

An Introduction to SAS® Information Map Studio

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ABSTRACT

SAS Information Map Studio is used to create information maps - metadata that surfaces your data into terms that business users can understand. Information architects can visually specify relationships between tables so that business users can query the data and get reports without having to know much (or any) programming. SAS Web Report Studio will be used to demonstrate the utility of information maps.

A couple days before the conference deadline for submitting this paper I found out about some major upgrades to Information Map Studio, making some of my content out-of-date. Thus I'm going make this more of an executive summary style paper rather than a technical one with a plan of demonstrating the latest release of the software, version 3.1, during the presentation.

WHAT IS INFORMATION MAP STUDIO?

Information Map Studio (IMS) provides a visual interface for capturing metadata about the contents of tables and how tables are related. The metadata information can then be utilized in a consistent way by end-users (single version of the truth). End-users do not have to write SQL code but instead select the data items that they want reports upon and the SQL code is automatically generated based on selections made.

There are similarities between Information Maps and SAS Views in that they both contain information about how to combine or subset data. However, Information Maps provide additional functionality in that they may contain filters, can be stored in metadata server, and they allow logical organization and presentation of components to the end-user using a familiar Microsoft Windows-like folder structure.

A quick glimpse at the interface

What does the developer see? Figure 1 shows the main interface of IMS with a two tabbed screen.

Presentation Tab

The left side of the page shows the physical tables that you want to be a part of your information map. In this example, there are two tables inserted. At a glance

you can pick out Table names, table columns, variable types, and key information.

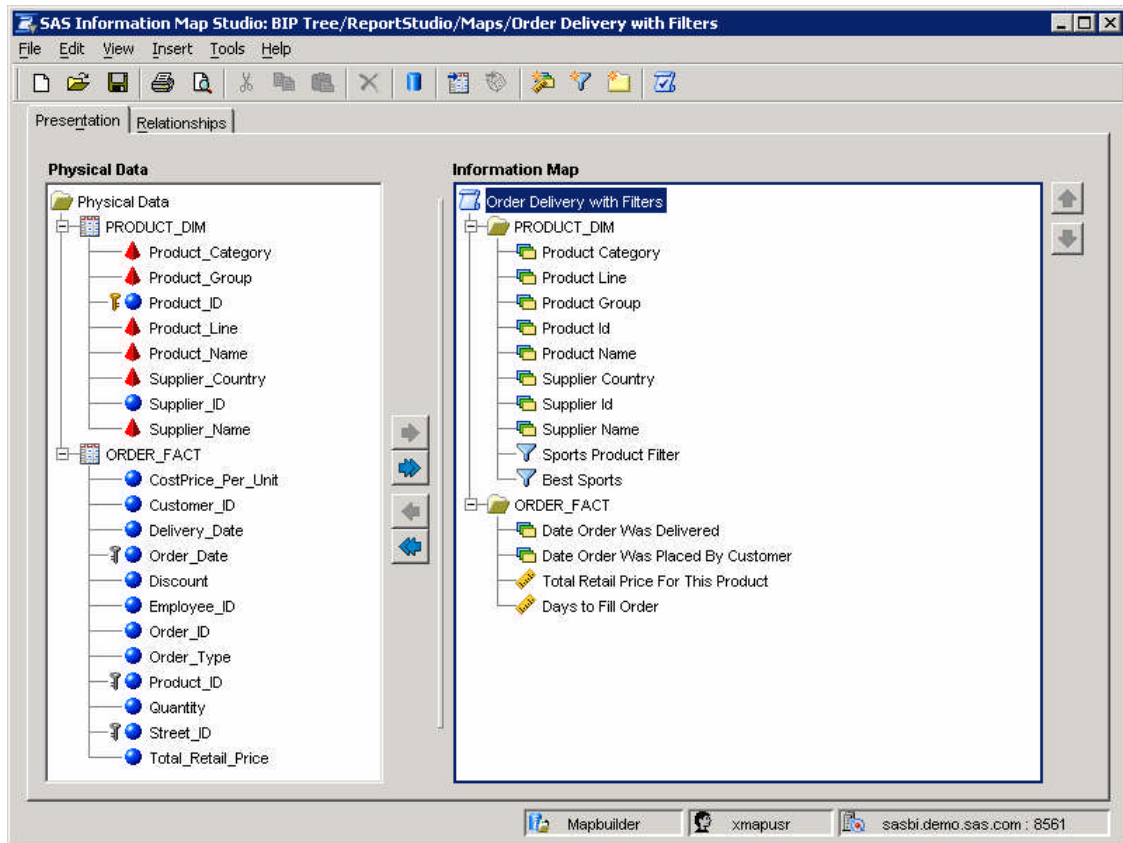


Figure 1. IMS main page – Presentation tab.

On the right side of the screen is a representation of your Information Map data items, which correspond to the columns you have selected from your tables. All items need to be classified as Category or Measures. Category fields serve as grouping variables for reports. Numeric fields by default are brought in as Measures (able to have statistics presented upon) but can be changed to Category types.

Filters are a third type of data item that you can create and can be used in a number of ways within Web Report Studio (WRS). The filters allow end-users to selectively apply constraints to the data or the developer also has options to have the filters automatically applied to any data requested by an end-user based on login-information using User/Group permissions.

Relationships Tab

Figure 2 shows the Relationships tab. On this page, you simply specify how the tables are to be joined. The graphic interface is very similar to Enterprise Guide and Microsoft Access. At a glance you can determine if it is a one-to-one or one-to-many join and if it is a Full, Inner, or Outer join.

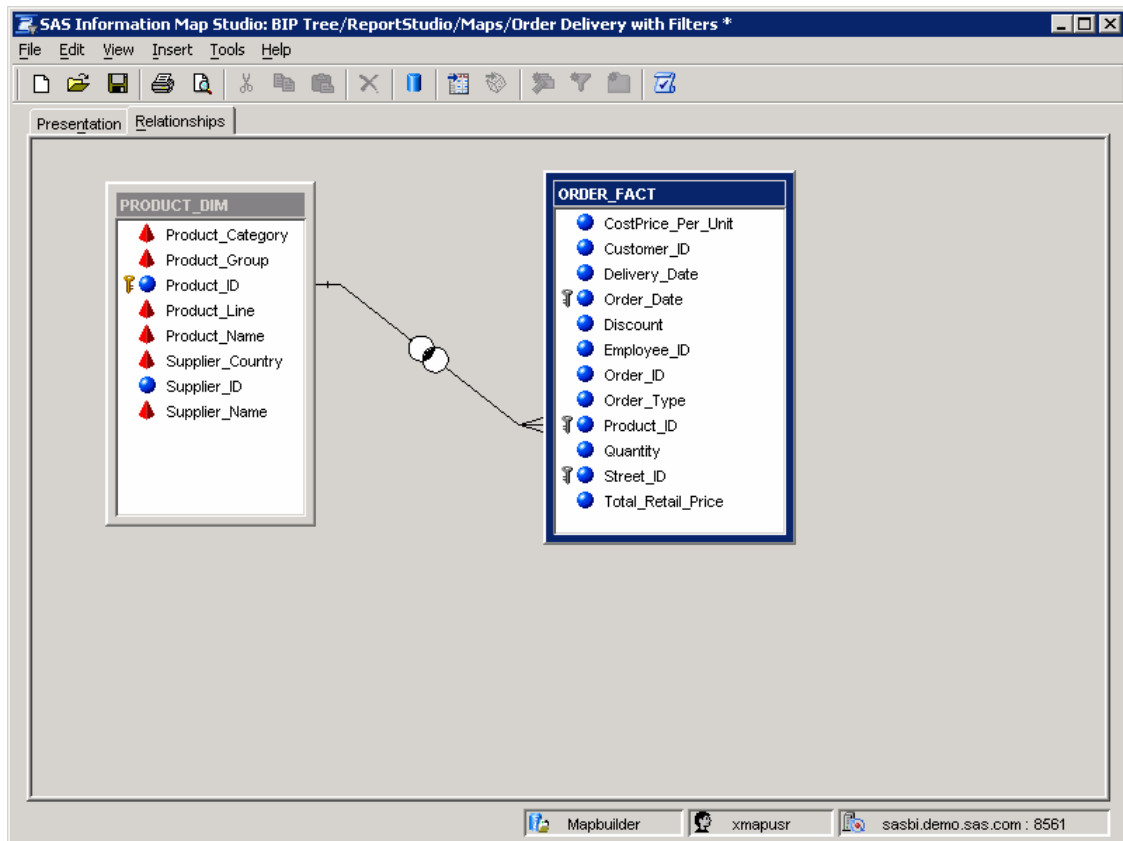


Figure 2. IMS main page – Relationships tab.

Properties

Double-clicking on a data item (or right-clicking the item and then selecting Properties) brings up the Data Item properties window. Figures 3, 4, and 5 present the 3 tabbed Properties page.

The Definition tab shown in Figure 3 provides a summary of the data item and allows you to provide a description, specify what folder you want the item to be in within the folder structure in the Information Map, and edit the item if needed (e.g. change the formula if the item is a calculated field).

Data Item Properties: Definition

Data item name: Days to Fill Order

Definition | Classifications/Formats | Permissions/Value Generation

ID: Days to Fill Order

Folder: ORDER_FACT

Description:

Expression settings

Type: Numeric

Expression: <<ORDER_FACT.Date Order was Delivered>> - <<ORDER_FACT.Date Order was placed by Customer>> + 1

Edit...

OK Cancel Help

Figure 3. Data Item Properties – Definition tab.

Classifications/Formats tab

As pictured in Figure 4, the Classifications/Formats tab has two functions, setting the classification to either Category or Measure and defining the format to be used. If the category of Measure is selected, you can specify what statistics you want to make available and what the default statistic should be.

Data Item Properties: Classifications/Formats

Data item name: Days to Fill Order

Definition | **Classifications/Formats** | Permissions/Value Generation

Classifications and aggregations

Classification:

☐ Category

☒ Measure

Aggregations (select at least one):

- ☒ AVG(argument)
- ☒ COUNT + NMISS
- ☒ COUNT + NMISS {Distinct}
- ☒ COUNT {Distinct}
- ☒ COUNT(argument)
- ☒ CSS

Select All Clear All

Default aggregation: AVG(argument)

Formatting

Format type: Numeric

Example: 1.26E6

SAS chooses the best notation

BEST

BINARY

COMMA

COMMAX

D

Valid width range: 1 to 32 3

Valid decimal range: 0

OK Cancel Help

Figure 4. Data Item Properties – Classifications/Formats tab.

Permissions/Value Generation tab

The Permissions and Value Generations tab as shown in Figure 5 allow you to give permission to end-users to Rank and/or Sort your data by the item by clicking on column headers.

The Value Generations section of the page allows you to specify the manner in which end-users are asked for filtering information (typing, select from a dynamically generated list, or from predefined list).

Data Item Properties: Permissions/Value Generation

Data item name:

Definition | Classifications/Formats | **Permissions/Value Generation**

Permissions

For this data item, allow users to:

☒ Rank

☒ Sort

Value-generation method

Select a value-generation method. This method will be used to generate values for use with items such as prompts and filters.

☒ Do not generate a list of values (allow user to enter value).

☐ Dynamically generate a list that contains all of the data item's values.

☐ Use a custom list of values that you create for the data item.

Create a custom list of values:

Create a custom list of values for the data item. Enter one pair of values per row below, or click Run Query to get values for the data item.

	Formatted	Unformatted

Add Row

Delete Row(s)

Run Query

OK Cancel Help

Figure 5. Data Item Properties – Permissions/Value Generation tab.

3 REASONS YOU SHOULD CARE ABOUT INFORMATION MAP STUDIO

- 1) It is the only source that works with SAS Web Report Studio and its maps can access any tables SAS/ACCESS can reach along with OLAP cubes.
- 2) You can now utilize Information Maps from BASE SAS, Enterprise Guide, and the Add-in for Microsoft Office. The INFOMAPS libname engine allows you to utilize Information Maps in data steps and most SAS procedures. You can even create Information Maps from BASE SAS

without licensing Information Map Studio although you do lose some functionality and a lot of convenience.

- 3) Can be utilized within AppDev Studio and SAS Information Delivery Portal.

HOW DOES IT WORK AND WHAT OTHER SOFTWARE COMPONENTS ARE REQUIRED?

IMS is actually a .java application that communicates with a SAS Metadata Server. It only runs on Windows but can access servers running on other platforms.

Metadata Server and PROC INFOMAPS allow you to create Information Maps with only BASE SAS. IMS is a separately sold module and also comes with the BI Server solution. Without IMS, you cannot update existing data items in information maps although you can add new data sources and new items to existing maps.

The following diagram outlines the basic flow of information between Metadata Server, Information Map Studio, and Web Report Studio.

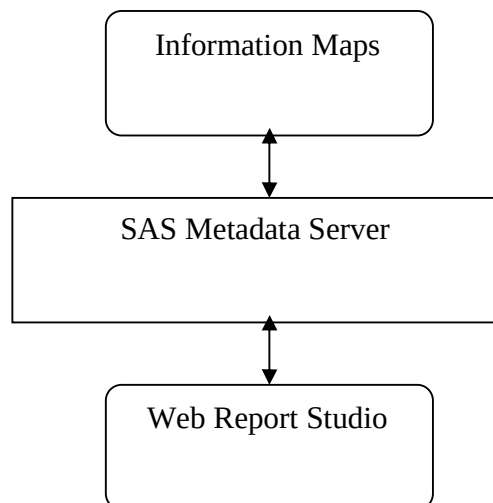


Figure 6. Flow of information when Information Maps are utilized with Web Report Studio.

Within SAS Management Console, the default storage location for maps is shown in Figure 7. Within Management Console, the only changes that you can make to an information map are to the description and/or the security settings.

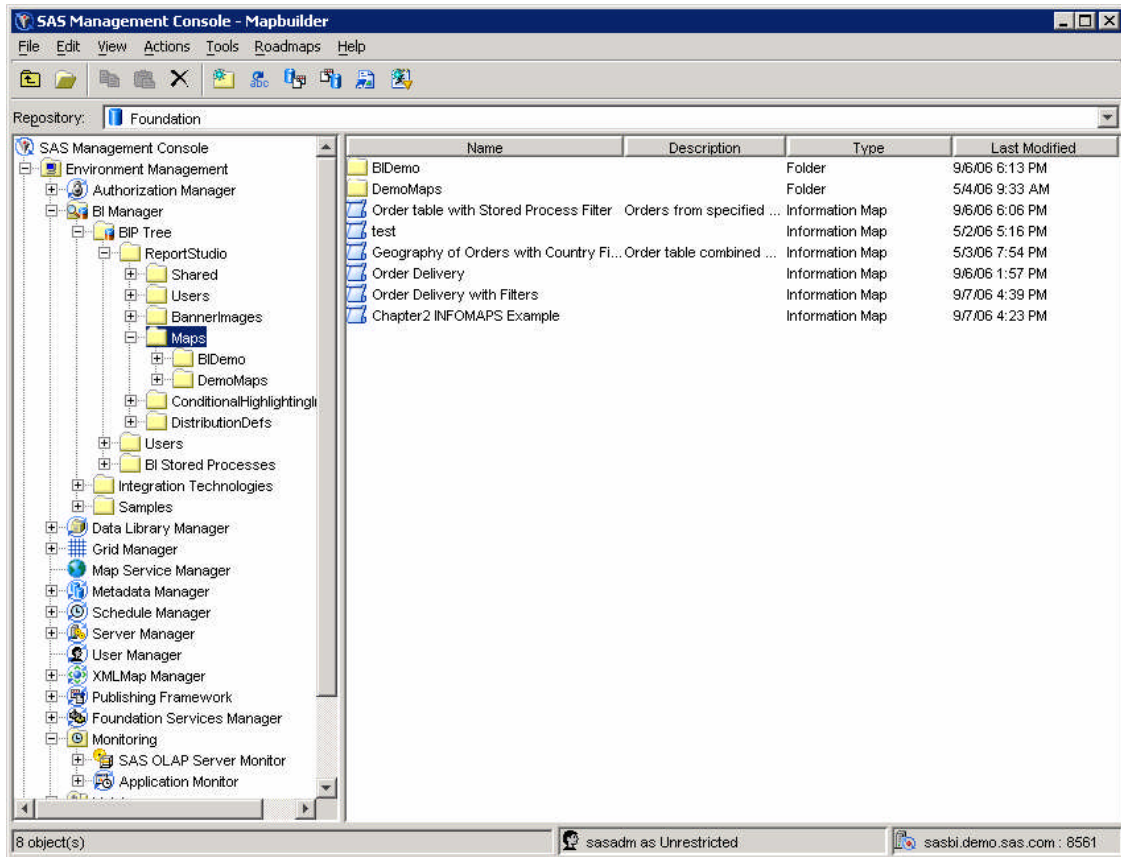


Figure 7. SAS Management Console

Web Report Studio – putting IMS to work

Web Report Studio (WRS) is a web based reporting tool that lets end users create their own reports, from simple to complex, including graphical and tabular displays. WRS also allows saving of reports, utilization of reports as templates for other reports, scheduling of reports and creation of distribution lists. WRS requires IMS as its input source and it can also accommodate Stored Processes. Figure 8 shows the beginning of report creation in WRS right after an Information Map has been selected as the data source. You can see the data items in the pane at the left. The presentation of this paper will show an example using WRS of developing a report and saving it for later use.

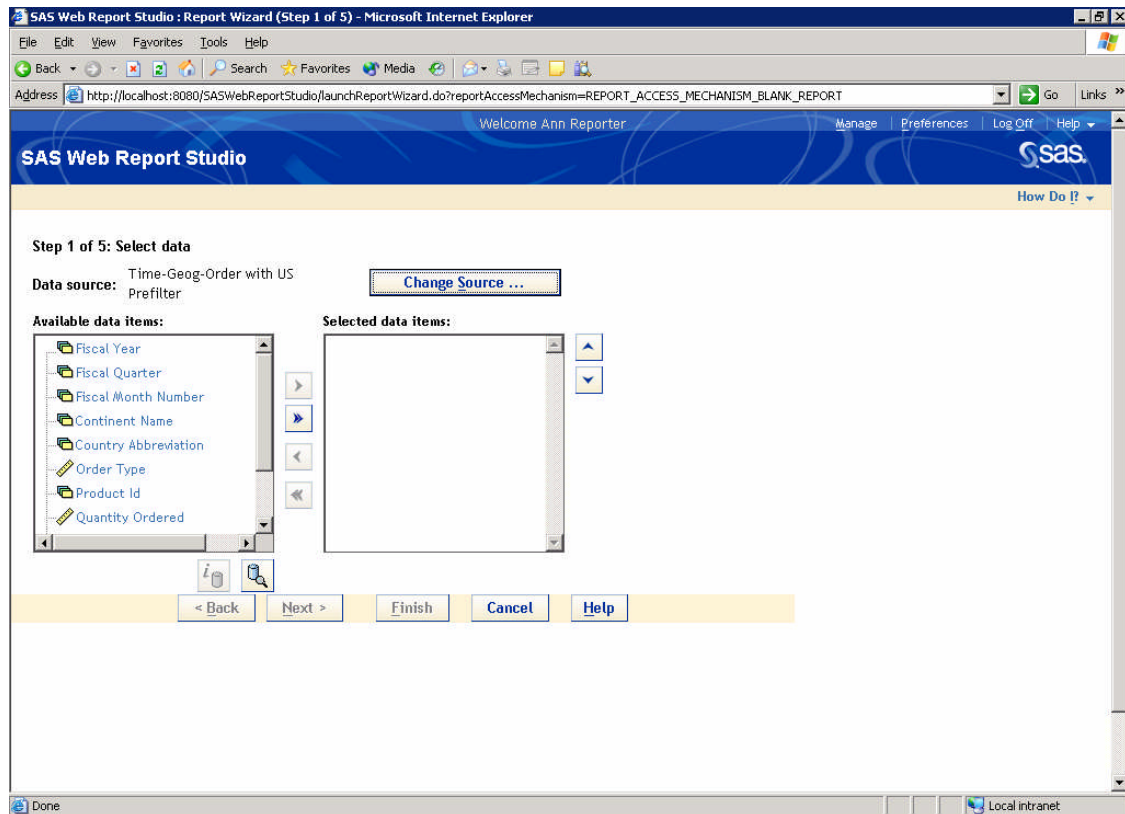


Figure 8. SAS Web Report Studio.

SUMMARY

Information Map Studio is now in Version 3.1 and it has made a lot of strides since its inception. Information Maps hold a lot of capability for packaging data, especially complex structures, in such a way that end-users can utilize the results to create their own reports. The avoidance of writing lengthy queries to join data sets can potentially save you a lot of time and a lot of debugging time. The recent incorporation of Information Maps in BASE SAS and Enterprise Guide may mean that you will be hearing a lot more about information maps in the near future.

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