

Tips and Suggested Related Reading for Slide Presentation

Excel Reports from SAS

with HTML, ExcelXP, MSOffice2K_x, TableEditor, or DDE, Which Is Best?

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For a reference, not listed anywhere below, that covers multiple solution alternatives, see Chevell Parker's presentation *The 10 Most Frequently Asked Questions of Exporting to Excel*, which you can find at:
<http://www.sas.com/offices/NA/canada/downloads/presentations/TASS-2011/Ten-faq.pdf>

This document covers three tagsets, ExcelXP, MSOffice2K_x, and TableEditor, and how to install them. It also provides a reference on how to assure that the desired Excel format for numeric, date, or currency content is applied to the report. The MSOffice2K tagset is too feature-limited to be worth discussion, in my estimation.

Using the ODS HTML destination is introduced in the slide presentation, and for anything else you might want to try with ODS HTML, rather than a tagset, you should be able to find abundant HTML resources elsewhere, even if they are devoted to its use to create web pages, not an XLS file. As explained in the slides, getting an XLS file merely requires using filetype XLS, rather than HTML. That is not to say that the resulting file, when opened with Excel, will necessarily perform as you expect or desire. However, for functions that do not REQUIRE use of a tagset, ODS HTML might suffice, especially with some use of HTML tags.

ExcelXP TagSet

Information That Can Be Dumped By You In Your SAS Log

If you want documentation specific to the version of the tagset installed on your computer, below is sample code to capture any subset, or the all-inclusive package, of the ExcelXP information that can be dumped to your SAS log. It writes the information to text files on disk, rather than into your SAS log. The code is designed to create no real output, only documentation.

The different variations of the help are described this way:

Help: Displays introductory text and available options in full detail.

Quick: Displays introductory text and an alphabetical list of options, their current value, and a short description. **NOTE by LeRB:** This option shows only the CURRENT value of each option, not the full list of available values for each option. Therefore, it is useful only as a run environment diagnostic or audit trail, not a how-to LookUp reference.

Settings: Displays config/debug settings.

Changelog: Lists the changes in reverse chronological order.

All: Shows the output from all the help options.

Below is code where you must replace &Path with your target folder. If you wish, you can create separate disk files for the other values of doc=.

```
proc printto
  log="%Path\ExcelXP_HelpInformationFromSASlog.txt" new; run;

ods tagsets.excelxp path="%sysfunc(getoption(work))" body='Empty.xml'
  options(doc='all');
ods tagsets.excelxp close;

proc printto; run;
```

SAS Institute-Provided Documentation

“Quick Reference for the TAGSETS.EXCELXP Tagset”

http://support.sas.com/rnd/base/ods/odsmarkup/excelxp_help.html

For the ExcelXP tagset, download document

http://support.sas.com/rnd/base/ods/odsmarkup/TipSheet_ods_xl_xp.pdf

which is the “ODS Excel XP Tip Sheet”. I cannot explain why this document for the ExcelXP tagset contains “Excel XP” with an imbedded blank.

You might find helpful the imprecisely titled (i.e., suppressing the fact that the only tagset used is ExcelXP) downloadable package “Example code for ODS Tagsets & Excel, an Excellent Combination” found at:

http://support.sas.com/rnd/base/ods/odsmarkup/excelxp_samples.zip

For a collection of twelve sample programs, go to web page

“Try This Demo: The ExcelXP Tagset and Microsoft Excel” found at:

http://support.sas.com/rnd/base/ods/odsmarkup/excelxp_demo.html

Other SAS-Institute-Provided Resources

The most prolific author on ExcelXP is Vincent DelGobbo from SAS Institute. You should be able to find every paper/presentation that he has presented at various SAS users conferences with a name search at www.lexjansen.com, but this will return non-Excel hits as well. I used the search option described as “Alternatively, perform a search for SAS papers based on title, author or keywords.”

At this web site, when I searched on “Vincent DelGobbo”, rather than “ExcelXP”, it turned up 34 results, all papers by him. Since he cunningly did NOT use “ExcelXP” in any titles, even though most of his papers about SAS-to-Excel are devoted to the ExcelXP tagset, you need to dig through them to find what you want.

Another option is Vince DelGobbo's ExcelXP Tagset Paper Index, found at:

<http://www.sas.com/events/cm/867226/ExcelXPPaperIndex.pdf>

Rather than rooting around in this extravaganza of topics, papers, and page numbers within papers, it MIGHT be easier to look through his three most recent SAS Global Forum papers that include a discussion of ExcelXP can be found at:

<http://support.sas.com/resources/papers/proceedings13/143-2013.pdf>

<http://support.sas.com/resources/papers/proceedings12/150-2012.pdf>

<http://support.sas.com/resources/papers/proceedings11/170-2011.pdf>

What you need, but cannot find in any of the documents cited above and in these three papers, you might look for via DelGobbo's Paper Index, or via a search for ExcelXP at www.lexjansen.com, or at support.sas.com, or at www.google.com.

A search for “ExcelXP” at support.sas.com 273 hits at

<http://support.sas.com/dsearch?Find=Search&ct=&qt=ExcelXP&col=suppprd&nh=25&qp=&qc=suppsas&ws=1&qm=1&st=1&lk=1&rf=0&oq=&rq=0>

SAS-User-Provided Information in Conference Proceedings

At Lex Jansen's web site, when I searched on “ExcelXP”, it turned up 25 results.

MSOffice2K_x TagSet

Information That Can Be Dumped By You In Your SAS Log

This code will file the Help information to a permanent file on disk:

```
proc printto  
    log="%Path\MSOffice2K_x_HelpInformationFromSASlog.txt" new; run;  
  
ods tagsets.msoffice2k_x path="%sysfunc(getoption(work))" body='Empty.xls'  
    options(doc='help');  
ods tagsets.msoffice2k_x close;  
  
proc printto; run;
```

Unlike the case of the ExcelXP tagset, there are no other options for doc=, such as 'a11'. The only information provided is option name and description, but NO statement as to the possible valid values for those options or their default values.

Other SAS-Institute-Provided Resources

A search for “MSOffice2K_x” at support.sas.com took me to

http://support.sas.com/dsearch?Find=Search&ct=&qt=msoffice2k_x&col=suppprd&nh=25&qp=&qc=suppsa&ws=1&qm=1&st=1&lk=1&rf=0&oq=&rq=0

and 21 hits.

The best resource that I found with that search was a useful SAS-provided collection of tips in one web document by Chevell Parker of SAS Technical Support:

“Base SAS: The MSOffice2K_x Tagset Adds Options to the MSOffice2K Tagset”
<http://support.sas.com/rnd/base/ods/odsmarkup/msoffice2k/index.html>

The search also yielded links to several papers that mention or discuss the MSOffice2K_x tagset or the much less useful MSOffice2K tagset. None of those papers provide many, if any, actual examples.

Other of these links address various How-To questions.

SAS-User-Provided Information in Conference Proceedings

At Lex Jansen’s web site, when I searched on “MSOffice2K_x”, it turned up nothing.

TableEditor TagSet

Information That Can Be Dumped By You In Your SAS Log

This code will file the Help information to a permanent file on disk:

```
proc printto  
    log="%Path\TableEditor_HelpInformationFromSASlog.txt" new; run;  
  
ods tagsets.tableeditor path="%sysfunc(getoption(work))" body='Empty.xls'  
    options(doc='help');  
ods tagsets.tableeditor close;  
  
proc printto; run;
```

Unlike the case of the ExcelXP tagset, there are no other options for doc=, such as 'all'. The only information provided is option name and description, but NO statement as the possible valid values for those options or their default values, with one exception.

The TableEditor tagset is unique among the ODS tagsets for supporting the ability to create Excel files with imbedded Excel charts. This SAS log help listing includes a listing of all valid values for the ODS tagset option `chart_type`.

The help listing includes the statement:

For the full list of options see the PDF file in the download

Unfortunately, the SAS log contains no information as to which download contains “**the PDF file**” and no information as to where to find the download.

Although the TableEditor tagset can be downloaded as a standalone file, it is also possible to download a zip file that contains the tagset, and a PDF file, a ReadMe.txt file, as well as code and output relevant to the content of the PDF file.

The PDF is Create That Perfect Data Grid.pdf, with internal title “Creating That Perfect Data Grid Using the SAS® Output Delivery System, Revised”. It is apparently a 33-page update of the 31-page paper “Creating That Perfect Data Grid Using the SAS Output Delivery System” found at

<http://www2.sas.com/proceedings/forum2008/258-2008.pdf>

This original file was a paper presented in Spring of 2008, and the revised version has a Date Modified of 12 August 2008.

Neither PDF contains a list of options with valid values and defaults. The source for that information is the ReadMe.txt file contained in the zip file.

The only way to discover the whereabouts of the zip file is to look in Chevell Parker’s paper “Now–That’s Your Style!!!!” found at:

<http://www2.sas.com/proceedings/sugi31/091-31.pdf>

The only use of the TableEditor tagset in this paper is to create A TREE VIEW OF THE TABLE OF CONTENTS for some web (not Excel) output.

Rather than publish the contents of ReadMe.txt file, which contains other remarks related to the content of the zip file, I recommend that you download the zip file yourself. According to SUGI paper 091-31.pdf mentioned above, the zip file can be found at:

<ftp.sas.com/techsup/download/public/base/tableEditor.ZIP>

Though the ReadMe.txt file DOES contain valid values for the options, some of them are “generic” in the sense that you need additional knowledge or do some experimentation. I.e., “size” for a font size and “value” for a margin do not tell you what units are supported, and whether or not they must be explicitly listed in the option assignment.

Other SAS-Institute-Provided Resources

A search for “TableEditor” at support.sas.com took me to

<http://support.sas.com/dsearch?Find=Search&ct=&qt=TableEditor&col=suppprd&nh=25&qp=&qc=suppsas&ws=1&qm=1&st=1&lk=1&rf=0&oq=&rq=0>

and 38 hits.

Most of them are not very helpful, and I don’t know why the search results included them. Among them was the SUGI paper 091-31.pdf, through which, by series of steps, I finally found the ReadMe.txt file.

The search also yielded links to several papers that mention or discuss the TableEditor tagset. None of those papers provide many, if any, actual examples.

The most useful item found, as a possible supplement to Create That Perfect Data Grid.pdf from the tableeditor.zip file, is:

“Creating a Data Grid Like VB.NET”

<http://support.sas.com/rnd/base/ods/odsmarkup/tableeditor/index.html>

Most of the examples involve creating HTML output. However, since, as you should see in the slide presentation, many things that you need to accomplish in an Excel file created with SAS and the TableEditor tagset actually require your code to first create a temporary HTML file which your subsequent programmatically saves the HTML file as an Excel file.

NOTE: Some of the examples you will find in the documentation did not work for me. However, the slide presentation shows you what, of the things that I tried, did work.

SAS-User-Provided Information in Conference Proceedings

At Lex Jansen’s web site, when I searched on “TableEditor”, it turned up a paper on using the tagset to create output for HTML, not Excel.

Installation of Tagsets

NOTE: If you are not going to use the MSOffice2K_x or TableEditor tagsets, or you are going to rely on someone else to install them and (you hope) keep them, and the ExcelXP tagset, current, then you can ignore this section. If you only want to be able to assess whether or not what you are using is current, then you might want to read it at least for that purpose.

The MSOffice2K_x and TableEditor tagsets are currently not shipped with Base SAS software. You or your SAS Administrator need to install them. If you are running SAS on a standalone PC, then they could be installed wherever you want, as long as you know how to access them from that location. The typical location is SASUSER.TEMPLAT. If you are running SAS on a server, these tagsets presumably will be installed in SASHELP.TMPLMST by your SAS Administrator upon someone's request or direction.

The ExcelXP tagset is shipped with Base SAS software. It might be updated between shipped releases of Base SAS software. If you learn that there is an update later than the one that is installed on your PC or server, you presumably might want to install it or have it installed.

Your SAS log, when you use a tagset to create some output, will always tell you the version number of the tagset. The tagset downloads page at support.sas.com will not necessarily tell you the version number, but will tell you the date of the version. Your SAS log for the tagset will or will not, depending on which tagset it is, tell you the date of the version.

Running this code:

```
ods tagsets.excelxp path="%sysfunc(getoption(work))" body='Empty.xml';
ods tagsets.excelxp close;
```

```
ods tagsets.msoffice2k_x path="%sysfunc(getoption(work))" body='Empty.xls';
ods tagsets.msoffice2k_x close;
```

```
ods tagsets.tableeditor path="%sysfunc(getoption(work))" body='Empty.xls';
ods tagsets.tableeditor close;
```

on SAS Version 9.3 (TS1M2) yielded this information in the SAS log (where the red color was added to key parts of the text by me:

```
1    ods tagsets.excelxp path="%sysfunc(getoption(work))" body='Empty.xml';
NOTE: Writing TAGSETS.EXCELXP Body file: Empty.xml
NOTE: This is the Excel XP tagset (Compatible with SAS 9.1.3 and above, v1.130,
05/01/2011).
Add options(doc='help') to the ods statement for more information.
2    ods tagsets.excelxp close;

3    ods tagsets.msoffice2k_x path="%sysfunc(getoption(work))" body='Empty.xml';
NOTE: Writing TAGSETS.MSOFFICE2K_X Body file: Empty.xls
v2.60
4    ods tagsets.msoffice2k_x close;

5    ods tagsets.tableeditor path="%sysfunc(getoption(work))" body='Empty.xml';
NOTE: Writing TAGSETS.TABLEEDITOR Body file: Empty.xls
V2.65  4/25/2013
6    ods tagsets.tableeditor close;
```

The version of the ExcelXP tagset that is listed on that downloads page is a lower version number than the tagset shipped with SAS Version 9.3, BUT its version date is later than the version date in the DOC='Help' listing in your SAS log, if you are running Version 9.3 of SAS.

Running the above code on SAS Version 9.4 (TS1M0) yielded the same version information for Msoffice2K_x and TableEditor, since those are downloads, and those downloads have not changed since I installed them. However, the result of ExcelXP, which is packaged and installed with the SAS software, yielded:

NOTE: This is the Excel XP tagset (Compatible with SAS 9.1.3 and above, v1.129, 11/07/2011) .

Note that the SAS log audit trail for Msoffice2K_x does not include a version date.

If you go to <http://support.sas.com/rnd/base/ods/odsmarkup/index.html>, you will find that:

the download there for Msoffice2K_x is described as "Updated (February 2013)", but no version number is listed;

the download there for TableEditor is described as "Updated (April 2013)", which is consistent with the SAS log version data above, but no version number is listed;

and

the download there for ExcelXP is described as "08/02/2013, version 1.130", which tells me that I could update my tagset.

For information on installing tagsets, see

<http://support.sas.com/kb/32/394.html>

"Usage Note 32394: Installing and Storing Updated Tagsets for ODS MARKUP"

For information about downloading tagsets, see the "How to Download Tagsets" section at

<http://support.sas.com/rnd/base/ods/odsmarkup/index.html>

"Base SAS: ODS Markup Resources"

It is possible to configure your ODS Excel report creation programs so that they always first download the current version of the tagset you are using. The disadvantage is that the format of your output might change unexpectedly due to a change in the tagset.

Assure that desired Excel format for numeric, date, or currency content is applied to the report

Various papers and authors have taken up parts of this topic, but perhaps the best (and latest) is:

<http://support.sas.com/resources/papers/proceedings11/266-2011.pdf>

“Don’t Gamble with Your Output: How to Use Microsoft Formats with ODS”

by Cynthia L. Zender from SAS Institute.

The cause for concern is best summarized by the opening of her abstract:

“Are you frustrated when Excel does not use your SAS® formats for number cells? Do you lose leading zeros on ZIP codes or ID numbers? Does your character variable turn into a number in Excel? Don’t gamble with your output! Learn how to use the HTMLSTYLE and TAGATTR style attributes to send Microsoft formats from SAS to Excel.”

The paper does not take up the MSOffice2K_x and TableEditor tagsets, only ExcelXP and MSOffice2K. I verified that what is shown there for MSOffice2K does work for MSOffice2K_x TableEditor.