## About charts

Charts are visually appealing and make it easy for users to see comparisons, patterns, and trends in data. By using the Microsoft Office Chart Component, you can create dynamic, interactive charts that you can make available on a Web site for viewing in a browser. When the data for a chart changes and the Web page that contains the chart is refreshed, the chart automatically updates to reflect the latest data.


Charts can use data that you enter into a data sheet, existing data from database tables and queries, or spreadsheets and PivotTable lists that you create with Microsoft Office Web Components. When your data is based on a PivotTable list or database table or query, you can add fields to organize the data, and then rearrange fields as well as sort and filter the data.

- Before you begin
- Preparing the source data you want to use in your chart
- Design programs you can use to create charts
- Creating a chart
- Customizing your chart


## - Testing and publishing

## Browsers that support charts

To work with interactive charts in Microsoft Internet Explorer 4.01 and later, users must have the Microsoft Office Web Components installed and an appropriate Office XP license. Users who do not have an Office XP license can install the components and view them on a Web page, but they cannot interact with them. Learn more about installing and licensing components.

Following are the levels of browser support available when users have the Office Web Components installed and an Office XP license.

- Microsoft Internet Explorer 5 and later
- Microsoft Internet Explorer versions 4.01, 4.1x, and 4.2x
- Other browsers


## About Microsoft Office Web Components

Microsoft Office Web Components is a set of ActiveX controls installed with Microsoft Office XP. With Office Web Components installed on your computer, you can interactively use a spreadsheet, a PivotTable list, and a chart on a Web page in Microsoft Internet Explorer 4.01 or later. If you want to use the components on a data access page in Microsoft Access, you should have Internet Explorer 5 or later.

If Office Web Components is not installed on your computer but you have an Office XP site license that permits intranet distribution, you can configure the components so that users will be prompted to download Office Web Components from your corporate intranet. This allows users at your site to use a data access page without having Office XP software installed on their computers.

For information about how to configure Office Web Components, see the Microsoft Office XP Resource Kit.

## About View-only mode for Office Web Components

If you do not have a Microsoft Office XP software license installed on your computer or accessed via a Microsoft Office XP application, you can view a Microsoft Office Web Component - a Spreadsheet Component, Chart Component, or PivotTable Component - on a Web page, but you cannot interact with it.

To be able to interact with and use full functionality of the component you are viewing, you must install Microsoft Office XP or have access to an Office XP license. If you are in a corporate or group environment, check with your network administrator for assistance.

When you are in View-only mode, you can:
View data.

## Print.

Select and scroll.
Use hyperlinks.
Resize a component.
Select sheets in the Spreadsheet Component.
Expand or collapse members in a PivotTable list.
Refresh data in a PivotTable list.
Use the About, Help, and Refresh commands. Help topics that deal with interactivity (such as formatting cells, dragging fields, sorting, filtering, and so on) do not apply.

All commands except About, Help, and Refresh are unavailable in Viewonly mode.

## About getting help for charts

- Getting help in other design programs
- Getting help writing scripts and programs that use charts for the Web
- Getting and providing help in the browser


## Keyboard shortcuts

For information about activating and deactivating a chart by using the keyboard, see Help for your design program.

- Keys for selecting items in a chart
- Keys for working with commands and options
- Keys for working with a data sheet
- Keys for working with fields
- Keys for working with the field list
- Keys for working with Help


## About chart tools, commands, and the field list

- The toolbar
- The Commands and Options dialog box
- The field list
- The shortcut menu
- Run-time access to the toolbar, field list, shortcut menu, and Commands and Options dialog box


## Show or hide the Commands and Options dialog box

1. In the design window, make sure the chart is activated. For instructions, see Help for your design program.
2. Do one of the following:

- To display the Commands and Options dialog box, right-click the chart, and then click Commands and Options on the shortcut menu.
- To hide the Commands and Options dialog box, click Close $\times$ in the upper right corner of the dialog box.


## Use the Commands and Options dialog box

If you leave the Commands and Options dialog box displayed while you select different parts of the chart, the available tabs and their contents change to reflect your current selection.

1. Display the Commands and Options dialog box by rightclicking the chart and then clicking Commands and Options on the shortcut menu.
2. Select the part of the chart that you want to modify by clicking once to select a group (such as a data series) and clicking a second time to select an individual item in a group (such as a data marker within the series). You can also select the part you want to modify in the Select list on the General tab of the Commands and Options dialog box.
3. Click the tab in the Commands and Options dialog box that contains the options you want to modify, and then make changes.
4. If you don't see tabs displayed for the options you want to modify, you might need to select a different item in the chart.

## Show or hide drop areas

When the drop areas are hidden, you cannot add or drag fields in the chart.

1. In the design window, make sure the chart is activated. For instructions, see Help for your design program.
2. Right-click the chart, and then click Drop Areas on the shortcut menu.

Note The Drop Areas menu item is not available unless the chart is based on database data or a PivotTable list.

## Elements of a chart

- Series, categories, and data representation
- Axes
- Titles and labels
- Fields


## Examples of chart types

- Area
- Column
- Bar
- Line
- SmoothLine
- Pie
- Doughnut
- Stock
- XY (Scatter)
- Bubble
- Radar
- Polar


## Create a chart

The specific steps for creating a chart depend on the program you are using to design your Web page. For more information, see Help for that program. If your design program Help does not provide a procedure for creating components such as charts, follow these steps:

1. In your design program, open or create the database, project, or Web page that contains the data you want to use in your chart.
2. Activate the page where you want to put the chart.
3. By using the design program's procedure for adding a control to a Web page, designate the location and initial size of the chart component on the Web page.
4. If the Commands and Options dialog box is not displayed, click the chart to display it.
5. Specify the data you want to use for the chart in the Data Source tab by selecting Data typed into a data sheet, Data from a database table or query, or Data from the following Web page item.
6. If you select Data from the following Web page item, you must also select the Web page item (such as a spreadsheet, PivotTable list, or data source control) you want to use in the list. Only items that exist on the Web page where you're creating the chart will be shown in the list.
7. Specify data settings for one of the following:

- Data typed into a data sheet
- Data from a database table or query
- Data Link Properties dialog box
lect Data member, table, view, or cube name and select the data iber, table, view or cube name from the list or select Command text or and type the connection string you want to use.
ider Plot details, select whether series should be in rows or columns by


## ing Series By Rows/Columns 駱.

sou want to use direct record values from your data, such as when you ! created a query that calculates totals on your server, and you want the t to use those totals rather than calculate its own totals on the client, st the Plot detail records check box.

Id data from the field list to the chart drop areas.
$w$ ?
ta from a Web page item: Spreadsheet
ta from a Web page item: PivotTable list
ta from a Web page item: Data source control
ck the Type tab, click the type of chart you want to use from the list, and click the chart sub-type you want to use from the display on the right.
ck the chart or an item in the chart to make options available in the ımands and Options dialog box. Different options will be displayed in the ig box depending on what is selected in the chart. For example, when you st the entire chart, the General tab becomes available (in which you can a legend or data labels, or make other changes based on the chart type). n you select an axis, the Format, Line/Marker, Axis, and Scale tabs are ayed.

## About source data for charts

When you create a chart, you can base it on existing data or provide data at the time of creation. When you base the chart on existing data, the source data must be available for use, and in some cases it must exist on the same Web page where you want to put your chart.
Charts can use data from the following sources.

- The chart data sheet
- A Spreadsheet Component
- A PivotTable Component
- A table or query in a database
- A data source control


## Work with a data sheet

If you created your chart by typing data into a data sheet, you can use these procedures to work with data sheets.

1. In the design window, make sure the chart is activated. For instructions, see Help for your design program.
2. On the toolbar, click Commands and Options 圆, and then click the General tab.
3. Under General commands, click Chart Workspace in the Select list.
4. Click the Data Sheet tab.
5. Do one or more of the following:

- Enter data
- Clear the data sheet
- Change category rows to series rows, or series rows to category rows
- Copy and paste data


## Change source data for a chart

1. In the design window, make sure the chart is activated. For instructions, see Help for your design program.
2. Right-click the chart, and click Data on the shortcut menu.
3. On the Data Source tab, select the new data source, and then set options for the data source.

## Create a combination chart

A combination chart uses two or more chart types to emphasize that the chart contains different kinds of information. The chart in the following example shows one data series (Actual) as a column chart type and the other (Projected) as a line chart.


1. In the design window, make sure the chart is activated. For instructions, see Help for your design program.
2. Determine which series you want to be a different chart type.
3. Do one of the following:

- Change the chart type for a series
- Change the chart type for a series group and add axes

Note Not all chart types can be combined. For example, you cannot combine 2-D and 3-D chart types, nor can you combine bar and column charts, or column and pie charts.

## Create multiple charts in a chart workspace

When your chart is based on data in a PivotTable list or in a database table or query，you can create multiple charts in the same chart workspace to make it easy to compare different aspects of your data．The following example shows multiple charts that compare sales data by using individual charts for each salesperson．The charts in the example also use the same scale，which is optional．


1．In the design window，make sure the chart is activated．For instructions，see Help for your design program．

2．On the toolbar，click Commands and Options 图，and then click the General tab．

3．Under General commands，select Chart Workspace in the Select list．

4．Under Add，click Plot multiple charts 畏．
5．If you want to use the same axis scale for all charts，click Multiple charts use same scale $⿴ 囗 十$ ．

6．Click Field List on the toolbar，and then use the scroll bars and the expand indicators（ $\boxplus$ and $\boxminus$ boxes）to find the field you want to add to the chart．

7．Click the field and drag it to the drop area on the chart that says Drop MultiChart Fields Here．

You can add multiple fields to the MultiChart area．

## Change the display of multiple charts

When you have multiple charts in a chart workspace, you can change whether they are displayed horizontally or vertically, and you can change the number of charts displayed in each row or column.

1. In the design window, make sure the chart is activated. For instructions, see Help for your design program.
2. On the toolbar, click Commands and Options 目, and then click the General tab.
3. In the Select box, click Chart Workspace.
4. Under Chart workspace, in the Chart layout list, click Horizontal or Vertical.

If you select Automatic, the charts will be displayed horizontally or vertically depending on the size and shape of the workspace.
5. If you want to limit the number of charts across and down the chart workspace, type the maximum number of charts you want displayed in the Maximum charts per row/col box.

Note This option is available only when you click Horizontal or Vertical in the Chart layout list.

## About using a chart in the browser

- Working in a browser vs. working in a design program
- What users can do in the browser


## About restricting the use of a chart in the browser

Some chart features are available only when you're working in the design program. Other features are available both while designing the chart and while using it in a browser. However, as a designer, you can restrict the availability of these features in the browser by changing property settings.

Regardless of the capabilities you have made available to the user in a browser, whether users can take advantage of those capabilities depends on what browser they are running and whether they have the appropriate license. To take full advantage of the capabilities of charts, users need Microsoft Internet Explorer version 4.01 or later and an Office XP license. In Internet Explorer 4.0, users with a license have access to some of the chart capabilities. In other browsers, users cannot view or interact with charts. Users without Office XP licenses but with Internet Explorer version 4.01 or later can view a chart, but they cannot interact with it.

- Capabilities that are not available in a browser
- Capabilities that are usually available in the browser
- Restrictions that you can set


## Restrict the use of a chart in the browser

When you change a setting to prevent a user from doing a specific task in a chart, you will not be able to do that task in the design program unless you change the setting again.

1. In the design window, make sure the chart is activated. For instructions, see Help for your design program.
2. Select the chart workspace by clicking the blank area outside the plot area but within the chart boundaries.
3. On the toolbar, click Commands and Options 旉, and then click the Show/Hide tab.
4. Under Let users view, do one of the following:

- Prevent adding, changing, or removing filters
- Prevent grouping or changing the layout
- Prevent display of selection marks
- Prevent access to the Commands and Options dialog box


## Print a chart

To print a chart, you must print the entire Web page.
To print a chart from the design window, see Help in your design program for specific instructions about printing a Web page.

To print a chart from the browser, click Print on the Microsoft Internet Explorer File menu.

Note If the chart is wider or longer than the printed page, the areas that don't fit on the page are not printed.

## Show or hide passive alerts

A passive alert indicates that your chart contains an error. The alert appears as an exclamation point at the bottom left corner of the chart, and when you click it, information about the alert is displayed. Passive alerts appear in error situations such as when a texture file cannot be found or when a database connection fails.

1. On the toolbar, click Commands and Options 圆, and then click the General tab.
2. Under General commands, click Chart Workspace in the Select box.
3. Click the Show/Hide tab.
4. Under Errors, select or clear the Show passive alerts check box.

## Show or hide ScreenTips

1. In the design window, make sure the chart is activated. For instructions, see Help for your design program.
2. On the toolbar, click Commands and Options 畳, and then click the General tab.
3. Under General commands, click Chart Workspace in the Select box.
4. Click the Show/Hide tab.
5. Under Show by default, select or clear the ScreenTips check box.

## About adding and removing fields

When you add data to a chart that is based on database data or on a PivotTable list, you select fields from the source data for display in the chart.

- Viewing the fields available to the chart
- Adding fields to the category or series area
- Adding fields to the data area
- Adding fields to the filter area
- Adding total fields
- Removing fields
- Moving fields
- Impact of adding and removing fields on filtering


## Add, change, or remove a field

1. In the design window, make sure the chart is activated. For instructions, see Help for your design program.
2. Do one or more of the following:

- Add a field
- Change the summary function for a data field
- Remove a field


## Move a field in a chart

1. In the design window, make sure the chart is activated. For instructions, see Help for your design program.
2. If the drop areas for the chart are not displayed, show them by right-clicking the chart and then clicking Drop Areas on the shortcut menu.
3. In the chart, click the field you want to move, and then drag it until the pointer changes to represent the area where you want to move it.

4. Release the mouse button.

Note The pointers shown above apply only when you're moving fields within the chart, not when you're adding fields from the field list.

## About changing the layout of fields in a chart

When a chart is based on data from a database or PivotTable list, you can control how the data is shown by moving fields and customizing the layout. A different layout lets you compare values for different elements in your data in ways that are meaningful for your audience. When you make the chart available to browser users, they can make further changes to the initial layout.

- Using the drop areas
- Moving fields to the category and series areas
- Moving fields to the data area
- Moving fields to the filter area
- Moving fields to the MultiChart area
- Moving the category or series fields to inner or outer levels
- Adding and removing fields
- Restrictions on moving and adding fields
- Impact of changing layout on filtering
- Restricting use of a chart in the browser


## Select a chart item

1. In the design window, make sure the chart is activated. See Help in your design program for specific information on how to activate a chart.

Note To activate a chart you must click it either once or twice, depending on your design program. For example, in data access pages you must click once to select the chart (white selection handles will appear on its border) and click a second a time to activate the chart (a hatched border will appear around the chart).
2. Do one of the following:

- Select an item by using the mouse
- Select an item by using the Commands and Options dialog box


## Change the chart type

1. In the design window, make sure the chart is activated. For instructions, see Help for your design program.
2. Do one of the following:

- To change the chart type for the entire chart, select the chart workspace by clicking the blank area outside the plot area but within the chart boundaries.
- To change the chart type for an individual data series, select the data series.

Note When you change the chart type for an individual series, you are creating a combination chart. Not all chart types can be combined. For example, you cannot combine 2-D and 3-D chart types, nor can you combine bar and column charts, or column and pie charts.
3. On the toolbar, click Chart Type
4. In the list, click the chart type you want, and then click the subtype you want.

## Add, remove, or change axes

1. In the design window, make sure the chart is activated. For instructions, see Help for your design program.
2. Do one or more of the following:

- Add an axis
- Remove an axis
- Change the position of an axis
- Add, change, or remove a title on an axis
" "
- Change the font or size of the axis value text
" "
- Change the spacing of tick marks and labels on the category axis
- Change where the category axis crosses the value axis
- Change a timescale category axis
- Reverse the direction of values on an axis
- Split values in an axis scale
- Change the line weight or color of the axis
" "
- Change the number format of the axis values
" "
- Change the scale of a value axis


## Add, remove, or change titles

1. In the design window, make sure the chart is activated. For instructions, see Help for your design program.
2. Do one or more of the following:

- Add a title
- Remove a title
- Change a title


## Add, remove, or change a legend

1. In the design window, make sure the chart is activated. For instructions, see Help for your design program.
2. Do one of the following:

- Add or remove a legend
- Change a legend


## Add, remove, or change data labels

1. In the design window, make sure the chart is activated. For instructions, see Help for your design program.
2. Do one or more of the following:

- Add data labels
- Remove data labels
- Change data labels


## Show, hide, or change gridlines

1. In the design window, make sure the chart is activated. For instructions, see Help for your design program.
2. Do one or more of the following:

- Show or hide gridlines
- Change gridlines


## Change the text size and font for chart items

1. In the design window, make sure the chart is activated. For instructions, see Help for your design program.
2. Click the axis title, data labels, R-squared label and equation label, legend text, chart title, or other chart text that you want to change.
3. On the toolbar, click Commands and Options and then click the Format tab.
4. Under Text format, select the options you want.

## Change line color, weight, and style in chart items

You can change the line weight and color of series lines, axis lines, gridlines, trendlines, error bars, and other types of lines in a chart.

1. Click the line you want to change.
2. On the toolbar, click Commands and Options 皿, and then click the Line/Marker tab.
3. Under Line, select the options you want.

## Change borders, fills, and background colors

You can change the border weight and color and the background color for the chart workspace, the plot area, the legend, a single data marker, a series of data markers, titles, and other chart items that support filled areas.

1. In the design window, make sure the chart is activated. For instructions, see Help for your design program.
2. Select the chart area or item you want to change.
3. On the toolbar, click Commands and Options and then click the Border/Fill tab.
4. Do one of the following:

- To change the border color, weight, or style, select the options you want under Border.
- To change the background color or fill, select an option under Fill in the Fill Type list (Solid color, Pattern, Gradient, or Picture/Texture) and then select the options you want that pertain to that fill type. For example, if you select Gradient, you can then choose the number of colors in the gradient and the gradient style, or you can choose a preset gradient.


## Rotate or flip the plot area

1. In the design window, make sure the chart is activated. For instructions, see Help for your design program.
2. Click the plot area that you want to change.
3. On the toolbar, click Commands and Options 盢, and then click the General tab.
4. Do one of the following:

- To flip the plot area horizontally or vertically, click Flip Horizontal $\Delta \Delta$ or Flip Vertical $\sqrt{4}$.
- To rotate the plot area clockwise or counterclockwise in 90degree increments, click Rotate Clockwise or Rotate Counterclockwise $\boldsymbol{1 0}^{*}$.


## Pull out slices in pie or doughnut charts



In doughnut and stacked pie charts, you can pull out slices in the outer ring only.

1. In the design window, make sure the chart is activated. For instructions, see Help for your design program.
2. Do one of the following:

- To pull out all slices or rings, click the chart workspace (the blank area between the plot area and the chart boundary).
- To pull out one slice or ring, click the data slice or ring once to select the data series it is in, and then click a second time to select the individual slice or ring.

3. On the toolbar, click Commands and Options 圆, and then click the General tab.
4. Under Chart, in the Explosion box, type a number to represent - as a percentage of the radius - the distance between the point of the slice or slices and the center of the doughnut or pie.

## Rotate the position of the slices in a doughnut or pie chart



The order in which data series are plotted in pie and doughnut charts is determined by the order of the source data. Use this procedure to rotate slices within the 360 degrees of the pie or doughnut circle.

1. In the design window, make sure the chart is activated. For instructions, see Help for your design program.
2. On the toolbar, click Commands and Options 图, and then click the General tab.
3. In the Select list, click Chart Workspace.
4. Under Chart, in the Angle of first slice box, type a number between 0 and 360 to specify the angle at which you want the first slice to appear.

## Change the overlap or spacing of data markers in bar and column charts

1. In the design window, make sure the chart is activated. For instructions, see Help for your design program.
2. Click the chart workspace (the blank area between the plot area and the chart boundary).
3. On the toolbar, click Commands and Options 目, and then click the General tab.
4. Do one of the following:

- To change the overlap of the data markers in each category, type a number between -100 and 100 in the Overlap box to represent the percentage of overlap you want. For example, at 100 , bars or columns overlap each other, while at -100 , a bar or column width of space is displayed between each. At 0 , bars or columns are adjacent to each other.
- To change the spacing between categories of data markers, type a number between 0 and 500 in the Gap width box to represent the percentage of gap width you want. For example, at 0 , data markers touch; at 100, there is one bar or column width of space between each.


## About data series and categories

Data series are represented by names in the legend and appear as likecolored groups of data markers on your chart. One point from each data series makes up a category. Categories, then, are groups of data points with similar characteristics. The values for categories and data series can come from either the rows or columns of your data.

For example, suppose your data looks like this:

|  | A | B |
| :--- | :---: | ---: |
| 1 |  | Europe |
| 2 | Qtr1 | 32 |
| 3 | Qtr2 | 35 |
| 4 | Qtr3 | 43 |
| 5 | Qtr4 | 35 |

If you want to compare unit sales in Europe categorized by quarters, your series would be in columns and your categories in rows, and the chart would look like this:


If you specify that your series are in rows, instead, the chart would use Europe as the category, and each quarter would make up a series, like this:


## Change series to categories or categories to series

To change the emphasis on which aspects of data you want to compare， you can change which parts of your data appear as categories and which appear as series．The following example emphasizes comparison of countries（as categories）．


The following example emphasizes comparison of years（as categories）．


1．In the design window，make sure the chart is activated．For instructions，see Help for your design program．

2．Do one of the following：
－If your chart is based on data from a PivotTable list or external data，click By Row／Column 島駘 on the toolbar．
－If your chart is based on data in a data sheet，right－click the chart，click Data on the shortcut menu，click the Data Sheet tab， then click By Row－By Column 瓃。

## Map chart colors to distinguish ranges of data

You can format data markers so that graduated or solid colors represent values or ranges of data. For example, the following chart shows locations of water samples and corresponding pH measurements distinguished by graduated colors, where higher percentages of pH levels are represented by increasingly lighter colors.


1. In the design window, make sure the chart is activated. For instructions, see Help for your design program.
2. Click the data series you want to format.
3. On the toolbar, click Commands and Options 图, and then click the Conditional Format tab.
4. Select the Conditionally color data points check box.
5. In the Style list, click the style of conditional formatting you want.

- Three Point Gradient Uses three graduated colors to distinguish between the smallest value and zero (or the value you indicate) and between zero (or the value you indicate) and the largest value.
- Two Point Gradient Uses two graduated colors to distinguish between smallest and largest values.
- Two Segment Solid Uses two solid colors to distinguish between values smaller than zero (or the value you indicate) and larger than zero (or the value you indicate).
- Bottom Values Uses a solid color to distinguish the smallest values in a range.
- Top Values Uses a solid color to distinguish the largest values in a range.

6. Next to Colors, choose the Beginning Color, Middle Color, or End Color (where applicable) to represent value ranges.
7. If you want to indicate a value on which to base your conditional format, type that value in the Value box and select the \% check box if appropriate. For example, to format the top $90 \%$ of values, type 90 in the value box and then select the \% check box.
8. If your chart is based on data from a database or a PivotTable list, you can specify additional values on which to base conditional formatting. For example, if you plot sales data for products in different regions, you can format the data markers based on an additional data set such as profit amount. To do this, clear the Conditional format based on data value field check box, and then add the data field you want to use to the Format Data drop area that appears on the chart.

## Add a picture or textured fill to a chart

1. In the design window, make sure the chart is activated. For instructions, see Help for your design program.
2. Select the chart area or item to which you want to add a picture - for example, the chart workspace, the plot area, or a data marker.
3. On the toolbar, click Commands and Options 㽢, and then click the Border/Fill tab.
4. Under Fill, in the Fill Type list, click Picture/Texture.
5. Do one of the following:

- Add your own picture
- Add a built-in texture


## Change the view of a 3-D chart

1. In the design window, make sure the chart is activated. For instructions, see Help for your design program.
2. On the toolbar, click Commands and Options 畳, and then click the General tab.
3. Under General commands, click Chart Workspace in the Select box.
4. Click the 3D View tab.
5. Click the Projection mode you want:

Perspective Chart objects are represented in relative distance and positions as they might appear to the eye.

Orthographic Chart objects are represented as if they all appear on the same plane, on a surface that is perpendicular to both the view and the lines of projection.
6. Make the changes you want by dragging the sliders for each option. For example, to rotate the lighting source for the chart, drag the rotation slider $\square$ under Lighting.

## Notes

To return to the default view of the chart, click Default next to Default view.

To make the height ratio or depth ratio proportionate, select the Height Ratio or Depth Ratio check box.

## Number formats

The Microsoft Office Chart Component uses the regional settings in Microsoft Windows Control Panel to determine how number, currency, date, and time formats are displayed in charts, both in the design program and at run time in the browser. For example, these settings determine whether years are displayed with two digits or four digits. See Windows Help for information about these formats.

In Microsoft Visual Basic or in a script, you can assign custom number formats to the data. For more information, see Help for writing scripts and programs that use charts for the Web.

The following number formats are available in the Number list under Text format on the Format tab in the Commands and Options dialog box, which is available when an item such as an axis value or data label is selected on the chart.

| Format | Effects |
| :--- | :--- |
| General | Displays a number with no thousands separator, <br> and preceded by a minus sign if negative. For <br> example, -36403. |
| Displays up to 11 digits, or 10 digits with a <br> decimal point, rounding additional digits to the <br> right of the decimal point. Displays numbers with <br> more than 11 digits to the left of the decimal point <br> in scientific format. |  |
|  | Displays numbers right aligned and text left <br> aligned. |

General Date
Displays a serial number as a date or time, or both. For example, 36403.24583 appears as 8/31/99 05:54 AM.

The decimal part of the number is the time. If a number has no decimal part, the format displays only a date. For example, 35920 appears as $5 / 5 / 98$. If a number has only a decimal part, the format displays only a time. For example, . 77

## appears as 6:28 PM.

| Long Date | Displays a date by using the Windows Control Panel regional setting for the long date format. An example is Thursday, January 25, 2001. |
| :---: | :---: |
| Medium Date | Displays a date according to the Windows Control Panel regional setting for the month and date separator, and displays two digits for the year. For example, Jan/25/01. |
| Short Date | Displays a date by using the Windows Control Panel regional setting for the short date format. For example, 1/25/01. |
| Long Time | Displays time by using the Windows Control Panel regional setting for the long time format. For example, 8:45:36 PM. |
| Medium Time | Displays time in 12-hour format, including the AM or PM designator and not including seconds. For example, 8:45 PM. |
| Short Time | Displays time in 24-hour format, not including the AM or PM designator and not including seconds. For example, 8:45 PM appears as 20:45. |
| Currency | Displays a number by using the Windows Control Panel regional setting for currency, with a currency symbol and a thousands separator, if appropriate, and two decimal places. For example, \$2,532.75. |
| Euro Currency | Displays a number as euro currency, with a thousands separator and two decimal places. The euro sign is placed before or after the number according to the regional settings for currency in Windows Control Panel. For example, with the default United States English regional settings, € 12.35. |
| Fixed | Displays a number with two decimal places. For example, 68.3 appears as 68.30. |
| Standard | Displays a number with two decimal places, using |

the thousands separator specified in the list separator setting in the Windows Control Panel regional settings. For example, 1800 appears as 1,800.00.

| Percent | Displays a number multiplied by 100, with two <br> decimal places and including a percent sign. For <br> example, 0.8914 appears as $89.14 \%$. |
| :--- | :--- |
| Scientific | Displays a number in exponential notation. For <br> example, $1.25 \mathrm{E}+10$. |
| Yes/No | Displays No if the number is 0, and displays Yes <br> for any other number. |
| True/False | Displays False if the number is 0, and displays <br> True for any other number. |
| On/Off | Displays Off if the number is 0, and displays On <br> for any other number. |

## Change number formatting

1. In the design window, make sure the chart is activated. For instructions, see Help for your design program.
2. Select the item in the chart for which you want to change number formatting, such as an axis or data labels.
3. On the toolbar, click Commands and Options 图, and then click the Format tab.
4. Under Text format, in the Number box, click the format you want.

Note You cannot change the number format for category axis labels.

## About using dates in charts

When you create a chart from data that uses dates, and the dates make up the category ( x ) axis in the chart, you can use a timescale category axis to represent the period of time between the dates.

Display of dates The timescale category axis displays dates in chronological order at specific intervals, even if the dates are not arranged in those intervals in your data.

The timescale group size (days, weeks, months, quarters, or years) is initially set by the chart according to the range of dates in your data. If the group size is initially set at months, for example, you can change the group size to quarters for a different perspective. When you do this, the chart automatically totals the points in each group so it can plot one point per group, like in the following example where the points in each quarter are summed, and the summed value is plotted. You can change the summary function used to create group totals.

| $1 / M / 2000$ | 110 |
| ---: | ---: |
| $2 / 1 / 2000$ | 123 |
| $3 / 1 / 2000$ | 325 |
| $4 / M / 2000$ | 100 |
| $5 / 1 / 2000$ | 234 |
| $6 / 1 / 2000$ | 380 |
| $7 / M / 2000$ | 429 |
| $8 / 1 / 2000$ | 279 |
| $9 / 1 / 2000$ | 134 |
| $10 / / 2000$ | 123 |
| $11 / 1 / 2000$ | 173 |
| $12 / / 2000$ | 234 |



Timescale charts and times You can't create timescale charts from
data that is measured at intervals of hours, minutes, or seconds. Only days, weeks, months, quarters, and years are considered dates in timescale charts.

## Chart types that can use a timescale axis Timescale axes are

 available on stock charts and on 2-D and 3-D line, column, bar, and area charts, except when these charts have multiple-level category labels or in charts that use fields.Note You cannot have a timescale axis if the dates in your chart appear in the legend. You can change the way data is plotted in the chart so that the dates appear on the category axis instead.

## About trendlines

Trendlines are used to graphically display trends in data and to analyze problems of prediction. Such analysis is also called regression analysis. For example, the following chart uses a simple linear trendline across four quarters to clearly show a trend toward rising revenue.


Chart types that support trendlines You can add trendlines to data series in column, bar, line, xy (scatter), bubble, area, stock, and polar charts. If you change a chart to a type that does not support the associated trendline, you lose the trendlines.

- Using the R-squared value to determine the best trendline
- Linear trendlines
- Logarithmic trendlines
- Polynomial trendlines
- Power trendlines
- Exponential trendlines
- Moving average


## Equations for calculating trendlines

- Linear
- Polynomial
- Logarithmic
- Exponential
- Power
- Moving average
- R -squared value


## Add a trendline to a data series

1. In the design window, make sure the chart is activated. For instructions, see Help for your design program.
2. Click the data series to which you want to add a trendline.
3. On the chart toolbar, click Commands and Options and then click the General tab.
4. Under Add, click Add trendline 四.

Note A linear trendline, its equation, and its R -squared value are placed on the series. Other trendline types include logarithmic, polynomial, power, exponential, and moving average.

## Change a trendline

1. In the design window, make sure the chart is activated. For instructions, see Help for your design program.
2. Click the trendline you want to change.
3. On the chart toolbar, click Commands and Options and then click the Trendline tab.
4. Do one or more of the following:

- To change the trendline type, click the arrow next to the Type box and select a type in the list.
- To change the order of a polynomial trendline, click the arrow next to the Order box and select from the list the number that you want to be the highest power for the independent variable.
- To change the trendline name, which appears in the legend, click the Custom Name check box under Name, and then type a new name in the box to the right.
- To show or hide the equation you use to calculate the trendline, select or clear the Display equation check box.
- To show or hide the R-squared value, select or clear the Display R-squared value check box.


## Delete a trendline

1. In the design window, make sure the chart is activated. For instructions, see Help for your design program.
2. Click the trendline you want to delete.
3. Press DELETE.

## Show or hide a trendline equation or R-squared value

1. In the design window, make sure the chart is activated. For instructions, see Help for your design program.
2. Click the trendline for which you want to show or hide the trendline equation or R -squared value.
3. On the chart toolbar, click Commands and Options and then click the Trendline tab.
4. Under Equation, select or clear the Display equation check box or the Display R-squared value check box or both.

## About error bars

Error bars graphically express potential error amounts relative to each data marker in a data series. For example, you could show 5 percent positive and negative potential error amounts in the results of a scientific experiment:


Chart types that support error bars You can add error bars to data series in column, bar, line, xy (scatter), bubble, area, radar, stock, and polar charts. For xy (scatter), polar, and bubble charts, you can display error bars for the $x$-values or the $y$-values. If you change a chart to a type that does not support the associated error bars, you lose the error bars.

## Equations for calculating the error amount in error bars

- Standard deviation
- Standard error


## Add error bars to a data series

1. In the design window, make sure the chart is activated. For instructions, see Help for your design program.
2. Click the data series to which you want to add error bars.
3. On the chart toolbar, click Commands and Options and then click the General tab.
4. Under Add, click Add Errorbar 国.

## Change error bars

When you select an error bar, any changes you make affect all the error bars in its associated data series.

1. In the design window, make sure the chart is activated. For instructions, see Help for your design program.
2. Click any error bar on your chart.
3. On the chart toolbar, click Commands and Options 圆, and then click the Error Bars tab.
4. Do one or more of the following:

- To show or hide end caps on the error bars, click the arrow next to Display II, and then click the type you want.
- To select a different type of error bar (positive or negative or both), click the arrow next to Marker It, and then click the type you want.
- To change the method used to determine the error amount, click the method you want in the Error calculation list, and then type the number you want in the Error box or the Percentage box.
- To change the direction of the error bars so that they calculate based on x-values or $y$-values for xy (scatter) charts, polar charts, and bubble charts, click $\mathbf{X}$ or $\mathbf{Y}$ in the Direction list.


## Delete error bars

You cannot delete an individual error bar. When you delete one error bar, all error bars for the entire data series are deleted.

1. In the design window, make sure the chart is activated. For instructions, see Help for your design program.
2. Click any error bar in the series from which you want to delete error bars.
3. Press DELETE.

## About filtering data in a chart

You can use the filter feature to find specific data values or all data that matches a value. You can filter when designing the chart, and users can filter when viewing the chart in the browser, unless you restrict access to filtering in the browser.

- Filtering techniques
- Combining multiple filters
- Removing and reapplying a filter
- Identifying the filters that are currently in effect
- Restricting filtering in the browser


## Filter a field in a chart

- Filter a field in the category, series, or filter area (autofiltering)
- Filter a series or point for the top or bottom $n$ values, or for a percentage (conditional filtering)


## Remove filters to display all data in a chart

When items in a field are hidden by filtering a field, the arrow $\nabla$ in the field label is blue.

1. In the design window, make sure the chart is activated. For instructions, see Help for your design program.
2. Do one of the following:

- Remove all filters
- Remove an autofilter from a field
- Remove a conditional filter


## Notes

If you don't want to retain your filters, make sure the AutoFilter button is not selected before you start selecting items to filter. If the button is not selected, selecting new items to filter automatically turns filtering on and removes your former filter settings.

You can prevent users from removing filters in the browser by clearing the Allow pivot filtering check box on the Show/Hide tab of the Commands and Options dialog box.

## Allow multiple or single selection for a field in the filter area

You can specify whether a field will allow single or multiple selection when in the filter area. In single-selection mode, selecting an item automatically clears the previous selection. In multiple-selection mode, when you select an item, previously selected items remain selected.

1. In the design window, make sure the chart is activated. For instructions, see Help for your design program.
2. Select the field for which you want to change the setting. The field should not yet be in the filter area, but in one of the other areas in the chart, such as a series or category area.
3. On the toolbar, click Commands and Options 目, and then click the Filter and Group tab.
4. Select or clear the Allow selecting multiple items when in filter area check box.

When the field is moved to the filter area, it will reflect the new setting.

## Notes

By default, multiple selection is enabled.
This setting applies only when the field is in the filter area. If you move the field to a category or series area, the field will always support multiple selection.

## Expand or collapse items in fields

You can expand or collapse items in series fields or category fields to show or hide more detailed information for a particular item. Expanding is similar to drilling except items on the same level are not hidden. In the example, West is expanded to show detailed information for West, but other regions are still displayed without detailed information. Collapsing will remove the detailed information for that item, and return the chart to the state it was prior to expanding.


- Chart that shows sales in each region.

2 Chart with West expanded to show sales per product in the West region.

1. In the design window, make sure the chart is activated. For instructions, see Help for your design program.
2. Click the field that contains the item or items you want to expand or collapse.
3. On the toolbar, click Expand 을 or Collapse $\stackrel{\text { 国 }}{ }$.

## Drill into or out of data in fields

You can drill into an item in an outer category field to focus on detailed information for that particular item, or you can drill out to remove detailed information for that item. Drilling is similar to expanding, except that when you drill into an item, other items on the same level are hidden.

In the example, the region North is drilled into, showing detail information for the North region and hiding all information for other regions. When you drill out of an item you drilled into, the detailed information is removed, and items on the same level are shown again.


- Chart that shows sales information for products by region.

2 Chart that shows North region item drilled into to show sales information for each type of product in the North region only. Other regions are hidden.

1. In the design window, make sure the chart is activated. For instructions, see Help for your design program.
2. Click the item on the category axis that you want to drill into or drill out of.
3. On the toolbar, click Drill into or Drill out 四,

## Sort data in a chart

You can sort category and series data in a chart that is based on a PivotTable list, database table, or query.

1. In the design window, make sure the chart is activated. For instructions, see Help for your design program.
2. Do one of the following:

- If you want to sort numerical data in a series, click the series or a series point within the series.
- If you want to sort items in a field alphabetically, click the category or series field, or click a category axis label or legend entry.

3. Do one of the following:

- Click Sort Ascending toolbar.
- If you have a stacked bar, stacked area, or stacked column chart, and you want to sort numerically based on the height of the entire stacked value rather than just one series, right-click the series or point, point to Sort, and then click Ascending By Total or Descending By Total.


## Group or ungroup data in a chart

1. In the design window, make sure the chart is activated. For instructions, see Help for your design program.
2. Select the category or series field whose items you want to group or ungroup.
3. On the toolbar, click Commands and Options 图, and then click the Filter and Group tab.
4. Do one of the following:

- Group data
- Ungroup data


## Summary functions available for chart data fields

The following table lists the summary functions provided by the AutoCalc $\Sigma=$ command used to summarize data fields.

| Function | Description <br> Calculates the sum of the values. |
| :--- | :--- |
| Count | Tallies the number of values. Empty values, such <br> as zero-length strings (strings that contain no <br> characters), are included in the count, but null <br> values (values that indicate missing or unknown <br> data) are not included. |
| Min | Returns the smallest value in the field being <br> summarized. |
| Max | Returns the largest value in the field being <br> summarized. |
| Returns the average of the values in the field |  |
| being summarized. |  |

Note The summary functions available for a field depend on the type of data in the field. For example, if a field contains text, you can use only the Count function for that field.

## Troubleshoot charts

- I can't find the command or option I want.
- An exclamation point appears in the bottom left corner of my chart.
!!
- I can't move or resize chart items with the mouse.
- I can't add text to a chart.
- Text is missing along the horizontal (x) axis of the chart.
- My xy (scatter) chart does not use the right values along the horizontal (x) axis.
- I published a chart from Excel, and it has more data in it now than it did in Excel.
- I published a chart from Excel, but it contains no data when I view it in a design program or in the browser.
- I have a blank box on the Web page where my chart should be.
- Users can't display or interact with my chart in the browser.
- My chart for the Web does not update in the browser.
- Clicking the Edit button in my Web browser opens my Web page in the wrong program.

