

Using ODS Select to Limit SAS® Output

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ABSTRACT

The Output Delivery System® (ODS) in SAS is a useful tool for producing various kinds of output files. Many times you are only interested in reporting certain portions of the output. This is especially useful when using procedures with multiple output tables like the LOGISTIC procedure or the UNIVARIATE procedure. The ODS SELECT statement allows you to specify which parts of the output you want to include in the output file. This paper will cover how to use ODS TRACE and ODS SELECT to determine the name of each output object and how to use those names to specify the objects to output. It will also discuss how to specify output for multiple procedures.

INTRODUCTION

When generating SAS output, you are often only interested in certain parts of the output. For example, you might run a PROC LOGISTIC and only want to output the model information, number of observations and the chi-square results. ODS SELECT allows you to specify which parts of the output to send to the output file. ODS TRACE can be used with ODS SELECT to help identify the name of each part of the output. Together, these statements can help you customize your output and keep your output file from getting cluttered with unnecessary tables.

THE BASICS OF ODS SELECT

ODS SELECT is a simple SAS statement that you can include in your code when using ODS to output a file. All you have to do is specify the tables you want to include in your output. From the PROC LOGISTIC example above, the statement would say:

```
ods select Stat.Logistic.ModelInfo Stat.Logistic.NObs  
Stat.Logistic.ParameterEstimates;
```

This statement would only output the model information, number of observations and analysis of maximum likelihood estimates. You would include this statement after you begin to create an ODS file. For example, if you wanted to create an rtf file with a footnote and title, your code would look like this:

```
ods rtf file="%basedir.\Output\Regression.RTF" startpage=no nogtitle;  
footnote justify=right "Date: &sysdate9 ";  
title justify=left "Regression Output";  
  
ods select Stat.Logistic.ModelInfo Stat.Logistic.NObs  
Stat.Logistic.ParameterEstimates;
```

USING ODS TRACE WITH ODS SELECT

Unless you are very familiar with the naming of SAS output tables, it can be difficult to determine what to call the tables you want to keep in your output. The ODS TRACE statement can be inserted before or after the ODS SELECT statement to help specify the output table names. When executed, it will include a list of each output table with the table name, label, template and path in the SAS log. If you want to see a list of all of the output tables for a procedure, you must use ODS TRACE without the ODS SELECT statement. If you use both statements, the log will only list the tables specified in the ODS SELECT statement. In the example, the code would look like this:

```
ods rtf file="%basedir.\Output\Regression.RTF" startpage=no nogtitle;  
footnote justify=right "Date: &sysdate9 ";  
title justify=left "Regression Output";  
  
ods trace on;  
  
ods select Stat.Logistic.ModelInfo Stat.Logistic.NObs  
Stat.Logistic.ParameterEstimates;  
  
proc logistic data=temp;  
model var1 = var2 var3 var4;  
run;  
ods trace off;
```

```
ods rtf close;
```

The SAS log would list the output tables like this:

```
Output Added:
-----
Name:      ModelInfo
Label:     Model Information
Template:  Stat.Logistic.ModelInfo
Path:     Logistic.ModelInfo
-----

Output Added:
-----
Name:      NObs
Label:     Observations Summary
Template:  Stat.Logistic.NObs
Path:     Logistic.NObs
-----

Output Added:
-----
Name:      ParameterEstimates
Label:     Parameter Estimates
Template:  Stat.Logistic.ParameterEstimates
Path:     Logistic.ParameterEstimates
-----
```

In the example, the template name from the ODS SELECT statement was used to specify the tables, but you can also use the name, label or path to specify a table. If you use the label, it must be surrounded with quotation marks. You can also use a partial path, which is any part of the path after a period. For example, you could use Logistic.ModelInfo or just ModelInfo.

OTHER USES OF ODS SELECT AND ODS TRACE

There are other ways that ODS SELECT and ODS TRACE can be utilized. Instead of specifying table names in the ODS SELECT statement, you can use ODS SELECT ALL or ODS SELECT NONE. The ALL option is the same as not using ODS SELECT because all output tables are sent to the output file. The NONE option results in no tables being sent to the output file.

ODS TRACE has two options that can be useful. The first one is the LABEL option. This option adds a label path to the trace record in the SAS log. The label path can then be used to specify output tables in the ODS SELECT statement just like name, label, template and path. This option is useful when running localized versions of SAS because the labels are translated from English into the local language (SAS, 1999, p. 71). The LABEL option is used as follows:

```
ods trace on / label;
```

The SAS log would list the output tables like this:

```
Output Added:
-----
Name:      ModelInfo
Label:     Model Information
Template:  Stat.Logistic.ModelInfo
Path:     Logistic.ModelInfo
Label Path: "The Logistic Procedure"."Model Information"
-----
```

Another option you can use with ODS TRACE is the LISTING option. This option is used when you want the trace record written to the SAS output listing instead of the SAS log. The trace record will be listed right before the output object in the SAS output (SAS, 1999, p. 71). The LISTING option is used as follows:

```
ods trace on / listing;
```

The SAS output listing would look like this:

The LOGISTIC Procedure

Output Added:

```
-----
Name:      ModelInfo
Label:     Model Information
Template:  Stat.Logistic.ModelInfo
Path:     Logistic.ModelInfo
-----
```

Model Information

Data Set	WORK.TEMP
Response Variable	var1
Number of Response Levels	3
Model	binary logit
Optimization Technique	Fisher's scoring

A FINAL EXAMPLE

Here is a complete example of the code and SAS log trace records when using the FREQ procedure to demonstrate the concepts of ODS SELECT and ODS TRACE. In this example, there are six variables in the PROC FREQ, but only three of them are needed in the output. The LABEL option is used in the ODS TRACE statement to display the label path in the trace record. The ODS SELECT statement uses a partial path to specify the output tables.

SAS code:

```
ods rtf file="%basedir.\Output\Freq.RTF" startpage=no nogtitle;
footnote justify=right "Date: &sysdate9 ";
title justify=left "Freq Output";

ods trace on / label;

ods select Table1.OneWayFreqs Table3.OneWayFreqs Table4.OneWayFreqs;

proc freq data=temp;
table var1 var2 var3 var4 var5 var6;
run;

ods trace off;

ods rtf close;
```

SAS log trace records:

Output Added:

```
-----
Name:      OneWayFreqs
Label:     One-Way Frequencies
Template:  Base.Freq.OneWayFreqs
Path:     Freq.Table1.OneWayFreqs
Label Path: "The Freq Procedure"."Table VAR1"."One-Way Frequencies"
-----
```

Output Added:

```
-----
Name:      OneWayFreqs
Label:     One-Way Frequencies
Template:  Base.Freq.OneWayFreqs
Path:     Freq.Table3.OneWayFreqs
Label Path: "The Freq Procedure"."Table VAR3"."One-Way Frequencies"
-----
```

Output Added:

```
-----
Name:      OneWayFreqs
Label:     One-Way Frequencies
Template:  Base.Freq.OneWayFreqs
-----
```

```
Path:          Freq.Table4.OneWayFreqs
Label Path:    "The Freq Procedure"."Table VAR4"."One-Way Frequencies"
-----
```

CONCLUSION

The ODS SELECT statement allows you to customize your SAS output so that you only output the tables that you need. This can help avoid any confusion that might occur when someone who is not familiar with SAS or is not a statistician is looking at your SAS output. It is also an alternative to outputting the procedure results in a SAS data set, which often contains unnecessary variables. The ODS TRACE statement gives you the output table names that are referenced in the ODS SELECT statement. Together, these statements provide a quick and easy method for editing your SAS output to best suit your needs.

REFERENCES

SAS Institute Inc., *The Complete Guide to the SAS® Output Delivery System, Version 8*, Cary, NC: SAS Institute Inc., 1999. 310 pp.

CONTACT INFORMATION

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