SASIxp™ Generic Import/Export Training Guide

NCS Pearson Part Number 609 650 071A

Second Edition (March 2000)
Revision A (March 2001)

The data and names used to illustrate the reports and screen images may include names of individuals, companies, brands, and products. All of the data and names are fictitious; any similarities to actual data or names are entirely coincidental.

Contents

Contents

Contents

Contents

Course Description

This course describes the generic import/export capabilities of the SASIxp™ educational software. This capability enables you to both import data from external files into the SASIxp software and export SASIxp data to another application.

This document is intended as a training guide and reference manual to lead you through the process of implementing the import/export operation of the SASIxp software.

Before You Begin

Back up **all** of your SASIxp data before you use the Import/Export atoms. Import/Export can directly alter the data files used by the SASIxp software, so even a seemingly small mistake can irreparably damage large portions of your SASIxp data. Be safe and back it up first.

Training Prerequisites

The Import/Export atoms are intended for experienced SASIxp users. To successfully complete this training, you should be familiar with:

- Installing, configuring, and operating the SASIxp software.
- Configuring and working with the Windows® or Macintosh® operating system used in the environment where you plan to implement SASIxp District Integration.
- The application that you want to import data from or export data to.

Expected Outcomes

The training is designed to give you a general understanding of the generic import/export capability of the SASIxp software. After completing this course, you will be able to:

- Define external files and fields.
- Map data fields between the source and destination files.
- Set up rules to translate data as needed during import/export.
- Define the actual import/export process, including locations and file names of source and destination files.
- Export or import data files.

1

Overview

Locate the Import/Export module in the File Management folder. This module provides the capability to import data from external files into SASIxp database files and to export data from the SASIxp software to external files.

You can import the following types of formats:

- Text files
- dBase® IV compatible files
- SQL database files (such as Microsoft® SQL Server™ or Oracle® files)

The Import/Export module provides simple data exchange capabilities without smart data translation or business rule enforcement. This module supports very basic data value translation.

When import importing data into the student file (ASTU) in the SASIxp software, the import process does not create any enrollment records in the AENR file.

The design of the Import/Export process is not to replace the data conversion services. Using the Import/Export process to convert older files can dam your data.

When to Use Import/Export

The Import/Export set of atoms enables the SASIxp software to create and export data files for use in external applications and systems, or to import data files from other applications. Import/Export enables the SASIxp software to share data with other computer systems and software your school district uses.

The following are uses of the Import/Export atoms:

- Sending data from the SASIxp software to a mainframe computer system at the district office.
- Updating your SASIxp data from files on the district office mainframe computer.
- Sharing data between the SASIxp software and external software application. Database programs or spreadsheets containing data about students, courses, grades, test scores, and other information are prime examples of shared data.

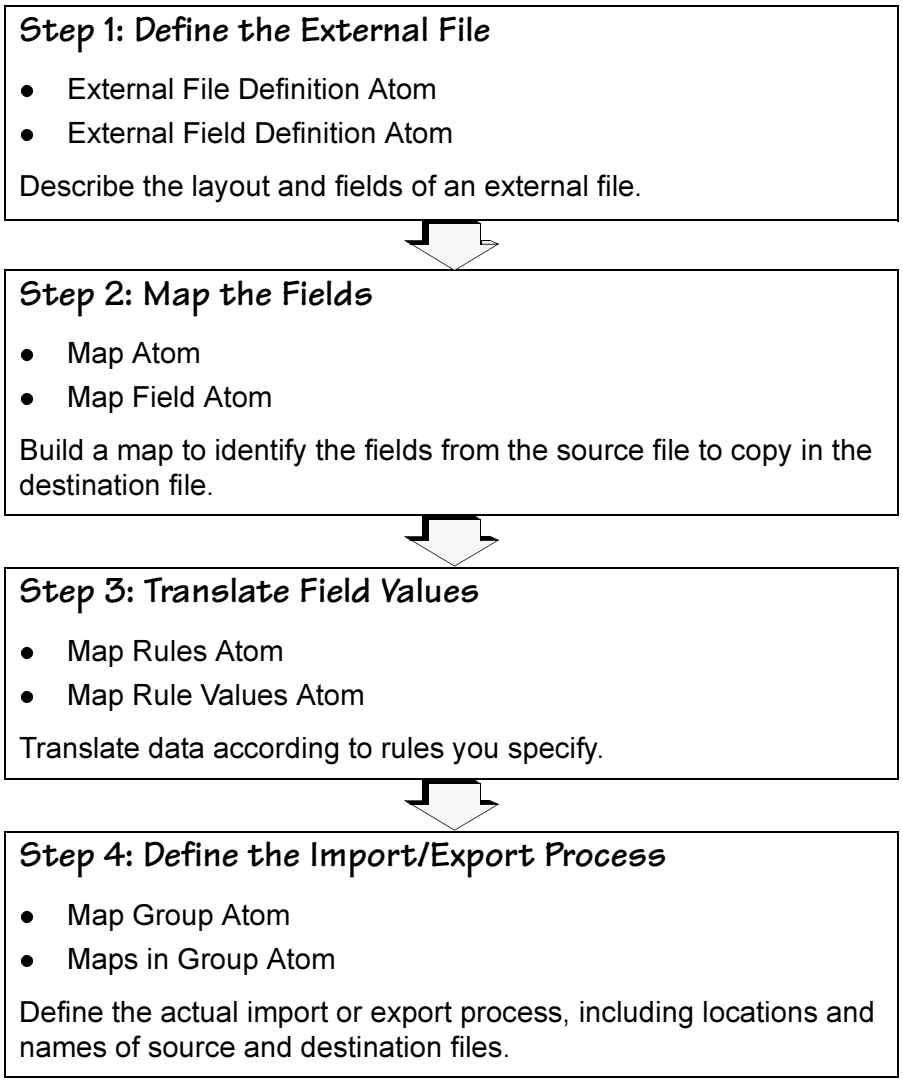
NCS Pearson recommends you limit access to the Import/Export process to specially authorized and trained users. The process allows direct update of the SASIxp files, which presents the risk of damaging or losing data.

Steps in the Import/Export Process

When you import or export data files in and out of the SASIxp educational software, the Import/Export process involves a number of specific steps. Perform the same basic steps in the same order when both importing or exporting data. Use this training guide to show the proper order to use the Import/Export atom.

Overview

This diagram illustrates the general process of using the Import/Export atoms. A more detailed description of the steps follow the diagram.



The same general steps apply to both import and export processes. The location of source and destination files, will vary.

Step 1: Define the external file

Before the SASIxp software maps data from one file to another, identify the record layouts of both files. Use the External File Definition atom and External Field Definition atom to describe external file layouts and describe the fields in an external file.

Step 2: Map the fields between the source and destination files

Once both the source and destination file layouts are known, define the field-to-field mapping. This map identifies the fields from the source file to copy into the fields in the destination file. Use the Map and Map Field atoms to create the maps between the source and destination file layouts.

Step 3: Translate field values

To translate data during import or export use the Map Rules and Map Rule Values atoms to enable simple mapping of values in the source file to other values in the destination file. This permits proper assignment of values to SASIxp internal fields as imported records into the SASIxp files.

> One example of translating a field value is when an exam grade in an external file field is “4.0”, but the same field in the SASIxp software needs to be an “A.”

Step 4: Define the import/export process

Use the Map Group and Maps in Group atoms to define the actual import/export process. These atoms enable you to specify the locations and names of source and destination files. Maps in Group permits convenient processing of several maps. Each map has one source and one destination file, and runs in a predetermined order.

Transaction-Based Import/Export

The Import/Export module also supports transaction-based import/export. Transaction-based processing is ideal for synchronizing external files and internal SASIxp files.

In the case of transaction-based import compare two versions of a file, and use the differences between them are to create a third file. This third file is the transaction file. The system can apply these transactions to a SASIxp data file to bring it up to date.

> If the district sends your school a file including transfer students who have come to or from your school, then compare the external file to the SASIxp student data files. Next, this program builds a transaction file containing the changes. Finally, use the transaction file to update the SASIxp software with the new information.

In the case of export, the system compares two versions of the DIFF file. You generate this file from a SASIxp file. Use the two versions of the DIFF file to generate transactions, which you can apply to the external files.

Separate Executable

In addition to launching the import/export process from an atom, you can also open it from outside of the SASIxp software using a separate executable, IMPEXP.EXE. You specify all run time parameters as command line parameters. These parameters include SASIxp user ID and password, map group to run, school number, and school year. Parameters are case sensitive, and must be enclosed in action marks.

The IMPEXP.EXE executable file is also useful to help automate the process of importing or exporting files. You can enter the IMPEXP.EXE command and any parameters into the TASKSERV.INI file so the import or export process will take place on a recurring basis under control of the Taskserver. For more information, see the “Using the Task Server to open Other Applications” topic in the online help.

Import/Export and System Filters

When you perform an import or export process using the IMPEXP.EXE executable file, the Import/Export process always ignores both system filters and file and field security. The system filter is also ignored when you import data into the SASIxp software using the import/export set of atoms.

However, when you run the Import/Export process from inside the Maps in Group atom, the current system filter is obeyed on every map row that **exports** a SASIxp file to an externally defined file. This process enables you to run extracts including a group of students you select.

Import/Export Processing

The system processes one map group per import/export run. Begin processing by selecting the map group in the Maps in Group atom and clicking the Process Map Group button, or by running the IMPEXP.EXE executable with the map group as a command line parameter.

Regardless of the type of translation, follow the same steps. Process each map sequentially in the order displayed in the Maps in Group atom.

The import/export process can include the following translation options:

- Data file to data file
- Data files to transaction file
- Transaction file to data file

The following sections describe how to use these atoms to define and run the import/export process.

Import/Export Templates

Enable the creation of Import/Export templates to distribute with the SASIxp software.

These are the templates for common and complex Import/Export tasks:

- Import locker number
- Import staff data
- Import test history data
- Import course, student, and teacher data
- Export transaction of student demographics

2

Using the Import/Export Atoms

Use these atoms, to set up and maintain the import/export process:

- External File Definition
- External Field Definition
- Map
- Map Field
- Map Rules
- Map Rule Values
- Map Group
- Maps in Group

Defining External Files

Use both the External File Definition and the External Field Definition atoms to create and maintain external file and field definitions. The system stores these definitions in the AIXE and AIXF files. Once you define the external file and its fields, the SASIxp software can access them as its own internal files. These are types of External files:

- Mainframe (non-record-oriented)
- Text
- dBASE® IV
- Tables in a SQL™ database.

These are types of external text files:

- **Variable Length Files** – These files have comma- or tab-delimited fields. When using field delimiters, the fields' length vary up to a maximum length defined for each field in the External Field Definition atom. Records of these files are delimited with standard text-file delimiters

  Delimit fields with tabs or commas. Do not use quotation marks to "tie together" fields containing spaces.

  Imported comma-delimited data often uses double quote characters, the Import/Export function is able to read such data. The system strips off the quotes as part of the import process. Double quotes are added around each field when exporting to comma-delimited files.

- **Fixed Length Files** – These files have fixed-length fields and records. If entering data into a field and the date has less character than defined in the field, the system pads the data with spaces. The fields have a fixed length, their location in the record is described using the offset, or number of characters, from the beginning of the record.

  Many fixed-length data files, and data files from mainframes, are non-record-oriented. Which means they have no record delimiter.

  If a record-oriented file is specified as a fixed-length file, take the record delimiters into account when defining the record length of the file. For example, suppose a fixed length record in a Windows text file has three fields, each five characters long. You must specify the record length as 17: the sum of the field lengths (5 + 5 + 5 = 15) plus the length of the record delimiter (CR+LF in a Windows text file, or two characters). Macintosh and Unix text files have one-character record delimiters.

  NCS Pearson recommends treating fixed-length text files as **Variable Length** with *No Field Delimiter*. the SASIxp software then identifies each field to be the maximum length, so the fields are actually fixed-length. The SASIxp software also uses standard record delimiters on Variable-Length records, do not worry about the size of record delimiters.

- **Fixed Length Files with different types of records** – These files combine several different sets of records into one file.

  A single external file contains an address record and an emergency record for each student. Base the description of the different types of information within the file on field offsets and record type identifier. Use the Map Group atom to define which fields and the information they contain are imported. Locate this information from records in the external source file. Then, identify the SASIxp destination files.

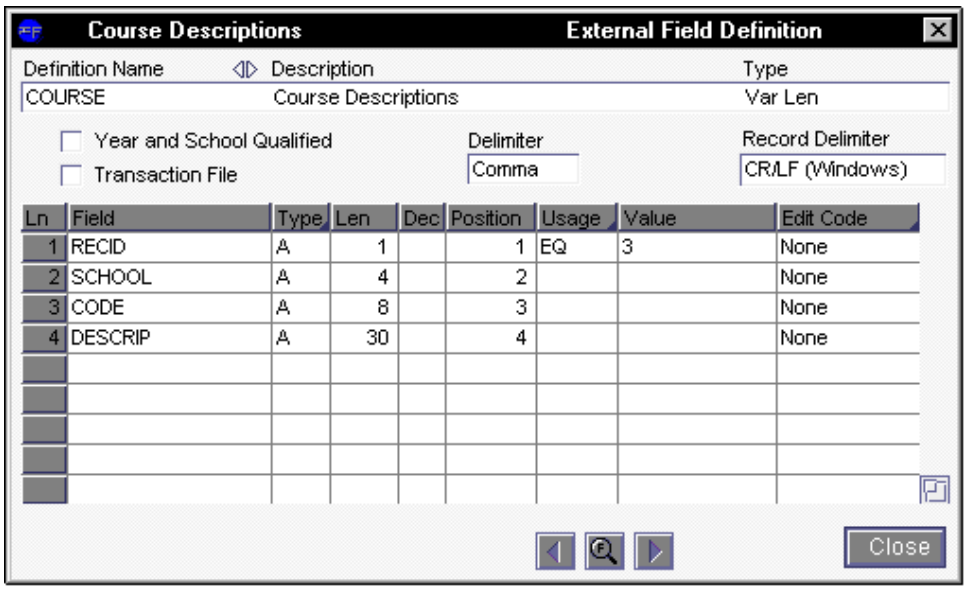
The External File Definition atom also provides formatting information for exporting.

Tag a field as “Zero Fill,” to enable the export process to add zeros to fill the field before writing it to the output text file.

Use this atom to describe dBASE and SQL external files.

External Field Definition Screen

The system stores data from the fields in this screen in the AIXE file.



External Field Definition Screen Fields

Field Name	Description
Definition Name	Name of the external file definition, up to eight characters. It is similar to the File Code in FILES.DBF, and must be uppercase with no embedded blanks.
Description	Description of the file definition.
Type	Type of database to store the external file. These are the options: • **Database** – The external file is either in an SQL database or a dBASE IV file, depending on the settings in the RDBMS.INI file. • **dBASE IV** – This is the same as the dBASE IV only setting in FILES.DBF. The external file is in dBASE IV, regardless of the settings in the RDBMS.INI file. • **Fixed Len** – Fixed length ASCII text file. • **Record Length** – If you select the fixed length option, this field displays. Enter the record length of the fixed length file. To allow for the record delimiter, add two characters to the desired total fixed length for Windows systems, or one character for the Macintosh. • **Var Len** – Variable length ASCII text file. Fields are delimited by commas or tabs, and records by carriage returns or carriage return/line feed combinations (depending on whether the file is produced on Macintosh or Windows). • **Delimiter** – Displays if you choose the Var Len option. Select the type of record delimiter used in this file. • **Record Delimiter** – Displays if you choose the Var Len option. Select the type of record delimiter used in this file.

Field Name	Description
Year and School Qualified	Select this option to enable the system to use external files. Qualified files always have a Year and School Number suffix added to the filename. **Note:** Rarely select this option for an external file, it is a SASIxp convention and few external applications use it.
Transaction File	Select this option **only** when the external file is a transaction file. Exported transaction files are created through a special comparison process. Imported transaction files must have a valid transaction code (like Add, Change, or Delete) in each record. **Note:** If this checkbox is set incorrectly, your database may be damaged.
Delimiter	This field displays only if the *Type* is Var Len. The field delimiters can be either commas, tabs, or none. A delimiter of none means the field is full size.
Record Delimiter	This field displays only if the *Type* is Var Len. Record delimitersare CR (Macintosh), CR/LF (Windows), or LF (Unix).
Edit Field Definition	This button opens the External Field Definition atom.

Working with the External File Definition Atom

Use these procedures to define and modify external files.

Adding File Definitions

1. Open the External File Definition atom.
2. From the Data menu, select Add External File Definition.
3. In the *Definition Name* field, type a name for the External File Definition. This field is up to eight uppercase characters with no embedded blanks.

4. In the *Description* field, type a description of up to 30 characters.
5. In the *Type* field, select the type of database where the external file is stored.
6. Select the *Year and School Qualified* checkbox to allow external files to act like qualified SASIxp files.
7. Select the *Transaction File* checkbox to specify the external file is a transaction file.
8. If you selected Var Len in the *Type* field, do the following:
   - Select the field delimiter in the *Delimiter* field.
   - Select the record delimiter in the *Record Delimite*r field.
9. If you selected Fixed Len in the *Type* field, enter the length of each record in the *Record Length* field.

> Use a carriage return and line feed characters as record delimiters. Windows computers use two separate characters (CR and LF), while Unix and Macintosh systems combine CR and LF into a single character. Allow for the space used by the record delimiter in a fixed length file, so add 2 to the record length for files created by a Windows system, and add 1 to the record length of files created by Macintosh or Unix systems.

> If choosing *Type* of fixed length, be certain the record length is correct. Otherwise, an error message displays stating the file does not match its definition. To avoid this situation, NCS Pearson recommends you use a *Type* of Var Len with No Field Delimiter when possible, because the record length is not critical.

10. Click Save.
11. To define fields, click Edit Field Definition to open the External Field Definition atom.
12. Click Save when you have finished defining fields, and then click close to close the External Field Definition atom.
13. In the External File Definition atom, click Close.

Changing File Definition Names

NCS Pearson recommends you not change the name of any file definitions. The name may already be in use other places, such as Maps and Map Groups. It may be in use to link to the fields in the External Field Definition atom. Changing the name of a file definition breaks all of these linkages.

1. Open the External File Definition atom. The External File Definition screen displays.
2. From the External File Definition menu, select Change Name…Description Line.
3. In the *Definition Name* field, edit the name.
4. In the *Description* field, edit the description.
5. Click Save, to save the changes into the system. The SASIxp software closes any open atoms on the Desktop.

Deleting File Definitions

To avoid problems similar to changing the name can create, make sure the file definition is not used in any Maps. Also, delete the External Field definitions before deleting the External File definition.

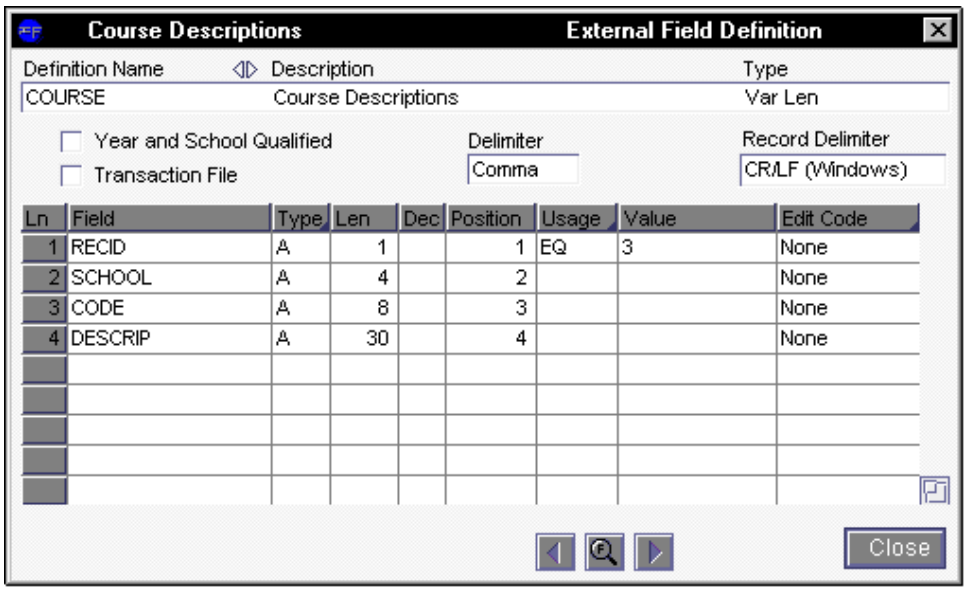
1. Open the External File Definition atom.
2. Select the file definition you want to delete.
3. From the Data menu, select Delete External File Definition to permanently delete the definition.

External Field Definition Atom

Use the External Field Definition atom to describe external fields. Open this atom either directly from the Import/Export folder, or by clicking the Edit Field Definition button in the External File Definition atom.

External Field Definition Screen

The system stores the fields you define in this atom in the AIXF file.



External Field Definition Screen Fields

Field Name	Description
Field	Name of field in the external file. It is up to 10 characters, uppercase, with no embedded blanks.
Type	Type of field: • **A** = Alphanumeric • **N** = Numeric • **D** = Date Use the Date type in dBASE and Database definitions. Use this field for fixed length and variable length ASCII text file definitions, describe the date fields as alphanumeric, and choose Dates in the *Edit Code* field.
Len	Use this field to enter the field size. The maximum size for *Var Len* files and the actual size for all other files.
Dec	Use this field to enter the number of decimals. Skip this field when the *Type* is not numeric.
Position	Pposition of the field in the file displays if the file type is not *Fixed Len*.. For dBASE and Database definitions, the position must start with 1. There must be no gaps or overlaps. For Variable Length text file definitions, you must define position 1 even if no data is needed in position 1.

Field Name	Description
Offset	Beginning byte offset of the field in the file displays if the *Type* is *Fixed Len*. . Offsets start with byte 1. Offsets greater than the record length are not allowed. Fields may overlap with each other (for fixed length ASCII text files only), which may be useful for import but dangerous for export. **Note:** For import processes, overlapping fields enables you to read the same data field in more than one way. For example, you have the following date field (starting at offset 1): Offset:12345678 Data: 19990603 Define the Date field as offset 1, length of 8, and you could define a separate field, such as Month as offset 5, length of 2. Put the Date into one SASIxp field and the Month into a different SASIxp field. The fields overlap, but there is no problem during an import. However, when exporting a SASIxp date of 19990603, and then export a Month of 07, the result is unpredictable. To avoid this problem, do not define overlapping fields for export files.

Field Name	Description
Usage	These are the possible values of the usage: • **U1…U5** – Enables the specification of up to 5 fields to screen the case-insensitive primary key of this external file. Specify primary keys for transaction files, because the primary key determines the Add, Delete, Change transaction code in the comparison process. A primary key must be specified if the transaction file will be a destination file. • **TrnCode (Transaction Code)** – Every transaction file has one transaction code field. This code defines the Delete, Add, and Change transactions. The code is: 1=Delete, 2=Add, 3=Change. • **TrnDate –** Optional Transaction Date. For export files, this is the Map Group run date. • **TrnTime –** Optional Transaction Time. For export files, this is the Map Group run time. • **RecIdEq** – Use to identify external files containing multiple record formats. This record format is equal the literal in the *Value* column. • **RecIdNe** – Use to identify external files containing multiple record formats. This record format is not equal the literal in the *Value* column. Blank is a valid literal value.
Value	Record ID values.

Field Name	Description

Edit Code	Format of data in this field. With the exception of the date edit codes, these values are ignored when this definition is used for import. Possible values are:
	• **UC** – Uppercase all data in this field.
	• **LC –** Lowercase all data in this field.
	• **LZ** – Fill field with leading zeros.
	• **RJ** – Right justify the field.
	• **Dates – These are** Various date formats:
	  • mmddyy
	  • mmddccyy
	  • mm/dd/yy
	  • mm/dd/ccyy
	  • yymmdd
	  • ccyymmdd
	  • mmyy (assume the first of the month)
	  • mm/yy (assume the first of the month)
	Note: Use this code only in alphanumeric fields.

Working with the External Field Definition Atom

Use these procedures to define and edit external fields.

Adding External Field Definitions:

1. Open the External Field Definition atom. Select the file to which you want to add field definitions.
2. From the Data menu, select Add External Field Definition.
3. In the *Field* field, enter the name of the field.
4. In the *Type* field, enter the type of field to be identified.
5. In the *Len* field, enter the field size.
6. In the *Dec* field, enter the number of decimals.
7. In the *Position* field, enter the position of the field in the file.

8. In the *Offset* field, enter the beginning byte offset of the field in the file. This field displays only if the external file is fixed length.
9. In the *Usage* field, select the usage of the field.
10. In the *Edit Code* field, select the formatting of the data.
11. Repeat Steps 2-10 to add additional fields.
12. Click Save to save the changes, then click Close.

Editing Field Definitions

1. Open the External Field Definition atom.
2. In the *Definition Name* field, select the file to edit.
3. Make necessary changes by selecting fields.
4. Click Save to save changes, then click Close.

Deleting Field Definitions

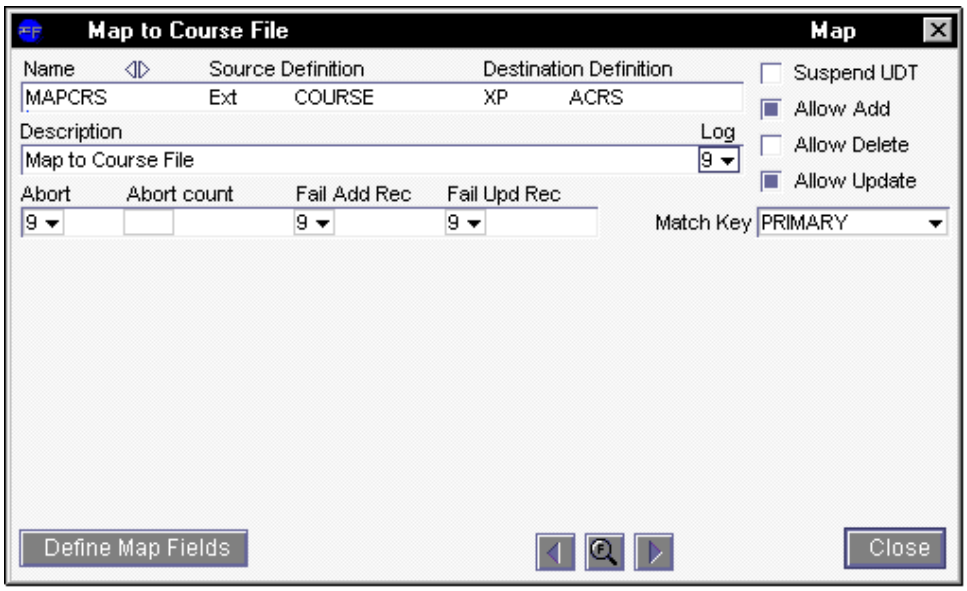
1. Open the External Field Definition atom.
2. In the *Definition Name* field, select the file to edit.
3. Click the *Ln* field for the definition you want to delete.
4. From the Data menu, select Delete External Field Def.
5. Click Save to save changes, then click Close.

Map Atom

Locate the Map atom in the Import/Export folder in File Management module. Use this atom to define conversion mappings between external files and the SASIxp software files.

Map Screen

The system stores the fields in this screen in the AIXM file.



Map Screen Fields

Field Name	Description
Name	Name of the map. It is 8-characters, uppercase, with no embedded blanks.
Source Definition	Name of the definition of the source file for this map. Also specifies where to find the definition, either in the SASIxp software (FILES.DBF) or an external file definition (Ext).

Field Name	Description
Destination Definition	Name of the definition of the destination file for this map. Also specifies where to find the definition, either in the SASIxp software (FILES.DBF) or an external file definition (Ext).
Description	A 30-character description of this map.
Log	Error level (1 - 9, 1 being highest) triggers logging of the record to the text log file. All errors with this level or higher are logged.
Abort	Error level causes the system to abort the add, update, or delete of the record to the destination file. Any error with a level equal to or higher than this level aborts the record's transaction. If the add, update, or delete of a record is aborted, the system adds 1 to the internal abort count.
Abort Count	Maximum abort count for this map. Once the internal abort count reaches this maximum, the conversion aborts.
Fail Add Rec	Use the error level when the back end database does not allow a record to be added to the destination file. The range of the error level is 1-9, with 1 being highest.
Fail Update Rec	Use the error level to be when the back end database does not allow a record in the destination file to be updated. The range of the error level is 1-9, with 1 being highest.
Suspend UDT	Displays only if the *Destination Definition* is an XP definition type. If the destination file is an XP file it contains definitions for User, Date, and Time stamp fields. Selecting this box suspends setting the fields.
*Allow Add**	Displays only if the *Destination Definition* is an XP definition type. Allows records to be added to the destination file. *Allow Add* is assumed when the *Destination* file is an Ext file.

Field Name	Description
*Allow Delete**	Displays only if the *Destination Definition* is an XP definition type. Allows records in the destination file to be deleted.
*Allow Update**	Displays only if the *Destination Definition* is an XP definition type. Allows records in the destination file to be updated.
Match Key	Displays if the *Destination Definition* is an XP definition type. From the pop-up list, select the unique key in the destination SASIxp file to use in accessing records in the SASIxp file.
Define Map Fields Button	Click to open the Map Fields atom.
Note: * The *Allow Add*, *Allow Delete*, and *Allow Update* options apply only to transaction files. If any of these fields are set incorrectly, damage can occur to the datatbase.	

Working with the Map Atom

Use these procedures to add and modify maps.

Adding Maps

1. Open the Map atom. From the Data menu, select Add Map.
2. In the *Name* field, enter the name of the map.
3. In the *Source Definition* field, enter the name of the definition of the source file for this map and the location of the file.
4. In the *Destination Definition* field, enter the name of the definition of the destination file for this map and the location of the file.
5. In the *Description* field, enter the description of this map.
6. In the *Log* field, enter the error level that triggers logging of the record to the text log file.
7. In the *Abort* field, enter the error level that stops the add, update, or delete of a record to the destination file.

8. In the *Abort Count* field, enter the number of errors that stops the add, update, or delete process of a record to the destination file.
9. In the *Fail Add Rec* field, enter the error level when the back end database does not allow you to add a record in the destination file.
10. In the *Fail Upd Rec* field, enter the error level used when the back end database does not allow a record to be updated in the destination file.
11. In the *Match Key* field, enter the unique key in the Destination SASIxp file used to access records in the SASIxp file.
12. In the *Suspend UDT* field, specify if you want to suspend date and time stamp fields. This field displays only if the destination file is a SASIxp file.
13. Select the *Allow Add* field to specify if you want to add a map. This field displays only if the destination file is a SASIxp file.
14. Select the *Allow Delete* field to specify if you want to delete a map. This field displays only if the destination file is a SASIxp file.
15. Select the *Allow Update* field to specify if you want to update a map. This field displays only if the destination file is a SASIxp file.
16. Click Save to save the changes, or click Undo to discard.

Changing File Definition Names

NCS Pearson recommends not changing the name of any file definitions. The name may already be in use other places, such as Maps and Map Groups. It may also be used to link to the fields in the External Field Definition atom. Changing the name of a file definition breaks all of these linkages.

1. Open the Map atom.
2. Select the map to rename.
3. From the Map menu, select Change Name…Description Line.
4. In the *Definition Name* field, edit the name.
5. In the *Description* field, edit the description.
6. Click Save to save changes.

Deleting File Definition Names

1. Open the Map atom.
2. Select the map to delete.
3. From the Data menu, select Delete map.
4. Click Save to save changes.

Map Fields Atom

Use the Map Fields atom to define and maintain the field mappings between the source and destination definitions. Open this atom either directly from the Import/Export folder, or by clicking the Define Map Fields button in the Map atom.

Mapping Data Types

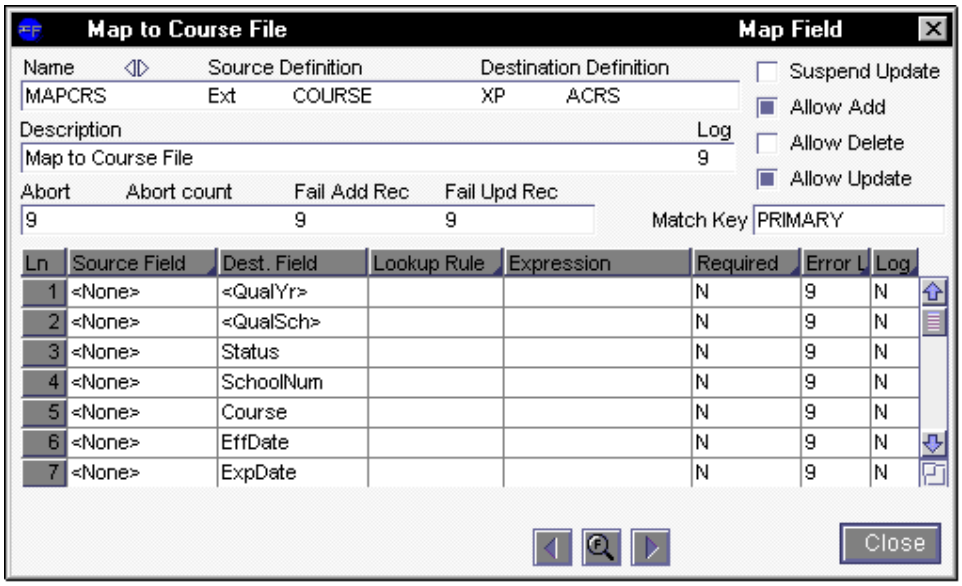
The system uses the following rules to map fields of different types.

Mapping Data Types			
Source	**Destination**		
	Alphanumeric	**Numeric**	**Date**
Alphanumeric	No issues	Leading and trailing blanks are stripped, and the number is right-justified. Nonnumeric characters cause an error.	Use if the proper date edit code is specified for the source field's external file definition. Source file MUST be externally defined.
Numeric	No issues	No issues	**Not allowed**

Mapping Data Types			
Date	Uses the date edit code specified in the External File Definition for the destination field. If no edit code, CCYYMMDD is assumed.	**Not allowed**	No issues

Map Fields Screen

The system stores the fields in this screen in the AIXN file.



Map Fields Screen Fields

Field Name	Description
Source Field	Choose from one of the fields in the source file definition or a special field name: • **<None>** – No field in the source file supplies the value to the destination field. The destination field is either set by the *Expression* column or if it is blank, is set to its default value (probably blank or zero). • **<QualYr>** – Only available if the source file is qualified by Year and School. The value comes from the year part of the source file's name, not from any data field in the source file. • **<QualSch>** – Only available if the Source file is qualified by Year and School. The value comes from the school part of the source file name, not from any data field in the source file. • **<TrnCd>** – Required on the row that has the destination transaction file's transaction code. • **<NextSeq>** – Indicates records are appended to the file. The next sequence function is used to generate this sequence number. *Allow Update* and *Allow Delete* should not be checked.

Field Name	Description
Dest. Field	The matrix contains a row for every field in the destination file. The value in the matrix is read-only. In addition to a row for every destination field, there are also three special destination field rows: • **<TrnCd>** – Available only if the source file is a transaction file (defined in the External File Definition atom). This row enables you to apply a lookup rule to the source file's transaction code so it can be translated into Import/Export's native format: 1=delete, 2=add, 3=change. • **<QualYr>** – Available only if the destination file is qualified by Year and School. Other columns in this row specify how the qualifying year is determined. The year can come from a data field in the source file, the source file's name, a literal in the *Expression* column, or functions in the *Expression* column. • **<QualSch>** – Available only if the destination file is qualified by Year and School. Other columns in this row specify how the qualifying school is determined. The school can come from a data field in the source file, the source file's name, a literal in the *Expression* column, or functions in the *Expression* column.
Lookup Rule	Lookup rule translates the source data into the destination data. Maintain Lookup rules using the Map Rules atom. The system uses lookup rules after expressions are evaluated. There are two kinds of lookup rules: list lookup and file lookup.
Expression	Data for the destination field can come from either the source file or this column. An expression can be a simple literal (value enclosed in quotation marks) or a function call.

Field Name	Description
Required	Whether this field is required and cannot be blank or zero. If the field is blank or zero, then the error level in the next column is triggered.
Error Level	The Error level (1 - 9, with 1 being highest) caused by missing required fields or failed lookup rules. If this error level is equal to or higher than the abort error level specified at the top of this screen, the record transaction will be aborted. If no error level is specified, the default is 9.
Log	Whether the field is reported in the text log file. Select Y to report in the log.

Working with the Map Fields Atom

Use these procedures to add and delete map fields.

Adding Map Fields

1. Open the Map atom.
2. From the Data menu, select Find Map and type the name of the map you need in the *Name* field. You can also select the appropriate map using the arrows above the *Name* field.
3. Click Define Map Fields.
4. In the *Source* field, select the name of the source file definition.
5. In the *Destination* field, select the name of the field in the destination file.
6. In the *Lookup Rule* field, select the lookup rule that translates the source data to the destination data.
7. In the *Expression* field, enter the data for the description field if the data is not supplied by the source file.
8. In the *Required* field, indicate whether the field is required and cannot be left blank or zero.
9. In the *Error Level* field, indicate the error level caused by missing required fields or failed lookup rules.

10. In the *Log* field, select Y to report this field in the text log file.
11. Click Save to save changes, then click Close.

Deleting Map Fields

1. Open the Map atom.
2. Select the definition from which you want to delete map fields.
3. Select the field to delete. To delete multiple fields, hold down the shift key as you select fields.
4. From the Data menu, select Delete Map Field.
5. Click Save to save changes, then click Close.

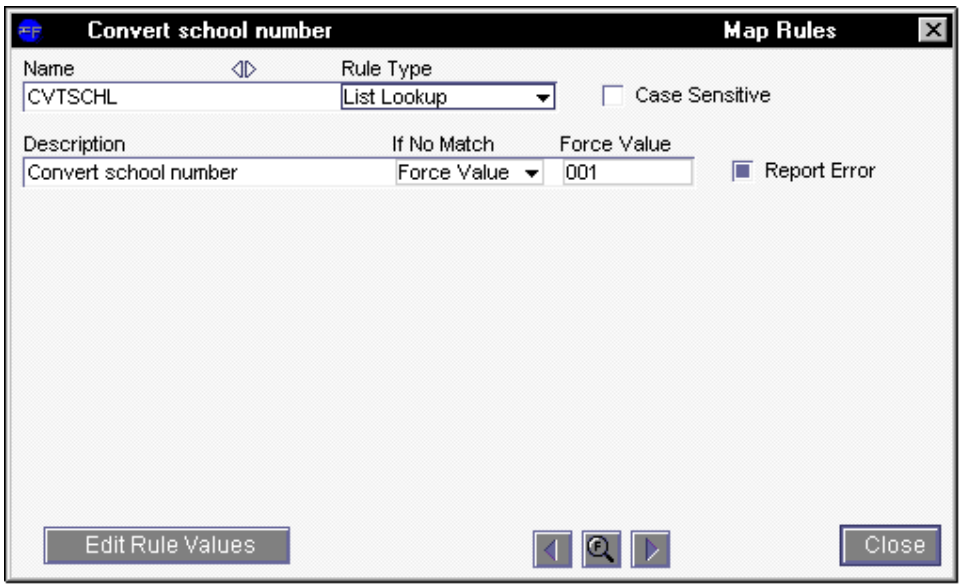
Map Rules Atom

Use the Map Rules atom to define map rules. This atom works with the Map Rule Values atom to define two types of lookup rules: list lookups and file lookups. Both types of rules ignore leading and trailing blanks in the source.

Rule	*Description*
List Lookup Rules	A List Lookup takes a data value from the source file, looks for the same data value in the *Source* column of the rule matrix (obeying the case sensitivity flag), and places the destination data value into the destination file. Use the Edit Rule Values button to open the Map Rule Values atom, where you can specify the source and destination values of the List Lookup rule.
File Lookup Rules	Use a File Lookup rule for two purposes at the same time, or disable the one not using. This rule dynamically builds a cross-reference table at run time from the specified SASIxp (XP) file. In addition, this rule is used to get new values from the Next ID files (ASCU and ASCF).

Map Rules List Lookup Screen

This atom maintains the Rule (AIXR) file, which defines the overall information about a rule.

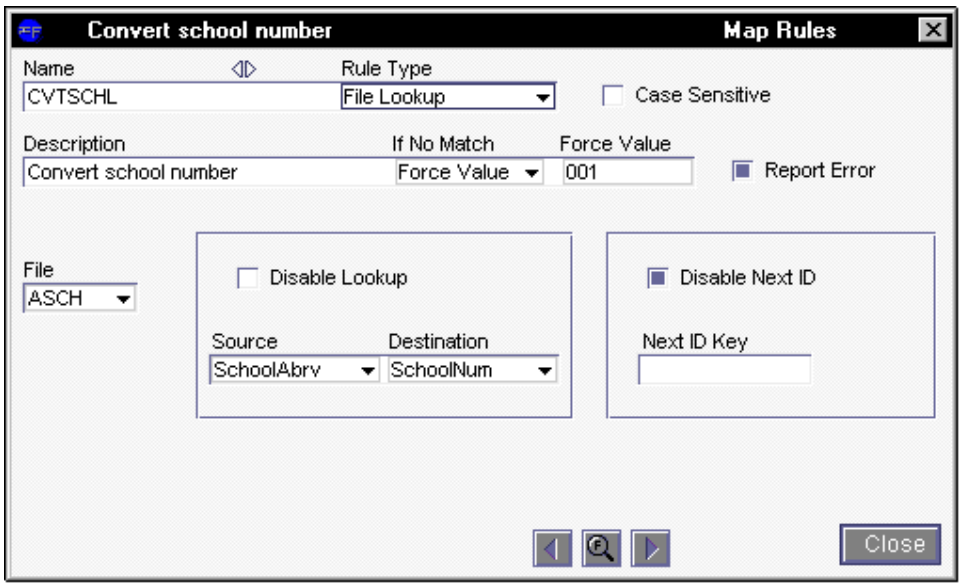


Map Rules List Lookup Screen Fields

Field Name	Description
Name	Name of the rule. It is 8 characters, uppercase, with no embedded blanks
Rule Type	Options include either List Lookup or File Lookup. The sample screen shows the List Lookup. See the Map Rules File Lookup Screen on page 34.
Case Sensitive	If you select this option, the case of the data value from the source file must match the case of the value in the source column in the Map Rule Values atom. For example, when this option is selected, “aaa” is not equal to “AAA.” If this option is not selected, “aaa” is considered equal to “AAA.”
Description	Description of the rule selected.

Field Name	Description
If No Match	Action to take if the data value from the source file cannot be found in the source column in the Map Rule Values atom. The two actions are: • **Force value –** Place the data value specified in the *Force Value* field into the destination file. • **Use source** – Place the data value from the source file into the destination file.
Force Value	Submit the value if no match was found and the *If No Match* field is set to *Force value*.
Report Error	Reports an error if no match were found. The error level for this rule is specified in the row in the Map atom that calls on this rule.
Edit Rule Values Button	Opens the Map Rule Values atom. The Map Rule Values atom maintains the source and destination values for the List Lookup rule.

Map Rules File Lookup Screen



Map Rules File Lookup Screen Fields

Field Name	Description
File	Name of the XP file that supplies the source and destination fields for the dynamically created lookup table.
Disable Lookup	Disables the lookup part of this rule. Select this option if the only purpose of this rule is to get new values from the Next ID file.
Source	Identifies the source field from the list.
Destination	Identifies the destination field from the list.
Disable Next ID	Disables the retrieval of values from the Next ID file. Only if this box is selected can a “No Match” condition occur. Select this option if the only purpose of this rule is to do lookups.
Next ID Key	The Key value to access the Next ID file. If this key value does not already exist in the Next ID file, it is automatically added to the file and the Next ID value is set to 1.

Working with the Map Rules Atom

Use these procedures to add and delete map rules.

Adding List Lookup Map Rules

1. Open the Map Rules atom. From the Data menu, select Add File.
2. In the *Name* field, type the name of the rule.
3. In the *Rule Type* field, select list lookup from the pop-up list.
4. In the *Description* field, type a description of the rule.
5. In the *If No Match* field, select the action taken if no match is found.
6. In the *Force Value* field, indicate the value to use if no match is found and you have selected Force Value in *the If No Match* field.

7. Select the *Case Sensitive* checkbox to make the rule case sensitive ("AAA" does not equal "aaa"). Clear the checkbox if the case is not important to the field value.
8. Select the *Report Error* checkbox to cause all errors to be reported in the text log file.
9. Click Save to save the new map rule.

List Lookup map rules require a list of values you add using the Map Rule Values atom. See Working with the Map Rule Values Atom on page 39.

Adding File Lookup Map Rules

1. Open the Map Rules atom from the Data menu, and select Add File.
2. In the *Name* field, type the name of the rule.
3. In the *Rule Type* field, select file lookup from the pop-up list. The file lookup fields display.
4. In the *Description* field, type a description of the rule.
5. In the I*f No Match* field, select the action taken if no match is found.
6. In the *Force Value* field, indicate the value to use if no match is found and you have selected Force Value in the *If No Match* field.
7. Select the *Case Sensitive* checkbox to make the rule case sensitive ("AAA" does not equal "aaa"). Clear the checkbox if case doesn't matter.
8. Select the *Report Error* checkbox to cause all errors to be reported in the text log file.
9. In the *File* field, select the internal SASIxp file to be used as a lookup table.
10. Click the *Disable Lookup* checkbox if the only purpose of this rule is to retrieve new values from the Next ID file.
11. In the *Source* field, select from a pop-up list the field in the selected file whose value is matched to the source value.
12. In the *Destination* field, select from a pop-up list the field in the selected file whose value is used as the destination value.
13. Select the *Disable Next ID* checkbox if the only purpose of this rule is to perform lookups.

14. In the *Next ID Key* field, type in the name of the internal field in the selected file whose Next ID value is used when adding a new record to the destination file.
15. Click Save to save the new map rule.

> Do not add any map rule values for file lookup map rules. The Edit Rule Values button is not displayed for file lookup rules.

Deleting Map Rules

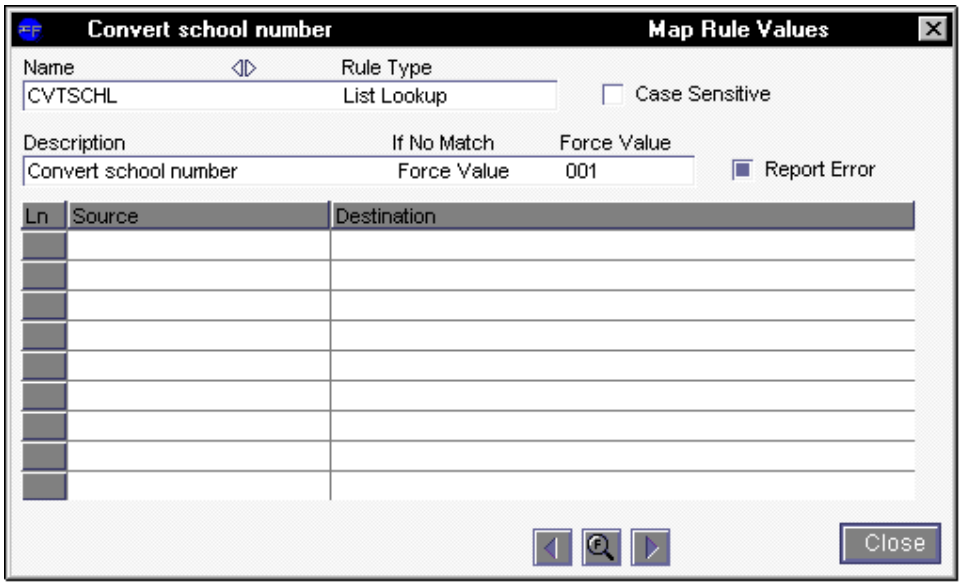
1. Open the Map Rules atom.
2. Select the Map Rule you want to delete.
3. From the Data menu, select Delete File.
4. Click OK to confirm.
5. Click Close.

Map Rule Values Atom

Use this atom to define source and destination values for a list lookup map rule. Open this atom directly from the Import/Export folder, or click the Edit Rule Values button in the Map Rules atom.

Map Rule Values Screen

The system stores the fields in this screen in the AIXS file.



Map Rule Values Screen Fields

Field Name	Description
Source	Identify the Source file for the data values.
Destination	Data values to be written to the Destination file.

Working with the Map Rule Values Atom

Use these procedures to define and delete map rule values.

Adding Map Rule Values

1. Open the Map Rule Values atom. Select the map rule to add a value.
2. From the Data menu, select Add Field.
3. In the *Source* field, type the source value to translate.
4. In the *Destination* field, type the destination value.
5. Click Save to save changes, then click Close.

Deleting Map Rule Values

1. Open the Map Rule Values atom. Select the map rule to delete a value.
2. Click the *Ln* field of the value you want to delete. This action selects the row. To select multiple rows, use the Shift key and click a range of *Ln* fields.
3. From the Data menu, select Delete Field.
4. Click Save to save the change.
5. Click OK to confirm the save.
6. Click Close.

Map Group Atom

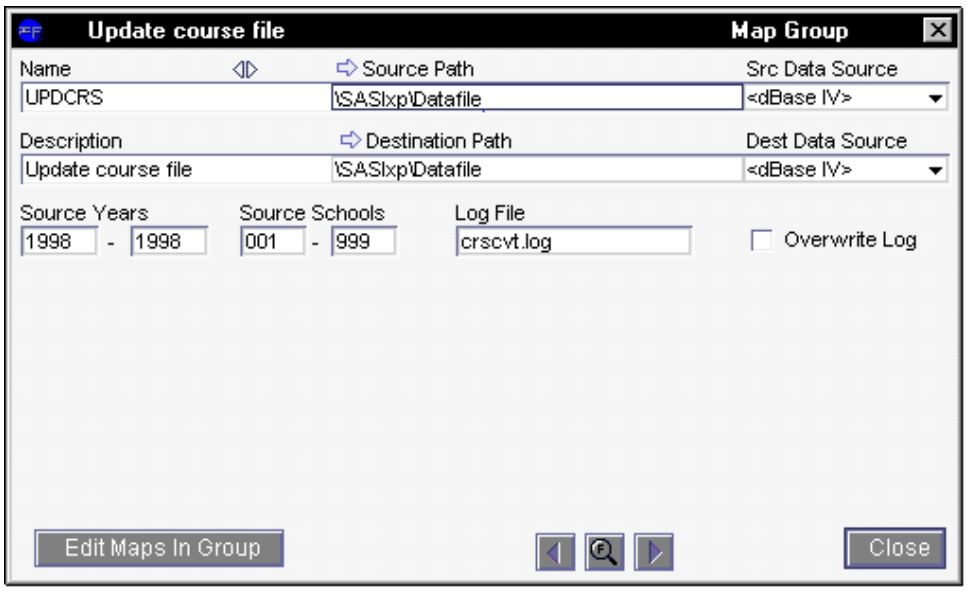
Use the Map Group atom both to group maps together and to perform the Import/Export process. This atom maintains the Map Group (AIXG) file.

Use this atom to access the Maps in Group atom, which maintains the Maps in Group (AIXH) file. Together use these atoms to define the process run unit. A process run unit is the processed maps. Process the maps by click the Process Map Group button in the Maps in Group atom.

Use the Map Group atom to maintain the overall information on each Map Group.

Map Group Screen

The system stores the fields in this screen in the AIXG file.



Map Group Screen Fields

Field Name	Description
Name	Name of the map group. This name must pass as a parameter to the Import/Export executable, because the map group is also the executable's run unit. The name can be up to 8 characters, uppercase, with no embedded blanks.
Source Path	Identifies the path to the sub-directory which contains source data files for all of the maps in this map group.
Source Data Source	If the source files are in a back end SQL database (such as Oracle or MS SQL), choose the data source from the list. The list is generated from the entries in the RDBMS.INI file.
Description	Use this field to enter a description of the map group.
Destination Path	Identifies the path to the sub-directory containing the destination data files for all of the maps in this map group.
Destination Data Source	If the destination files are in a back end SQL database (such as Oracle or MS SQL), choose the data source from the list. The list is generated by the entries in the RDBMS.INI file.
Source Years	Range of years to process for source files are qualified by school and year.
Source Schools	Range of schools to process for source files are qualified by school and year. **Note:** The *Source Years* and *Source Schools* fields are used only for export. However, you must enter information in these fields in any case.

Field Name	Description
Log File	Name of the text log file. This log file is always placed in the *Destination Path*.
Overwrite Log	Select this option to erase the old log file and create a new log file. If you do not select this option, the new log is appended to any existing log file.
Edit Maps in Group Button	Click *Edit Maps in Group,* to open the Maps in Group atom.

Working with the Map Groups Atom

Use these procedures to define and modify map groups.

Adding Map Groups

1. Open the Map Group atom. From the Data menu, select Add Map Group.
2. In the *Name* field, type the name of the map group.
3. Click the arrow above the *Source Path* field and select a source path.
4. In the *Src Data Source* field, select the type of the data in the source file.
5. Click the arrow above the *Destination Path* field and choose a destination path.
6. In the *Dest Data Source* field, select the type of the data in the destination file.
7. In the *Source Years* field, type the range of years to use from the source file.
8. In the *Source Schools* field, type the range of schools to use from the source file.

> Enter data in the *Source Years* and *Source Schools* fields. It does not matter if the source file is year and school qualified or has year or school fields. The system will skip any unnecessary fields.

9. In the *Log File* field, type the name of the text log file to use.

10. Select the *Overwrite Log* checkbox if you want the system to replace earlier log files of the same name.
11. Click Save to save changes, then click Close.

Deleting Map Groups

1. Open the Map Group atom.
2. Select the Map Group you want to delete.
3. From the Data menu, select Delete Map Group.
4. Click Close.

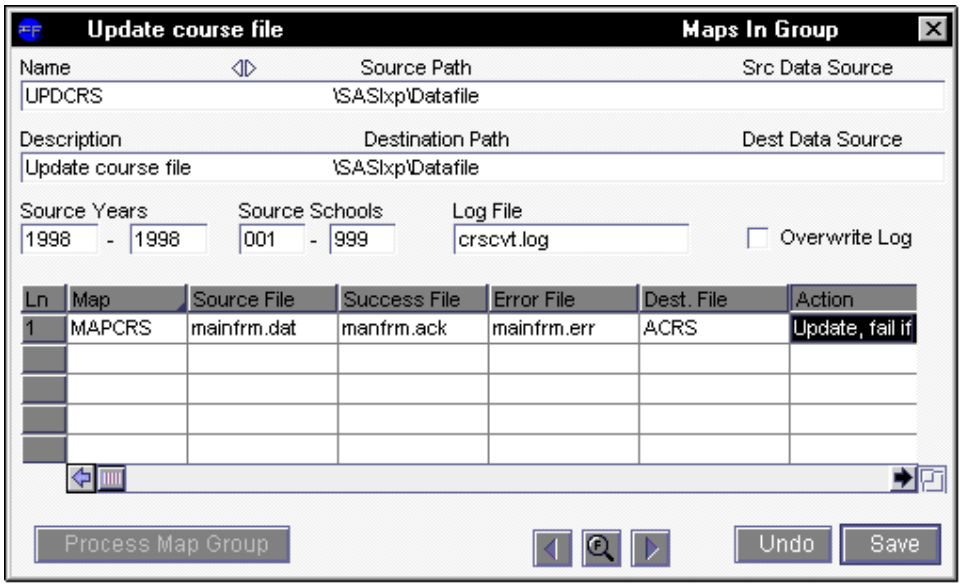
Maps in Group Atom

Use the Maps in Group atom to maintain the list of maps to run in the Map Group run unit.

This atom links maps to actual physical files. You can link physical files containing multiple record formats to multiple maps. This atom also specifies the run order to process the maps. Run the Import/Export process from this atom by clicking the Process Map Group button.

Maps in Group Screen

The system stores the fields in this screen in the AIXH file.



Maps in Group Matrix Fields

Field Name	Description
Map	Name of a map to process.
Source File	Name of the physical source file in either the source path or source data source. The physical source file contains many different record formats. This physical source file matches the definition of the source file in the map. If the source file is qualified by year and school, this name is only the prefix, with the year and school number concatenated to create the actual physical source file name.
Success File	Optional file. Place this file in the same path or data source the source file is in. This file has the same record format as the source file. Copy the source record when applying this file and a record from the source file to the destination file.
Error File	Optional file. Place this file in the same path or data source of the source file. This file has the same record format as the source file. Copy the source record to the error file when this file and a record from the source file cannot be applied to the destination file because of an error.
Dest. File	Name of the physical destination file in either the destination path or destination data source. This physical destination file matches the definition of the destination file in the map. If the destination file is qualified by year and school, this name is only the prefix, with the year and school number concatenated to create the actual physical destination file name.

Field Name	Description
Action	This column specifies how the source file should be applied to the destination file. Select from the following: • **Create, fail if exists** – Create the destination file, but if it already exists, abort the processing of this map. Ignore any transaction codes. Records are always added to the destination file. • **Create, delete if exists** – If the destination file already exists, delete it and create a new destination file. Ignore any transaction codes. Records are always added to the destination file. • **Create, rename if exists** – If the destination file already exists, rename it to the name in the *Rename old file to* column. Create a new destination file. Ignore any transaction codes. Records are always added to the destination file. • **Append, auto create** – Create the destination file if it does not already exist. Append to the existing destination file. Ignore any transaction codes. Records are always added to the destination file. • A *Match Key* must exist and be specified. If the source file is not a transaction file, then the transaction is presumed to be an Add (if the record does not already exist in the destination file) or an Update (if the record does exist in the destination file).

Field Name	Description
Action (continued)	• **Update, fail if not exist** – Available if the destination file is a SASIxp (XP) file. If the destination file does not already exist, abort the processing of this map. This action follows the transaction code in the source file (if it is defined as a transaction file) and also follows the *Allow Add*, *Allow Update*, and *Allow Delete* options set in the Map atom. A *Match Key* must exist and be specified. If the source file is not a transaction file, the transaction is presumed to be an Add (if the record does not already exist in the destination file) or an Update (if the record exists in the destination file). • **Update, auto create –** Available if the destination file is a SASIxp (XP) file. Create the destination file if it does not already exist. This action follows the transaction code in the Source file (if it is defined as a transaction file) and also follows the *Allow Add*, *Allow Update*, and *Allow Delete* options set in the Map atom.
Rename old to	If the action is *Create, rename if exists*, delete this file if it exists and rename the old destination file to this name. This column is ignored (and should be blank) if the destination file is an XP definition type.
Cur dest file	Name of the current version of the file used by the comparison process. This name is only needed if the destination file is a transaction file. Transaction destination files are created through a comparison process. This process compares current to previous versions of the destination file. This file is stored in the destination path or data source.

Field Name	Description
Prev dest file	Name of the previous version of the file used by the comparison process. Use this name if the destination file is a transaction file. Transaction destination files are created through a comparison process which compares current to previous versions of the destination file. This file is stored in the destination path or data source.
Abort remaining	If the processing of this map is aborted, this column specifies whether processing is aborted for the rest of the map group or continues with the next map in the group.

Working with the Maps in Group Atom

Use these procedures to add, delete, and modify the maps in a map group.

Adding Maps to Map Groups

1. Open the Maps in Group atom.
2. Select the map group to which you want to add maps.
3. From the Data menu, select Add Maps in Group. Complete some fields from the Map Group atom.
4. In the *Map* field, select the name of the map to process from the pop-up list.
5. In the *Source File* field, type the name of the physical Source file in either the Source Path or *Source Data Source*.
6. In the *Success File* field, type the name of the Success file. If the system successfully processes a record, it is added to the success file (if a success file is defined).
7. In the *Error File* field, enter the name of the error file. If the system cannot add a record to the destination file due to an error, the record is copied to the error file (if an error file is defined).
8. In the *Destination File* field, enter the name of the physical destination file in either the *Destination Path* or *Destination Data Source* fields.

9. In the *Action* field, select how the Source file should be applied to Destination file.
10. In the *Rename Old To* field, enter a name used to rename any previous destination file. This step prevents the old file from being overwritten by the new destination file.
11. If you are exporting transactions, in the *Cur Dest File* field, enter the name of the current version of the file used by the comparison process to create the destination file.
12. If you are exporting transactions, in the *Prev Dest File* field, enter the name of the previous version of the file used by the comparison process to create the destination file.
13. In the *Abort Remaining* field, indicate whether processing is aborted for the rest of the map group or continues with the next map in the group.
14. Click Save to save changes, then click OK to confirm the save.
15. Click Close.

Editing Maps in a Map

1. Open the Map Group atom.
2. Select the map group for which you want to edit maps.
3. Click the *Ln* field to edit.
4. Make necessary changes.
5. Click Save to save changes, then click Close.

Deleting Maps From a Map

1. Open the Maps in Group atom.
2. Select the map group containing the map you want to delete.
3. Click the line number of the map you want to delete.
4. From the Data menu, select Delete Maps in Group.
5. Click Save to save changes, then click OK to confirm the save.
6. Click Close.

Processing a Map Group

Processing a Map Group is the final step in running import and export files.

When processing an export from this atom, the system follows the current system filter on every map row exports the SASIxp software data to an external file.

1. Open the Maps in Group atom.
2. Select the map group you want to process.
3. Click Process Map Group. A progress bar displays the processing status. If no error message displays, the task is complete.

3

Working with Import/Export

This section provides sample scenarios describing how to use the generic import/export feature of the SASIxp software:

- Importing a new course file from a mainframe
- Importing student transactions from a mainframe
- Importing free and reduced lunch codes
- Exporting student transactions

The first scenario contains detailed step-by-step instructions to walk you through the process of using the Import/Export atoms. Some scenarios leave out the steps and focus on the main actions to perform.

Importing a New Course File from a Mainframe

You begin by receiving a fixed length ASCII file from the mainframe computer at the district office. The file contains a replacement for the Course Master and Student Master files. Use this file in the next scenario.

The district office provides the file containing the following Course record layout:

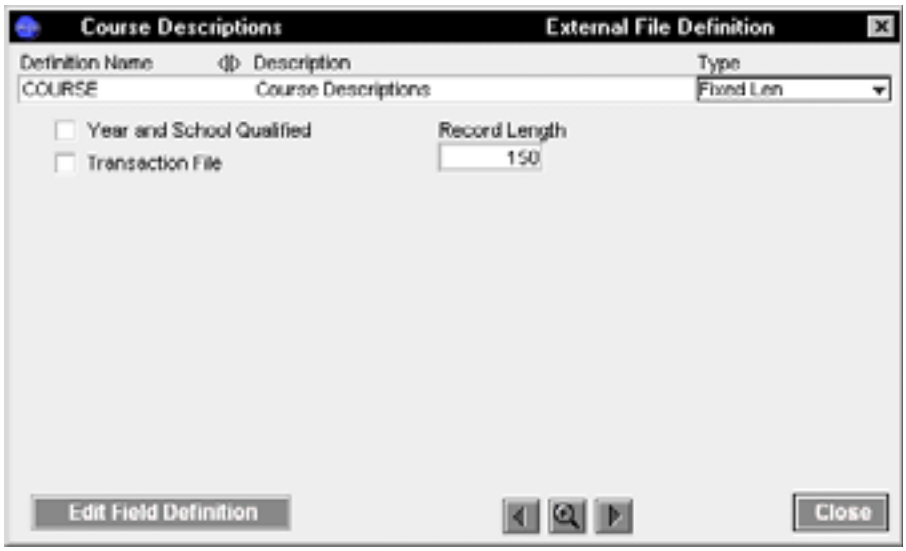
All the records in the source file are 150 bytes long.

COURSE RECORD	OFFSET	LENGTH	TYPE
OUT-COURSE-NUMBER	1	8	A
OUT-COURSE-TITLE	9	20	A
OUT-DEPARTMENT-NUMBER	29	1	A
OUT-TERM-CODE	30	1	A
OUT-KEY-SCHOOL-NUMBER	125	4	A
OUT-KEY-RECORD-TYPE	130	1	A

Defining the External File

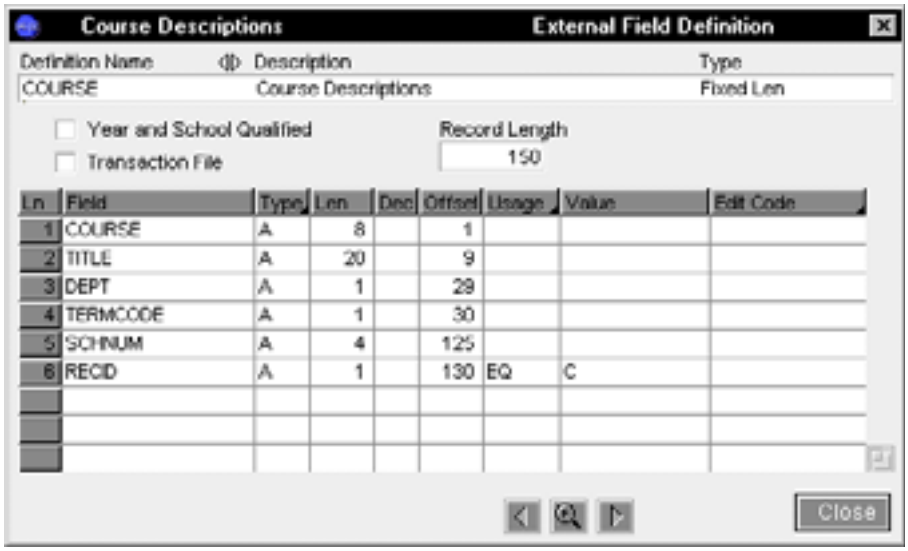
First, define the basic information about the external file using the External File Definition atom.

1. Open the External File Definition atom.
2. From the Data menu, select Add Ex File Def, or type **Ctrl+A**.
3. Type in the information about the file.



4. Click Save to enter the file information into the system, then click OK to confirm.
5. Use the External Field Definition atom to define the fields in the external file to import.
6. Click Edit Field Definition to open the External Field Definition atom.

7. From the Data menu, select Add Ex File Def, or press **Ctrl+A**.
8. Complete the appropriate fields with information about each field in the fixed length file.
9. Close the External Field Definition and External File Definition atoms.

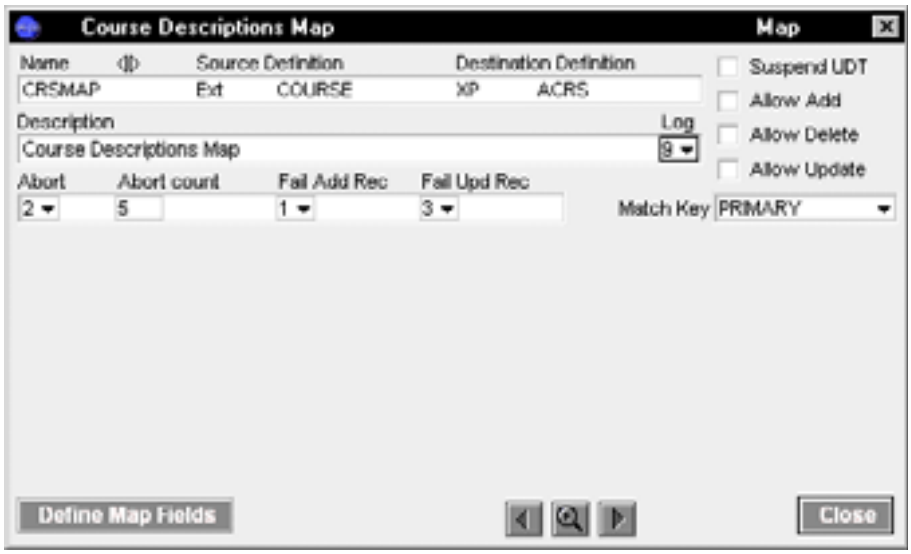


If changing an existing external file definition, first delete all older error/success files.

Mapping the Fields

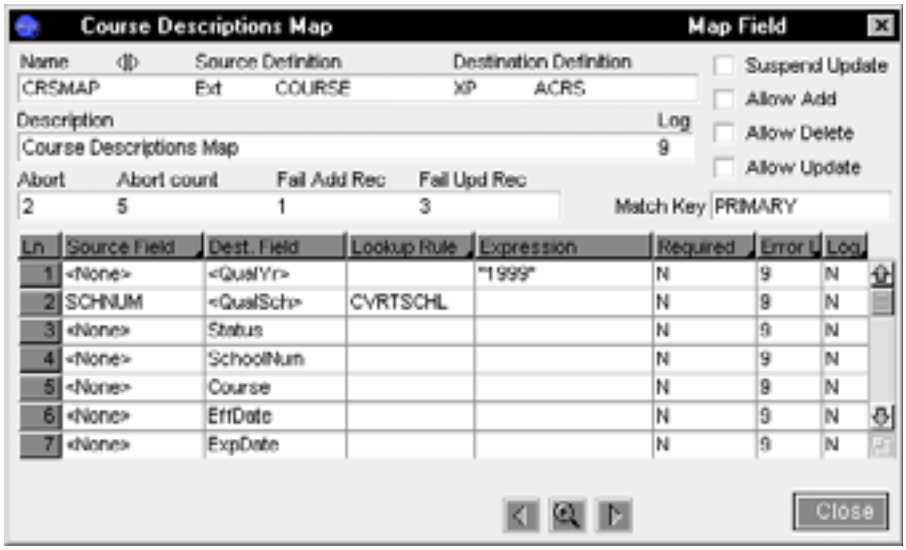
With the information you provided using the External File and External Field Definition atoms, the SASIxp software can now read the contents of the fixed length file. Now enter into the SASIxp software where each field goes in the ACRS file, by using the Map and Map Field atoms.

1. Open the Map atom. From the Data menu, select Add Map, or press **Ctrl+A**.
2. Complete the information for the new map.



3. Click Save to save the map.
4. Click Define Map Fields to open the Map Field atom.

5. Map the mainframe course file to the ACRS file.



- There is a row in the matrix for every field in the ACRS file. There also is two rows for <QualYr> and <QualSch> because ACRS is qualified. To save space, the sample screen shows only the ACRS fields you need for this scenario.
- Do not select the *Allow Add*, *Allow Update*, or *Allow Delete* checkboxes. In the Map Group atom, specify the action as *Create, fail if exists*, which ignores these settings. None of the "*Allow …*" checkboxes is selected, so you do not need to specify a *Match Key*.
- Do not select the *Suspend UDT* checkbox. The ACRS file already has *User*, *Date*, and *Time* stamps defined, and you want the date and time of the conversion to be placed into the ACRS file.
- The mainframe file has a field to specify the school for the course r, so the field is mentioned twice on the map. Mapping SCHNUM to <QualSch> causes Import/Export to create a new ACRS file for each new school. Mapping SCHNUM to SchNum places the school number into the ACRS file. In both cases, the *CVTSCHL* rule that translates the school number is in effect. Define this rule later in the process, using the Map Rule Values atom.
- The mainframe file does not specify the school year, so type "2000" in the *Expression* field for the <*QualYr*> destination field. Be sure to type the quotation marks. Use the last digit of the year in the ACRS file name.
- Map the 4-digit School Number (SCHNUM) field in the external source file to the 3-digit QualSch field in the SASIxp destination file. The CVRTSCHL lookup rule, which you define using the Map

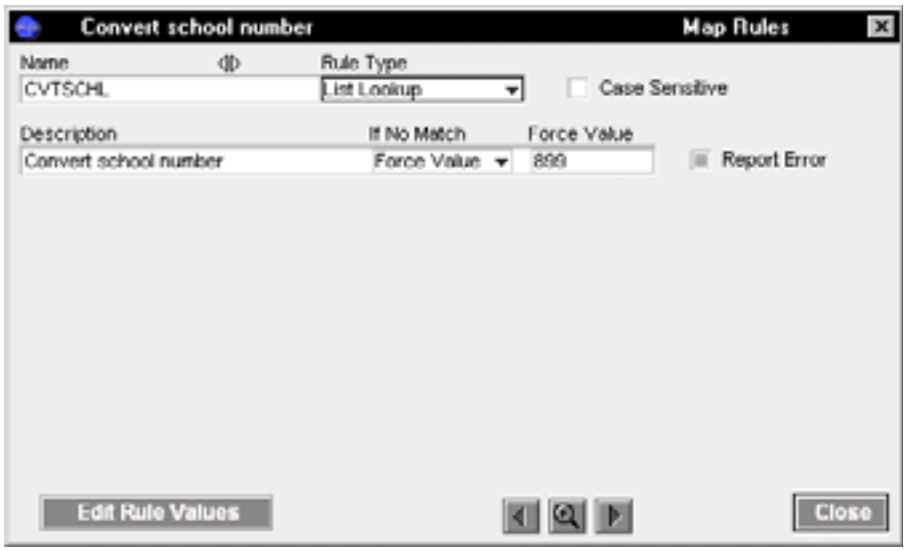
Rules atom, handles the conversion.

6. When finished, click Save.
7. To continue close all atoms.

Setting Up the Rules

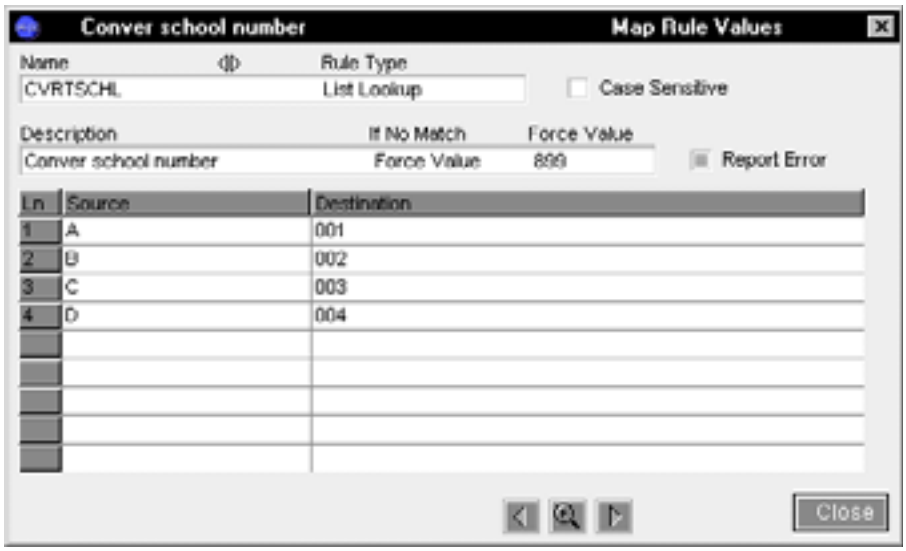
The SASIxp system stores the details of the external file and the fields it contains. Often, external data needs some translation to be consistent with other SASIxp data. It is necessary to set up rules so Import/Export can convert the school number and term codes from the external file.

1. Open the Map Rules atom. Select the Add File option from the Data menu, or type **Ctrl+A** to create a map rules file.
2. Complete the fields as shown, and click Save.



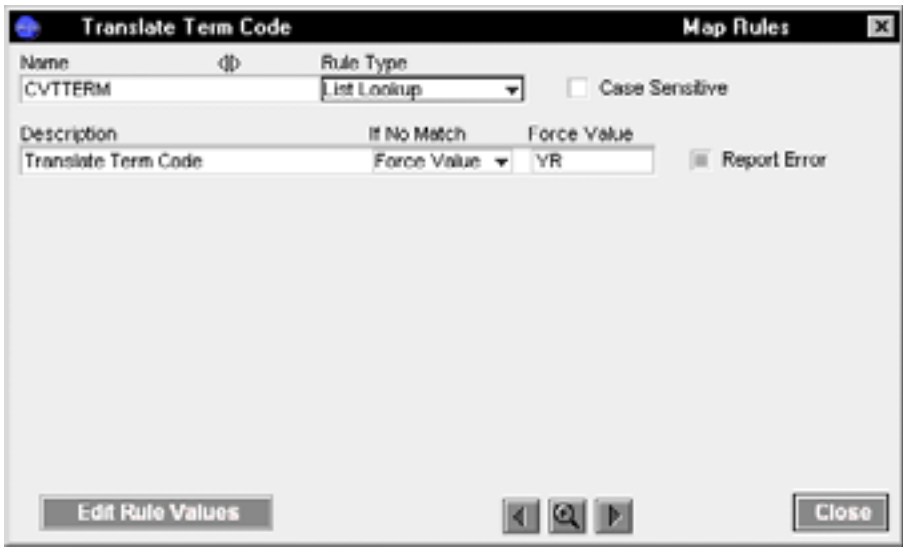
3. Click Edit Rule Values to open the Map Rule Values atom. Create two lookup rules because the mainframe's School Code and Term Code differ from the SASIxp systems data.

4. For the first lookup rule, complete all fields so they match the example below, and click Save.

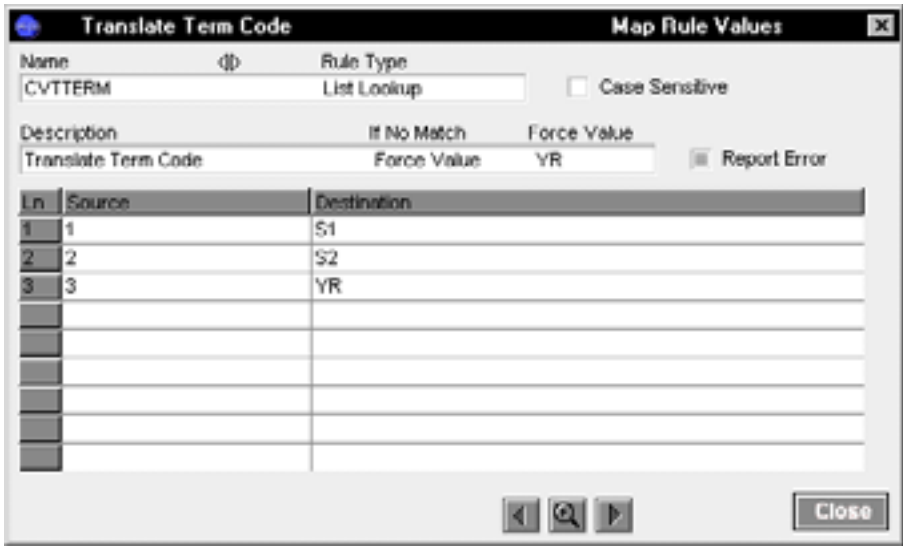


5. To create the second rule, open or select the Map Rules atom. Select Add File option from the Data menu, or press **Ctrl+A** to create a map rules file.

6. Complete the fields as shown below, and click Save.



7. Click Edit Rule Values.



8. Your data should match the illustration. Edit if necessary, and click Close.

Defining the Import/Export Process Details

Now the SASIxp software has all necessary information about the external file to read and interpret the data in it. The remaining task is to identify where the source and destination files are in the SASIxp software, and define a few other details of the Import/Export process.

1. Open the Map Group atom and from the Data menu, select Add Map Group, or press **Ctrl+A** to create the map group for this conversion.
2. Complete the necessary fields using information in this sample screen.

3. Click Edit Maps In Group and complete the fields as shown in this sample screen.

4. To perform the import to the ACRS file, click Process Map Group.

Run the import process using the IMPEXP.EXE executable file using one of the following commands, from a DOS prompt or using the Run… option from the Start menu on the Windows desktop:

```
C:> IMPEXP.EXE "SASIXPUSER=theuser
SASIXPPWD=thepassword group=mapgroupname"
```

Enclose the parameter string in quotation marks. The parameter string is case sensitive.

You can also enter the command and its parameters into the TASKSERVER.INI file to have the Task Server run the process on an automatic, repeating basis.

For additional information, see "Using the Task Server to Open Other Applications" topic in the online help system.

Importing Student Transactions from a Mainframe

You receive a fixed length ASCII file from the mainframe computer at the district office containing a replacement for the Student Master file. This ASCII file contains a replacement for the Course Master file, which you ignore, because it was used in an earlier scenario.

In this scenario, do not replace the Student Master file. Apply the differences between last night's mainframe file and tonight's mainframe file to the ASTU files. This is a two-step process:

1. Create a transaction file from the differences between last night's and tonight's version of the mainframe file.
2. Apply the transaction file created in Step 1 to your ASTU files.

The Student record layout from the mainframe is:

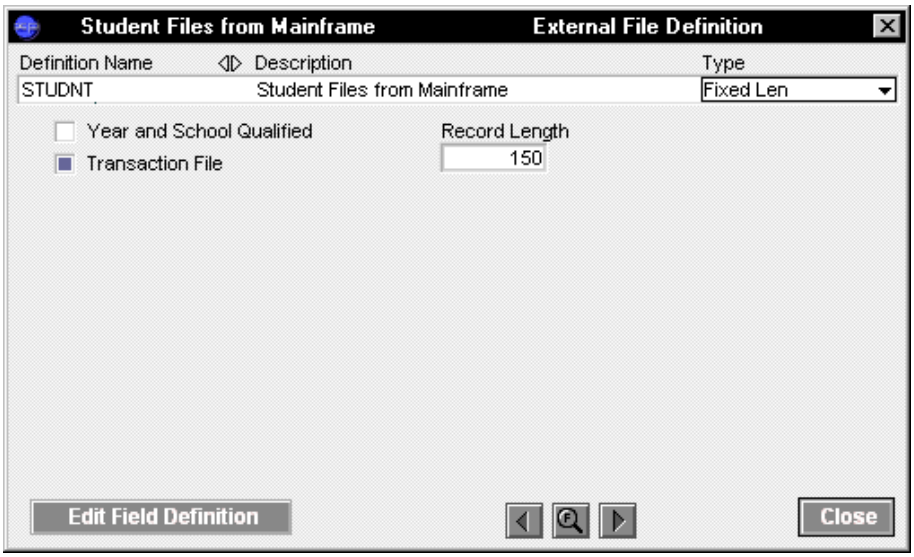
STUDENT RECORD	OFFSET	LENGTH	TYPE
OUT-STUDENT-NUMBER	1	10	A
OUT-LAST-NAME	11	17	A
OUT-FIRST-NAME	28	11	A
OUT-MIDDLE-INIT	39	1	A
OUT-GRADE-LEVEL	44	2	A
OUT-BIRTH-YY	49	2	A
OUT-BIRTH-MM	51	2	A
OUT-BIRTH-DD	53	2	A
OUT-SEX	55	1	A
OUT-RACE	72	1	A
OUT-KEY-SCHOOL-NUMBER	125	4	A
OUT-KEY-RECORD-TYPE	130	1	A

Import/Export can compare the mainframe file to your current student data and create a transaction file containing only the changes.

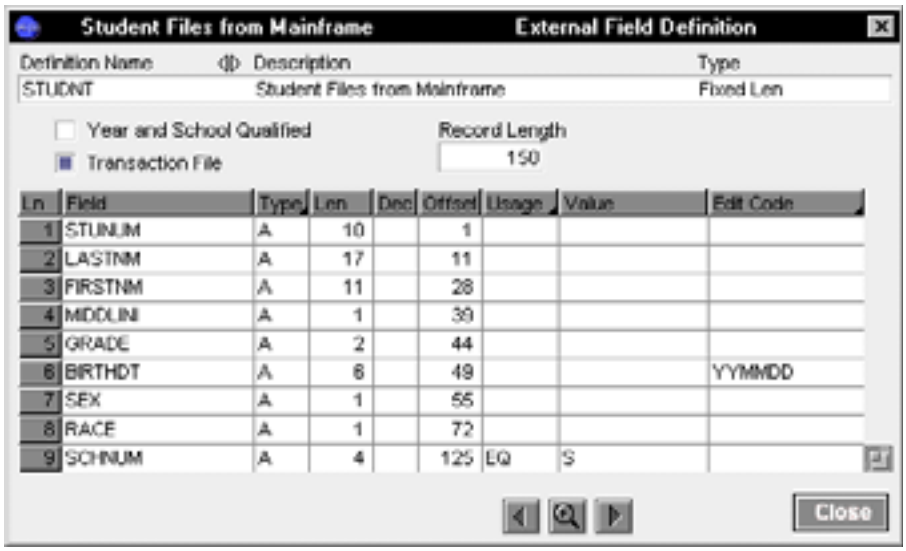
Because you are working with two external files, create two external file definitions: one of the file from the mainframe and one of the transaction file that you create from the mainframe file.

1. To create a definition of the mainframe file, open the External File Definition atom.
2. From the Data menu, select Add Ex File Def, or type **Ctrl+A**, to create a new definition.

3. Complete the fields with the appropriate data from this sample screen. When finished, click Save.



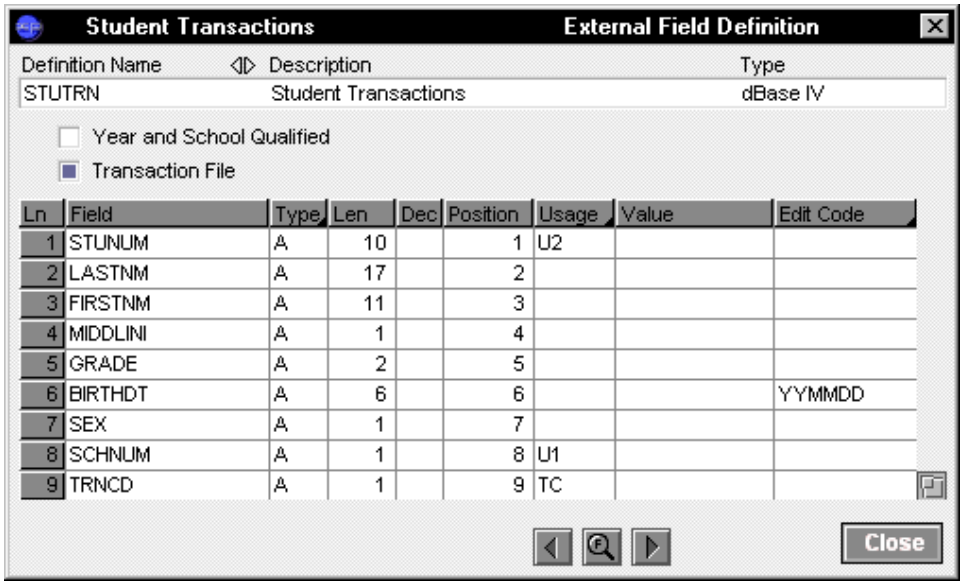
4. Click Edit Field Definition to open the External Field Definition atom.



5. The edit code of *YYMMDD* specifies that the date in the mainframe file is in Year, Month, Day format.

Use the External File Definition and External Field Definition atoms to define the transaction file you create using the mainframe file.

The definition looks similar this mainframe file.



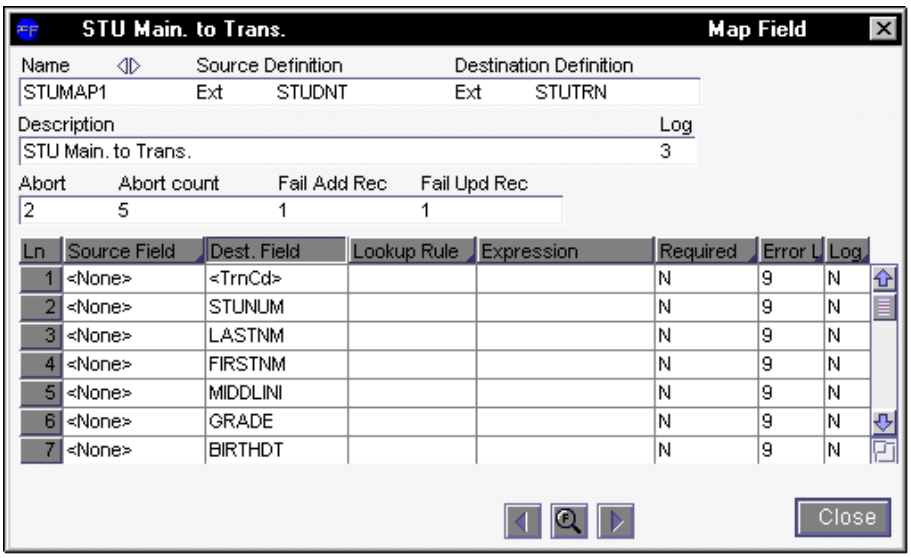
Transaction files have one transaction code field defined, and it is designated as TC.

Specify at least one field as part of the primary key. In this example, designate the school number and the student number form with the usage code of U1 and U2 as the primary key. By making the school number part of the primary key, a student with a different school number from last night's file creates a delete transaction at the old school and an add transaction at the new school.

Now create two maps, one for the mainframe to the transaction file and one from the transaction file to the ASTU file.

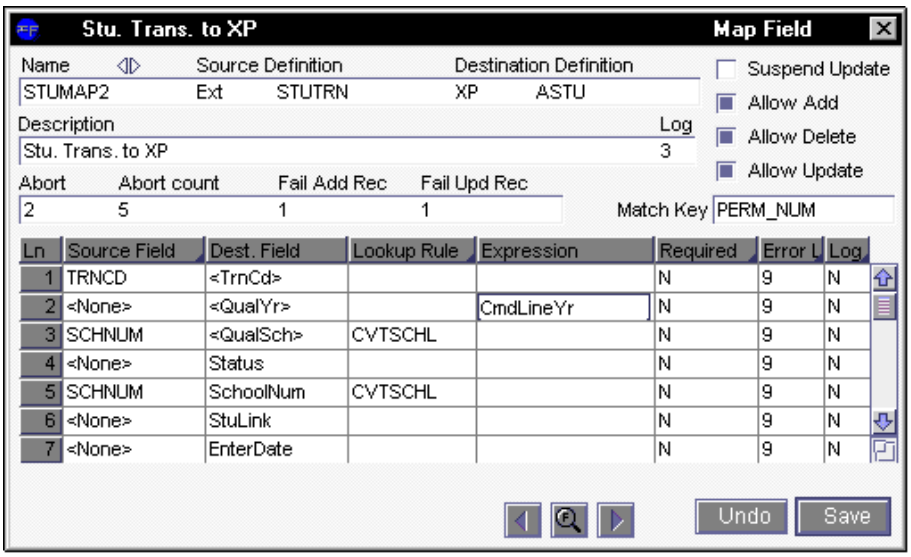
1. Open the Map atom.
2. From the Data menu, select Add Map, or type **Ctrl+A**.
3. Complete the appropriate fields, then click Save.

4. Click Define Map Fields to open the Map Field atom.



5. Because there is no lookup rule on the TRNCD row, place the internal Transaction Codes (1=delete, 2=add, 3=change) into the destination file.

6. Create a second map to apply the transactions to the ASTU file.



7. Check the *Allow Add*, *Allow Update*, and *Allow Delete* checkboxes, because in the Map Group atom you specify the action as *Update or auto create*, which uses these settings.

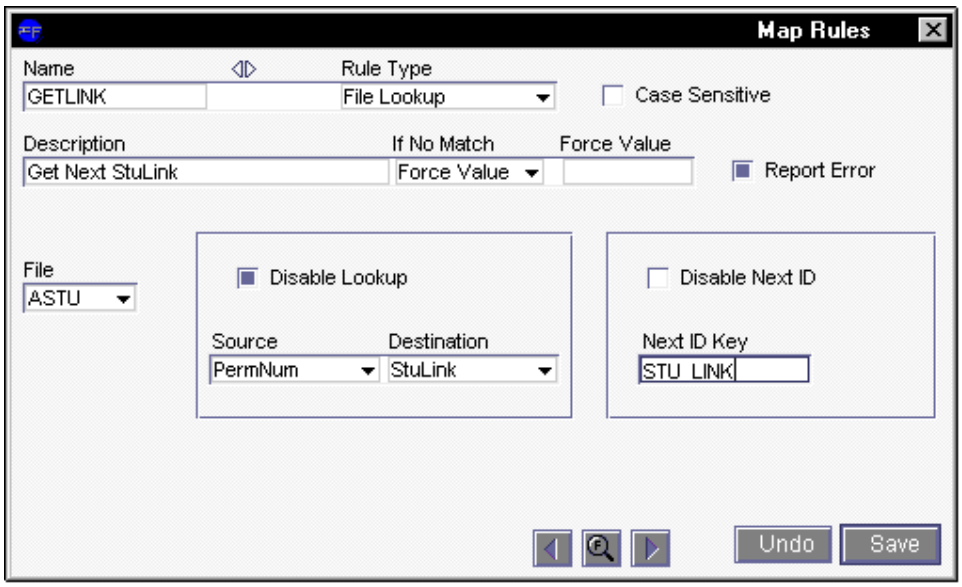
Because the Import/Export process creates the transaction file, the first row does not have any special lookup rule to translate the transaction code in the source file.

Locate the School Year on the command line of the Import/Export executable, while the source file. Translate the source file by the same rule created for the ACRS file which supplies the school number.

The *Match Key* specifies that the ASTU file is accessed on the PermNum unique key using the STUNUM field from the mainframe.

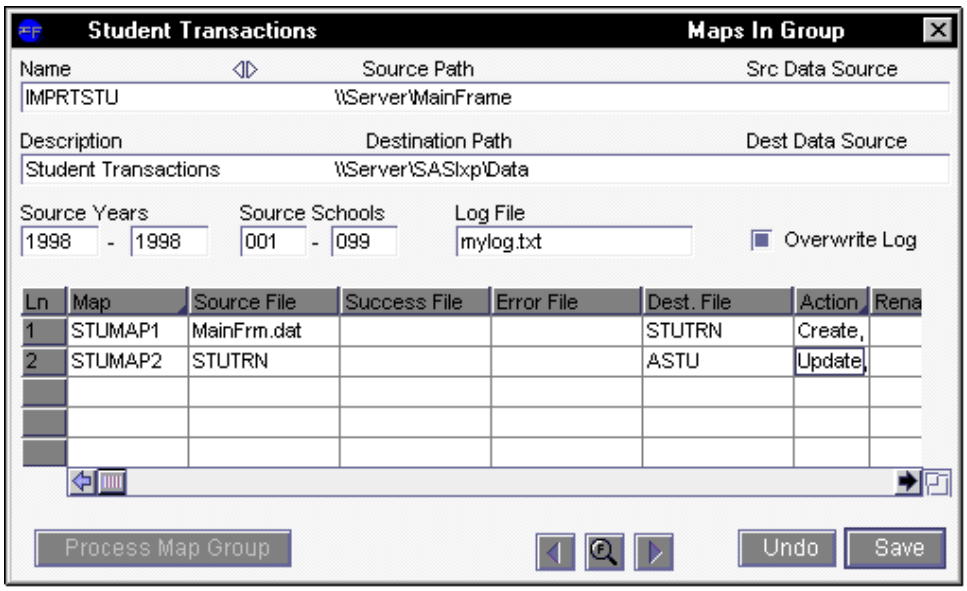
For new ASTU records, use the lookup rule GetLink to get the next student link from the ASCF file.

8. Create the GetLink rule using the Map Rules atom.



Use this rule to get the next student link, so select the *Disable Lookup* option.

9. All information combines in the Maps In Group atom.



Complete all fields as shown in this sample screen to define a process involving two maps.

The first map, STUMAP1, performs the following processes:

1. Deletes the STUPRV file, if it exists.
2. Renames the STUCUR file to STUPRV and creates a new empty STUCUR file.
3. Reads the STUDNT records from “MainFrm.dat” and put them into STUCUR.
4. Compares STUCUR to STUPRV, using the defined Primary Key (SCHNUM and STUNUM), creating the transaction file STUTRN.

The second map, STUMAP2, then applies the STUTRN file to the ASTU files.

Call the Import/Export executable (passing the year as a parameter) by typing the following command either from a DOS shell, or using the Run… option of the Start menu on the Windows desktop:

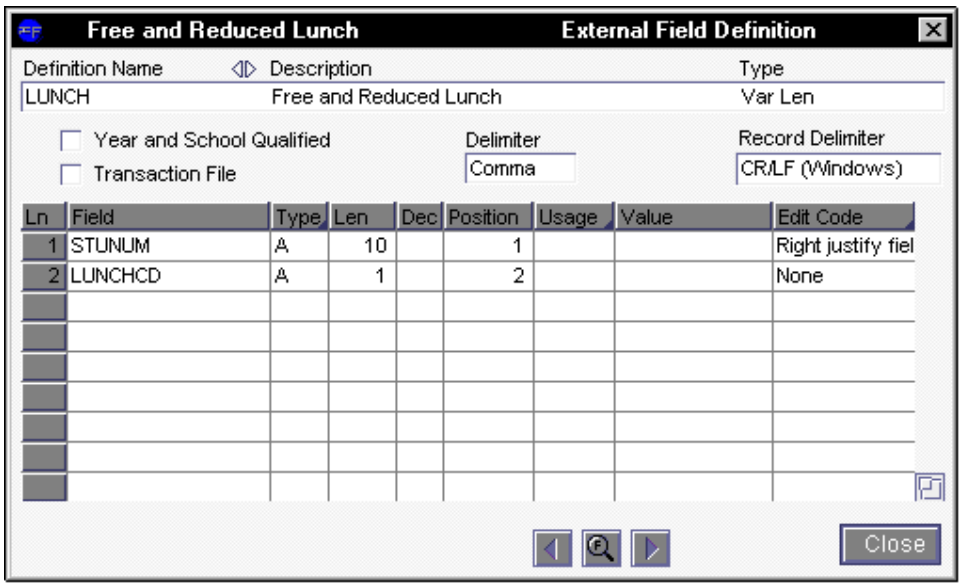
```
C:> IMPEXP.EXE “SASIXPUSER=theuser
SASIXPPWD=thepassword group=mapgroupname year=1998”
```

Enclose the parameter string in quotation marks. The parameter string is case sensitive.

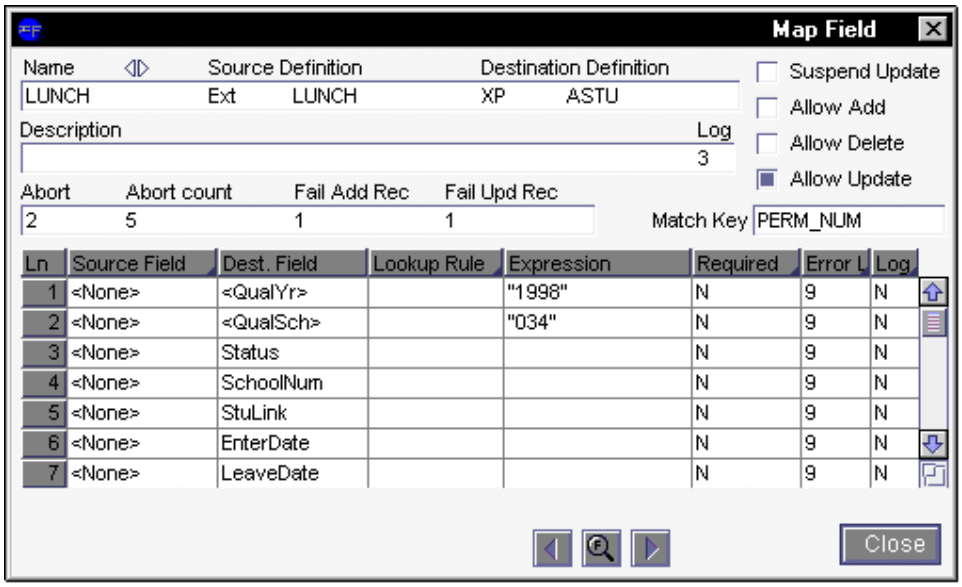
Importing Free and Reduced Lunch Codes

You receive a variable length ASCII file from a district mainframe computer running a food service program. Use it to update the free and reduced lunch codes in the ASTU file.

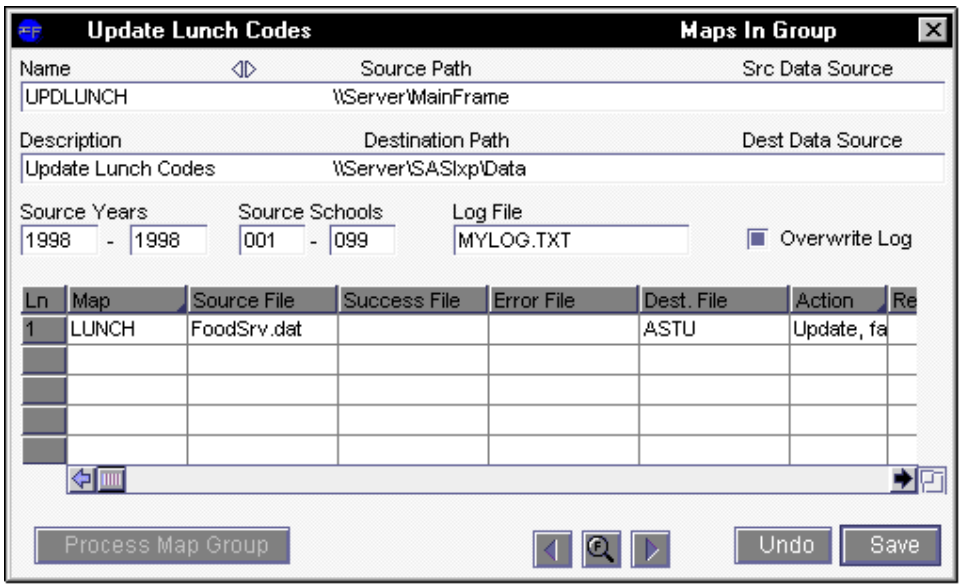
For this scenario, define the layout of the variable length ASCII from the Food Service product using the External File Definition and External Field Definition atoms.Complete all fields to match the this sample screen.



Next, map this file to the ASTU File using the Map and Map Field atoms. Complete all fields to match this sample screen.



Finally, use the Map Group and Maps in Group atoms to provide the remaining information to the SASIxp software. Complete the fields in the Update Lunch Codes screen as shown.



The SASIxp software now has all the information to import the information from the mainframe source file. Begin the process by clicking, Process Map Group.

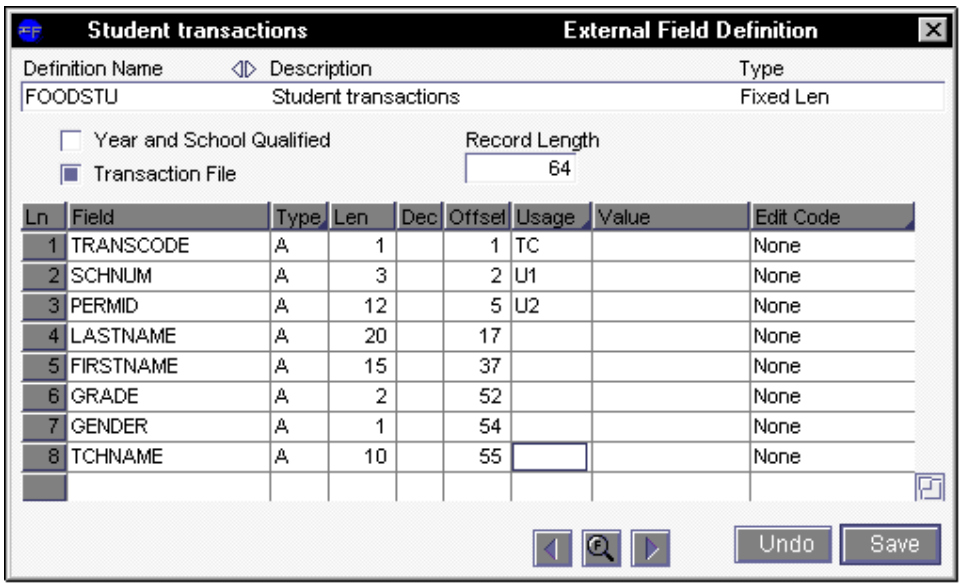
Exporting Student Transactions

The district office requires you to export student transactions from your school computer for use with the same mainframe food service package that provided your school with new free and reduced lunch codes. The district office creates one transaction file, containing all of the student transactions. Create the fixed length ASCII file in the following format:

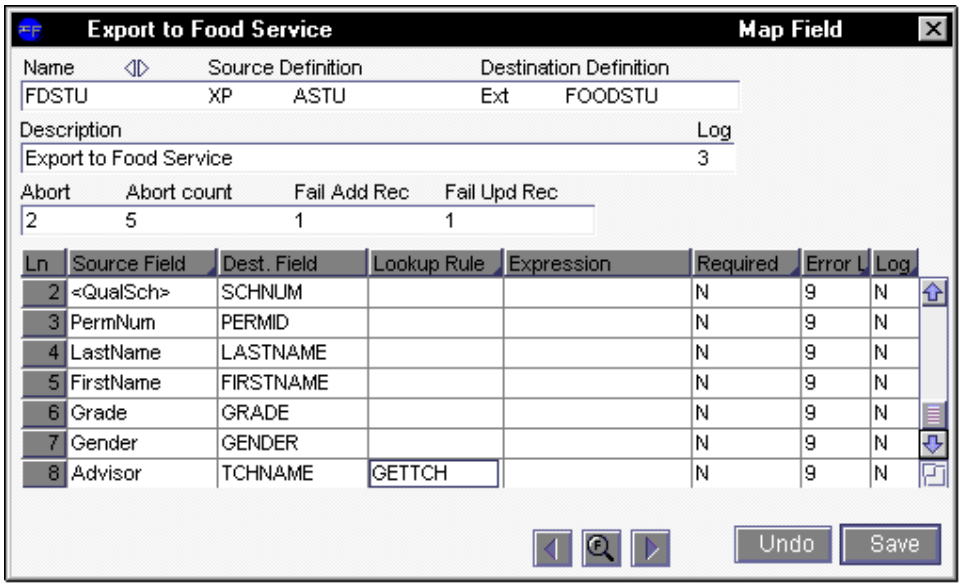
	OFFSET	LENGTH	TYPE
TRANS-CODE	1	1	A
SCHOOL-NUMBER	2	3	A
STUDENT-NUMBER	5	12	A
LAST-NAME	17	20	A
FIRST-NAME	37	15	A
GRADE	52	2	A
GENDER	54	1	A
TEACHER-NAME	55	10	A

The record length is 64 bytes.

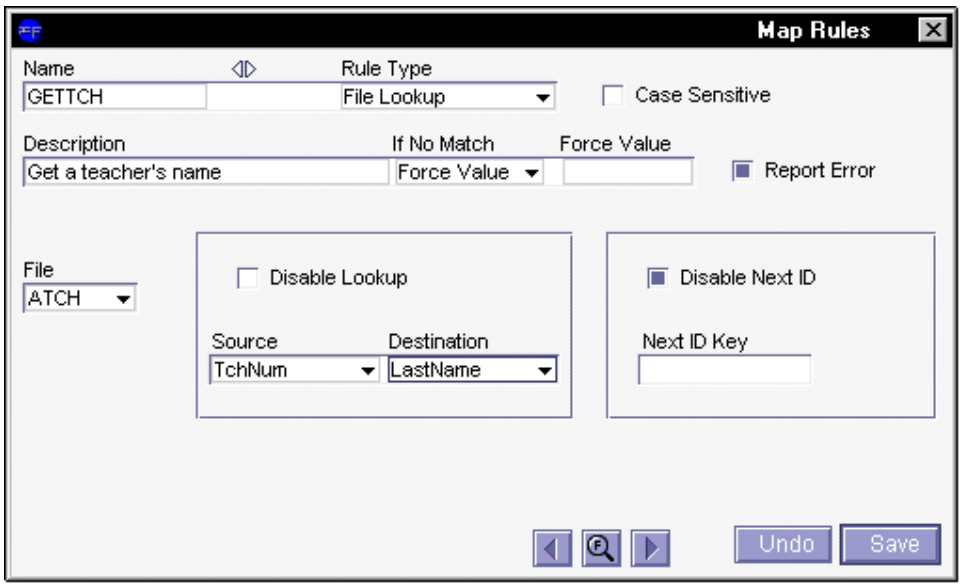
For this scenario, define the transaction file using the External File and External Field Definition atoms. Complete all the fields to match this sample screen.



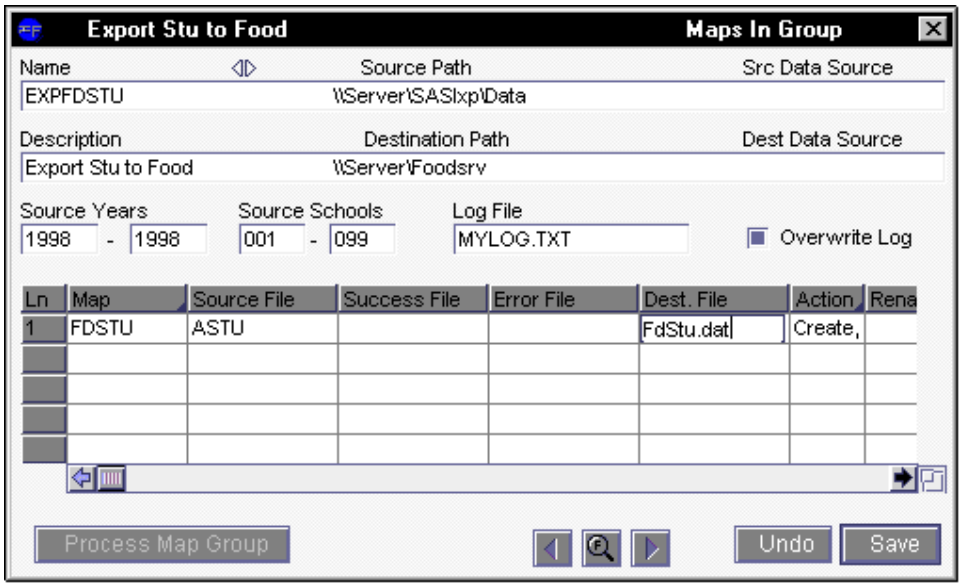
Next, create a Map using the Map and Map Fields atoms. Complete all fields to match this sample screen.



The map uses a new rule called GETTCH. Use the Map Rules atom to define the new rule. Complete all fields to match this sample screen.



Finally, use the Map Group and Maps in Group atoms to define the map group. Complete all fields to match this sample screen.



The Source Schools range causes the Import/Export process to loop through all of the ASTU files at the district office, and write all of the records to the FdStuCur file. Compare the FdStuCur file to the FdStuPrv from the last time this export was run, producing the transaction file FdStu.dat.

The SASIxp software now has all the information to export all the student record transactions to the district mainframe computer. Perform the export process by clicking Process Map Group.

File Definitions

This appendix describes the files in SASIxp generic import/export process. Store all external file definitions, maps, rules, and map groups you create in these files.

> Preserves external file definitions, maps, rules, and map groups you create when upgrading to a new version of the SASIxp software. This ensures no data will be lost in the conversion process. However, if your school orders custom external file definitions, maps, rules, and map groups from NCS Pearson Inc., your data files will be overwritten when installing the new files.

File	Definition
External File Definition (AIXE)	This is a master file. It has a description and a type.
External File Def Fields (AIXF)	This file describes every field in the External File Definition. One of the field properties in the External File Definition is the Usage. Usage can be the following: • **Rec ID –** Use this field to identify the record format of this External file. External Files with different Rec IDs can exist within the same physical file. • **Unique** – This field is part of the Unique Key for this file. This key is needed for Diff files to correctly generate the Add, Change, or Delete transaction code. • **Trans CD** – This is the transaction code field for Diff files.
Map File (AIXG)	This file specifies the two files to map. Define the files being mapped in either FILES.DBF or the External File Definition (AIXE).
Map Fields (AIXH)	This file maps a field from one file to the other file. It can also map a literal value to a field in the destination file. Map Fields can reference the Map Rules file. The Map Rules file specifies value translations. Special rules are used to translate StuLink into PermID or assign new StuLinks from the ASCF file.

File	Definition
Map Group (AIXM)	This file contains control and run-time information about the run group. A group contains one or more maps. Import/Export processes always run Map Groups; they do not run Map Files directly. Map Groups enable one file to be converted into multiple files (such as ASTU and APRN). The Map Group can optionally specify the qualification criteria (school number or school year). Qualification criteria that are not specified in this file (or in the source file itself) must be specified at run time by the user.
Maps in Group (AIXN)	Each record references a map to run. It also specifies the names and paths of the two physical files associated with the two File Definitions in the Map. The order of these records in a Map Group specifies the run order. For instance, the first map in a group might create a Difference file from a Mainframe file. Then, the second map in the group might apply that Difference file to a SASIxp file.
Map Rules (AIXR)	This file lists all of the regular rules that are used to transform values. For example, an Ethnic Code rule might transform 1, 2, 3 into A, B, C. This file does not contain special rules. Special rules are imbedded in the code and are used to do difficult transformations, such as StuLink to PermID.
Map Rule Values (AIXS)	This file contains a record for each value to transform.

B

Import/Export Error Codes

This appendix contains a list of Import/Export specific errors in the Map Group log file. Most errors will be general database errors with numbers in the range of –1000 to –2999.

Import/Export specific errors, which are fairly uncommon, are in the range of –29000 to –29200.

Import/Export either reports error codes from existing SASIxp managers, such as the Database manager or it reports one of these errors:

Error Name	*Number*
Invalid Argument	-29001
Can't Open Database	-29002
Can't Close Database	-29003
Database Access Error	-29004
Memory	-29005
Progress Callback Error	-29006
Can't Parse Expression	-29007

Error Name	Number
Can’t Load Rule	-29008
Can’t Terminate Rule Manager	-29009
Can’t Terminate Expression Manager	-29010
Can’t Set District Year	-29011
Can’t Set Command Line Year	-29012
Unknown	-29013
Internal Rule Manager Error	-29014
Not Initialized	-29015
Field Translation Not Specified	-29016
Database Exists	-29017
Can’t Delete Database	-29018
Illegal Field Name	-29019
Illegal Field Number	-29020
Unknown Field Type	-29021
Can’t Write Destination Field	-29022
Can’t Add Record	-29023
Internal Error	-29024
Rule Lookup Failed	-29025
Invalid Transaction Code	-29026
Can’t Delete Record	-29027
Invalid Key	-29028
Can’t Update Record	-29029
Can’t Process Record	-29030
Can’t Rename Database	-29031

Error Name	Number
Bad Parameters	-29032
Out of Memory	-29033
File Not Found	-29034
No Fields	-29035
Previous File Not Found	-29036
Current File Not Found	-29037
Too Many Transaction Code Fields	-29038
Bad Append Or Create Command	-29039
Transaction Code Is Missing	-29040
Illegal Edit Code	-29041
Commit Failed	-29042
Can't Set Data Path	-29043
Can't Rename File	-29044
Source Files Not Found	-29045
Can't Connect to Remote Source	-29046
Can't Close Remote Source	-29047
Can't Set Remote Data Source	-29048
Can't Load Map Group	-29049
Couldn't Process Map Group	-29050
Illegal Field Value	-29051
Need Command Line School Year	-29052
Can't Create Text Log File	-29053
Can't Open Text Log File	-29054
Can't Close Text Log File	-29055

Error Name	Number
Can’t Close Error File	-29056
Can’t Write to Text Log File	-29057
Can’t Write to Error File	-29058
Required Field Blank Or Zero	-29059
Abort Map	-29060
Can’t Initialize	-29061
Can’t Terminate	-29062
Field Level Not Zero	-29063
Old File Blank	-29064
Memo Field Type Not Supported	-29065
Binary Field Type Not Supported	-29066
Illegal Field Type Not Supported	-29067
Array Field Mismatch	-29068
Unable to Map Data Field	-29069
Progress Bar Error	-29070
User Aborted Process	-29071
Can’t Write to Success File	-29072
School And Year Not In Filter List	-29073
File Does Not Exist	-29074
Invalid Argument	-29100
Memory	-29101
Can’t Parse Expression	-29102
Can’t Initialize	-29103
Not Initialized	-29104

Error Name	Number
Can't Terminate	-29105
Command Line Year Not Set	-29106
Current District Year Not Set	-29107
Memory	-29200
Invalid Argument	-29201
Unknown Rule Type	-29202
Unexpected Rule Type	-29203
Not Initialized	-29204
Can't Open Database	-29205
Database Access Error	-29206
Can't Close Database	-29207
Internal Error	-29208
Key Lookup Failed	-29209
Illegal Field Name	-29210
Illegal Field Number	-29211
Illegal File Lookup Rule Values	-29212
Next ID Lookup Failed	-29213
Lookup Failed	-29214
Illegal Rule Values	-29215
Lookup Rule File Does Not Exist	-29216