, ASCII, MSAccess/Excel, ODBC, SQL, Oracle, DB/2).

To use SQL Server, Oracle or DB/2 files directly, you must have the clients for those database types installed. You can still use those file types via ODBC but processing will be slower.

You can mix database tables of different file types.

3. Repeat to add additional files.

If you enter a name in the Alias, MatchUp will use that name on subsequent screens and on reports. This is helpful if the file or table name is cryptic or otherwise unclear.

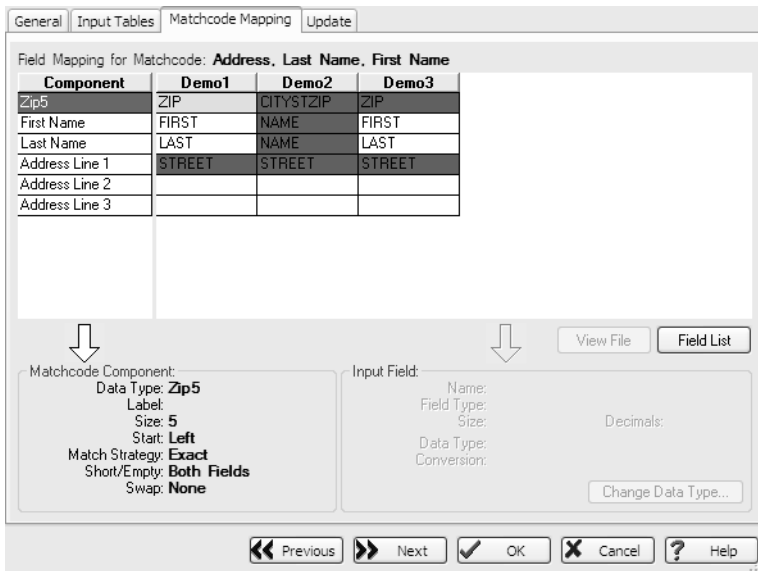
4. Select the Table Type. Tables in a File Update setup can be used two different ways.
 - **Input** — The table or tables that contain the updated information to be added to matching records in the output table.

- **Output** — The table that will be updated with information from matching records in the input table or tables. There can only be one output table.

In order for the data from the input table or tables to be added to the output, the matching fields must already exist in the output table. MatchUp will not create the fields during the update. You can use the **Modify Structure** button in MatchUp to add the necessary fields before adding the table to the setup.

Matchcode Mapping

The Matchcode Mapping sets how fields from each input table are matched to the data types used by the selected matchcode. MatchUp attempts to intelligently match fields to the correct data types. Fields that have to be parsed prior to matching are displayed with a pink background.



If you find that MatchUp has not assigned a field to the correct data type:

1. Click the **Field List** button.
MatchUp displays the field list. Fields that are already matched are displayed with a blue-green background.
2. Drag the field name to the correct square in the column for that input table.

To remove a field from the mapping:

1. Right click on the field on the **Field Mapping** table.

2. Click **Change Field** and select <none>.

To change a field mapping:

1. Right click on the field on the **Field Mapping** table.
2. Click **Change Field** and select the correct field name.

To change the data type of a field in an input table:

1. Click on the field.
2. Click the **Change Data Type** button.
3. Select the correct data type from the dropdown list.

When finished with the Matchcode Mapping, click **Next**.

Update

On the **Update** tab, you will select which field in your output table will be updated with information from matching records in the input table or tables.

The screenshot shows the MatchUp software interface with the 'Update' tab selected. It displays two input sources (Demo1 and Demo2) and one output source (Demo3). The 'Input Sources' table lists fields: FIRST, LAST, STREET, CITY, STATE, ZIP, LASTCALL, SALARY, and AGE. The 'Output Source' table lists the same fields. Below the tables, there are sections for 'Input Field' and 'Output Field'. The 'Output Field' section is populated with 'Name: LASTCALL', 'Field Type: Date Time', 'Size: General', and 'Update Method: Stack Group A'. There are 'Change Data Type...' buttons for both input and output fields.

In the left column or columns, this table shows lists of fields from the input tables.

To change the data type of an input field:

1. Click the field.
MatchUp will activate the Input Field controls below.

2. Click **Change Data Type...**
3. MatchUp will display a dropdown list.
4. Select the correct data type and click the green check button.

In the right column you will see a list of the fields in the output table. At first, all fields are set for <No Update>. In order for MatchUp to update the output table, you must select an Update Method for one or more of the fields.

To select the Update Method for a field:

1. Click on the field name in the right column.
2. Select the **Update Method** from the dropdown list below.

To change the data type of an updated field:

1. Click the **Change Data Type...** button.
2. MatchUp will display a dropdown list.
3. Select the correct data type and click the green check button.

To select the Update Method for several fields at once:

1. Click the **Global Update...** button.
2. MatchUp displays the **Global Update** dialog.
3. Click on the field name to select them. Click again to deselect them.
4. Check **Update**.
5. Select the Update Method from the dropdown list.
6. Click **Change!**
7. Repeat as needed for other fields.
8. Click **Close** when finished.

Click **OK** to finish configuring the File Update setup.

Update Methods

There are numerous Update Methods available. Which ones are accessible for any given field depends on the type of data in the actual field (text, numbers or dates). Many are self-explanatory, but some may need clarification.

First Data:

MatchUp selects the first matching record that contains data in the updated field.

Join:

MatchUp joins together all of the data contributed into a single string. Join is only available for character fields.

Join with Spaces:

Same as Join above, but each piece of data is separated by a space.

Longest:

MatchUp scans the group of duplicates and takes the longest data string that it comes across. Longest is only available for character fields.

Shortest:

The opposite of Longest above.

Maximum Value:

MatchUp scans the group of duplicates and takes the field with the largest value. Maximum is available for character and numeric fields.

Minimum Value:

Same as Maximum, above, but takes the field with the smallest value.

Add Values:

The value in each contributing field is added together to obtain a total result. This is useful if the data consists of sales figures that need to be totaled. Add is only available for numeric fields.

Earliest Date:

The field with the earliest date is selected for output.

Latest Date:

Just like Earliest, above, but takes the field with the latest date. Latest is only available for date fields.

Stack Group (A-H):

There are 8 stack groups (letters A through H). These are useful if you have tables with multiple instances of the same kind of data. Two or more output fields are assigned to a stack group. The data from the first matching record is written to the first field in the stack group. The next record's data is written to the second field, and so on. If there are more

records with matching fields than there are fields in the stack group, the excess fields are discarded.

Saving the Setup

1. Click **OK** to finish creating the new File Update setup.
2. You will be warned if some of the input fields may be truncated. Click **Yes** to confirm.
3. Click the **Save Setup** button.
4. Specify a directory and a file name for the new setup and click **OK**.

CASS

This optional part of the MatchUp software uses the same CASS Certified™ address matching technology found in Melissa Data's MAILERS+4 software and Address Object API. In MatchUp, you can use this technology to verify the deliverability of addresses in your list and add ZIP + 4® codes and carrier routes to your list, as well as enhance your list with additional demographic information from the National postal database.



To set up MatchUp to verify your list:

1. Click the **New Setup** button.
2. Click the **CASS** button.
3. MatchUp displays the CASS setup screen.

Input/Output Fields

The first tab shows the normal address data fields, such as a company name, street address, city, state and ZIP Code, in two columns. The column on the left (Input) shows the existing fields in the input table while the right column (Output) allows you to select the fields that will receive the verified and standardized data after processing is completed on each record.

To select an input table:

1. Click **Browse**.
2. Select a file (dBase/FoxPro, ASCII, MSAccess/Excel, ODBC, SQL, Oracle, DB/2).

You can SQL Server, Oracle or DB/2 files directly if you have the clients for those database system installed. If not, you can still use those file type via ODBC but processing will be slower.

You can mix database tables of different types.

3. Click **OK**.

Input:	Output:	Size
Company: <None>	Company: <None>	0
Address Line 1: STREET	Address Line 1: STREET	30
Address Line 2: <None>	Address Line 2: <None>	0
Suite: <None>	Suite: <None>	0
City or City/St/Zip: CITY	City: CITY	30
State: STATE	State: STATE	2
Zip: ZIP	Zip: ZIP	10
Plus 4: ZIP	Plus 4: ZIP	10
Urbanization: <None>	Urbanization: <None>	0
Carrier Route: <None>	Carrier Route: CRRT	4
Delivery Point Code: <None>	Delivery Point Code: <None>	0
DP Check Digit: <None>	DP Check Digit: <None>	0

To write the verified data back to the same fields in the input table, click **Copy Input >> Output**. This will copy the name of any field found in the input column to the matching data output type.

If you wish to write a data type to a different field, or if the output type does not match an existing input field, you can select an existing field from the dropdown list next to that data type. When working with dBase tables, if a field does not yet exist in the input table, you can type a new name in the box. A field with this name will be added to the table when the table is processed. If you create a new field this way, you must also enter a size for the field.

Note: If you are verifying the output of a Merge/Perge operation, you can only select existing field name. To create new fields, you must do so during the Output Field Mapping step.

If you select the same field for the City, State, ZIP Code and Plus 4, MatchUp will concatenate the output data into a single field.

Some of the fields on the **Input/Output Field** tab may require additional explanation.

- **Urbanization** — This field is only used with Puerto Rican addresses to break ties between addresses in the same ZIP Code.
- **Delivery Point Code** — This is the 10th and 11th digit of the Delivery Point Barcode number. The first nine digits are the ZIP + 4.
- **Delivery Point Check Digit** — This is the 12th digit of the Delivery Point Barcode.

Click **Next** to move on to Additional Output Fields.

Additional Output Fields

MatchUp matches your address data to the National database and can use these matches to insert additional information about each address into the database, if desired.

Input/Output Fields		Additional Output Fields		Options	
Demographics:		Size	Split Components:		Size
City Abbreviation:	ABBR	13	Number:	STR_NUM	10
County:	COUNTY	30	Pre-Directional:	PRE	10
County FIPS:	FIPS	5	Name:	STR_NAME	20
Time Zone:	TZ	20	Suffix:	SFFX	10
Time Zone Code:	TZ_CODE	2	Post-Directional:	POST	10
MSA Number:	MSA	4	Secondary:	SECONDARY	30
PMSA Number:	PMSA	4	PO Box:	POBOX	30
Congressional Dist:	DIST	2	Address Status:		Size
Geographics:		Size	LACS ^{Link} :	LACSLINK	1
Latitude:	LAT	7	EWS:	EWS	1
Longitude:	LONG	9	Address Type:	ADD_TYPE	1
			DPV Footnotes:	DPV	10

Again, you can either select the name of an existing field or enter the name of a new field. If you enter a new field name, MatchUp supplies a field length that matches the standard length of that data type. For example, the City Abbreviation is 13 characters, so if you enter a new field name for City Abbreviation, MatchUp will automatically set the field length at 13.

Demographics

- **City Abbreviation** — If the city name is less than 13 characters long, the full name is returned. If more than 13 characters long, the standard USPS abbreviation is returned.
- **County Name** — The name of the county associated with the input address.
- **County FIPS** — The Federal Information Processing Standard number assigned to the county.
- **Time Zone and Time Zone Code** — The name and numeric code for the time zone containing the input address. See page 40 at the end of this guide for a full list of time zones and their codes.
- **MSA Number** — The Metropolitan Statistical Area code assigned to the ZIP Code for the current address.
- **PMSA Number** — The Primary Metropolitan Statistical Area code assigned to the ZIP Code for the current address.

- **Congressional District** — The two-digit code for the congressional district in which a verified address is located.

Geographics

These two fields return the latitude and longitude of the geographic center of the ZIP + 4 in which the verified address is located.

Split Components

The street address is parsed into its component parts. If the address is successfully verified, then MatchUp will parse the standardized address returned by the software. If not, MatchUp will attempt to parse the address as found in the input table.

Address Status

- **LACSLink** - If the submitted address has been updated due to conversion from Rural Route format to standard city-style street addresses or other types of address conversion (such as renaming a street), MatchUp will match the address to the USPS database of such addresses and automatically update the field to the correct address. If these has happened for a given address, MatchUp will return a “Y” in this field.
- **EWS** - If the address is found on the list of new addresses scheduled to be included in the national database, MatchUp will return a “Y” to this field.
- **Address Type** - MatchUp returns a one-letter code for the type of address indicated in the national database. See the end of this guide for a table of possible return values.
- **DPV Footnotes** - MatchUp returns a series of two letter codes indicating the degree of success it had matching the current address to a deliverable address. See the end of this guide for a table of possible return values.

Click **Next** to move on to Options.

Options

The options screen allows you further control over how MatchUp handles the verification of your data.

- **Output Error Code** - Select or enter a field name for MatchUp to use for the Error Code, a one-digit string which indicates the reason an address was not successfully verified and coded. See the end of this guide for a list of possible error codes.

- **Output Status Code** - Select or enter a field name for MatchUp to use for the Status Code, a one-digit string which indicates MatchUp's degree of success in verifying and coding an address. See the end of this guide for a list of possible Stacodes.

- **LACS^{Link} Status Code** - Select or enter a field name for MatchUp to use for the LACS^{Link} Status Code, which indicates the degree of matching between the input address and the LACS^{Link} database.
- **If there's a coding error...** - If MatchUp can't verify an address record, you have the option of clearing the ZIP + 4 and Carrier Fields if they already exist in the input table. This prevents an unverified address from being mistaken for a verified one.
- **If joining City/State Zip...** — This option controls how MatchUp formats a combined city, state and ZIP + 4 string before writing it to the output field.
- **Input Filter** — Enter a dBase expression to limit the records from the input table that are verified. See the MatchUp help file for more information on dBase syntax and the Expression Builder.
- **Perform DPV verification** — Uncheck this option to turn off DPV verification. This allows addresses that are not DPV matches to be ZIP + 4 coded. Because DPV is a CASS requirement, however, turning this option off will disable printing of CASS Form 3553.
- **Perform LACS^{Link} verification** - Uncheck this option to turn off LACS^{Link} checking. Because LACS^{Link} is a CASS requirement, however, turning this option off will disable printing of CASS Form 3553.

- **Use CASSMate enhanced processing** - Turning on this option causes MatchUp to be more aggressive in attempting to verify addresses than with normal address verification. This may slow down processing but can result in more verified addresses.
- **Processing via ZIPIndex** - Temporarily sorts your input in ZIP Code order to allow CASSMate processing. This option allows you to use CASSMate, which requires ZIP Code order, without permanently re-sequencing your input table. This option is only available for dBase tables.
- **Form 3553 Information** - This information is required to complete the CASS Form 3553. This information can be stored for future use by selecting **User Settings > CASS > Options** before creating the CASS setup.

Click **OK** to complete the CASS setup.

Saving the Setup

1. Click **OK** to finish creating the new CASS setup.
2. You will be warned if some of the input fields may be truncated. Click **Yes** to confirm.
3. Click the **Save Setup** button.
4. Specify a directory and a file name for the new setup and click **OK**.

Processing

To process the data in the currently loaded setup, simply click the **Process** button.



MatchUp will display the **Processing** dialog, which shows the progress of the operation as it proceeds.

The appearance of this dialog varies depending on the type of setup being processed, but they all show continually updated statistics about the operation in progress, including the number of records already processed, the total records, the current speed in records per hour, and the estimated time when the current operation will be completed.

The **Processing** dialog has a small slider bar near the bottom, with “Updates” at one end and “Speed” at the other. When the slider bar is moved toward the “Updates” end, the dialog will be updated more frequently. Move the slider toward “Speed” and MatchUp will dedicate more cycles to processing the list rather than updating the screen, meaning that the number will change less frequently. While this theoretically does speed up the processing, it tends to make the program less responsive to user input. If you click the **Cancel** or **Pause** button, it will take longer for MatchUp to respond. Current computers are fast enough that this setting probably does not have a noticeable effect on speed but if you are using MatchUp on an older computer, this control may improve performance.

After processing is complete, the **Processing** dialog will show the final statistic and enable two new buttons: Analyzer and Reports.

The screenshot shows the 'Processing' dialog box with the following sections:

- Processing Statistics:**
 - Elapsed Time: 0:00:01.0
 - Estimated Time Remaining: 0:00:00
 - Completed at: 2:38:09 pm
 - Total Records: 500
 - Records Processed: 500
 - Records per Hour: 1800000
- Matching Statistics:**

Source	Total	Processed	Filtered	Output	Duplic.
Demo1	500	500	0	450	
Total:	500	500	0	450	
- Total:**
 - Output: 450
 - Duplicates: 50
 - Suppressed: 0
 - Not Intersected: 0
 - CASS Coded: 0 of 0
 - DPV Coded: 0 of 0
 - LACS^{link} Converted: 0 of 0
- Progress:**
 - Thread Progress: 1 <Idle>
 - Current Pass: 100.0%
 - Total Progress: 100.0%
- Ratio: Screen Updates vs. Processing Speed**
 - Updates: [Slider]
 - Speed: [Slider]
- Buttons:** Reports..., Analyzer..., Pause, Close

Analyzer

This option is available on all types of Setup except CASS. The Analyzer shows a table of all records processed by the previous operation. Records that have matched in some way are color coded. The colors don't mean anything, but simply alternate to make reading the table easier.



The first column of each record is also marked with one of the following status codes:

- **U** - A unique record.
- **O** - An output record that has duplicates.
- **D** - A rejected duplicate record.
- **S/s** - A suppression table record. Lower case means a match was found to this record and those records were suppressed. Upper case means no matches were found for this record.
- **X** - This record was rejected because it matched a record in a suppression table.

- **Ii** - An intersection table record. Lower case means a match was found to this record and those records were not rejected. Upper case means no matches were found for this record.
- **Y** - This record was rejected because it failed to match an intersection table record.

Status	Table	Record	Key			DupeGro.	Zip5	First Name	Last Name	Address
U	Demo1.db	5	00001	BERNARD	NEWTON	100	00001	Bernard	Newton	100 Main
U	Demo1.db	6	00001	BERNARD	NEWTON	20	200001	Bernard	Newton	20 100 J
U	Demo1.db	119	01018	LORLA	RAILEY	41	301018	Lorla	Railey	41 Cutte
U	Demo1.db	226	01214	REDFEATHERLANE	798	NEWORLEANS	401214	Red Feather	Lane	798 New
U	Demo1.db	438	01278	ANITA	CRAIG	108	HEYNARD	Anita	Craig	108 Heyn
U	Demo1.db	378	01414	BARRY	NEWTON	4400	WILDCORSE	Barry	Newton	4400 Wil
U	Demo1.db	261	01470	MATT	HEESE	267	TURRETISHE	Matt	Heese	267 Tur
U	Demo1.db	30	01498	BRENDALINE	NEWTON	1664	QUEENSGRAN	Brendaline	Newton	1664 Que
O	Demo1.db	60	01610	SANDRA	CLARK	608	GLENEALGE	Sandra	Clark	608 Gle
D	Demo1.db	106	01610	SANDRA	CLARK	608	GLENEALGE	Sandra	Clark	608 Gle
O	Demo1.db	200	01616	LAURA	SENDEN	1218	BCHLAGOOON	Laura	Senden	1218 Be
D	Demo1.db	393	01616	L	SENDEN	1218	BCHLAGOOON	L	Senden	1218 Be
U	Demo1.db	302	01656	MAURICE	TAIT	1075	GOVERNORS	Maurice	Tait	1075 Gov
U	Demo1.db	118	01698	KATRINA	HYATT	9655	DEER	Katrina	Hyatt	9655 De
U	Demo1.db	218	01698	DENISE	HYATT	8879	NEWORLEANS	Denise	Hyatt	8879 Nev
O	Demo1.db	360	01878	MILLO	JEFFCOAT	19	NEWORLEANS	Milo	Jeffcoat	19 New
D	Demo1.db	424	01878	MILLO	JEFFCOAT	19	NEWORLEANS	Milo	Jeffcoat	19 New
U	Demo1.db	1	02021	BERNARD	NEWTON	51	ANDREA	Bernard	Newton	51 Andre
U	Demo1.db	2	02021	BERNARD	NEWTON	5	ANDREA	Bernard	Newton	5 Andre

Reports

This option displays the wide variety of reports that show you, in detail, the statistics from the most recent operation.

See the help file for detailed descriptions of each report.



The CASS operation has a single report, called CASS. Select this report and click **Print** to generate a CASS Form 3553 report. This report is necessary to use the verified address for a mailing and receive postage discounts from the USPS.

Reference

The following tables contain the possible values for some of the data types that MatchUp can include in its output when processing a table.

Merge Status Codes

These codes are returned by the Merge and Merge/Purge setups.

ASCII	Hexadecimal	Decimal	Description
A	0X20	32	Record is a Dupe.
B	0X10	16	Output record has a Dupe.
C	0X00	0	Output record has no Dupes (it is unique).
D	0X02	2	Record was suppressed.
E	0X08	8	Record was not intersected.
F	0X04	4	Intersection record was used to intersect.
G	0X01	1	Suppression record caused a suppression.

CASS Codes

Time Zone Code

These codes and names are returned to the Time Zone Code and Time Zone data types in a CASS setup.

Code	Zone	Code	Zone
(blank)	Military	9	Alaska time
4	Atlantic Time	10	Hawaii Time
5	Eastern Time	11	Samoa Time
6	Central Time	13	Marshall Island Time
7	Mountain Time	14	Guam Time
8	Pacific Time	15	Palau Time

Address Type

These codes are returned by the Address Type data type in a CASS setup

Code	Description
(blank)	Unverified Address
F	Company Address
G	General Delivery
H	High-Rise or Business Complex
P	PO Box
R	Rural Route
S	Residential Address

DPV Footnotes

Code	Description
AA	Input address matched to the ZIP + 4 file.
A1	Input address not matched to the ZIP + 4 file.
BB	Input address matched to DPV (all components).
CC	Input address primary number (street number) matched to DPV but secondary number not matched.
N1	Input address primary number matched to DPV but secondary number missing.
M1	Input address primary number missing.
M3	Input address primary number invalid.
P1	Input address PO, RR or HC box number missing.
P3	Input address PO, RR or HC box number invalid.
RR	Input address matched to CMRA.
R1	Input address matched to CMRA but secondary number not present.
F1	Address was coded to a military address.
G1	Address was coded to a General Delivery address.
U1	Address was coded to a unique ZIP Code.

CASS Error Codes

Code	Description
(blank)	No Error
M	Multiple Matches — More than one record matches the address and there is not enough information available in the input address to break the tie between multiple records. Passing more complete information, such as city names or urbanization names, can help reduce the number of multiple match errors.
N	No Street Data for Zip — The ZIP Code exists but no streets begin with the same letter in that ZIP Code.
R	Range Error — The address was found but the street number in the input address was not between the low and high range in the CASS database.
T	Component Error — Either the directionals or the suffix field did not match the CASS database, and there was more than one choice for correcting the address. For example, if the given address was “100 Main St” and the only addresses found were “100 E Main St” and “100 Main Ave” the error code “T” would be returned because we do not know whether to add the directional “E” or to change the suffix to “Ave.”
U	Unknown Street — An exact street name match could not be found and phonetically matching the street name resulted in either no matches or matches to more than one street name.
X	Non-Deliverable — Address The physical location exists but there are no homes on this street. One reason might be that there are railroad tracks or a river running alongside this street, as they would prevent construction of homes in this location.
Z	Invalid ZIP Code — The ZIP Code does not exist and could not be determined by the city and state.
C	Canadian Postal Code — The ZIP Code matches the format characteristics of a Canadian Postal Code.
W	EWS File Record — The ZIP Code was found in the Early Warning System Data. These are new addresses scheduled to be included in the next USPS national database.

CASS Status Codes

Code	Description
D	Demo Mode — If processing with the demo CASS database, records not in the state of Nevada will be coded with “D.”
E	Expired Database — The CASS database has expired.
S	Standardized but Not Coded — Standardization means that some conversion was done on the address (for example, changing “Post Office Box” to “PO Box”).
V	Street Number Validated to DPV Level — This record has been DPV validated. You can check the DPV Footnotes for more information about the level of validation.
X	Address Not Coded — Check the Error code and/or DPV Footnotes for more information.
7	Multiple Matches — There were multiple matches for the address that were all in the same ZIP Code and Carrier Route. The returned ZIP Code and Carrier Route will be correct but you will not get any Plus 4 information.
9	Fully Coded — The address was fully coded
