

Topic: **Access: Gateway to Other Applications**

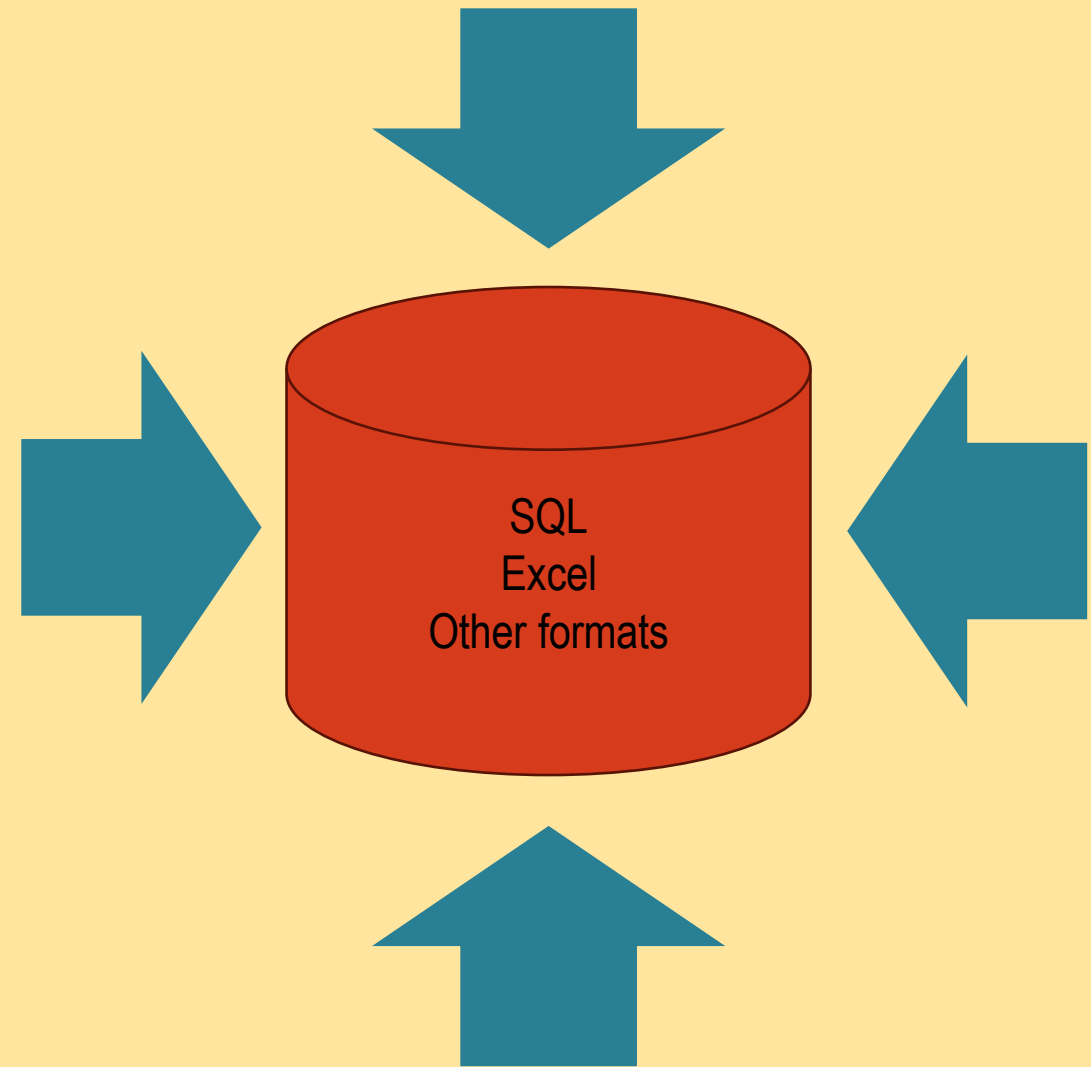
Case Studies in Integration



Welcome to the Case Study!

Today's Lecture

- SAS Access is a component of SAS that has been around since the early 2000s
- It is tool that you can use to connect to other databases, especially MS SQL databases





Open Database Connectivity (ODBC)

- ODBC is an application programming interface (API)
- APIs are used to connect applications together
- The SAS Access component lets you open an “ODBC connection” to other types of databases
- Common examples: MS SQL, Excel

Accessing MICROSOFT EXCEL and MICROSOFT ACCESS Through the Use of a Simple Libname Statement

By Kee Lee

<https://buff.ly/3RLehR7>

Using Proc SQL and ODBC to Manage Data Outside of SAS

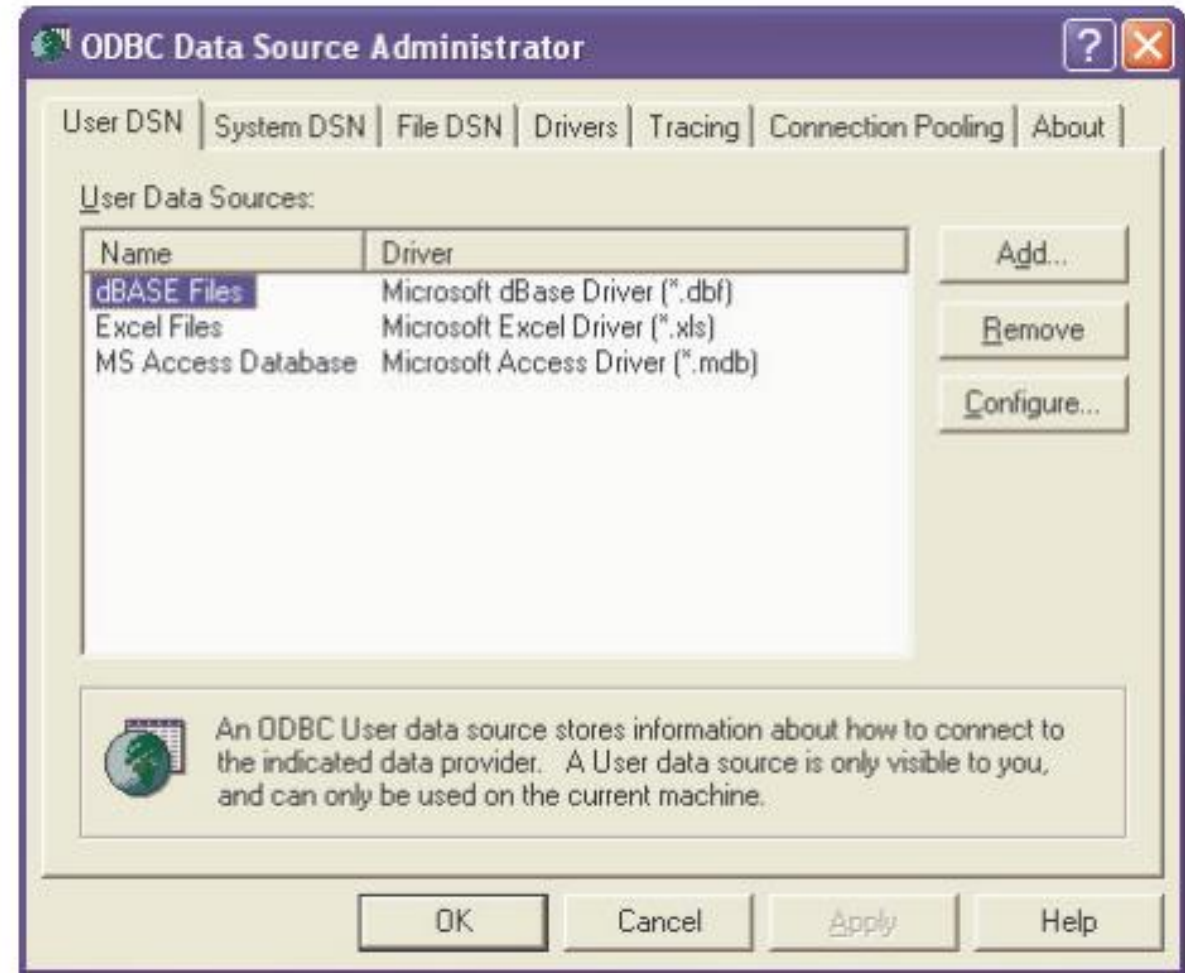
By Jeff Magouirk

<https://buff.ly/3fYlLNu>



Setting Up the ODBC

- My experience is setting it up in a Microsoft environment (e.g., Windows, we have an MS SQL server, we use Excel)
- This screen shot is from Windows XP – but you can still basically the same thing today



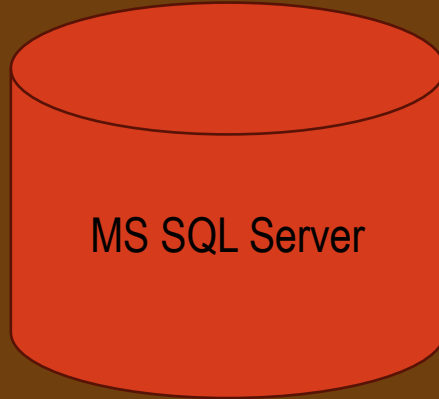


What's Actually Happening?



PC SAS User at
XYZ Company

Logs into SQL
from PC SAS and
"data steps" in
data tables!



MS SQL Server

XYZ's Company's
Main Database

Permissions
Sets up ODBC
connection



Network/Database
Administrator

XYZ Company's Secure Environment



Examples from SQL White Paper: Establish connection

```
Libname ross odbc dsn='Ross';  Logging into the ODBC – just setting a LIBNAME!  
* Establish connection to MS SQL Server data via and ODBC Driver;
```

```
PROC SQL;  
  CREATE TABLE ross.tbl_lab  
    Subject_id      num(4)  
    Whitebloodcount num(10.2)  
    Redbloodcount   num(10.2)  
    Temp            num(5.2)  
    Height          num(5.2)  
    Weight          num(5.2)  
    Date            num format=Date9. informat=Date9. ;  
Quit;
```

Author uses PROC SQL to make a blank table to store the data he will import from SQL – but you can do that in data steps, too.



Examples from SQL White Paper: Set up Libname

```
PROC SQL;  
  CREATE TABLE ross.tbl_lab as  
    SELECT * FROM ross1.tbl_lab;  
QUIT;
```

Author sets local LIBNAME
and then selects SQL data
into his table.

The * is a wildcard for all of the fields in the dataset ross1.tbl_lab.

- One example of many – but most have to do with importing data into SAS from another environment for analysis
- This is a strategy for minimizing SAS I/O cost



Examples from Excel White Paper: Establish connection

- I wanted to do a demonstration using online SAS OnDemand for Academics (ODA)
 - Free, practice version
- I was able to import an *.xlsx, but could not create an ODBC connection to it with SAS ODA
- Not sure if it is functional in ODA

Parameters you have to prepare

1. Name of your file (e.g., "Demo.xls")
2. Name of the tab it is on (e.g., "sheet1")
3. Set a named range (e.g., highlight a set of cells and name it "sheet1")
4. Name of LIBREF (e.g., "odbcxls") which is also the DSN (dataset name)



Examples from Excel White Paper: Import and Export

Setup

Let's assume I have a MICROSOFT EXCEL file named 'demo.xls' and it has a worksheet 'sheet1' with a named range called 'sheet1'. Its ODBC data source name (DSN) is 'odbcxls'.

Here is how to assign the libref 'odbcxls' to the data source odbcxls:
(Of course, libref can be any name you prefer to use.)

```
libname odbcxls odbc dsn=odbcxls;
```

Import and Export

Use the libref odbcxls in the DATA step:

```
data fromxls;  
/*SAS data set stores the extracted xls data*/  
set odbcxls.sheet1;  
/*points to DSN odbcxls which links to demo.xls*/  
run;
```

You can write the SAS data back to the MICROSOFT EXCEL file and create a new worksheet.

[Examples from Excel White Pa...](#)

```
data xlsodbc.sheet2;  
/*sheet2 is the new sheet in demo.xls;*/  
set fromxls;  
newfield='anything'; *add a new field to it if you want to;  
run;
```



Questions?

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