XML Spreadsheet Reference

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In this article

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Applies to:

    Microsoft® Excel 2002

    Microsoft® Office XP Web Components Spreadsheet Component

Summary: This reference describes the elements and attributes that make up the XML Spreadsheet (XMLSS) schema when the data in Microsoft Excel 2002 spreadsheets and

Microsoft Office XP Spreadsheet Components is exported to the Extensible Markup Language (XML) format. (53 printed pages)

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How to Use This Reference

To use this reference, click on the hyperlinked tag you're interested in as listed in the Contents section above. The easiest way to see how these tags relate to each other is to export the data in a Microsoft® Excel 2002 spreadsheet or Microsoft® Office XP Spreadsheet Component to the XML Spreadsheet (XMLSS) format and cross-reference the output against the tags listed here.

To save the data from an Excel 2002 spreadsheet in the XMLSS format, on the **File** menu, click **Save As**. In the **Save As** list, click **XML Spreadsheet (*.xml)**. Type a file name into the **File name** list, and then click **Save**. Then open the XML file in Microsoft® Internet Explorer 5 or later to examine the XMLSS output.

To save the data from an Office XP Spreadsheet Component in the XMLSS format, click the **Export to Microsoft Excel** button on the Spreadsheet Component's toolbar, and then follow the directions above to save the Excel 2002 spreadsheet's contents as XML.

XML Spreadsheet Tag Hierarchy

The hierarchy of tags in the XML Spreadsheet model is as follows:

Copy

```
<ss:Workbook>
    <ss:Styles>
        <ss:Style>
            <ss:Alignment/>
            <ss:Borders>
                <ss:Border/>
            </ss:Borders>
            <ss:Font/>
            <ss:Interior/>
            <ss:NumberFormat/>
            <ss:Protection/>
        </ss:Style>
    </ss:Styles>
    <ss:Names>
        <ss:NamedRange/>
    </ss:Names>
    <ss:Worksheet>
        <ss:Names>
            <ss:NamedRange/>
        </ss:Names>
        <ss:Table>
            <ss:Column/>
            <ss:Row>
                <ss:Cell>
                    <ss:NamedCell/>
                    <ss:Data>
                        <Font/>
                        <B/>
                        <I/>
                        <U/>
                        <S/>
                        <Sub/>
                        <Sup/>
                        <Span/>
                    </ss:Data>
                    <x:PhoneticText/>
                    <ss:Comment>
                        <ss:Data>
                            <Font/>
                            <B/>
                            <I/>
                            <U/>
                            <S/>
                            <Sub/>
                            <Sup/>
                            <Span/>
                        </ss:Data>
                    </ss:Comment>
                    <o:SmartTags>
                        <stN:SmartTag/>
```

```
                    </o:SmartTags>
                </ss:Cell>
            </ss:Row>
        </ss:Table>
        <c:WorksheetOptions>
            <c:DisplayCustomHeaders/>
        </c:WorksheetOptions>
        <x:WorksheetOptions>
            <x:PageSetup>
                <x:Layout/>
                <x:PageMargins/>
                <x:Header/>
                <x:Footer/>
            </x:PageSetup>
        </x:WorksheetOptions>
        <x:AutoFilter>
            <x:AutoFilterColumn>
                <x:AutoFilterCondition/>
                <x:AutoFilterAnd>
                    <x:AutoFilterCondition/>
                </x:AutoFilterAnd>
                <x:AutoFilterOr>
                    <x:AutoFilterCondition/>
                </x:AutoFilterOr>
            </x:AutoFilterColumn>
        </x:AutoFilter>
    </ss:Worksheet>
    <c:ComponentOptions>
        <c:Toolbar>
            <c:HideOfficeLogo/>
        </c:Toolbar>
    </c:ComponentOptions>
    <o:SmartTagType/>
</ss:Workbook>
```

<B> Tag

Used by:	Excel only
Parent element:	ss:Data
Required elements:	(none)
Optional elements:	(none)
Required attributes:	(none)
Optional attributes:	(none)

Description

Specifies a change to bold within an Excel rich-text data stream.

<c:ComponentOptions> Tag

Used by:	Spreadsheet component only
Parent element:	ss:Workbook
Required elements:	(none)
Optional elements:	c:Toolbar
Required attributes:	(none)
Optional attributes:	(none)

Description

This element contains information that is unique to the Spreadsheet component. Excel does not need to read or understand this information.

<c:DisplayCustomHeaders> Tag

Used by:	Spreadsheet component only
Parent element:	c:WorksheetOptions
Required elements:	(none)
Optional elements:	(none)
Required attributes:	(none)
Optional attributes:	(none)

Description

Presence of this element indicates that the Spreadsheet component should display custom row and column headers for this sheet, rather than the default "A, B, C..." and "1, 2, 3..."

style row and column headers.

<c:HideOfficeLogo> Tag

Used by:	Spreadsheet component only
Parent element:	c:Toolbar
Required elements:	(none)
Optional elements:	(none)
Required attributes:	(none)
Optional attributes:	(none)

Description

Presence of this element indicates that the Office logo should be hidden. The default state is to show the Office logo, hence the name **HideOfficeLogo**.

<c:Toolbar> Tag

Used by:	Spreadsheet component only
Parent element:	c:ComponentOptions
Required elements:	(none)
Optional elements:	c:HideOfficeLogo
Required attributes:	(none)
Optional attributes:	**ss:Hidden**

Description

This element contains information about the state of the Spreadsheet Component's toolbar.

Optional Attributes

Attribute:	ss:Hidden
Description:	**True** specifies that the spreadsheet component's toolbar is hidden. **False** (or omitted) specifies that it is visible.
Type:	Boolean

<c:WorksheetOptions> Tag

Used by:	Spreadsheet component only
Parent element:	ss:Worksheet
Required elements:	(none)
Optional elements:	c:DisplayCustomHeaders
Required attributes:	(none)
Optional attributes:	(none)

Description

This element contains worksheet options that are specific to the Spreadsheet component.

<Font> Tag

Used by:	Excel only
Parent element:	ss:Data
Required elements:	(none)
Optional elements:	(none)
Required attributes:	(none)
Optional attributes:	**x:Color**

Description

Specifies a font change within an Excel rich-text data stream.

Optional Attributes

Attribute:	**x:Color**
Description:	Specifies the font color to use.
Type:	**String**
Default:	0

<I> Tag

Used by:	Excel only
Parent element:	ss:Data
Required elements:	(none)
Optional elements:	(none)
Required attributes:	(none)
Optional attributes:	(none)

Description

Specifies a change to italic within an Excel rich-text data stream.

<o:SmartTags> Tag

Used by:	Excel only
Parent element:	ss:Cell
Required elements:	(none)
Optional elements:	stN:SmartTag
Required attributes:	(none)
Optional attributes:	(none)

Description

A collection of **SmartTag** tags, each of which denote single instances of a smart tag on a cell.

The child tags of this collection have namespaces that have been defined at both the top of the document per XML standards and with **SmartTagType**. stN (for example, st1, st2) is the common local alias for these namespaces. For example, if a smart tag type is defined with a namespace of "urn:mycompany-com" and a name of "bar", expect child tags called "<st1:bar>" where st1 refers to the urn:mycompany-com namespace.

To add smart tags to your workbook, go to the **Smart Tags** tab (**AutoCorrect** dialog box, **Tools** menu) and check all the boxes. Smart tags are not available in the Spreadsheet component.

<o:SmartTagType> Tag

Used by:	Both Excel and the Spreadsheet component
Parent element:	ss:Workbook
Required elements:	(none)
Optional elements:	(none)
Required attributes:	**o:name, o:namespaceuri**
Optional attributes:	(none)

Description

Defines a smart tag type category that is used within this workbook. A smart tag type is fully defined by both a namespace and a tag name; this is what smart tag actions register to provide actions for, and what smart tag recognizers pass to the applications as annotations.

To add smart tags to your workbook, go to the **Smart Tags** tab (**AutoCorrect** dialog box, **Tools** menu) and check all of the boxes. Smart tags are not available in the Spreadsheet component.

Required Attributes

Attribute:	o:name
Description:	The tag name that this smart tag type is using.
Type:	String

Attribute:	o:namespaceuri
Description:	The namespace that this smart tag type is associated with.
Type:	String

<S> Tag

Used by:	Excel only
Parent element:	ss:Data
Required elements:	(none)
Optional elements:	(none)
Required attributes:	(none)
Optional attributes:	(none)

Description

Specifies a change to strikethrough within an Excel rich-text data stream.

<Span> Tag

Used by:	Excel only
Parent element:	ss:Data
Required elements:	(none)
Optional elements:	(none)

Required attributes:	(none)
Optional attributes:	(none)

Description

This element is used to save outline formatting, for example: `<Span ss:Style="text-effect:outline">`.

`<ss:Alignment>` Tag

Used by:	Both Excel and the Spreadsheet component
Parent element:	ss:Style
Required elements:	(none)
Optional elements:	(none)
Required attributes:	(none)
Optional attributes:	ss:Horizontal, ss:Indent, ss:ReadingOrder, ss:Rotate, ss:ShrinkToFit, ss:Vertical, ss:VerticalText, ss:WrapText

Description

Defines the font alignment attributes to use in this style. Each attribute that is specified is considered an override from the default.

Optional Attributes

Attribute:	ss:Horizontal
Description:	Specifies the left-to-right alignment of text within a cell. The Spreadsheet component does not support **CenterAcrossSelection**, **Fill**, **Justify**, **Distributed**, and **JustifyDistributed**.
Type:	Enumeration—**Automatic**, **Left**, **Center**, **Right**, **Fill**, **Justify**, **CenterAcrossSelection**,

	Distributed, and **JustifyDistributed**
Default:	**Automatic**

Attribute:	ss:Indent
Description:	Specifies the number of indents. This attribute is not supported by the Spreadsheet component.
Type:	**Unsigned Long**
Default:	0

Attribute:	ss:ReadingOrder
Description:	Specifies the default right-to-left text entry mode for a cell. The Spreadsheet component does not support **Context**.
Type:	Enumeration—**RightToLeft**, **LeftToRight**, and **Context**
Default:	**Context**

Attribute:	ss:Rotate
Description:	Specifies the rotation of the text within the cell. 90 is straight up, 0 is horizontal, and -90 is straight down. The Spreadsheet component does not support this attribute.
Type:	**Double**
Default:	0

Attribute:	ss:ShrinkToFit
Description:	**True** means that the text size should be shrunk so that all of the text fits within the cell. **False** means that the font within the cell should behave normally. The Spreadsheet component does not support this attribute.
Type:	**Boolean**
Default:	0 (**False**)

Attribute:	ss:Vertical
Description:	Specifies the top-to-bottom alignment of text within a cell. **Distributed** and **JustifyDistributed** are only legitimate values when **ss:VerticalText** is **True**. The Spreadsheet component does not support **Justify**, **Distributed**, or **JustifyDistributed**.

Type:	Enumeration—**Automatic**, **Top**, **Bottom**, **Center**, **Justify**, **Distributed**, and **JustifyDistributed**
Default:	**Automatic**

Attribute:	**ss:VerticalText**
Description:	Specifies whether the text is drawn "downwards", whereby each letter is drawn horizontally, one above the other. The Spreadsheet component does not support this attribute.
Type:	**Boolean**
Default:	0 (**False**)

Attribute:	**ss:WrapText**
Description:	Specifies whether the text in this cell should wrap at the cell boundary. **False** means that text either spills or gets truncated at the cell boundary (depending on whether the adjacent cell(s) have content). The Spreadsheet component does not support this attribute.
Type:	**Boolean**
Default:	0 (**False**)

\<ss:Border\> Tag

Used by:	Both Excel and the Spreadsheet component
Parent element:	ss:Borders
Required elements:	(none)
Optional elements:	(none)
Required attributes:	**ss:Position**
Optional attributes:	**ss:Color**, **ss:LineStyle**, **ss:Weight**

Description

Defines a single border within this style's **Borders** collection. The **Borders** collection may contain up to six unique **Border** elements. If duplicate **Border** elements exist, the behavior is unspecified and the XML Spreadsheet document is considered invalid.

Required Attributes

Attribute:	ss:Position
Description:	Specifies which of the six possible borders this element represents. Duplicate borders are not permitted and are considered invalid. The Spreadsheet component does not support **DiagonalLeft** or **DiagonalRight**.
Type:	Enumeration—**Left**, **Top**, **Right**, **Bottom**, **DiagonalLeft**, and **DiagonalRight**

Optional Attributes

Attribute:	ss:Color
Description:	Specifies the color of this border. This value can be either a 6-hexadecimal digit number in "#rrggbb" format or it can be any of the Microsoft® Internet Explorer named colors (including the named Microsoft Windows® colors). This string can also be the special value of "Automatic." This string is case insensitive.
Type:	String
Default:	Automatic

Attribute:	ss:LineStyle
Description:	Specifies the appearance of this border. The Spreadsheet component does not support **SlantDashDot** and **Double**.
Type:	Enumeration—**None**, **Continuous**, **Dash**, **Dot**, **DashDot**, **DashDotDot**, **SlantDashDot**, and **Double**
Default:	None

Attribute:	ss:Weight
Description:	Specifies the weight (or thickness) of this border. This measurement is specified in points, and the following values map to Excel: 0—Hairline

	1—Thin
	2—Medium
	3—Thick
Type:	**Double**
Default:	0

<ss:Borders> Tag

Used by:	Both Excel and the Spreadsheet component
Parent element:	ss:Style
Required elements:	(none)
Optional elements:	ss:Border
Required attributes:	(none)
Optional attributes:	(none)

Description

Defines the border properties for cells referencing this style. The **Borders** element contains no attributes; it is purely a container for individual **Border** elements.

<ss:Cell> Tag

Used by:	Both Excel and the Spreadsheet component
Parent element:	ss:Row
Required elements:	(none)
Optional elements:	o:SmartTags, ss:Comment, ss:Data, ss:NamedCell, x:PhoneticText
Required attributes:	(none)

Optional attributes:	c:PasteFormula, ss:ArrayRange, ss:Formula, ss:HRef, ss:Index, ss:MergeAcross, ss:MergeDown, ss:StyleID, x:HRefScreenTip

Description

Defines a single cell within the contained row.

Optional Attributes

Attribute:	c:PasteFormula
Description:	Component only. Specifies the absolute formula stored in this cell when a copy/paste occurs within the component. All formulas are persisted in R1C1 notation because they are significantly easier to parse and generate than A1-style formulas. This attribute is specified whenever a user copies a range of data with formulas. By default, formula is not written if it refers to a cell out of the copy range.
Type:	String

Attribute:	ss:ArrayRange
Description:	Specifies the range of cells onto which we apply an array formula. When an array formula is specified, only the top-left cell contains an **ArrayRange** and **Formula** attribute. Other cells in the range do not contain **ArrayRange** or **Formula**. This reference may be any valid reference as long as the **ss:ArrayRange** attribute appears in the top-left corner of the array. For example, this means if I have an array in cells A1:B2, A1 must have the **ArrayRange** attribute, but the specified range reference could be B1:A2. Example:

```
<ss:Table>
    <ss:Row ss:Height="3">
        <ss:Cell ss:ArrayRange="R1C1:R2C2"
                    ss:Formula="={1,2;3,4}">
            <ss:Data ss:Type="Number">1</ss:Data>
        </ss:Cell>
        <ss:Cell>
            <ss:Data ss:Type="Number">2</ss:Data>
        </ss:Cell>
    </ss:Row>
```

```
        ...
      </ss:Table>
```

Type:	String

Attribute:	ss:Formula
Description:	Specifies the formula stored in this cell. All formulas are persisted in R1C1 notation because they are significantly easier to parse and generate than A1-style formulas. The formula is calculated upon reload unless calculation is set to manual. Recalculation of the formula overrides the value in this cell's **Value** attribute.
Type:	String

Attribute:	ss:HRef
Description:	Specifies the URL to which to link this cell. The cell's **<Value>** **<Data>** element displays the content to show on-screen.
Type:	String

Attribute:	ss:Index
Description:	Specifies the column index of this cell within the containing row. If this tag is not specified, the first instance of a **Cell** element within a row has an assumed **Index**="1". Each additional **Cell** element has an assumed **Index** that is one higher. Indices must appear in strictly increasing order. Failure to do so will result in an XML Spreadsheet document that is invalid. Indices do not need to be sequential, however. Omitted indices are formatted with either the default format, the column's format, or the table's format (depending on what has been specified). Indices must not overlap. If duplicates exist, the behavior is unspecified and the XML Spreadsheet document is considered invalid. If the previous cell is a merged cell and no index is specified on this cell, its start index is assumed to be the first cell after the merge.
Type:	Unsigned Long

Attribute:	ss:MergeAcross
Description:	Specifies the number of adjacent cells across (right unless in right-to-left mode) from the current cell to merge.

As mentioned above, indices must not overlap. If duplicates exist, the behavior is unspecified and the XML Spreadsheet document is considered invalid. One way for overlap to occur is careless use of the **MergeAcross** attribute. Care must be taken with this attribute to ensure that the merge does not include another cell index in the merged range.

This count excludes the current cell. So, if a cell is not merged, the **MergeDown**="0" and **MergeAcross**="0".

Type:	**Unsigned Long**
Default:	0

Attribute:	**ss:MergeDown**
Description:	Specifies the number of adjacent cells below the current cell to merge. As mentioned above, indices must not overlap. If duplicates exist, the behavior is unspecified and the XML Spreadsheet document is considered invalid. One way for overlap to occur is careless use of the **MergeDown** attribute. Care must be taken with this attribute to ensure that the merge does not include another cell index in the merged range. This count excludes the current cell. So, if a cell is not merged, the **MergeDown**="0" and **MergeAcross**="0".
Type:	**Unsigned Long**
Default:	0

Attribute:	**ss:StyleID**
Description:	Specifies a reference to a previously defined **ID** attribute in a **Style** tag. This reference indicates that this **Style** should be used to format this element. If this attribute is not present, the default **Style** should applied to this element.
Type:	**ID Reference**

Attribute:	**x:HRefScreenTip**
Description:	Specifies the ToolTip's content to display when the user hovers over this cell's ToolTip. The Spreadsheet component does not support this attribute.
Type:	**String**

<ss:Column> Tag

Used by:	Both Excel and the Spreadsheet component
Parent element:	ss:Table
Required elements:	(none)
Optional elements:	(none)
Required attributes:	(none)
Optional attributes:	c:Caption, ss:AutoFitWidth, ss:Hidden, ss:Index, ss:Span, ss:StyleID, ss:Width

Description

Defines the formatting for one or more adjacent columns. This element contains no data; all cell data is stored within **Row** elements. All **ss:Column** elements must appear before the first **ss:Row** element, otherwise unexpected behavior may occur.

Optional Attributes

Attribute:	c:Caption
Description:	Specifies the caption that should appear when the Component's custom row and column headers are showing.
Type:	String

Attribute:	ss:AutoFitWidth
Description:	If this attribute is specified as **True** ("1"), it means that this column should be autosized for numeric and date values only. We do not autofit textual values.
	If both **ss:Width** and **ss:AutoFitWidth** exist, the behavior is as follows:
	• **ss:AutoFitWidth**="1" and **ss:Width** is unspecified: Autofit the column width to fit the content.
	• **ss:AutoFitWidth**="1" and **ss:Width** is specified: Set the column to the specified width and only autofit if the size of the content is larger than the specified width.
	• **ss:AutoFitWidth**="0" and **ss:Width** is unspecified: Use the default column width.
	• **ss:AutoFitWidth**="0" and **ss:Width** is specified: Use the specified width.
Type:	Boolean

Default:	1 (**True**)

Attribute:	ss:Hidden
Description:	**True** specifies that this column is hidden. **False** (or omitted) specifies that this column is shown.
Type:	**Boolean**

Attribute:	ss:Index
Description:	Specifies the position of this column within the table. If this tag is not specified, the first instance has an assumed **Index**="1". Each additional **Column** element has an assumed **Index** that is one higher. Indices must appear in strictly increasing order. Failure to do so will result in an XML Spreadsheet document that is invalid. Indices do not need to be sequential, however. Omitted indices are formatted with the default style's format. Indices must not overlap. If duplicates exist, the behavior is unspecified and the XML Spreadsheet document is considered invalid. An easy way to create overlap is through careless use of the **Span** attribute.
Type:	**Unsigned Long**

Attribute:	ss:Span
Description:	Specifies the number of adjacent columns with the same formatting as this column. When a **Span** attribute is used, the spanned column elements are not written out. As mentioned in the **Index** tag, columns must not overlap. Doing so results in an XML Spreadsheet document that is invalid. Care must be taken with this attribute to ensure that the span does not include another column index that is specified.
Type:	**Unsigned Long**

Attribute:	ss:StyleID
Description:	Specifies a reference to a previously defined **ID** attribute in a **Style** tag. This reference indicates that this **Style** should be used to format this element. If this attribute is not present, the default **Style** should be applied to this element.
Type:	**ID Reference**

Attribute:	ss:Width

Description:	Specifies the width of a column in points. This value must be greater than or equal to 0.
Type:	Double

<ss:Comment> Tag

Used by:	Excel only
Parent element:	ss:Cell
Required elements:	ss:Data
Optional elements:	(none)
Required attributes:	(none)
Optional attributes:	**ss:Author**, **ss:ShowAlways**

Description

Contains the comment to be associated with this cell.

Optional Attributes

Attribute:	**ss:Author**
Description:	Specifies the author of this comment.
Type:	**String**

Attribute:	**ss:ShowAlways**
Description:	Specifies whether this comment is displayed regardless of whether the user is hovering over the cell or not.
Type:	**Boolean**
Default:	0 (**False**)

<ss:Data> Tag

Used by:	Both Excel and the Spreadsheet component
Parent element:	ss:Cell, ss:Comment
Required elements:	(none)
Optional elements:	B, Font, I, S, Span, Sub, Sup, U
Required attributes:	**ss:Type**
Optional attributes:	x:Ticked

Description

Specifies the value of this cell. The value should be specified in the appropriate format based on the value of the cell's **Type** attribute. This element can also be used to specify a cell's comment.

Examples

Represent an invalid name reference:

```
<ss:Cell ss:Formula="=foo">
    <ss:Data ss:Type="Error">#NAME?</ss:Data>
</ss:Cell>
```

Represent a string:

```
<ss:Cell>
    <ss:Data ss:Type="String">Bob's Market</ss:Data>
</ss:Cell>
```

Represent a number:

```
<ss:Cell>
    <ss:Data ss:Type="Number">123</ss:Data>
</ss:Cell>
```

Represent rich-text:

```
<ss:Cell>
    <ss:Data ss:Type="String" xmlns="http://www.w3.org/TR/REC-html40">
        This is <B>Bold, <I>Bold Italic, </I></B><I>and Italic</I> text.
</ss:Data>
</ss:Cell>
```

The Spreadsheet component will load rich-text and strip out the HTML elements. When saved, it will write a text-only version.

When the data is Rich Text, we only support well-formed XML tags (even though it may look like HTML).

Required Attributes

Attribute:	ss:Type
Description:	Specifies the data type of this tag's required **Data** element. With the exception of 'Error', the format of these data types are defined as "#NULL!, #DIV/0!, #VALUE!, #REF!, #NAME?, #NUM!, #N/A, #CIRC!". #CIRC! indicates that the current cell contains a circular reference. For applications with iteration (such as Excel), this error should be ignored, and the formula should be applied to the cell. The cell's value should be recalculated after loading. This attribute is not used when the data is inside the **ss:Comment** element; it is only used inside the **ss:Data** element.
Type:	Enumeration—**Number**, **DateTime**, **Boolean**, **String**, and **Error**

Optional Attributes

Attribute:	x:Ticked
Description:	When **ss:Type** is set to **String**, **x:Ticked** indicates the presence of a tick (') at the beginning of the data. When loading an XML Spreadsheet document, if **x:Ticked** is 1 (**True**) and **ss:Type**=**String**, the data in this cell should be prepended with a tick. When saving an XML Spreadsheet, if a tick is the first character in the data string, and **ss:Type**=**String**, the tick should be removed from the data string, and **x:Ticked** set to 1. This attribute is only used in conjunction with **ss:Type**=**String**. If this attribute appears in an XML Spreadsheet document when loading and **ss:Type** is not equal to **String**, ignore this attribute and continue loading.

Type:	Boolean
Default:	0 (**False**)

\<ss:Font\> Tag

Used by:	Both Excel and the Spreadsheet component
Parent element:	ss:Style
Required elements:	(none)
Optional elements:	(none)
Required attributes:	(none)
Optional attributes:	ss:Bold, ss:Color, ss:FontName, ss:Italic, ss:Outline, ss:Shadow, ss:Size, ss:StrikeThrough, ss:Underline, ss:VerticalAlign, x:CharSet, x:Family

Description

Defines the font attributes to use in this style. Each attribute that is specified is considered an override from the default.

Optional Attributes

Attribute:	ss:Bold
Description:	Specifies the bold state of the font. If the parent style has **Bold**="1" and the child style wants to override the setting, it must explicitly set the value to **Bold**="0". If this attribute is not specified within an element, the default is assumed.
Type:	Boolean
Default:	0 (**False**)

Attribute:	ss:Color

Description:	Specifies the color of the font. This value can be either a 6-hexadecimal digit number in "#rrggbb" format or it can be any of the Internet Explorer named colors (including the named Windows colors). This string can also be special value of **Automatic**. This string is case insensitive. If this attribute is not specified within an element, the default is assumed.
Type:	String
Default:	Automatic

Attribute:	ss:FontName
Description:	Specifies the name of the font. This string is case insensitive. If this attribute is not specified within an element, the default is assumed.
Type:	String
Default:	Arial

Attribute:	ss:Italic
Description:	Similar to **Bold** in behavior, this attribute specifies the italic state of the font. If this attribute is not specified within an element, the default is assumed.
Type:	Boolean
Default:	0 (**False**)

Attribute:	ss:Outline
Description:	Similar to **Bold** in behavior, this attribute specifies whether the font is rendered as an outline. This property originates in Macintosh Office, and is not used on Windows. If this attribute is not specified within an element, the default is assumed. The Spreadsheet component does not support this attribute.
Type:	Boolean
Default:	0 (**False**)

Attribute:	ss:Shadow
Description:	Similar to **Bold** in behavior, this attribute specifies whether the font is shadowed. This property originates in Macintosh Office, and is not used on Windows. If this attribute is not specified within an element, the default is assumed. The Spreadsheet component does not support this attribute.

Type:	Boolean
Default:	0 (**False**)

Attribute:	ss:Size
Description:	Specifies the size of the font in points. This value must be strictly greater than 0. If this attribute is not specified within an element, the default is assumed.
Type:	Double
Default:	10

Attribute:	ss:StrikeThrough
Description:	Similar to **Bold** in behavior, this attribute specifies the strike-through state of the font. If this attribute is not specified within an element, the default is assumed. The Spreadsheet component does not support this attribute.
Type:	Boolean
Default:	0 (**False**)

Attribute:	ss:Underline
Description:	Specifies the underline state of the font. If the parent style is something other than **None** and a child style wants to override the value, it must explicitly reset the value. If this attribute is not specified within an element, the default is assumed.
Type:	Enumeration—**None**, **Single**, **Double**, **SingleAccounting**, and **DoubleAccounting**
Default:	None

Attribute:	ss:VerticalAlign
Description:	This attribute specifies the subscript or superscript state of the font. If this attribute is not specified within an element, the default is assumed. The Spreadsheet component does not support this attribute.
Type:	Enumeration—**None**, **Subscript**, and **Superscript**
Default:	None

Attribute:	x:CharSet
Description:	Win32-dependent character set value.

Type:	Unsigned Long
Default:	0

Attribute:	x:Family
Description:	Win32-dependent font family.
Type:	Enumeration—**Automatic**, **Decorative**, **Modern**, **Roman**, **Script**, and **Swiss**
Default:	**Automatic**

\<ss:Interior\> Tag

Used by:	Both Excel and the Spreadsheet component
Parent element:	ss:Style
Required elements:	(none)
Optional elements:	(none)
Required attributes:	(none)
Optional attributes:	**ss:Color**, **ss:Pattern**, **ss:PatternColor**

Description

Defines the fill properties to use in this style. Each attribute that is specified is considered an override from the default.

Optional Attributes

Attribute:	ss:Color
Description:	Specifies the fill color of the cell. This value can be either a 6-hexadecimal digit number in "#rrggbb" format or it can be any of the Internet Explorer named colors (including the named Windows colors). This string can also be special value of **Automatic**. This string is case insensitive. If **Pattern**=**Solid**, this value is the fill color of the cell. Otherwise, the cell is filled with a blend of **Color** and **PatternColor**, with the **Pattern** attribute choosing the appearance.

Type:	String
Default:	Automatic

Attribute:	ss:Pattern
Description:	Specifies the fill pattern in the cell. The fill pattern determines how to blend the **Color** and **PatternColor** attributes to produce the cell's appearance. The Spreadsheet component does not support this attribute.
Type:	Enumeration—**None**, **Solid**, **Gray75**, **Gray50**, **Gray25**, **Gray125**, **Gray0625**, **HorzStripe**, **VertStripe**, **ReverseDiagStripe**, **DiagStripe**, **DiagCross**, **ThickDiagCross**, **ThinHorzStripe**, **ThinVertStripe**, **ThinReverseDiagStripe**, **ThinDiagStripe**, **ThinHorzCross**, and **ThinDiagCross**
Default:	None

Attribute:	ss:PatternColor
Description:	Specifies the secondary fill color of the cell when **Pattern** does not equal **Solid**. The Spreadsheet component does not support this attribute.
Type:	String
Default:	Automatic

<ss:NamedCell> Tag

Used by:	Both Excel and the Spreadsheet component
Parent element:	ss:Cell
Required elements:	(none)
Optional elements:	(none)
Required attributes:	**ss:Name**
Optional attributes:	(none)

Description

Presence of this tag indicates that this cell is a member of a user-defined named range. When saved from Excel, this tag is only present on cells that are non-empty or contain

formatting. This tag can appear multiple times (one for each user-defined name that this cell lies in).

Required Attributes

Attribute:	ss:Name
Description:	Specifies which user-defined named range this cell belongs to. This value should correspond to an **ss:Name** attribute of an **ss:NamedRange** tag. We do not need to validate that when this element exists, the cell it lies on is within the specified range. We do not need to verify that an **ss:Cell** exists for each cell in a specified named range.
Type:	**String**

<ss:NamedRange> Tag

Used by:	Both Excel and the Spreadsheet component
Parent element:	ss:Names
Required elements:	(none)
Optional elements:	(none)
Required attributes:	**ss:Name, ss:RefersTo**
Optional attributes:	**ss:Hidden**

Description

Defines a single named range within this workbook.

Required Attributes

Attribute:	ss:Name
Description:	Specifies the name of this named range. This name must be unique within the list of named ranges and cannot contain spaces or resemble an R1C1-style reference.
Type:	**String**

Attribute:	ss:RefersTo

Description:	Specifies what this named range refers to. This should be an Excel-style formula. Examples:
	
	`ss:RefersTo="=123"`
	
	`ss:RefersTo="=123*Rate"`
	
	`ss:RefersTo="=R1C1*10"`

Type:	String

Optional Attributes

Attribute:	ss:Hidden
Description:	Specifies whether the name of a range is hidden from the user interface of the spreadsheet application.
Type:	Boolean
Default:	0 (**False**)

<ss:Names> Tag

Used by:	Both Excel and the Spreadsheet component
Parent element:	ss:Workbook, ss:Worksheet
Required elements:	(none)
Optional elements:	ss:NamedRange
Required attributes:	(none)
Optional attributes:	(none)

Description

Defines the collection of named ranges within this workbook or worksheet.
ss:NamedRange elements in the **<ss:Workbook>** collection require **RefersTo** attributes with an explicit SheetN! qualifier (for example, Sheet1!).

<ss:NumberFormat> Tag

Used by:	Both Excel and the Spreadsheet component
Parent element:	ss:Style
Required elements:	(none)
Optional elements:	(none)
Required attributes:	(none)
Optional attributes:	**ss:Format**

Description

Defines the number format that should be in cells referencing this style. The default value is **General**, and all other number formats require a custom format code.

Optional Attributes

Attribute:	**ss:Format**
Description:	A number format code in the Excel number format syntax. This can also be one of the following values: **General**, **General Number**, **General Date**, **Long Date**, **Medium Date**, **Short Date**, **Long Time**, **Medium Time**, **Short Time**, **Currency**, **Euro Currency**, **Fixed**, **Standard**, **Percent**, **Scientific**, **Yes/No**, **True/False**, or **On/Off**. All special values are the same as the HTML number formats, with the exception of **Currency** and **Euro Currency**. **Currency** is the currency format with two decimal places and red text with parenthesis for negative values. **Euro Currency** is the same as **Currency** using the Euro currency symbol instead.
Type:	**String**
Default:	**General**

<ss:Protection> Tag

Used by:	Both Excel and the Spreadsheet component
Parent element:	ss:Style

Required elements:	(none)
Optional elements:	(none)
Required attributes:	(none)
Optional attributes:	**ss:Protected**, **x:HideFormula**

Description

Defines the protection properties that should be used in cells referencing this style. This element exists as a short-hand way to apply protection to an entire table, row, or column, by simply adding it to a style.

The **<ss:Protected>** attribute of the **<ss:Cell>** element overrides a style's **<ss:Protection>** settings.

Optional Attributes

Attribute:	**ss:Protected**
Description:	This attribute indicates whether or not this cell is protected. When the worksheet is unprotected, cell-level protection has no effect. When a cell is protected, it will not allow the user to enter information into it.
Type:	**Boolean**
Default:	1 (**True**)

Attribute:	**x:HideFormula**
Description:	This attribute indicates whether or not this cell's formula should be hidden when worksheet protection is enabled.
Type:	**Boolean**
Default:	0 (**False**)

<ss:Row> Tag

Used by:	Both Excel and the Spreadsheet component

Parent element:	ss:Table
Required elements:	(none)
Optional elements:	ss:Cell
Required attributes:	(none)
Optional attributes:	c:Caption, ss:AutoFitHeight, ss:Height, ss:Hidden, ss:Index, ss:Span, ss:StyleID

Description

Defines the formatting and data for one or more adjacent rows. If this element contains cell data, it must not contain the **Span** attribute. Each **Row** element may contain one or more **Cell** elements defining the table's data.

Optional Attributes

Attribute:	c:Caption
Description:	Specifies the caption that should appear when the component's custom row and column headers are showing.
Type:	String

Attribute:	ss:AutoFitHeight
Description:	If this attribute is **True** (1), it means that this row should be autosized. By default all rows are autofitted, so changing the size of the font in a cell will automatically resize a row. If both **ss:Height** and **ss:AutoFitHeight** exist, the behavior is as follows: • ss:AutoFitHeight="1" and ss:Height is unspecified: Autofit the row height to fit the content. • ss:AutoFitHeight="1" and ss:Height is specified: Set the row to the specified height and only autofit if the size of the content is larger than the specified height. • ss:AutoFitHeight="0" and ss:Height is unspecified: Use the default row height. • ss:AutoFitHeight="0" and ss:Height is specified: Use the specified height.
Type:	Boolean
Default:	1 (**True**)

Attribute:	ss:Height
Description:	Specifies the height of a row in points. This value must be greater than or equal to 0.
Type:	Double

Attribute:	ss:Hidden
Description:	**True** specifies that this row is hidden. **False** (or omitted) specifies that this row is shown.
Type:	Boolean

Attribute:	ss:Index
Description:	Specifies the position of this row within the table. If this tag is not specified, the first instance has an assumed **Index**="1". Each additional **Row** element has an assumed **Index** that is one higher.

Indices must appear in strictly increasing order. Failure to do so will result in an XML Spreadsheet document that is invalid. Indices do not need to be sequential, however. Omitted indices are formatted with the default style's format.

Indices must not overlap. If duplicates exist, the behavior is unspecified, and the XML Spreadsheet document is considered invalid. An easy way to create overlap is through careless use of the **Span** attribute. |
| Type: | Unsigned Long |

Attribute:	ss:Span
Description:	Specifies the number of adjacent rows with the same formatting as this row. When a **Span** attribute is used, the spanned row elements are not written out.

As mentioned in the **Index** tag, rows must not overlap. Doing so results in an XML Spreadsheet document that is invalid. Care must be taken with this attribute to ensure that the span does not include another row index that is specified.

Unlike columns, rows with the **Span** attribute must be empty. A row that contains a **Span** attribute and one or more **Cell** elements is considered invalid. The **Span** attribute for rows is a short-hand method for setting formatting properties for multiple, empty rows. |
| Type: | Unsigned Long |

Attribute:	ss:StyleID
Description:	Specifies a reference to a previously defined **ID** attribute in a **Style** tag. This reference indicates that this **Style** should be used to format this element. If this attribute is not present, the default **Style** should applied to this element.
Type:	ID Reference

<ss:Style> Tag

Used by:	Both Excel and the Spreadsheet component
Parent element:	ss:Styles
Required elements:	(none)
Optional elements:	ss:Alignment, ss:Borders, ss:Font, ss:Interior, ss:NumberFormat, ss:Protection
Required attributes:	ss:ID
Optional attributes:	**ss:Name**, **ss:Parent**

Description

Defines a single style in the current workbook. This element is optional, but is required to perform any custom formatting. A style can be either standalone or based on one other style (this is called the parent style), in which case, all base properties are first inherited from the parent, then the properties in the style are treated as overrides. Parent styles must be specified before they are first referenced. This means we will not allow:

```
<ss:Styles>
    <ss:Style ss:ID="xl1" ss:Parent="xl2"> ... </ss:Style>
    <ss:Style ss:ID="xl2"> ... </ss:Style>
</ss:Styles>
```

To define the default style for this workbook, set the **ss:ID** attribute to "Default". If a **Parent** style is not specified, it is assumed that the style with **ID**="Default" is used as the parent.

Required Attributes

Attribute:	ss:ID
Description:	A unique name within this XML document that identifies this style. This string can be any valid identifier and there is no notion of order. The special value of "Default" indicates that this style represents the default formatting for this workbook.
Type:	Unique String ID

Optional Attributes

Attribute:	ss:Name
Description:	This property identifies this style as a named style that was created in Excel using the **Style** command (**Format** menu). Duplicate names are illegal.
Type:	String

Attribute:	ss:Parent
Description:	Presence of this element indicates that this style should first inherit it's default formatting settings from the specified parent style. Then, after the parent settings are inherited, we apply the settings in this style as overrides. This attribute refers to a predefined style ID.
Type:	ID Reference

<ss:Styles> Tag

Used by:	Both Excel and the Spreadsheet component
Parent element:	ss:Workbook
Required elements:	(none)
Optional elements:	ss:Style
Required attributes:	(none)
Optional attributes:	(none)

Description

Contains the style definitions for the current worksheet. This element is optional, but is required to perform for any custom formatting.

<ss:Table> Tag

Used by:	Both Excel and the Spreadsheet component
Parent element:	ss:Worksheet
Required elements:	(none)
Optional elements:	ss:Column, ss:Row
Required attributes:	(none)
Optional attributes:	ss:DefaultColumnWidth, ss:DefaultRowHeight, ss:ExpandedColumnCount, ss:ExpandedRowCount, ss:LeftCell, ss:StyleID, ss:TopCell, x:FullColumns, x:FullRows

Description

Defines the cell table within the current worksheet. In this version of the schema, only one instance of a Table tag is valid for a single worksheet.

The optional **TopCell**, **LeftCell**, **RowCount**, and **ColumnCount** attributes specify the used range for this cell table, indicating the furthest filled extents. Cell formulas are specified relative to the **TopCell** and **LeftCell** indices, and should be adjusted when placed into a sheet (assuming that **TopCell** and **LeftCell** are not [1, 1]). When saving an entire worksheet or a collection of sheets in a workbook, **TopCell** and **LeftCell** will be saved as (1, 1). When saving a range as XML, the **TopCell** and **LeftCell** indices are used to specify the location of the range within the worksheet. This allows for future expansion where multiple, non-overlapping tables could be stored within a single worksheet.

Optional Attributes

Attribute:	**ss:DefaultColumnWidth**
Description:	Specifies the default width of columns in this table. This attribute is specified in points.

Type:	Double
Default:	48

Attribute:	ss:DefaultRowHeight
Description:	Specifies the default height of rows in this table. This attribute is specified in points.
Type:	Double
Default:	12.75

Attribute:	ss:ExpandedColumnCount
Description:	Similar to **ExpandedColumnCount**, this attribute specifies the total number of columns in this table. If specified, this attribute must be in sync with the table. Columns indices in the table should begin at 1 and go to **ExpandedColumnCount**. If this value is out-of-sync with the table, the specified XML Spreadsheet document is invalid.
Type:	Unsigned Long

Attribute:	ss:ExpandedRowCount
Description:	Specifies the total number of rows in this table without regard for sparseness. This attribute defines the overall size of the table, if the specified rows and columns were expanded to full size. If specified, this attribute must be in sync with the table. Row indices in the table should begin at 1 and go to **ExpandedRowCount**. If this value is out-of-sync with the table, the specified XML Spreadsheet document is invalid.
Type:	Unsigned Long

Attribute:	ss:LeftCell
Description:	Specifies the column index that this table should be placed at. This value must be greater than zero.
Type:	Unsigned Long
Default:	1

Attribute:	ss:StyleID
Description:	Specifies a reference to a previously defined **ID** attribute within a **Style** tag. This reference indicates that this **Style** should be used to format this element. If this

attribute is not present, the default **Style** should be applied to this element. The default style, if specified, is the **<Style>** tag whose **ss:ID**="Default".

Type:	ID Reference

Attribute:	ss:TopCell
Description:	Specifies the row index that this table should be placed at. This value must be greater than zero.
Type:	Unsigned Long
Default:	1

Attribute:	x:FullColumns
Description:	WebCalc will set **x:FullColumns** to 1 when the data in the table represents full columns of data. Excel will save **x:FullColumns** to 1 if the **<Table>** extends the full height. This attribute is ignored on file load, but on XML Spreadsheet paste it is taken to indicate that the source clip has full columns.
Type:	Boolean

Attribute:	x:FullRows
Description:	WebCalc will set **x:FullRows** to 1 when the data in the table represents full rows of data. Excel will save **x:FullRows** to 1 if the **<Table>** extends the full width. This attribute is ignored on file load, but on XML Spreadsheet paste it is taken to indicate that the source clip has full rows.
Type:	Boolean

<ss:Workbook> Tag

Used by:	Both Excel and the Spreadsheet component
Parent element:	(none)
Required elements:	ss:Worksheet
Optional elements:	c:ComponentOptions, o:SmartTagType, ss:Names, ss:Styles
Required attributes:	(none)
Optional attributes:	(none)

Description

Defines a workbook that will contain one or more **Worksheet** elements. This is the top-most element of an XML Spreadsheet document and is required. This element has a required order for child elements. The order is:

```
<ss:Workbook>
    <ss:Styles>
    <ss:Names>
    <ss:Worksheet>
            ...
    <ss:Worksheet>
</ss:Workbook>
```

<ss:Worksheet> Tag

Used by:	Both Excel and the Spreadsheet component
Parent element:	ss:Workbook
Required elements:	(none)
Optional elements:	c:WorksheetOptions, ss:Names, ss:Table, x:AutoFilter, x:WorksheetOptions
Required attributes:	**ss:Name**
Optional attributes:	**ss:Protected**, **ss:RightToLeft**

Description

Defines a worksheet within the current workbook. At least one instance of this element is required within a valid XML Spreadsheet document. This element has a required order for child elements. The order is:

```
<ss:Worksheet>
    <ss:Names>
    <ss:Table>
```

```
        <x:AutoFilter>
        ... Excel Stuff ...
    </ss:Worksheet>
```

Required Attributes

Attribute:	**ss:Name**
Description:	This tag specifies the name of this worksheet. This value must be unique within the list of sheet names in this workbook. Sheet names must conform to the legal names of Excel sheets and, thus, cannot contain /, \, ?, *, [,].
Type:	**String**

Optional Attributes

Attribute:	**ss:Protected**
Description:	This attribute indicates whether or not the worksheet is protected. When the worksheet is not protected, cell-level protection has no effect.
Type:	**Boolean**
Default:	0 (**False**)

Attribute:	**ss:RightToLeft**
Description:	If this attribute is **True** (1), the window displays from right to left, but if this element is not specified (or zero), the window displays from left to right. The Spreadsheet component does not support this attribute.
Type:	**Boolean**
Default:	0 (**False**)

<stN:SmartTag> Tag

Used by:	Excel only
Parent element:	o:SmartTags

Required elements:	(none)
Optional elements:	(none)
Required attributes:	(none)
Optional attributes:	(none)

Description

A collection of **SmartTag** tags, each of which denote single instances of a smart tag on a cell. stN (for example, st1, st2) refers to the individual name space for this smart tag type as defined in the smart tag type definition. The name for this tag is not **SmartTag**, either, but actually the tag name as defined in the **SmartTagType** tag.

To add smart tags to your workbook, go to the **Smart Tags** tab (**AutoCorrect** dialog box, **Tools** menu) and check all of the boxes. Smart tags are not available in the Spreadsheet component.

stN:SmartTag tags can also contain an arbitrarily defined list of attributes with the tag. This is up to the smart tag owner to define in the namespace. Programmatically, a developer can add new attributes to their smart tags either via
`Range("A1").SmartTags(1).Properties.Add "star", "bar"` (which adds an attribute called **Star** with a value *bar*), or doing recognition or action time by manipulating the passed-in **ISmartTagProperties** object.

\<Sub\> Tag

Used by:	Excel only
Parent element:	ss:Data
Required elements:	(none)
Optional elements:	(none)
Required attributes:	(none)
Optional attributes:	(none)

Description

Specifies a change to subscript within an Excel rich-text data stream.

<Sup> Tag

Used by:	Excel only
Parent element:	ss:Data
Required elements:	(none)
Optional elements:	(none)
Required attributes:	(none)
Optional attributes:	(none)

Description

Specifies a change to superscript within an Excel rich-text data stream.

<U> Tag

Used by:	Excel only
Parent element:	ss:Data
Required elements:	(none)
Optional elements:	(none)
Required attributes:	(none)
Optional attributes:	x:Style

Description

Specifies a change to underline within an Excel rich-text data stream.

Optional Attributes

Attribute:	x:Style

Description:	Specifies the underline style to use.
Type:	Enumeration—**text-underline:single**, **text-underline:double**, **text-underline:single-accounting**, and **text-underline:double-accounting**
Default:	**text-underline:single**

<x:AutoFilter> Tag

Used by:	Both Excel and the Spreadsheet component
Parent element:	ss:Worksheet
Required elements:	(none)
Optional elements:	x:AutoFilterColumn
Required attributes:	**x:Range**
Optional attributes:	(none)

Description

Defines an AutoFilter range on the current worksheet. This element can contain one or more **x:AutoFilterColumn** elements (up to one per column) with the appropriate filter settings. If no **x:AutoFilterColumn** elements exist, each column in the range is assumed to be set to **Type**="all" (see **x:AutoFilterColumn** for more details).

Required Attributes

Attribute:	**x:Range**
Description:	This tag specifies the AutoFilter range in R1C1 notation and is required. It is assumed that the topmost row specifies the headers for the AutoFilter. There is no way to create an AutoFilter without a header row. This attribute is required to be an absolute reference.
Type:	String

<x:AutoFilterAnd> Tag

Used by:	Both Excel and the Spreadsheet component
Parent element:	x:AutoFilterColumn
Required elements:	x:AutoFilterCondition
Optional elements:	(none)
Required attributes:	(none)
Optional attributes:	(none)

Description

Defines an AND condition in a custom AutoFilter function. Currently, Excel allows a custom AutoFilter function to contain at most one AND or one OR condition. If this tag exists, it must contain at least one **<x:AutoFilterCondition>** tag to define the test condition(s).

<x:AutoFilterColumn> Tag

Used by:	Both Excel and the Spreadsheet component
Parent element:	x:AutoFilter
Required elements:	(none)
Optional elements:	x:AutoFilterAnd, x:AutoFilterCondition, x:AutoFilterOr
Required attributes:	(none)
Optional attributes:	**x:Hidden**, **x:Index**, **x:Type**, **x:Value**

Description

Defines the filtering properties for a single column of the AutoFilter range. If one or more columns are omitted, we assume that no filtering should occur on those columns.

Optional Attributes

Attribute:	x:Hidden
Description:	**True** specifies that this AutoFilter column is hidden. **False** (or omitted) specifies that

this AutoFilter column is shown.

Type:	Boolean
Default:	0 (**False**)

Attribute:	x:Index
Description:	Specifies the position of this column within the AutoFilter range. If this tag is not specified, the first instance has an assumed Index="1". Each additional **<x:AutoFilterColumn>** element has an assumed Index that is one higher. Indices must appear in strictly increasing order. Failure to do so will result in an XML Spreadsheet document that is invalid. Indices do not need to be sequential, however. Indices must not overlap. If duplicates exist, the behavior is unspecified and the XML Spreadsheet document is considered invalid.
Type:	**Unsigned Long**

Attribute:	x:Type
Description:	Specifies the type of filtering to apply to this column. By default we assume "all", meaning that this column is not causing any items to be filtered. When multiple columns contain filtering, only rows meeting all the filter criterion are shown. A description of each of the filter types is given below, but in the context that only this column contains filtering. This provides simplicity, without loss of generality. • **All**—Display all of the rows in the AutoFilter range. Nothing is filtered. • **Blanks**—Only display rows in the AutoFilter range where cells in this column are empty. • **NonBlanks**—Only display rows in the AutoFilter range where cells in this column contain data. • **Top**—Only display rows in the AutoFilter range for the top n values. When this filter type is specified, the Value attribute is required and must contain the number (specifically a whole number greater than zero) of items to display. • **TopPercent**—Only display rows in the AutoFilter range where values in this column are in the top n%. When this filter type is specified, the Value attribute is required and must contain the percentage (specifically a decimal value between 0.0 and 100.0) of top items to display. • **Bottom**—Only display rows in the AutoFilter range for the bottom n values. When this filter type is specified, the Value attribute is required and must contain the number (specifically a whole number greater than zero) of items to display. • **BottomPercent**—Only display rows in the AutoFilter range where values in this column are in the bottom n%. When this filter type is specified, the Value

attribute is required and must contain the percentage (specifically a decimal value between 0.0 and 100.0) of bottom items to display.

- **Custom**—Only display rows in the AutoFilter range whose values meet the criteria specified inside this element. When **Type**="custom", this element must contain at least one <**x:AutoFilterCondition**> tag, but these conditions may also be nested inside of <**x:AutoFilterAnd**> or <**x:AutoFilterOr**> tags.

The Spreadsheet component supports **All**, **Blanks**, **NonBlanks**, and **Custom**.

Type:	Enumeration—**All**, **Blanks**, **NonBlanks**, **Top**, **TopPercent**, **Bottom**, **BottomPercent**, and **Custom**
Default:	**All**

Attribute:	x:Value
Description:	Specifies the number or percentage of items to display when the filter type is set to top, top-percent, bottom, or bottom-percent. This attribute may not appear unless the **Type** attribute is set to one of those four values. See the **Type** attribute for value restrictions to this attribute.
Type:	Double
Default:	0

<x:AutoFilterCondition> Tag

Used by:	Both Excel and the Spreadsheet component
Parent element:	x:AutoFilterAnd, x:AutoFilterOr, x:AutoFilterColumn
Required elements:	(none)
Optional elements:	(none)
Required attributes:	**x:Operator**, **x:Value**
Optional attributes:	(none)

Description

Defines a single condition in a custom AutoFilter function.

Required Attributes

Attribute:	x:Operator
Description:	Specifies the operator to use in this filter condition. Note that wildcard characters are permitted, so to store the equivalent of "BeginsWith a", we would save <x:AutoFilterCondition x:Operator="Equals" x:Value="a*">.
Type:	Enumeration—**Equals**, **DoesNotEqual**, **GreaterThan**, **GreaterThanOrEqual**, **LessThan**, and **LessThanOrEqual**

Attribute:	x:Value
Description:	Specifies the value to use with the associated Operator attribute.
Type:	**String**

<x:AutoFilterOr> Tag

Used by:	Both Excel and the Spreadsheet component
Parent element:	x:AutoFilterColumn
Required elements:	x:AutoFilterCondition
Optional elements:	(none)
Required attributes:	(none)
Optional attributes:	(none)

Description

Defines an OR condition in a custom AutoFilter function. Currently, Excel allows a custom AutoFilter function to contain at most one AND or one OR condition. If this tag exists, it must contain two **<x:AutoFilterCondition>** tags, defining the test conditions.

<x:Footer> Tag

Used by:	Excel only

Parent element:	x:PageSetup
Required elements:	(none)
Optional elements:	(none)
Required attributes:	x:Margin
Optional attributes:	x:Data

Description

Specifies the footer for each printed page.

Required Attributes

Attribute:	x:Margin
Description:	Specifies the margin for the footer.
Type:	Double
Default:	0.5

Optional Attributes

Attribute:	x:Data
Description:	Specifies the data for the footer. This is a string in the same format as the Cascading Style Sheet (CSS) for Excel 2000.
Type:	String

\<x:Header> Tag

Used by:	Excel only
Parent element:	x:PageSetup
Required elements:	(none)
Optional elements:	(none)

Required attributes:	x:Margin
Optional attributes:	x:Data

Description

Specifies the header for each printed page.

Required Attributes

Attribute:	x:Margin
Description:	Specifies the margin for the header.
Type:	Double
Default:	0.5

Optional Attributes

Attribute:	x:Data
Description:	Specifies the data for the header. This is a string in the same format as the Cascading Style Sheet (CSS) for Excel 2000.
Type:	String

<x:Layout> Tag

Used by:	Excel only
Parent element:	x:PageSetup
Required elements:	(none)
Optional elements:	(none)
Required attributes:	(none)
Optional attributes:	x:CenterHorizontal, x:CenterVertical, x:Orientation, x:StartPageNumber

Description

Determines the layout for the page setup. This includes page orientation, centering, and page numbers.

Optional Attributes

Attribute:	**x:CenterHorizontal**
Description:	If **True**, the document should be centered on the page.
Type:	**Boolean**
Default:	0 (**False**)

Attribute:	**x:CenterVertical**
Description:	If **True**, the document should be centered on the page.
Type:	**Boolean**
Default:	0 (**False**)

Attribute:	**x:Orientation**
Description:	Specifies the orientation of the page.
Type:	Enumeration—**Portrait** and **Landscape**
Default:	**Portrait**

Attribute:	**x:StartPageNumber**
Description:	Specifies the starting page number for printouts.
Type:	**Unsigned Long**

<x:PageMargins> Tag

Used by:	Excel only
Parent element:	x:PageSetup

Required elements:	(none)	
Optional elements:	(none)	
Required attributes:		**x:Bottom**, **x:Left**, **x:Right**, **x:Top**
Optional attributes:	(none)	

Description

Specifies the margins for printed pages.

Required Attributes

Attribute:	**x:Bottom**
Description:	Specifies the bottom margin on the page in inches.
Type:	**Double**
Default:	1

Attribute:	**x:Left**
Description:	Specifies the left margin on the page in inches.
Type:	**Double**
Default:	0.75

Attribute:	**x:Right**
Description:	Specifies the right margin on the page in inches.
Type:	**Double**
Default:	0.75

Attribute:	**x:Top**
Description:	Specifies the top margin on the page in inches.
Type:	**Double**
Default:	1

<x:PageSetup> Tag

Used by:	Excel only
Parent element:	x:WorksheetOptions
Required elements:	(none)
Optional elements:	x:Footer, x:Header, x:Layout, x:PageMargins
Required attributes:	(none)
Optional attributes:	(none)

Description

Contains the print options for this workbook.

<x:PhoneticText> Tag

Used by:	Excel only
Parent element:	ss:Cell
Required elements:	(none)
Optional elements:	(none)
Required attributes:	(none)
Optional attributes:	**x:Visible**

Description

Specifies the additional phonetic "hint" text that should be associated with this cell's data. This information is extremely important for East Asia, especially for sorting data.

Optional Attributes

Attribute:	x:Visible
Description:	Specifies whether phonetic text is displayed. This option is only available on East Asian versions of Excel. When **x:Visible** is on, phonetic text will be displayed above the regular cell text. Current implementation limitations: this tag won't roundtrip in non-East Asian versions of Excel; phonetic text can be associated with groups of characters (like Rich Text) in Excel, but when it is saved, it loses the character association and the text becomes lumped together.
Type:	**Boolean**
Default:	0 (**False**)

\<x:WorksheetOptions\> Tag

Used by:	Both Excel and the Spreadsheet component
Parent element:	ss:Worksheet
Required elements:	(none)
Optional elements:	x:PageSetup
Required attributes:	(none)
Optional attributes:	(none)

Description

This is an Excel defined element that contains a number of specific Excel features.