

Paper 064-2008

SAS® Web Report Studio Tips and Techniques

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ABSTRACT

SAS® Web Report Studio is a rich Web-based reporting tool with a great deal of functionality built in over the course of three major releases. You'll learn about techniques and creative solutions to answer common report challenges that experienced users know and rely on, helping you to more effectively develop your reports.

OVERVIEW

The first two sections of this paper explain how to create reports that offer users more ways to retrieve targeted results. The third section focuses on a powerful—but seldom used—feature that enables report authors to share reports that are based on group breaks.

OPTIONAL PROMPTING: GIVING USERS THE CHOICE TO SUBSET OR NOT

Sometimes you want to offer users the choice of whether to subset a report or not. In order to do this, you must provide a prompt value that represents all possible values (see Figure 1).

Please answer the prompts below and click the View Report button to continue.

* To see information for all employees, select All Employees from the drop-down list. To see information for an individual employee, select that employee's number.

All Employees ▼

View Report Reset to Defaults

Figure 1. User Selects All Employees, Which Represents All Values

Because the user selected **All Employees**, information is displayed for all employees (see Figure 2).

Employee Number	Deptcode	Division	Employee Gender	Hire Date	Status
000001	ISO	INFORMATION SYSTEMS	F	30JUL1991	N
000012	QA0	QUALITY ASSURANCE	F	20MAY1993	N
000014	FIN	FINANCE	M	01MAY1991	N
000018	TXR	TEXAS REGIONAL	M	30JUL1991	V
000023	PUB	PUBLICATIONS	F	31JAN1981	N
000024	TXR	TEXAS REGIONAL	F	27NOV1991	N
000026	HSD	HOST SYSTEMS DEVELOPMENT	M	15JAN1984	N
000027	TXR	TEXAS REGIONAL	M	05MAY1993	N
000030	FAC	FACILITIES	M	06MAR1993	N
000034	FIN	FINANCE	M	04JUN1993	N
000035	CCD	SOFTWARE DEVELOPMENT	M	14JUN1989	N
000040	TXR	TEXAS REGIONAL	M	20MAY1993	H
000045	CON	CONTRACTS	M	15FEB1991	N
000047	PUB	CORPORATE COMMUNICATIONS	M	22SEP1992	N
000051	EDU	EDUCATION	M	10APR1992	N
000052	TXR	TEXAS REGIONAL	M	29AUG1987	N
000053	FAC	SOFTWARE DEVELOPMENT	M	01JUN1984	N
000056	FAC	FACILITIES	M	04JUN1993	N
000059	SAM	SALES & MARKETING	M	21DEC1989	N
000066	CON	CONTRACTS	M	31MAY1991	N
000067	HRO	HUMAN RESOURCES	M	19JUN1993	N
000069	HSD	HOST SYSTEMS DEVELOPMENT	M	13SEP1991	N
000070	CCD	SOFTWARE DEVELOPMENT	M	13SEP1991	N

Figure 2. Results Are Returned for All Employees

The following section explains how to create an optional prompted filter like the one that is shown in Figure 1.

Note: The following example is an overview of the complete steps that are outlined in SAS Sample 30924: "SAS Web Report Studio: How to create optional prompts" (SAS Institute Inc. 2008).

CREATING THE FILTER

1. In SAS[®] Information Map Studio, select **Insert ► Data Item** to open the Data Item Properties dialog box. Name the new data item, and then click **Edit** to open the Expression Editor.
2. Select **Character** for the data item type. Then, in the **Expression Text** field, type a value within single quotes. This is the value that users will select in SAS Web Report Studio (see Figure 3).



Tip: The expression does not have to match the name of the data item.

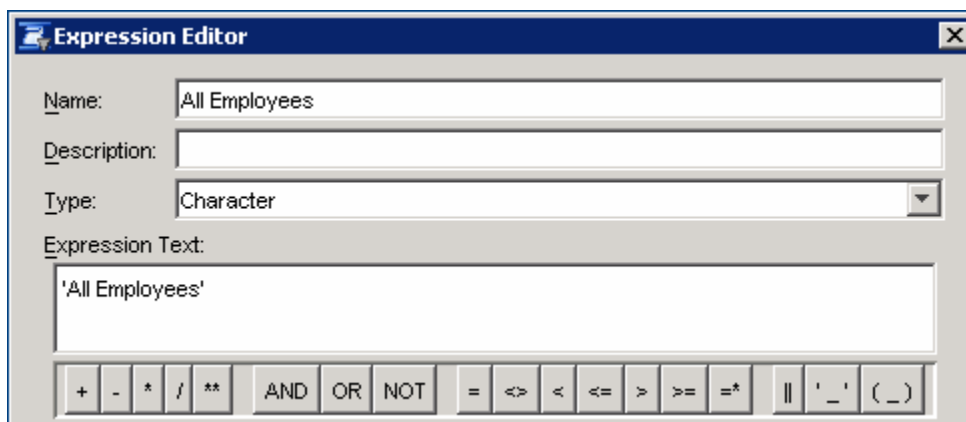


Figure 3. The Expression for the New Data Item is a Simple Quoted String

3. After you create the data item, click **Insert ► Filter** to open the New Filter dialog box. Enter a name for the filter and then select the data item that you are filtering on, such as *Employee Number*. Set the condition to **Is equal to**, and set the value to **Prompt user for value(s)**.
4. Click **Create Prompt** to open the Prompt Properties dialog box. After naming the prompt, click the **Prompt Value Generation** tab.



Tip: Enter prompt text that will help users understand how to use the prompt.

5. For **Prompt Type**, select **Prompt the user, using a custom list of values**.¹
6. Click **Get Values** to see the values that are available for the selected data item. Move the values that you want to use from the **Valid values** list to the **Current values** list. Click **OK** to return to the Prompt Properties dialog box.
7. Back in the Prompt Properties dialog box, click **Add Row** (see Figure 4). For the **Formatted** and **Unformatted** values, type the value that you entered in the **Expression Text** field in Step 2. Do not use single quotes, but be sure to match the casing exactly.



Tip: Move the new value to the top of the list and make it the default.



Tip: You can make the prompt single or multi-select.

¹ You also can use **Prompt the user, using a custom list of values** to enter a value. For instructions, see Sample 30924: "SAS Web Report Studio: How to create optional prompts" (SAS Institute Inc. 2008).

Values list (values that the user will select from):

	Default	Formatted	Unformatted
1	<input checked="" type="radio"/>	All Employees	All Employees
2	<input type="radio"/>	000001	000001
3	<input type="radio"/>	000012	000012
4	<input type="radio"/>	000014	000014
5	<input type="radio"/>	000018	000018
6	<input type="radio"/>	000023	000023
7	<input type="radio"/>	000024	000024
8	<input type="radio"/>	000026	000026

Buttons: Add Row, Delete Row

Figure 4. The List of Values That Users Will Choose from Now Includes the Data Item Created in Step 2

8. Back in the Edit Filter dialog box, click **Combinations**, and then click **Add** to add the filter that you just created to the **Filter combinations** box.
9. In the **Data item** list box, select the data item that you created in Steps 1 through 3.
10. Select **Prompt user for value(s)** and select the prompt that you created in Steps 5 through 8.
11. Click **Add** to add the new expression to the already existing expression.
12. Click the **AND** operator to change it to **OR** (see Figure 5).

Filter combinations:

Employee Number = (&All Employee Prompt [All Employee Prompt])	OR	Edit ▲
All Employees = (&All Employee Prompt [All Employee Prompt])		Delete

Figure 5. The Combination Filter That Will Be Used for the Optional Prompt

13. In SAS Web Report Studio, assign this filter to the applicable data item, such as *Employee Number*, used in this example. Sample results are shown in Figures 1 and 2.



Tip: When selecting the data items for the section query, do not include the data item that you created. That data item is only a placeholder for creating the "all values" prompt.

REPORT LINKING: DESIGNING A DRILL PATH INTO DATA

You can simulate a cascading (also known as, drill through) prompt by using a little creativity with report linking.² Figures 6 through 9 show the results of linking four reports that are based on the same information map. The user drills down on **Country**, **Region**, and **Division** until the final report—subset by the previous selections—is displayed.

² The ability to create cascading prompts is planned for SAS® 9.2.

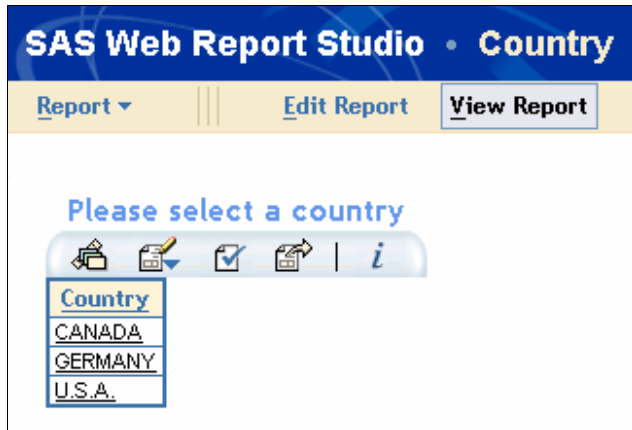


Figure 6. The Initial Report in the Sequence (Country) Enables the User to Select a Country

The value for country (U.S.A.) is sent to the prompt for country in the Region report.



Figure 7. The Second Report in the Sequence, Region, Enables the User to Select a Region

From the Region report, the value for the country group break (U.S.A.) and the value that the user selects for Region (WEST) is sent to the prompts in the Division report.



Figure 8. The Third Report in the Sequence, Division, Enables the User to Select a Division

From the Division report, the value for the country group break (U.S.A.), region group break (WEST), and the value that the user selects for Division (EDUCATION) is sent to the prompts in the final report.

Month		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
		Actual Sales	Actual Sales	Actual Sales	Actual Sales	Actual Sales	Actual Sales	Actual Sales	Actual Sales	Actual Sales	Actual Sales	Actual Sales	Actual Sales
FURNITURE	BED	\$433.00	\$930.00	\$500.00	\$465.00	\$1,333.00	\$1,687.00	\$1,677.00	\$1,387.00	\$791.00	\$1,585.00	\$1,051.00	\$1,179.00
	SOFA	\$1,235.00	\$601.00	\$1,045.00	\$1,497.00	\$996.00	\$613.00	\$550.00	\$734.00	\$170.00	\$427.00	\$380.00	\$1,003.00
OFFICE	CHAIR	\$282.00	\$1,323.00	\$777.00	\$1,763.00	\$750.00	\$434.00	\$1,756.00	\$927.00	\$1,409.00	\$1,659.00	\$562.00	\$1,097.00
	DESK	\$933.00	\$1,179.00	\$813.00	\$961.00	\$906.00	\$757.00	\$1,368.00	\$1,001.00	\$1,639.00	\$955.00	\$1,804.00	\$672.00
	TABLE	\$969.00	\$1,304.00	\$793.00	\$665.00	\$630.00	\$1,848.00	\$280.00	\$828.00	\$1,570.00	\$396.00	\$1,517.00	\$943.00

Figure 9. The Final Report, Subset by Previous Country, Region, and Division Selections, Is Displayed

A BEHIND-THE-SCENES VIEW OF THE LINKING SEQUENCE

Each report contains the necessary prompts and group breaks so that values can be passed from one report to the other. Figure 10 shows how the sequence works.

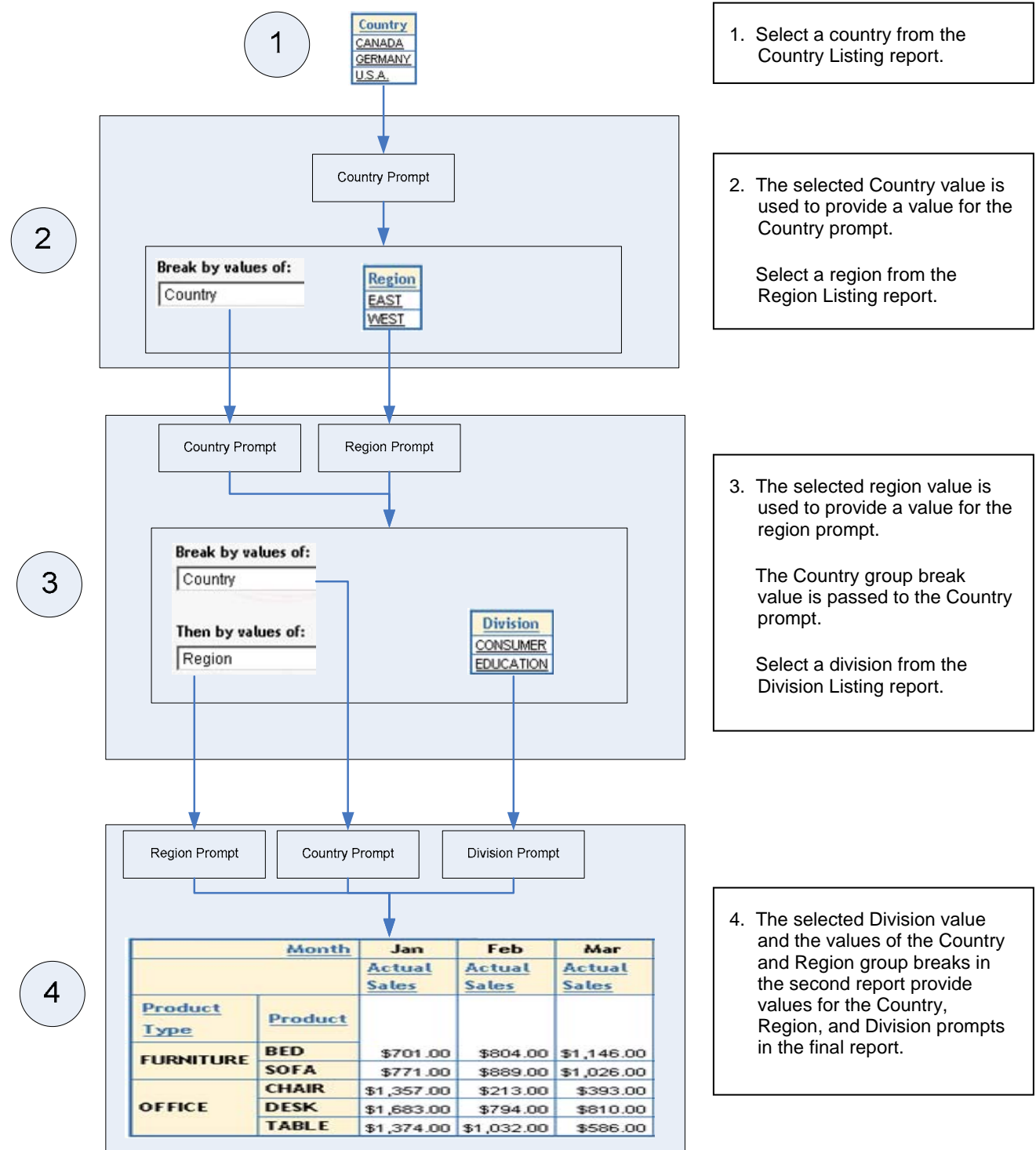


Figure 10. How Values Are Passed to Each Report

LINKING TO REPORTS

To link the reports, complete the Report Linking dialog box for each table in each report. To access the dialog box, select **Report Linking** from the **Edit** menu on the Table toolbar. In Figure 11, the first report in the sequence is linked to the second report.



Tip: Add tool-tip text so that users know how to interact with the data.

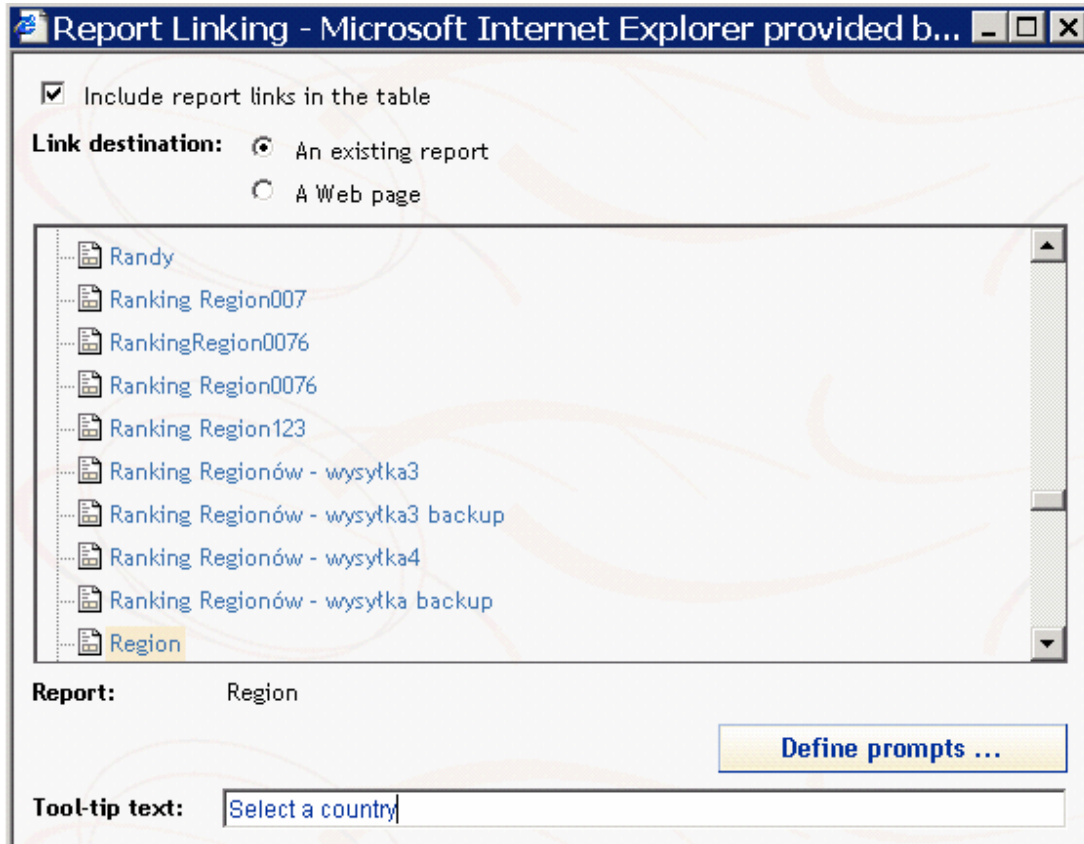


Figure 11. The Region Report is Selected as the Target for the Country Report

To associate the prompt in the Region report with the value selected in the Country report, click **Define prompts** and select the prompt from the list box (see Figure 12). Any other required prompt values are supplied by the group break values in the previous report (see Figure 10 for an illustration of how this works).

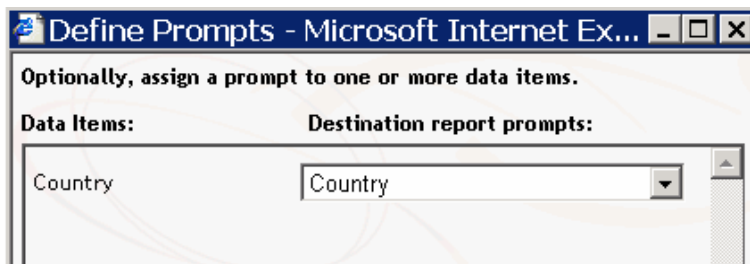


Figure 12. The Value of the Country Data Item in the Country Report is Associated with the Country Prompt in the Region Report

REPORT DISTRIBUTION: SELECTIVELY SHARING DATA

Report distribution allows you to e-mail or publish a report to one or more people. You can further tailor the report to a user by using BY-group processing. By creating a report and distribution e-mail list with BY-group processing, users will only see information in the report that is based on a particular subset of data.

Figures 13 through 16 show the grouped report, as well as the results of distributing this report via e-mail and a publishing channel.

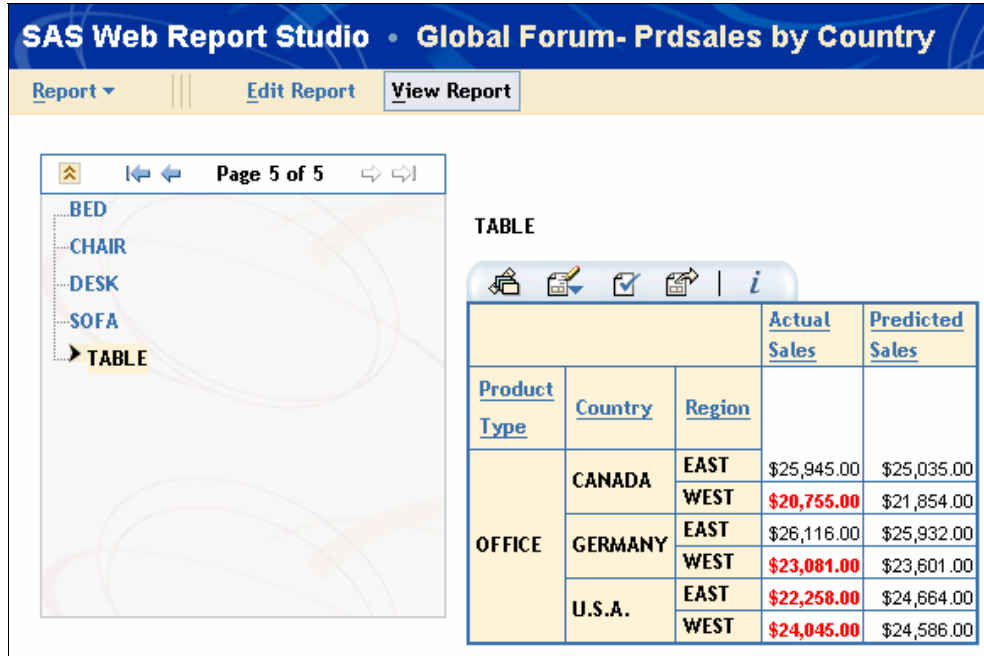


Figure 13. Report Grouped by Product

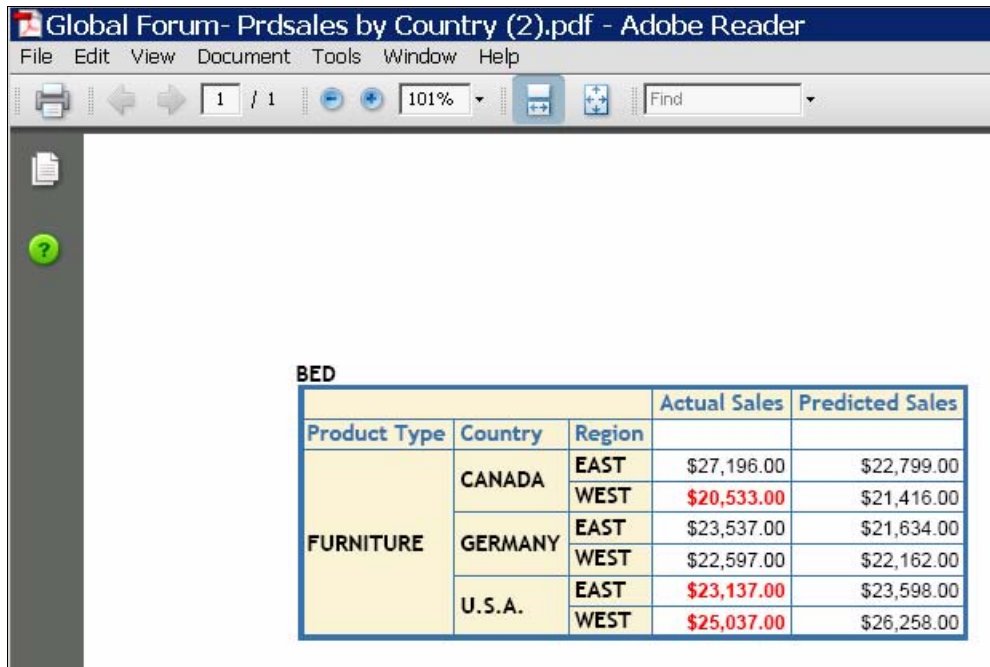


Figure 14. PDF Output Distributed via an E-mail Attachment

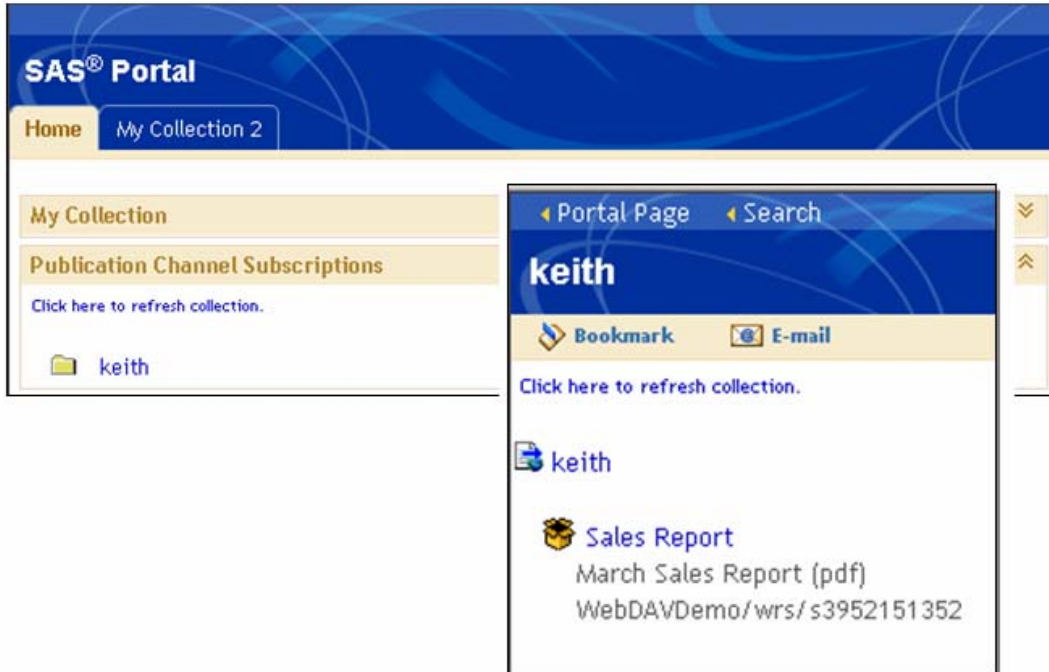


Figure 15. PDF Output Distributed via Channel Subscription in SAS® Information Delivery Portal

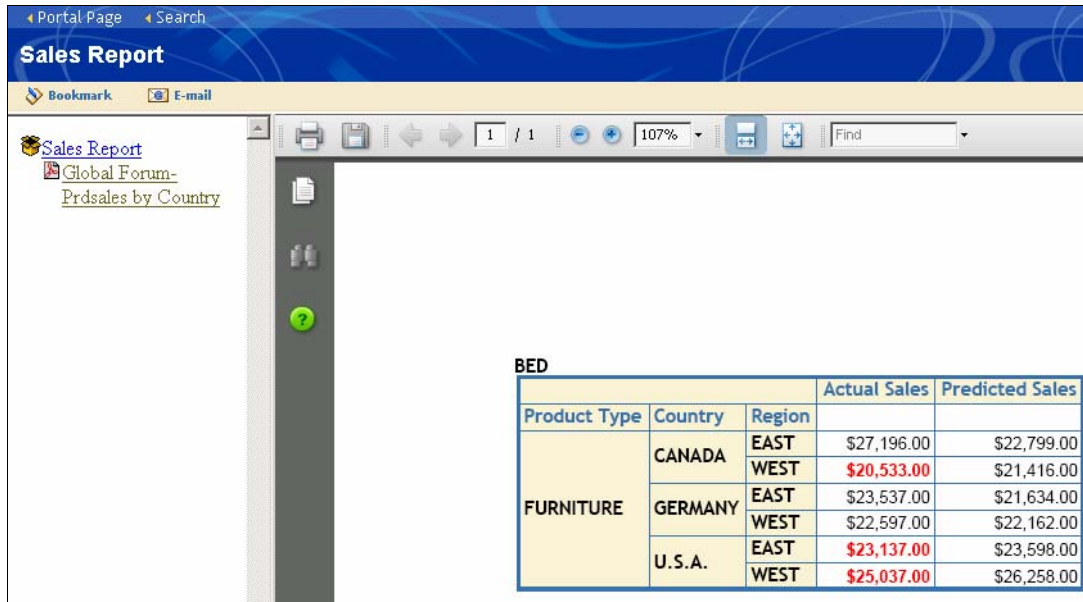


Figure 16. The Distributed Report Viewed via the Keith Publication Channel

SETTING UP REPORT DISTRIBUTION WITH BY-GROUP PROCESSING

If a scheduling server is available and you are authorized to distribute reports, then the **Distribute** menu item will be active in the SAS Web Report Studio **Report** menu. Here are the steps for completing the Distribution Wizard.

1. With the report open in SAS Web Report Studio, select **Report** ► **Distribute** from the **Report** menu (see Figure 17).

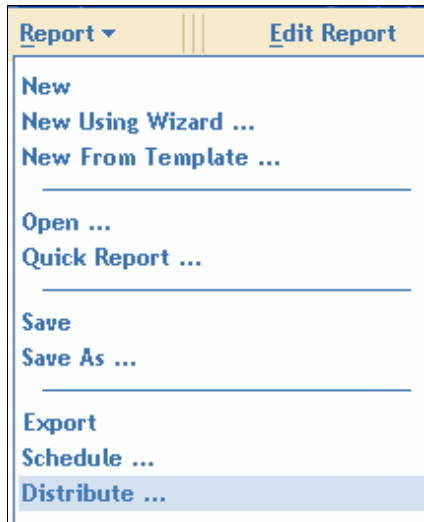


Figure 17. The **Distribute** Menu Item Launches the Distribution Wizard

2. In the Specify Recipient Rules dialog box, click **New** to create a new recipient list.
3. Name the list and then select the **Create recipient list based on group break** check box (see Figure 18).
4. In the list box, select the group break that will be used to parse the distributed results. A report can have more than one group break.

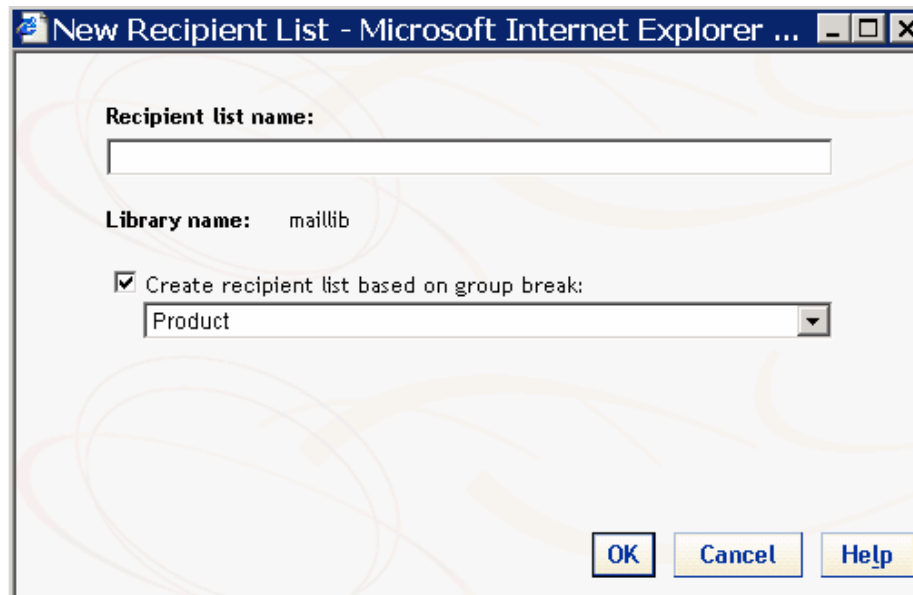


Figure 18. The **Product** Group Break is Selected

5. After you click **OK**, a new—but empty—recipient list (SAS table) is created (see Figure 19).

Specify Recipient Rules - Microsoft Internet Explorer provided by SAS

Select recipient list:

BICLIENTS
Product

New ...
Remove

Product: Email and channels must be edited by using SAS.

Product	EMAIL	CHANNEL
BED		
CHAIR		
DESK		
SOFA		
TABLE		

Divide report based on:

Group break: Product

Assign group break categories to Product column names:

Group break categories: Product: Column names: Product

OK Cancel Help

Figure 19. The Recipient Table is Created but the EMAIL and CHANNEL Columns are Initially Empty

6. Next, you must launch an interactive SAS session in order to assign a library (the default location is `\Lev1\SASMain\Data\wrsdist`) and add the e-mail addresses and channels to the recipient table (see Figure 20).



Tip: Adding channels to the recipient list enables you to publish reports to channels that can be displayed in the SAS Information Delivery Portal. You set up the channels in the SAS® Management Console by using the Publishing Framework Plug-in.

	Product	EMAIL	CHANNEL
1	BED	keith.myers@SASGlobalForum.com	Keith
2	CHAIR	ann.smith@yahoo.com	
3	DESK	Lynn.davis@nc.rr.com	
4	SOFA	madelyn.johnson@bellsouth.net	
5	TABLE	bruce.lee@yahoo.com	

Figure 20. In an Interactive SAS session, You Enter E-mail Addresses and Channels into the Recipient Table

7. Back in SAS Web Report Studio, select the **Group break** check box to associate the recipient list with the Product group break (Figure 21).

Specify Recipient Rules - Microsoft Internet Explorer provided by SAS

Select recipient list:

BICLIENTS
keith2
Product

New ...
Remove

Product: Email and channels must be edited by using SAS.

Product	EMAIL	CHANNEL
BED	keith.myers@SASGlobalForum.com	Keith
CHAIR	ann.smith@yahoo.com	
DESK	Lynn.davis@nc.rr.com	
SOFA	madelyn.johnson@bellsouth.net	
TABLE	bruce.lee@yahoo.com	

Divide report based on:

Group break: Product

Assign group break categories to Product column names:

Group break categories: Product: Column names: Product

OK Cancel Help

Figure 21. The EMAIL and CHANNEL Columns in the Recipient Table Now Contain Values

CONCLUSION

Optional prompts enable you to create more flexible reports that will serve more users. Creating linked reports that can be used to drill down into data enables users to easily focus on a particular section of a report. Finally, distributing reports based on BY groups is a powerful and easy way to selectively share content.

REFERENCES

SAS Institute Inc. 2008. Sample 30924: "SAS Web Report Studio: How to create optional prompts". Available at support.sas.com/kb/30/924.

ACKNOWLEDGMENTS

The authors acknowledge the contribution of Grégory Neuvéglise, Business Developer in SAS France, for his work on the optional prompting solution.

RECOMMENDED READING

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