

## APPENDIX

## 4

## Migrating from QMF to SAS/ ASSIST Software

<i>Introduction</i>	255
<i>Generating a QMF Export Procedure</i>	255
<i>Exporting Queries from QMF</i>	257
<i>Importing QMF Queries into Query and Reporting</i>	257
<i>Alternate Method to Import Queries</i>	258

### Introduction

This appendix describes how to migrate IBM QMF queries to Query and Reporting. With the query migration tool, you can export your QMF queries and move them to Query and Reporting through a three-step process. You then can use the SQL queries in Query and Reporting just as you would use your other queries. Individual users or a system administrator can perform this migration process, depending on each site's setup. The migration process consists of three stages:

- 1 Generate an export procedure in SAS that can be run in QMF.
- 2 Run the export procedure in QMF.
- 3 Import the queries into SAS/ASSIST Query and Reporting.

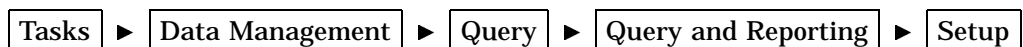
Each of these steps can be executed independently.

### Generating a QMF Export Procedure

To generate a QMF export procedure, you need READ access to the DB2 table Q.OBJECT\_DIRECTORY (or a view of it).\* QMF stores information about stored objects in Q.OBJECT\_DIRECTORY. Because system or database administrators have access to this file, they usually complete this stage. Users can complete the other steps themselves.

To generate an export procedure, follow these steps.

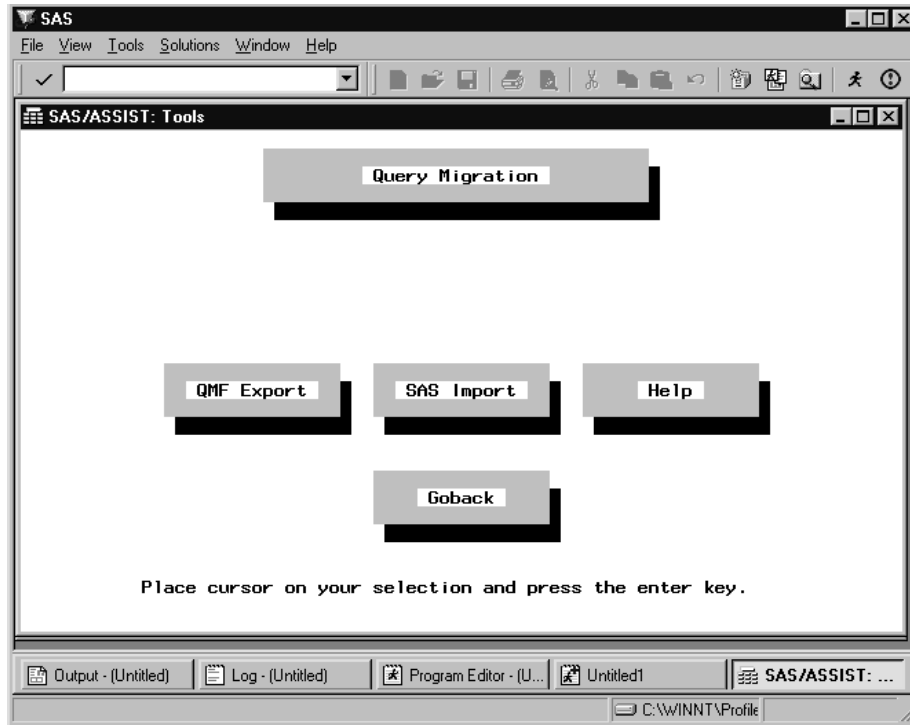
- 1 Follow this selection path:



From the Query and Reporting: Setup window, select **Query Migration**. The following display shows the Query Migration main menu.

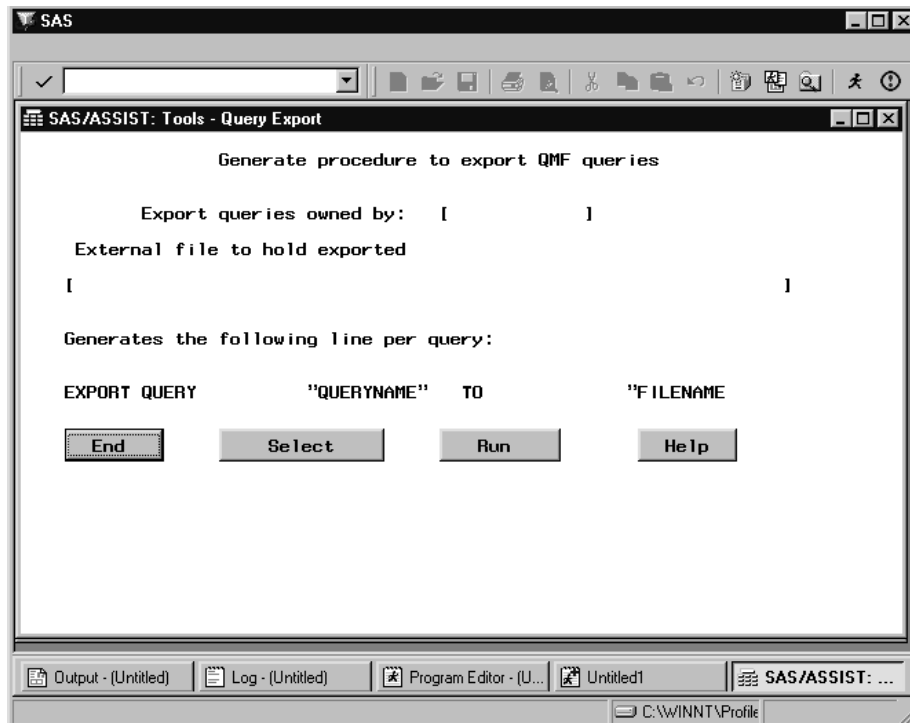
\* If you create a DB2 SQL view of the Q.OBJECT\_DIRECTORY table to export the QMF queries, make a source entry in the SASUSER.PROFILE catalog named QMFTABLE.SOURCE. On the first line of QMFTABLE.SOURCE, type the name of the new DB2 view that you created (such as SASQR.QMFOBJECT).

Display A4.1 Query Migration Window



- 2 Select **QMF Export** to generate an export procedure. The following display shows the Query Export window.

Display A4.2 Query Export Window



- 3 Queries are exported from one owner at a time. In the **Export queries owned by** field, type the user ID of the owner from whom you are exporting queries. Type **?** and press ENTER to list the available user IDs.
- 4 The Select Queries window opens with a list of all of the queries owned by the specified user ID. You can select all or some of the queries to export. Select **END** to return to the Query Export window.
- 5 In the **External file to hold exported queries** field, type the name of the external file that you want to hold your QMF export procedure and the exported queries.

The external file does not need to be previously allocated. If the external file does not exist, you are prompted to allocate it. This is the recommended method to allocate the external file because it ensures that the external file has the correct format.

If the external file exists and has the correct format but is not empty, you are prompted to choose whether to delete all of the external file's members or to specify another external file name.

- 6 Select **Run** to write the export procedure to the specified external file. A message appears that indicates the procedure has been successfully written. The message also indicates the procedure name, which is stored in the external file that you just specified.

Query and Reporting actually writes two members to this external file. One member is the export procedure. The other member is used internally by Query and Reporting.

- 7 When the two members have been written, exit your SAS session (if necessary) and invoke QMF to export the queries.

---

## Exporting Queries from QMF

To export queries from QMF, follow these steps.

- 1 Invoke QMF.
- 2 Import the export procedure that you created by issuing this command from the PROGRAM EDITOR window:

```
IMPORT PROC FROM ' external_file_name(QMF2SAS)'
```

where *external\_file\_name* is the name of the external file that you specified in the Query Export window, as described in the previous section.

- 3 Run the export procedure and exit QMF.
- 4 If necessary, invoke the SAS System and SAS/ASSIST software, and return to the Query and Reporting Setup window and the Query Migration tool.

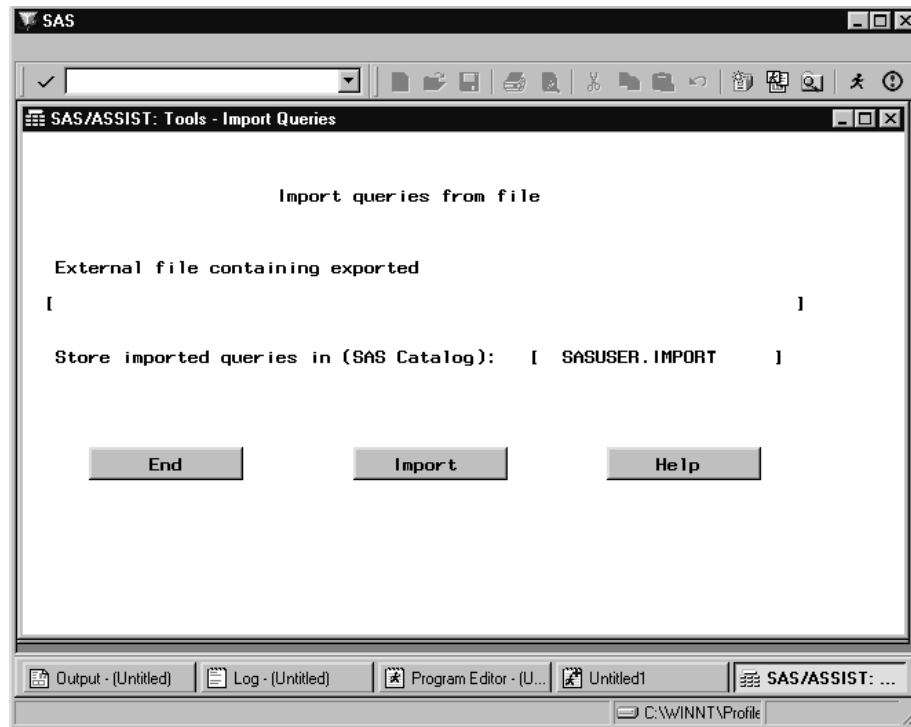
---

## Importing QMF Queries into Query and Reporting

You have now written an export procedure and exported your QMF queries. In this stage, you import the queries for use in Query and Reporting.

- 1 Select **SAS Import** from the Query Migration main menu to open the Import Queries window, as shown in the following display.

Display A4.3 Import Queries Window



- 2 Type the name of the external file that contains the exported queries.
- 3 Query and Reporting has a default catalog (SASUSER.IMPORT) to hold the imported queries. The first time you use this default catalog, it is automatically created. However, you can type the name of your own SAS catalog over the default catalog name.

If the catalog does not exist, it is created. If queries with the same name already exist in the catalog, they are replaced by the imported queries.

- 4 Select **Import** to start importing the QMF queries into the SAS System. An Importing window appears to show the progress of the importing process.

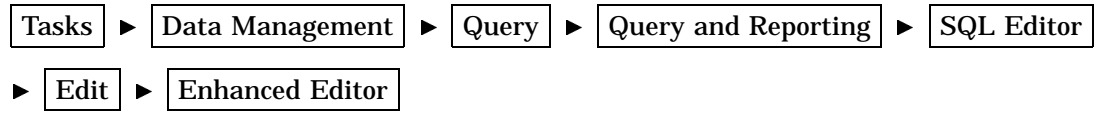
After the importing process has been completed, you can access the SQL queries from either the Result Manager window or from the SQL Editor window (by selecting **Open** from the **File** menu). Notice that the queries are of type **SQL**, which indicates that they are SQL queries.

You can use any of the Result Manager window commands to select, edit, browse, or print the queries. You can then edit the DB2 SQL queries, save them, or create reports from them, just like any other query in Query and Reporting.

---

## Alternate Method to Import Queries

If you want to import just a few queries, you can use the Enhanced Editor in the SQL Editor window instead of the Import Queries window. To open the Enhanced Editor, follow this selection path:



When you select **Include** from the **File** menu, the Include window opens and prompts you for the name of an external file. Type the name of the external file and query that you want to import. Enclose the external file in quotes if necessary.

Select **OK** to include the query in the Enhanced Editor. The query is “imported.”



# Glossary

---

**active table**

in SAS/ASSIST software, the SAS tables specified for the given task.

**analysis column**

a numeric column used to calculate statistics. Usually an analysis column contains quantitative or continuous values, but this is not required.

**arithmetic operators**

in SAS software, the symbols (+, -, /, \*, and \*\*) used to perform addition, subtraction, division, multiplication, and exponentiation in SAS expressions.

**base SAS software**

software that includes a programming language that manages your data, procedures for data analysis and reporting, procedures for managing SAS files, a macro facility, help menus, and a windowing environment for text editing and file management.

**batch mode**

a method of executing SAS programs in which you prepare a file containing SAS statements and any necessary operating system commands and submit the program to the computer's batch queue. While the program executes, control returns to your terminal. Batch mode is sometimes referred to as running in background. The job output can be written to files or printed on an output device.

**button**

in windowing environments, a graphical shape in a window that, when selected, results in an action. **Cancel**, **Go back**, and **OK** are examples of buttons. **Cancel** and **OK** are examples of buttons.

**BY column**

a column named in a BY statement whose values define groups of rows to process.

**character column**

a column whose values can contain alphabetic and special characters as well as numeric characters.

**chart column**

a column in the input table whose values are represented by bars, blocks, pie slices, and star spines, or whose values determine the number of bars, blocks, pie slices, and star spines.

**class column**

in some SAS procedures, a column used to group, or classify, data. Class columns can be character or numeric. Class columns can have continuous values, but they typically have a few discrete values that define the classifications of the column.

**classification column**

See class column.

**column**

in relational databases, a vertical component of a table containing data of a specific type and with certain attributes. A column is a set of data values that describe a given characteristic across all rows. Each column has a unique name. A column is also known as a *variable* in SAS terminology.

**crosstabulation table**

a frequency table that displays the frequency distribution for two or more columns. These tables are often referred to as two-way, three-way, or *n*-way tables. See also frequency table.

**cumulative frequency**

the total number of rows in all ranges up to and including a given range.

**cumulative percent**

the percentage of rows in all ranges up to and including a given range.

**data set**

see table.

**DATA step**

a group of statements in a SAS program that begins with a DATA statement and ends with either a RUN statement, another DATA statement, a PROC statement, the end of the job, or the semicolon that immediately follows instream data lines. The DATA step enables you to read raw data or other SAS tables and use programming logic to create a SAS table, write a report, or write to an external file.

**data value**

in the SAS data model, an element in a collection of data values that are organized and presented to the SAS System in a rectangular structure of columns and rows. A data value represents the intersection of a row and a column.

**dependent column**

a column whose value is determined by the value of another column or set of columns.

**dialog box**

a type of window that opens to prompt you for additional information, provide additional information, or ask you to confirm a request.

**engine**

a part of the SAS System that reads from or writes to a file. Each engine allows the SAS System to access files with a particular format. There are several types of engines.

**external file**

a file maintained by the host operating environment that the SAS System can read data from and route output to. External files can contain raw data, SAS programming statements, procedure output, or output created by the PUT statement. See also fileref.

**fileref**

a name temporarily assigned to an external file or to an aggregate storage location that identifies it to the SAS System. You assign a fileref with SAS/ASSIST software, a FILENAME statement, or an operating environment command.



Do not confuse filerefs with librefs. Filerefs are used for external files; librefs are used for SAS data libraries. See also libref.

**format**

an instruction the SAS System uses to display or write each value of a column. Some formats are supplied by SAS software. Other formats can be written by the user with SAS/ASSIST software, the FORMAT procedure in base SAS software, or with SAS/TOOLKIT software.

**frequency chart**

a graphic illustration of the number of times a value or range of values for a given column occurs.

**frequency count**

the number of times a value or range of values for a given column occurs.

**frequency table**

a table that lists the values of a column and the number of rows with each value. See also crosstabulation table and frequency count.

**function key**

a keyboard key that can be defined to have a specific action in a specific software environment.

**group column**

(1) a column in the input table used to categorize chart column values into groups.  
(2) in the SAS/ASSIST software Design Report facility, a column that orders the detail rows in a report according to their formatted values and consolidates multiple rows that have a unique combination of values for all group columns into one row.

**independent column**

a column that does not depend on the value of another column; in a two-dimensional plot, the independent column is usually plotted on the  $x$  (horizontal) axis.

**index**

in SAS software, a component of a SAS table that enables the SAS System to access rows in the SAS table quickly and efficiently. The purpose of SAS indexes is to optimize WHERE-clause processing and facilitate BY-group processing.

**informat**

an instruction the SAS System uses to read raw data values to create column values. Some informats are supplied by SAS software. Other informats can be written by the user with SAS/ASSIST software, the FORMAT procedure in base SAS software, or SAS/TOOLKIT software.

**interactive line mode**

a method of running SAS programs in which you enter one line of a SAS program at a time at the SAS session prompt. The SAS System processes each line immediately after you press the ENTER or RETURN key. Procedure output and informative messages are returned directly to the display monitor.

**label, column**

a descriptive label of up to 40 characters that can be printed in the output by certain procedures instead of, or in addition to, the column name.

**length, column**

the number of bytes used to store each of a column's values in a SAS table.

**libref**

the name temporarily associated with a SAS data library.

**local host**

a computer on which you use a SAS session to initiate a link with a remote host. See also local session.

**local session**

a SAS session running on the local host. The local session accepts SAS statements and passes those that are remote-submitted to the remote host for processing. The local session manages the output and messages from both the local session and the remote session.

**logical operator**

an operator used in expressions to link sequences of comparisons. The logical operators are AND, OR, and NOT.

**menu bar**

the primary list of items in a window that represents the actions or classes of actions that can be executed. Selecting an item executes an action, opens a pull-down menu, or opens a dialog box requesting additional information.

**methods of running the SAS System**

standard methods of operation used to run SAS System programs. These methods are SAS/ASSIST software, display manager, interactive line mode, noninteractive mode, and batch mode.

**midpoint**

a value that represents one data value or the middle of a range of data values. When a midpoint represents a range of values, the algorithm used to calculate it depends on the procedure.

**missing value**

a value in the SAS System indicating that no data are stored for the column in the current row. By default, the SAS System prints a missing numeric value as a single period (.) and a missing character value as a blank space.

**numeric column**

a column that can contain only numeric values. By default, the SAS System stores all numeric columns in floating-point representation.

**observation**

See row.

**permanent SAS table**

a table that remains after the current program or interactive SAS session terminates. Permanent SAS tables are available for future SAS sessions.

**PROC SQL view**

a SAS table (of type VIEW) created by the SQL procedure. A PROC SQL view contains no data; instead, it stores the information required to read data values from its underlying files, which can include SAS data files, SAS/ACCESS views, DATA step views, or other PROC SQL views. When executed, a PROC SQL view's output can be a subset or superset of one or more underlying files. See also view.

**pull-down menu**

the list of choices that appears when you choose an item from a menu bar or from another menu.

**query-expression (query)**

a table-expression or multiple table-expressions that can be linked with set operators. The primary purpose of a query-expression is to retrieve data from tables, PROC SQL views, or SAS/ACCESS views. In the SQL procedure, the SELECT statement is contained in a query-expression.

**raw data**

data that has not been read into a SAS table.

**remote host**

in SAS/CONNECT software, the computer on which processing occurs when you execute a PROC DOWNLOAD, PROC UPLOAD, or other SAS statement that is executed with the RSUBMIT command or statement. The term remote describes how you interact with the SAS session running on the computer; it is not related to the physical location of the computer. See also local host and remote session.

**remote session**

a SAS session running in a special mode on the remote host. No output or log message are displayed on the remote host; instead, the results of a remote SAS session are transmitted back to the log and output files on the local host.

**row**

in relational database management systems, the horizontal component of a table. A row is a collection of data values associated with a single entity, such as a customer or state. Each row contains one data value for each column. It is also known as an *observation* in SAS terminology.

**SAS catalog**

a SAS file that stores many different kinds of information in smaller units called catalog entries. A single SAS catalog can contain several different types of catalog entries.

**SAS catalog entry**

a unit of information in a SAS catalog that stores data as records whose attributes vary according to the entry type. Catalog entries differ widely in content and purpose.

**SAS data file**

in the SAS data model, a SAS table that is implemented in a form that contains both the data values and the descriptor information. SAS data files have the type DATA.

**SAS data library**

a collection of one or more SAS files that are recognized by the SAS System and that are referenced and stored as a unit. Each file is a member of the library.

**SAS data view**

A SAS table in which the descriptor information and the rows are obtained from other files. A SAS data view contains only the descriptor and other information required to retrieve the data values from other SAS files. Both PROC SQL views and SAS/ACCESS views are considered SAS data views. SAS data views are of member type VIEW.

**SAS log**

a file that contains the SAS statements you have submitted, messages about the execution of your program, and in some cases, output from the DATA step and from certain procedures.

**SAS name**

a name whose construction follows certain rules and that can appear in a SAS statement (for example, names of columns and SAS tables). SAS names can be up to eight characters long. The first character must be a letter or an underscore. Subsequent characters can be letters, numbers, or underscores. Blanks and special characters (except the underscore) are not allowed.

**SAS procedure**

a program accessed with a PROC statement that produces reports, manages files, or analyzes data. Many procedures are included with the SAS System. In addition,

users can write their own procedures using SAS/TOOLKIT software; these are called user-written procedures.

**SAS program**

a group of SAS statements that guide the SAS System through a process or series of processes.

**SAS statement**

a string of SAS keywords, SAS names, and special characters and operators ending in a semicolon that instructs the SAS System to perform an operation or gives information to the SAS System.

**SAS table**

descriptor information and its related data values organized as a table of rows and columns that can be processed by the SAS System. A SAS table can be either a SAS data file or a SAS data view.

**SAS windowing environment**

an interactive interface to SAS System software. Windowing environment commands can be issued by typing them on the command line, pressing function keys, or selecting items from the menu bar. Within one session, many different tasks can be accomplished, including preparing and submitting programs, viewing and printing results, and debugging and resubmitting programs.

**SASUSER library**

a default permanent SAS data library that is created at the beginning of your first SAS session. It contains a PROFILE catalog that stores the tailoring features you specify for the SAS System. You can also store other SAS files in this library.

**selection field**

the portion of a window (shown on the display as an underscore) where you can enter a short command to perform an action, such as B for browse.

**selection-field command**

a command that enables you to perform actions from a selection field in a window. For example, entering D in the selection field beside the name of a SAS table in the DIRECTORY window enables you to delete that SAS table.

**Structured Query Language (SQL)**

the standardized, high-level query language used in relational database management systems to create and manipulate database management system objects. The SAS System implements SQL through the SQL procedure.

**table**

(1) in relational database management terminology, a two-dimensional system representing data in rows and columns. See also SAS table. (2) In the SQL procedure, a SAS data file. See also SAS data file.

**table alias**

a temporary, alternate name for a table that is specified in the FROM clause. Table aliases are optionally used to qualify column names when tables are joined. See also table.

**temporary SAS table**

a table that exists only for the duration of the current program or interactive SAS session. Temporary SAS tables are not available for future SAS sessions.

**variable**

See column.

**view**

a definition of a virtual table. The definition is named and stored for later use. This file contains no data but describes or defines data stored elsewhere. See also DATA step view, PROC SQL view, SAS data view, and view descriptor.

**view descriptor**

a file created by SAS/ACCESS software that defines a subset of database management system (DBMS) data described by an access descriptor. The access descriptor describes the data in a single DBMS table.

**WHERE processing**

a method of conditionally selecting rows for processing in a DATA or PROC step. WHERE processing involves using a WHERE expression in a WHERE statement, a WHERE= table option, a WHERE clause, or a WHERE command.



The correct bibliographic citation for this manual is as follows: SAS Institute Inc., *Doing More With SAS/ASSIST Software, Version 8*, Cary, NC: SAS Institute Inc., 1999. pp. 282.

**Doing More With SAS/ASSIST Software, Version 8**

Copyright © 1999 by SAS Institute Inc., Cary, NC, USA.

ISBN 1-58025-520-5

All rights reserved. Printed in the United States of America. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, or otherwise, without the prior written permission of the publisher, SAS Institute Inc.

**U.S. Government Restricted Rights Notice.** Use, duplication, or disclosure of the software by the government is subject to restrictions as set forth in FAR 52.227-19 Commercial Computer Software-Restricted Rights (June 1987).

SAS Institute Inc., SAS Campus Drive, Cary, North Carolina 27513.

1st printing, October 1999

SAS® and all other SAS Institute Inc. product or service names are registered trademarks or trademarks of SAS Institute Inc. in the USA and other countries.® indicates USA registration.

Other brand and product names are registered trademarks or trademarks of their respective companies.

The Institute is a private company devoted to the support and further development of its software and related services.