

XML Spreadsheet Reference

Office XP

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Applies to:

Microsoft® Excel 2002

Microsoft® Office XP Web Components Spreadsheet Component

XML Spreadsheet Tag Hierarchy

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

```
<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:Cell>
      </ss:Row>
    </ss:Table>
  </ss:Worksheet>
</ss:Workbook>
```

```

        <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>

```

<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.

 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
Type:	String (“#RRGGBB” six-digit hexadecimal format)

<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
Type:	Enumeration— Automatic , Left , Center , Right , Fill , Justify , CenterAcrossSelection , Distributed , and JustifyDistributed
Attribute:	ss:Indent
Type:	Unsigned Long
Attribute:	ss:ReadingOrder
Type:	Enumeration— RightToLeft , LeftToRight , and Context
Attribute:	ss:Rotate
Type:	Double
Attribute:	ss:ShrinkToFit
Type:	Boolean
Attribute:	ss:Vertical
Type:	Enumeration— Automatic , Top , Bottom , Center , Justify , Distributed , and JustifyDistributed
Attribute:	ss:VerticalText
Type:	Boolean
Attribute:	ss:WrapText
Type:	Boolean

<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
Type:	Enumeration— Left , Top , Right , Bottom , DiagonalLeft , and DiagonalRight

Optional Attributes

Attribute:	ss:Color
Type:	String (“#RRGGBB” six-digit hexadecimal format)
Attribute:	ss:LineStyle
Type:	Enumeration— None , Continuous , Dash , Dot , DashDot , DashDotDot , SlantDashDot , and Double
Attribute:	ss:Weight
Type:	Double (0—Hairline, 1—Thin, 2—Medium, 3—Thick)

<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:	ss:Formula
Type:	String
Attribute:	ss:HRef
Type:	String
Attribute:	ss:Index
Type:	Unsigned Long
Attribute:	ss:MergeAcross
Type:	Unsigned Long (if a cell is not merged, the MergeDown ="0" and MergeAcross ="0".)
Attribute:	ss:MergeDown
Type:	Unsigned Long (if a cell is not merged, the MergeDown ="0" and MergeAcross ="0".)
Attribute:	ss:StyleID
Type:	ID Reference
Attribute:	x:HRefScreenTip
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:	ss:AutoFitWidth
Type:	Boolean (column will be autosized for numeric and date values only) If both ss:Width and ss:AutoFitWidth exist, the behavior is as follows: <ul style="list-style-type: none">• 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.
Attribute:	ss:Hidden
Type:	Boolean
Attribute:	ss:Index
Type:	Unsigned Long
Attribute:	ss:StyleID
Type:	ID Reference
Attribute:	ss:Width
Type:	Double (must be greater than or equal to 0)

<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-htm140">
    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
Type:	Enumeration— Number, DateTime, Boolean, String and Error

<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
Type:	Boolean
Attribute:	ss:Color
Type:	String ("#RRGGBB" six-digit hexadecimal format)

Attribute:	ss:FontName
Type:	String
Attribute:	ss:Italic
Type:	Boolean
Attribute:	ss:Outline
Type:	Boolean (this property originates in Macintosh Office, and is not used on Windows)
Attribute:	ss:Shadow
Type:	Boolean (this property originates in Macintosh Office, and is not used on Windows)
Attribute:	ss:Size
Type:	Double (size specified in points)
Attribute:	ss:StrikeThrough
Type:	Boolean
Attribute:	ss:Underline
Type:	Enumeration—None, Single, Double, SingleAccounting, and DoubleAccounting
Attribute:	ss:VerticalAlign
Type:	Enumeration—None, Subscript, and Superscript
Attribute:	x:Family
Type:	Enumeration—Automatic, Decorative, Modern, Roman, Script, and Swiss

<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
Type:	String (“#RRGGBB” six-digit hexadecimal format)

Attribute:	ss:Pattern
Type:	Enumeration— None, Solid, Gray75, Gray50, Gray25, Gray125, Gray0625, HorzStripe, VertStripe, ReverseDiagStripe, DiagStripe, DiagCross, ThickDiagCross, ThinHorzStripe, ThinVertStripe, ThinReverseDiagStripe, ThinDiagStripe, ThinHorzCross, andThinDiagCross
Attribute:	ss:PatternColor
Type:	String (“#RRGGBB” six-digit hexadecimal format)

<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
Type:	String (can 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, On/Off ; or a Excel number format style)

<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:	ss:AutoFitHeight
Type:	Boolean (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: <ul style="list-style-type: none"> 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.
Attribute:	ss:Height
Type:	Double
Attribute:	ss:Hidden
Type:	Boolean
Attribute:	ss:Index
Type:	Unsigned Long
Attribute:	ss:StyleID
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="x11" ss:Parent="x12"> ... </ss:Style>
  <ss:Style ss:ID="x12"> ... </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
Type:	Unique String ID

Optional Attributes

Attribute:	ss:Name
Type:	String
Attribute:	ss:Parent
Type:	ID Reference (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)

<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
Type:	Double
Attribute:	ss:DefaultRowHeight
Type:	Double
Attribute:	ss:ExpandedColumnCount
Type:	Unsigned Long
Attribute:	ss:ExpandedRowCount
Type:	Unsigned Long
Attribute:	ss:LeftCell
Type:	Unsigned Long
Attribute:	ss:StyleID
Type:	ID Reference
Attribute:	ss:TopCell
Type:	Unsigned Long
Attribute:	x:FullColumns
Type:	Boolean
Attribute:	x:FullRows
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
Type:	String

Optional Attributes

Attribute:	ss:Protected
Type:	Boolean
Attribute:	ss:RightToLeft
Type:	Boolean

<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
Type:	String

<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
Type:	Boolean
Attribute:	x:Index
Type:	Unsigned Long
Attribute:	x:Type
Type:	<p>Enumeration—All, Blanks, NonBlanks, Top, TopPercent, Bottom, BottomPercent, and Custom</p> <ul style="list-style-type: none"> • 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.
Attribute:	x:Value
Type:	Double (use only when the filter type is set to top, top-percent, bottom, or bottom-percent)

<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
Type:	Double

Optional Attributes

Attribute:	x>Data
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
Type:	Double

Optional Attributes

Attribute:	x>Data
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
Type:	Boolean
Attribute:	x:CenterVertical
Type:	Boolean
Attribute:	x:Orientation
Type:	Enumeration— Portrait and Landscape
Attribute:	x:StartPageNumber
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
Type:	Double

Attribute:	x:Left
Type:	Double
Attribute:	x:Right
Type:	Double
Attribute:	x:Top
Type:	Double

<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: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.