

Introduction to the SAS/ACCESS Interface

<i>Introduction</i>	3
<i>Purpose of SAS/ACCESS Software</i>	3
<i>Overview of Using the Interface</i>	3
<i>SAS/ACCESS Descriptor Files</i>	4
<i>Access Descriptor Files</i>	5
<i>View Descriptor Files</i>	5
<i>Example Data in This Book</i>	6

Introduction

This chapter introduces you to SAS/ACCESS software and some of its terminology and briefly describes how to use the interface. This chapter also gives an introduction to the sample SYSTEM 2000 database, view descriptors, and SAS data files used in this book.

Purpose of SAS/ACCESS Software

SAS/ACCESS software provides an interface between the SAS System and the SYSTEM 2000 data management software. You can perform the following tasks with the SAS/ACCESS interface:

- create SAS/ACCESS descriptor files using the ACCESS procedure
 - directly access data in SYSTEM 2000 databases from within a SAS program using the descriptor files created with the ACCESS procedure
 - extract SYSTEM 2000 data and place them in a SAS data file using the ACCESS procedure or the DATA step
 - load data into a SYSTEM 2000 database using the DBLOAD procedure
 - update data in SYSTEM 2000 databases using the SQL procedure, SAS/FSP software, or the APPEND procedure
 - directly access data in SYSTEM 2000 databases with SYSTEM 2000 statements using the QUEST procedure.
-

Overview of Using the Interface

The SAS/ACCESS interface consists of four parts:

- the ACCESS procedure, which you use to define the SAS/ACCESS descriptor files
- the interface view engine, which enables you to use SYSTEM 2000 data in SAS programs in much the same way that you use SAS data files
- the DBLOAD procedure, which enables you to create and load SYSTEM 2000 databases using data from SAS data sets
- the QUEST procedure, which enables you to access SYSTEM 2000 software and issue SYSTEM 2000 statements from the SAS System.

The ACCESS procedure enables you to describe SYSTEM 2000 data to the SAS System. You store the description in SAS/ACCESS descriptor files, which you can use in SAS programs just as you would use SAS data files. You can print, plot, and chart the data described by the descriptor files, use them to create other SAS data files, and so on.

Chapter 3, “Defining SAS/ACCESS Descriptor Files,” on page 19 provides instructions for creating the descriptor files. Chapter 4, “Using SYSTEM 2000 Data in SAS Programs,” on page 23 presents several examples of using SYSTEM 2000 data accessed by the descriptor files in SAS programs. Chapter 5, “Browsing and Updating SYSTEM 2000 Data,” on page 43 shows how to use the descriptor files to update SYSTEM 2000 data from within a SAS program as well as how to access SYSTEM 2000 software directly to issue SYSTEM 2000 statements.

Chapter 6, “Creating and Loading SYSTEM 2000 Databases,” on page 63 shows how to use the DBLOAD procedure to create and load SYSTEM 2000 databases using SAS data.

The interface view engine is an integral part of the SAS/ACCESS interface, but you do not have to deal directly with the engine. The SAS System automatically interacts with the interface view engine when you use SYSTEM 2000 data in your SAS programs, so you can simply use SYSTEM 2000 data just as you would use SAS data.

You may need to combine data from several SYSTEM 2000 databases, external databases such as DB2, Version 6 SAS data sets, and Version 7 SAS data sets. Such combinations are not only possible but easy to do. The SAS System can distinguish between SAS data files, SAS/ACCESS descriptor files, and other types of SAS files, and the software will use the appropriate access method. See Chapter 4, “Using SYSTEM 2000 Data in SAS Programs,” on page 23 for an example of combining data from Version 6 and Version 7 data sets.

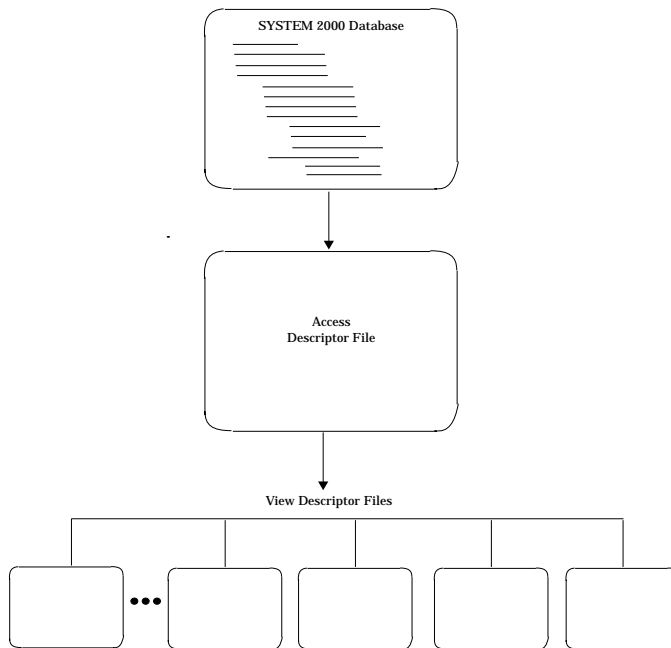
SAS/ACCESS Descriptor Files

SAS/ACCESS descriptor files are the tools SAS/ACCESS software uses to establish a connection between the SAS System and SYSTEM 2000 software. To create these files, you use the ACCESS procedure.

There are two types of descriptor files: *access descriptors* and *view descriptors*.

Figure 1.1 on page 5 illustrates the relationships among a SYSTEM 2000 database, access descriptors, and view descriptors.

Figure 1.1 Relationships Among a SYSTEM 2000 Database, Access Descriptor Files, and View Descriptor Files



The two types of descriptor files are discussed in the following sections. Chapter 3, “Defining SAS/ACCESS Descriptor Files,” on page 19 explains how to create and edit these files.

Note that when you create or load data into a database, the DBLOAD procedure creates these descriptor files for you.

Access Descriptor Files

Access descriptor files have a member type of ACCESS. Each access descriptor holds essential information about one SYSTEM 2000 database that you want to access, for example, the database name, the item names, and item types. It also contains corresponding SAS System information, such as the SAS variable names, formats, and informats. Typically, you have one access descriptor for each SYSTEM 2000 database, or you may have one access descriptor for each of several SYSTEM 2000 passwords.

An access descriptor describes one SYSTEM 2000 database. You cannot create a single access descriptor that references two SYSTEM 2000 databases.

View Descriptor Files

View descriptor files are sometimes called *SAS data views*, because their member type is VIEW. This book uses the term *view descriptor* to distinguish them from views created by the SQL procedure.

Each view descriptor can define all of the data or a particular subset of the data described by one access descriptor (and therefore one SYSTEM 2000 database). For example, you may want to use only three or four possible items and only some of the values stored in the items. The view descriptor allows you to do this by selecting the items you want to use and by specifying selection criteria to select only specific data you want. Your selection criteria might be that the date of transaction is July 3, 1987, and

that customers' names begin with W. You typically have several view descriptors, selecting subsets of data for each access descriptor that you have created.

You can join SYSTEM 2000 databases with the SQL procedure. The SQL procedure can join SAS data files, PROC SQL views, and SAS/ACCESS view descriptors.

Example Data in This Book

This book uses a SYSTEM 2000 database named EMPLOYEE and several SAS data files to show you how to use the SAS/ACCESS interface to SYSTEM 2000 software. The database and the SAS data files MYDATA.CLASSES, V6.BIRTHDY, and MYDATA.CORPHON were created for a company's employee information. The data file TRANS.BANKING (used as an example for the DBLOAD procedure) was created for banking transactions. All of the data are fictitious. The database is used to show how the interface treats SYSTEM 2000 data. It is not meant as an example for you to follow in designing databases for any purpose.

Appendix 3, "Example Data," on page 143 gives more information about the example data used in this manual. Appendix 3 provides the entire EMPLOYEE database definition, the SAS jobs used to create the data files, and the definitions of the view descriptors. In addition, the EMPLOYEE database data that the view descriptors access is provided.

The SAS jobs to create the SAS data files are on your installation media; see your SAS System Consultant to create the SAS data files. The EMPLOYEE database is on the SYSTEM 2000 installation tape; see your Database Administrator to ensure the data is available and restored to its original state.

You will create the access descriptor MYLIB.EMPLOYE and the view descriptors VLIB.EMPPPOS and VLIB.EMPSKIL in Chapter 3, "Defining SAS/ACCESS Descriptor Files," on page 19. You will need to create the other view descriptors in this book on your own using the definitions shown in Appendix 3, "Example Data," on page 143.

The correct bibliographic citation for this manual is as follows: SAS Institute Inc., *SAS/ACCESS® Interface to SYSTEM 2000® Data Management Software: Reference, Version 8*, Cary, NC: SAS Institute Inc., 1999.

**SAS/ACCESS® Interface to SYSTEM 2000® Data Management Software:
Reference, Version 8**

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

ISBN 1-58025-549-3

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, by 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.