

# ExcelXP Tagset Help

## Compatible with SAS 9.1.3 and later, v1.116, 08/25/2010

This tagset/destination creates Microsoft's spreadsheetML XML. It is used specifically for importing SAS procedure output into Microsoft Excel.

By default each table is placed in its own worksheet within a workbook. This destination supports ODS styles, traffic lighting, and Excel formats and formulas.

Numbers, currency, and percentages are correctly detected and displayed. Excel formats and formulas are specified by supplying a style override on the TagAttr style attribute.

By default, titles and footnotes are part of the spreadsheet, but are part of the header and footer.

Also by default the print orientation is 'Portrait'. The orientation can be changed to 'Landscape'.

The specification for this XML is here:

[http://msdn2.microsoft.com/en-us/library/aa140062\(office.10\).aspx](http://msdn2.microsoft.com/en-us/library/aa140062(office.10).aspx)

See Also:

<http://support.sas.com/rnd/base/topics/odsmarkup/>  
<http://www.sas.com/reg/gen/corp/867226?page=Resources>  
<http://support.sas.com/rnd/papers/index.html#excel2011>  
<http://support.sas.com/rnd/papers/index.html#excel2010>  
<http://support.sas.com/rnd/papers/index.html#excel2009>  
<http://support.sas.com/rnd/papers/index.html#excel2008>  
<http://support.sas.com/rnd/papers/index.html#excel2007>  
<http://support.sas.com/rnd/papers/index.html#excel2006>

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These are the options supported by this tagset.

Sample usage:

```
ods tagsets.excelxp file='test.xml' contents='index.xml' data='test.ini'  
options(doc='help');  
  
ods tagsets.excelxp options(doc='quick');  
  
ods tagsets.excelxp options(embedded_titles='no' orientation='landscape');
```

**Doc:** No default value.

Values: 'Help', 'Quick', 'Settings', 'ChangeLog', 'All'.

'Help' displays introductory text and options and 'Quick' displays available options, their current value, and a short description. 'Settings' displays the configuration and debug settings. 'ChangeLog' lists the changes to the tagset in reverse chronological order. 'All' shows the output from all the help options.

**Orientation:** Default value: 'Portrait'

Values: 'Portrait', 'Landscape'

Instructs Excel about how to format the page when printing. The only other value is 'Landscape'. Also available as a macro variable: ORIENTATION

**Embedded\_Titles:** Default value: 'No'

Values: 'Yes', 'No', 'On', 'Off'

If 'Yes' or 'On', titles appear in the worksheet. By default, titles are a part of the print header. Also available as a macro variable: EMBEDDED\_TITLES

**Embedded\_Footnotes:** Default value: 'No'

Values: 'Yes', 'No', 'On', 'Off'

If 'Yes' or 'On', footnotes appear in the worksheet. By default, footnotes are a part of the print footer. Also available as a macro variable: EMBEDDED\_FOOTERS

**Embed\_Titles\_Once:** Default value: 'No'

Values: 'Yes', 'No', 'On', 'Off'

If 'Yes' or 'On', embedded titles only appear at the top of each worksheet.

**Merge\_Titles\_Footnotes:** Default value: 'No'

Values: 'Yes', 'No', 'On', 'Off'

If 'No' or 'Off', left justified titles and footnotes are not merged across cells. Centered titles and footnotes are merged across the current column count for the worksheet.

**Title\_Footer\_Width:** Default value: '0'

Values: 0, number

If '0', titles and footnotes merge across the number of columns currently in use. A non-zero value results in the titles and footnotes merging across that number of columns.

**Print\_Header:** Default value: ''

Values: string

If there are no titles or embedded titles are on, this value is used as the header for printing. Everything about the appearance of the 3 part header can be controlled with this value. The Excel syntax for this string follows.

Of course, the easiest way to create a header or footer is by using Excel. Save the workbook to XML, and then search the XML for '<Header' or '<Footer'. A simple copy-and-paste makes it a part of your SAS program.

```
&amp;L <Left header> &amp;C <Center header> &amp;R <Right Header>
```

A very simple example is this:

```
&amp;LLeft header text&amp;CCenter header text&amp;RRight Header Text
```

Newlines can be introduced by inserting `&#13;` within the text. Other special values are:

Newline:	&#13;	
Page Number:	&amp;P	
Pages:	&amp;N	
Date:	&amp;D	
Time:	&amp;T	
File Path:	&amp;Z&amp;F	
File:	&amp;F	
Sheet Name:	&amp;A	
Underline:	&amp;U	One to start underlining, another to stop it.
Font Size:	&amp;8	Persists until changed.

The font size can be controlled by placing the font size, in points, right before the text. This is a left-justified header with a font size of 8.

```
&amp;L&amp;&8This is a test;
```

The font, bold, and italic settings can be changed using this syntax:

```
&quot; <font name>,<Bold> <Italic> &quot;
```

This example changes the font, turns on bold and italic, changes the font size, and then turns underlining on and off:

```
&L&quot;Palatino,Bold Italic&9&UThis is a test&U
```

This is a complete example, showing the various possibilities:

```
&L&quot;Palatino,Bold Italic&9&UThis is underlined &U  
This is not &#13;&#12This is bigger&CThis is the Center&#13;Page:  
&P&#13;Pages: &N&#13;Date: &D&#13;Time: &T&#13;Path:  
&Z&F&#13;File: &F&#13;Sheet: &A&R&#14This is bigger and on  
the right&#13;&P
```

**Print\_Footer:** Default value: ''

Values: string

If there are no footnotes or embedded footers are on, this value is used as the footer for printing.

Everything about the appearance of the 3 part footer can be controlled with this value. The syntax for this value is the same as that for the Print\_Header option.

**Print\_Header\_Margin:** Default value: '0.5'

Values: number (inches)

This is the header margin as set in the Excel Page Setup dialog window.

**Print\_Footer\_Margin:** Default value: '0.5'

Values: number (inches)

This is the footer margin as set in the Excel Page Setup dialog window.

**Suppress\_Bylines:** Default value: 'No'

Values: 'Yes', 'No', 'On', 'Off'

If 'Yes' or 'On', BY lines do not appear in the worksheet. This is useful because using the NOBYLINE SAS system option defeats the tagset's BY group processing capabilities.

**Zoom:** Default value: '100'

Values: number (percentage)

This value determines the zoom level on the worksheet.

**Scale:** Default value: '100'

Values: number (percentage)

This value determines the scale level for printing.

**DPI:** Default value: '300'

Values: number

This value determines the dots per inch for printing.

**Pages\_FitWidth:** Default value: '1'

Values: number

This value determines the number of pages to fit the worksheet across when printing via the Excel "Fit to" option (Page Setup dialog). See also, FitToPage.

**Pages\_FitHeight:** Default value: '1'

Values: number

This value determines the number of pages down to fit the worksheet when printing via the Excel "Fit to" option (Page Setup dialog). See also, FitToPage.

**FitToPage:** Default value: 'No'

Values: 'Yes', 'No', 'On', 'Off'

This value sets the Excel "Fit to" option (Page Setup dialog) to 1 page wide by 1 page tall. See also, Pages\_FitWidth and Pages\_FitHeight.

**Page\_Order\_Across:** Default value: 'No'

Values: 'Yes', 'No', 'On', 'Off'

If set to 'Yes' or 'On', the worksheet page order is set to print across, then down.

**Center\_Vertical:** Default value: 'No'

Values: 'Yes', 'No', 'On', 'Off'

This value controls vertical centering for printing.

**Center\_Horizontal:** Default value: 'No'

Values: 'Yes', 'No', 'On', 'Off'

This value controls horizontal centering for printing.

**Gridlines:** Default value: 'No'

Values: 'Yes', 'No', 'On', 'Off'

This value turns gridlines for printing on or off (option in Excel Page Setup dialog).

**WrapText:** Default value: 'Yes'

Values: 'Yes', 'No', 'On', 'Off'

This value turns text wrapping on or off for all style definitions. This option should be used carefully. Wraptext is an attribute which is part of the style definition, specifically, the alignment part. Turning this off causes all style definitions that are generated afterward to leave out the wraptext setting. Turning it on or off can work, provided you understand that only styles generated from an override are affected by later changes to the setting.

This option also interacts with the tagattr Wrap setting. If wrap is the opposite of the setting given by this option, then it is treated as a style override, and a new style is generated with a new alignment tag, which also contain a redefinition of the vertical and horizontal justifications. This interaction means that if you use these options together, it is best to set WrapText at the very beginning and then leave it alone. Otherwise the interaction of the options and the styles already created could get complicated.

**Hidden\_Columns:** Default value: 'None'

Values: 'None', number, list of numbers, range

All columns listed are hidden. The value is a comma separated list of numbers or ranges. Examples:

```
Hidden_Columns='3'  
Hidden_Columns='3,4'  
Hidden_Columns='3,4,9-10'
```

**BlackAndWhite:** Default value: 'No'

Values: 'Yes', 'No', 'On', 'Off'

This value turns black and white printing on or off (option in Excel Page Setup dialog).

**DraftQuality:** Default value: 'No'

Values: 'Yes', 'No', 'On', 'Off'

This value turns draft quality printing on or off (option in Excel Page Setup dialog).

**RowColHeadings:** Default value: 'No'

Values: 'Yes', 'No', 'On', 'Off'

This value turns row and column headings for printing on or off (option in Excel Page Setup dialog).

**Row\_Repeat:** Default value: 'None'

Values: 'None', number, range, 'Header'

If a number is specified, that row is repeated across pages if a worksheet breaks across pages when printing. If a range such as '3-5' is specified, that range of rows are repeated. If 'Header' is specified, the table headers for the first table of the worksheet are repeated.

**Column\_Repeat:** Default value: 'None'

Values: 'None', number, range, 'Header'

If a number is specified, that column is repeated across pages if a worksheet breaks across pages when printing. If a range such as '3-5' is specified, that range of columns are repeated. If 'Header' is specified, the columns that contain the row headers for the first table of the worksheet are repeated.

**Frozen\_Headers:** Default value: 'No'

Values: 'Yes', 'No', 'True', 'False', number

If 'Yes' or 'True', the rows down to the bottom of the headers are frozen when the table data scrolls vertically. This includes any titles created with the Embedded\_Titles option. If a number is specified, all rows up to and including that row are frozen. Also available as a macro variable: FROZEN\_HEADERS

**Frozen\_RowHeaders:** Default value: 'No'

Values: 'Yes', 'No', 'True', 'False', number

If 'Yes' or 'True', the header columns on the left are frozen when the table data scrolls horizontally. If a number is specified, all columns up to and including that column are frozen. Also available as a macro variable: FROZEN\_ROWHEADERS

**AutoFilter:** Default value: 'None'

Values: 'None', 'All', range

If 'All', an AutoFilter is applied to all columns. If a range such as '3-5' is specified, the AutoFilter is applied to that range of columns.

**AutoFilter\_Table:** Default value: '1'

Values: number

If sheet interval is anything other than 'Table' or 'Bygroup', the value specified determines which table gets the AutoFilter applied. If the sheet interval is 'Table', or 'Bygroup', the (only) table in the worksheet gets the AutoFilter, regardless of this setting.

**Formulas:** Default value: 'Yes'

Values: 'Yes', 'No', 'On', 'Off'

By default, data values that start with an '=' become formulas instead of cell values. This behavior can be turned off by setting this option to 'No' or 'Off'. Excel only supports relative column references in its XML. A formula like =SUM(C2,C3) or =A2+B3 will not work; you must use R1C1 style formulas. Equivalent formulas might be =SUM(R[-2]C,R[-1]C) or =RC[-2]+RC[-1]. Refer the PROC PRINT example in the "Using Style Attributes" section.

**Width\_Fudge:** Default value: '0.75'

Values: 'None', number

By default, this value is used along with Width\_Points and column width to calculate an approximate width for the table columns.

$$\text{width} = \text{Data\_Font\_Points} * \text{Number\_Of\_Chars} * \text{Width\_Fudge}$$

If 'None' is specified, this feature is turned off.

**Width\_Points:** Default value: 'None'

Values: 'None', number

By default, the point size from the data or header style elements are used to calculate a pseudo column width. The column width is calculated from the given column width or the length of the column's header text, if the header is bigger. In the case where the header length is used, the header's point size is also

used. This value overrides that point size. This value is used along with Width\_Fudge and column width to calculate an approximate width for the table columns.

$$\text{width} = \text{Width\_Points} * \text{Number\_Of\_Chars} * \text{Width\_Fudge}$$

**Default\_Column\_Width:** Default value: 'None'

Values: 'None', number, list of numbers

Most procedures provide column widths, but occasionally a column will not have a width. Excel resizes the column to fit any numbers but will not auto-size for character string headings. In the case that a column does not have a width, this value is used instead. The value should be the width in characters. If the value of this option is a comma separated list, each number is used for the column in the same position. If the table has more columns, the list starts over again.

**Absolute\_Column\_Width:** Default value: 'None'

Values: 'None', number, list of numbers

This option works similarly to the Default\_Column\_Width option. The difference is that these widths are used regardless of any column widths the procedure might provide. The value should be the width in characters. If the value of this option is a comma separated list, each number is used for the column in the same position. If the table has more columns, the list starts over again.

**Row\_Heights:** Default value: '0, 0, 0, 0, 0, 0, 0'

Values: list of numbers (points)

This option controls how tall the rows are for each type of row. The numbers are in points. By default, the values are taken from the font size used for the row. The font size values are collected from the style element definitions for each item. The table row height is defined by the font size in the header style.

The parameters of this option are positional, but not all values must be specified. A value of '0' means the height should be taken from the style element. The first value is the height for table header rows. The second value is the height for table body rows. The third value is the row height for bylines.

The fourth is for titles, the fifth is for footers, the sixth is the pagebreak height, and the last value is the height for paragraph skip. The default values are:

Table\_Head: 0  
Table: 0  
Byline: 0  
Title: 0  
Footer: 0  
PageBreak: 0  
Parskip: 0

**Row\_Height\_Fudge:** Default value: '4'

Values: number (points)

This value is added to the row height for each row. The additional height makes the spreadsheet easier to read.

**Autofit\_Height:** Default value: 'No'

Values: 'Yes', 'No', 'On', 'Off'

If 'Yes', no row heights are specified. This allows the auto fit height feature of Excel to do its job... sometimes not so well.

**Sheet\_Interval:** Default value: 'Table'

Values: 'Table', 'Page', 'Bygroup', 'Proc', 'None'

This option controls how many tables appear in a worksheet. In reality only one table is allowed per worksheet. To get more than one table, the tables are actually combined into one.

Specifying a sheet interval causes the current worksheet to close. It is recommended that this always be the first option, to insure that the options following it apply to the new worksheet, rather than the previous worksheet.

**Sheet\_Name:** Default value: 'None'

Values: 'None', string

Worksheet names can be up to 31 characters long. This name is used in combination with a worksheet counter to create a unique name. Specifying 'None' results in the tagset controlling the worksheet name.

**Blank\_Sheet:** Default Value 'None'

Values: string

Creates a blank worksheet with the name specified. Worksheet names can be up to 31 characters long. This name is used in combination with a worksheet counter to create a unique name.

**Sheet\_Label:** Default value: 'None'

Values: 'None', string

This option is used in combination with the various worksheet naming heuristics, which are based on the sheet interval. This string is used as the first part of the name instead of the predefined string it would normally use.

The default values are:

```
'Proc ' total_Proc_count - label
'Page ' total_page_count - label
'By ' numberOfWorksheets byGroupLabel - label
'Table ' numberOfWorksheets - label
```

Specifying 'None' results in the tagset controlling the worksheet name.

**Contents\_Workbook:** Default value: 'Contents, Index'

Values: 'Contents', 'Index', 'Workbooks', 'All'

If set to 'All', the contents file contains 3 worksheets: a list of workbooks, a hierarchical table of contents, and a list of worksheets.

**Contents:** Default value: 'No'

Values: 'Yes', 'No', 'On', 'Off'

If set to 'Yes' or 'On', the first worksheet contains a table of contents with links to each worksheet in the workbook.

**Index:** Default value: 'No'

Values: 'Yes', 'No', 'On', 'Off'

If set to 'Yes' or 'On', the first worksheet contains a table of contents with a single link to each worksheet in the workbook. If both this option and the Contents option are specified, then the index of worksheets is the second worksheet, and it is named 'Worksheets'.

**Missing\_Align:** Default value: 'Right'

Values: 'Left', 'Center', 'Right'

Sets the horizontal alignment for missing values. By default a 'datamissing' style element is created from the 'data' style element. The 'datamissing' style element is created in 3 versions, one for each justification. When a style element has the string 'data' in its name, the data value is checked. If the data value is missing, then the 'datamissing' style element is used instead. A 'datamissing' style element can be provided in the style definition. If found, the tagset uses that style element as a basis for the 3 'datamissing' styles elements.

**Auto\_SubTotals:** Default value: 'No'

Values: 'Yes', 'No', 'On', 'Off'

If 'Yes' or 'On', a subtotal formula is placed in the subtotal cells on the first summary row of the PRINT procedure's tables. **WARNING:** This does not work with SUMBY; it works only for the cells in the first summary row of a table. It also does not work if the BY and ID values are the same.

**Convert\_Percentages:** Default value: 'Yes'

Values: 'Yes', 'No'

If 'Yes' or 'On', the percent symbol is removed, Excel percent format is applied, and the value is multiplied by 100. This causes percentage values to display as numeric percentages in Excel. If 'No' or 'Off', percentage values remain untouched and appear as text values in Excel. This option will be deprecated in a future release, when it is no longer needed.

**Currency\_Symbol:** Default value: '\$'

Values: string

Used for detection of currency formats and for removing those symbols so Excel will like them. This option will be deprecated in a future release, when it is no longer needed.

**Currency\_Format:** Default value: 'Currency'

Values: Excel format

The currency format for Excel to use for monetary data. Another possible value is 'Euro Currency'. This option will be deprecated in a future release, when it is no longer needed.

**Decimal\_Separator:** Default value: '.'

Values: string

The character used for the decimal point. This option will be deprecated in a future release, when it is no longer needed.

**Thousands\_Separator:** Default value: ','

Values: string

The character used for indicating thousands in numeric values. Used for removing those symbols from numeric values so Excel will like them. This option will be deprecated in a future release, when it is no longer needed.

**ASCII\_Dots:** Default value: 'Yes'

Values: 'Yes', 'No', 'On', 'Off'

By default, batch/ASCII output is prefixed by a dot to preserve leading spaces. This is not always desirable, particularly when using PUT statements from the DATA Step. This option allows the dots to be turned off.

**Numeric\_Test\_Format:** Default value: '12.'

Values: SAS numeric format

Used to determine whether or not a value is numeric. Other useful values might be the COMMAX. or NLNUM. formats. This option will be deprecated in a future release, when it is no longer needed.

**Minimize\_Style:** Default value: 'No'

Values: 'Yes', 'No', 'On', 'Off'

If 'Yes' or 'On', the style definitions are filtered so that only the most necessary definitions are included. This can have the reverse effect if style attribute overrides are used on PROC statements. It is best to define a new style with the appropriate overrides built in. The procedure can use the new style, but without individual attribute overrides. The result is a much smaller style section. In that case, this option should be set to 'No' or 'Off'.

**Skip\_Space:** Default value: '1, 0, 1, 1, 1'

Values: list of numbers

This option controls how much space follows the different types of output that can occur within a worksheet. The number given is a multiplier that is used against the height given in the 'parskip' style

element. In the absence of the 'parskip' style element, the font size from the 'header' style element is used.

The parameters of this option are positional, but not all values must be specified. The first value is for the space following each table. The second value is the space following BY lines. The third is for titles, the fourth is for footers and the last value is the space following page breaks if the PageBreaks option is turned on and a 'pagebreak' style element exists.

The default values are:

Table: 1  
Byline: 0  
Title: 1  
Footer: 1  
PageBreak: 1

**PageBreaks:** Default value: 'No'

Values: 'Yes', 'No', 'On', 'Off'

If 'Yes' or 'On', page breaks are inserted into the style definition. The 'pagebreak' style element is used to define what that page break looks like. A sample style element definition looks like this.

```
style pagebreak / cellheight=8 foreground=black tagattr="HorzStripe";
```

It is not necessary to define a 'pagebreak' style element. In its absence, a blank row is inserted.

**Configuration\_File:** Default value: ''

Values: Any valid file name

The name of the configuration file to use. This is a .ini-formatted file as written to the data file, if one was specified. If specified, the options for the configuration are loaded on top of any options given on the ODS statement. A file may contain more than one configuration section. Only the first section that matches the configuration name is loaded. See also, Configuration\_Name.

**Configuration\_Name:** Default value: 'default'

Values: string

The name of the configuration to read or write in the .ini file.

**Debug\_Level:** Default value: '0'

Values: 0, number

Determines what level of debugging information should be printed to the SAS Log.

## Using Style Attributes

There are a few style attributes that can be used to good effect in the ExcelXP tagset. The TagAttr attribute can be used to add formulas and formats. Cellwidth can be used to control the column widths. Flyover can be used to add comments to cells. A URL on a cell causes it to be a link. Additionally, formulas can be given as the actual data values.

An alternative to setting widths is to use the cellwidth / width style attributes. This value is used regardless of any other column width calculations. Cellwidth can be specified in any of these units: inch, centimeter, millimeter, points, or pixel. If a cell width for column is given more than once, the first width is used. This can happen when there is more than one table per worksheet.

The following example shows Excel formulas as data, comment text on a header, and absolute control of column widths:

```
ods tagsets.excelxp file='test.xml' options(zoom='75');

data test;
length a b 8 c $20;
input a b c $;
cards;
1 2 3
2 3 =RC[-2]+RC[-1]
3 4 =RC[-2]+RC[-1]
. . =SUM(R[-3]C:R[-1]C)
;
run;

proc print data=test noobs;
  var a b;
  var c / style(head) = {flyover='Hello World'}
        style(data) = {cellwidth=50pt};
run; quit;

ods tagsets.excelxp close;
```

**TagAttr:** Default value: "

Values: *<Excel-format or format:Excel-format>*  
*<formula:Excel-formula>*  
*<rotate:degrees-of-rotation>* (90 through -90)  
*<type:data-type>*  
*<hidden:Yes>*  
*<wrap:Yes | No>*  
*<mergeacross:Yes | No | Number>*

This is not a tagset option but instead it is a style attribute that the tagset uses to set Excel formulas and formats, and other attributes. A single value without a keyword is interpreted as an Excel format. Valid Excel formats and formulas must be specified. Any combination of keywords can be specified together. There should be no spaces except for those between the two values. The keyword and value must be separated by a ':'. For example:

```
tagattr='format:###.## formula:SUM(R[-4]C:R[-1]C) rotate:90'
```

The table below lists some common Excel format values. Note that for Date and Time values, you must specify `type:DateTime`.

Desired Format	Excel Format Value
Text	@
Time as 0:00	Short Time
Time as 0:00:0	h:mm:s
Time as 00:00 AM	Medium Time
Time as 24:00:00	[h]:mm/:s
Date and Time as 3/14/01 1:30 PM	m/d/yy\ h:mm\ AM/P
Percentage, 6 decimal places	0.00000%%
ZIP Code	00000
ZIP Code + 4	00000\ -0000
Scientific Notation	Scientific
Scientific Notation, 4 decimal places	0.0000E+00
Fraction, as sixteenths (8/16)	#\ ??/1

Refer to the Formulas tagset option above for information about specifying Excel formulas.

Valid values for `data-type` are General, String, Number and DateTime. Be sure to specify the values exactly as they are shown here, because Excel is case-sensitive. It should not be necessary to specify `data-type` except when DateTime is being used.

When Hidden is set to Yes for any cell, the entire row is hidden.

Specifying Yes for Wrap turns on text wrapping for that cell. This works in conjunction with the WrapText tagset option. By default text wrapping is on. Setting this value to the opposite of the wraptext setting results in a style override for this cell.

MergeAcross is used to force a cell to merge across the current width of the worksheet. Using a number causes the cell to merge across that many columns.

### **Margins:**

Margins can be set two ways: with the system options or through style elements. The system options take precedence over the style attributes. In the style, the margins must be set on the 'body' style element.

Setting the margins with the options statement is the easiest thing to do:

```
options topmargin=1in
        bottommargin=1in
        leftmargin=.5in
        rightmargin=.5in;
```

As a style element definition, the 'body' style element might look like this:

```
style body from body / topmargin=.5in leftmargin=.25in;
```

This approach is more reusable, since each program that uses the style automatically gets the margins.

### **Center/NoCenter system options**

Setting the center or nocenter options causes titles, footnotes and BY lines to be centered or left justified within the worksheet, respectively. If the nocenter option is set, the cells are not merged. This causes Excel to do a better job of printing when the BY line, title, or footnote text is long.

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