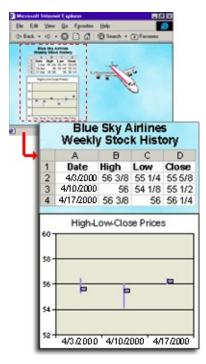
#### **About charts**

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 5.01 SP2 and later, users must have the Microsoft Office Web Components installed and an appropriate Office 2003 license. Users who do not have an Office 2003 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 2003 license.

- ▶ Microsoft Internet Explorer 5.01 SP2 and later
- Other browsers

#### **About Microsoft Office Web Components**

Microsoft Office Web Components is a set of ActiveX controls installed with Microsoft Office 2003. 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 5.01 SP2 or later. If you want to use the components on a data access page in Microsoft Access, you should have Internet Explorer 5.01 SP2 or later.

If Office Web Components is not installed on your computer but you have an Office 2003 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 2003 software installed on their computers.

For information about how to configure Office Web Components, see the *Microsoft Office 2003 Resource Kit*.

# About installing, licensing, and distributing Office Web Components

When you design a Web page using Microsoft Office Web Components, any user with an Office 2003 license can interact with the components in the browser to the level of interactivity you provide. That is, a user with an appropriate license can make changes to data in a spreadsheet, change formatting, drag fields in a chart or PivotTable List, and so on, as long as you didn't protect these options at design time. Users with an Office 2003 license can also create, design, and modify components in a design environment such as Microsoft FrontPage, or Microsoft Access.

Users who do not have Office 2003 licenses can view the components and the data in them, and can print the view of the components, but they cannot interact with the components or manipulate them in a design environment. This means that if you distribute a Web page that uses components, users who have Office 2003 licenses will have access to all functionality provided, but users without a license can only view the data and information you've provided.

- ▶ Installing the Office Web Components
- Details on licensing and functionality

#### **About View-only mode for Office Web Components**

If you do not have a Microsoft Office 2003 software license installed on your computer or accessed via a Microsoft Office 2003 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 2003 or have access to an Office 2003 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**

Some of the content in this topic may not be applicable to some languages.

- 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

#### **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.

# 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 chart toolbar

- 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 **Toolbar** on the shortcut menu.

### **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 I** 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.

- 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.

#### 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

#### About accessing a data source in a different domain

The Chart Component attempts to access data in another domain, but fails due to one of the following reasons:

In Internet Explorer, on the **Security Settings** dialog box, under **Miscellaneous**, **Access data sources across domains** is set to either **Disable** or **Prompt** and when prompted, you clicked **Cancel**.

The site being accessed by the control is not included in the list of trusted sites.

To enable access across domains, do the following:

- Enable prompting
- Add the site to the list of trusted sites

# About making connections to external data sources more secure

When you define a connection to an external data source for a chart component on a Web page, the authoring environment stores this information as an unencrypted (plain text) connection string in the HTML source. As a result, a user opening the page in a browser can easily view the HTML source for the page and read the connection string, which may include a user name and password.

To prevent unauthorized access using information from the connection string, if the data source supports this mode of authentication, use Windows Authentication (also referred to as a Trusted Connection and Integrated Security), which uses the current user's Microsoft Windows account to connect to an external data source. Using Windows Authentication to connect to an external data source has the following advantages:

The page designer doesn't have to enter a user name or password to connect to the data source, so that information cannot be exposed in the HTML source of the page.

The user of the page doesn't have to enter a user name or password to connect to the data source when opening the page, so that information cannot be compromised while it's being sent to the server.

Only a Windows user account that is configured in the security system for the data source will be allowed to connect to that data source.

As an example, to connect to Microsoft SQL Server using Windows Authentication, use the following procedure when defining a connection.

Important Before you can use Windows Authentication to connect to a Microsoft SQL Server database, a server administrator must configure the server to use this mode of authentication, and must grant your Windows user account (or a group of which your user account is a member) login access. Additionally, the server administrator should provide your account with the minimum level of permissions to the tables or stored procedures required for your chart.

1. In the design window, make sure the chart is activated. For

- instructions, see Help for your design program.
- 2. Right-click on the chart and select **Commands and Options**.
- 3. In the **Commands and Options** dialog box, select **Data from a** database table or query.
- 4. Click Connection.
- 5. On the **Data Details** tab, click **Edit**.
- On the Select Data Source dialog box, double-click New SQL Server Connection.odc.
- 7. In the Data Connection Wizard, specify the name of the server in **Server name**.
- 8. Under Log on credentials, click Use Windows Authentication.
- 9. Click **Next**, and then follow the directions in remaining screens of the Data Connection Wizard to specify the data to retrieve.

**Note** Other data sources that support Windows Authentication may present different options in the Data Connection Wizard. For example, to connect to an Oracle database by using Windows Authentication, you must enter only a forward slash (/) in the **User Name** box. For more information, see the documentation for the data source provider you are using.

If Windows Authentication is not available for the data source you want to connect to, you must enter a user name and password to connect to the data source. Because this user name and password might be viewed when the chart is on a Web page, do not use this mode of authentication to connect to sensitive data from a chart on a Web page. Even if you are not concerned about unauthorized users viewing your data, you should connect only with a user account that has limited permissions on the data source. For example, when connecting to a SQL Server database using a user name and password, do not use the SA account or any other account that has elevated permissions, because an unauthorized user might be able to use this account and password to access other data on the server.

Note If you use the Data Retrieval Service for Microsoft SQL Server (or use a Data Retrieval Service Connections (.uxdc) file that is defined to use that data retrieval service) to connect to an external data source, and you do not use Windows Authentication, the user name and password used to connect to the data source are not saved in the Web page. When you use this method to connect to an external data source, users of the Web Page that hosts your chart will be prompted to enter their logon information.

## **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.

**Security Note** Under some circumstances, a user can view the information used to connect to an external data source. This may represent a security risk. For more information, see <u>About making connections to external data sources more secure</u>.

## **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 from a Web page item: Spreadsheet
  - Data from a Web page item: PivotTable list
  - ▶ Data from a Web page item: Data source control
- 8. Click the **Type** tab, click the type of chart you want to use from the list, and then click the chart sub-type you want to use from

- the display on the right.
- 9. Click the chart or an item in the chart to make options available in the **Commands and Options** dialog box. Different options will be displayed in the dialog box depending on what is selected in the chart. For example, when you select the entire chart, the **General** tab becomes available (in which you can add a legend or data labels, or make other changes based on the chart type). When you select an axis, the **Format**, **Line/Marker**, **Axis**, and **Scale** tabs are displayed.

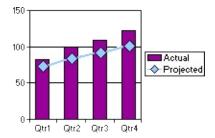
#### Work with a data sheet

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 <u>toolbar</u>, click **Commands and Options** , 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

#### 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.

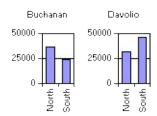


- 1. In the design window, make sure the chart is activated. For instructions, see Help for your design program.
- 2. Determine which series you want to be a different chart type.
- 3. Do one of the following:
  - Change the chart type for a series
  - ▶ Change the chart type for a series group and add 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 <u>toolbar</u>, click **Commands and Options** , and then click the **General** tab.
- 3. Under **General commands**, select **Chart Workspace** in the **Select** list.
- 4. Under Add, click Plot multiple charts 🛅.
- 5. If you want to use the same axis scale for all charts, click Multiple charts use same scale 
  ■.
- 6. Click **Field List** on the toolbar, and then use the scroll bars and the expand indicators (⊕ and □ 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.

- In the design window, make sure the chart is activated. For instructions, see Help for your design program.
- 2. On the <u>toolbar</u>, click **Commands and Options** , 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 5.01 SP2 or later and an Office 2003 license.

- 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 <u>toolbar</u>, click **Commands and Options** , 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

### 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 <u>toolbar</u>, click **Commands and Options** , 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 <u>toolbar</u>, click **Commands and Options** , 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.

This pointer	Represents this area
	Series area
	Category area
	Filter area
	Data area
	MultiChart area

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 <u>toolbar</u>, 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 <u>toolbar</u>, click **Commands and Options** , 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 <u>toolbar</u>, 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 <u>toolbar</u>, click **Commands and Options** , and then click the **General** tab.
- 4. Do one of the following:
- To flip the plot area horizontally or vertically, click **Flip Horizontal** or **Flip Vertical** •.
- To rotate the plot area clockwise or counterclockwise in 90-degree increments, click **Rotate Clockwise** or **Rotate Counterclockwise**

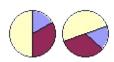
# Pull out slices in pie or doughnut charts



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 <u>toolbar</u>, click **Commands and Options** , 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 <u>toolbar</u>, click **Commands and Options** , 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 <u>toolbar</u>, click **Commands and Options** , 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.

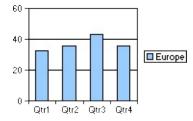
# **About data series and categories**

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.

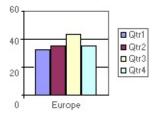
For example, suppose your data looks like this:

	A	В
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:

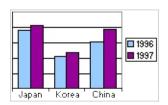


If you specify that your series are in rows, instead, the chart would use Europe as the category, and each quarter would make up a series, like this:

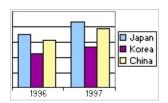


# Change series to categories or categories to series

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).



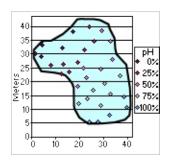
- 1. In the design window, make sure the chart is activated. For instructions, see Help for your design program.
- 2. Do one of the following:
- If your chart is based on data from a PivotTable list or external data, click **By Row/Column** on the <u>toolbar</u>.
- If your chart is based on data in a data sheet, right-click the chart, click **Data** on the shortcut menu, click the **Data Sheet** tab, then click **By Row By Column**.

# Change the orientation and position of the category axis label

- 1. In the design window, make sure the chart is activated. For instructions, see Help for your design program.
- 2. Click the label for the category axis.
- 3. On the <u>toolbar</u>, click **Commands and Options** , and then click the **Format** tab.
- 4. To change the orientation or the location of the axis label, click the drop down list adjacent to **Orientation** or **Position** respectively.
- 5. Select the option you want.

# 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 <u>toolbar</u>, click **Commands and Options** , 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.
- 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 <u>toolbar</u>, click **Commands and Options** , 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 <u>toolbar</u>, click **Commands and Options** , 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.

	drag the rotation slider		under <b>Lighting</b> .	
	option. For example, to	rotate the lig	hting source for	the chart,
6.	Make the changes you	want by drag	ging the sliders t	or each

#### 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**

Some of the content in this topic may not be applicable to some languages.

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 <u>Help for writing scripts and programs that use charts for the Web</u>.

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, and preceded by a minus sign if negative. For example, –36403.
	Displays up to 11 digits, or 10 digits with a decimal point, rounding additional digits to the right of the decimal point. Displays numbers with more than 11 digits to the left of the decimal point in scientific format.
	Displays numbers right aligned and text left 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	e 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 decimal places and including a percent sign. For example, 0.8914 appears as 89.14%.
Scientific	Displays a number in exponential notation. For example, 1.25E+10.
Yes/No	Displays No if the number is 0, and displays Yes for any other number.

True/Fals	e Displays False if the number is 0, and displays True for any other number.
On/Off	Displays Off if the number is 0, and displays On 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 <u>toolbar</u>, click **Commands and Options** , 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.

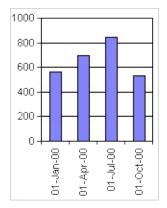
# **About using dates in charts**

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.

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

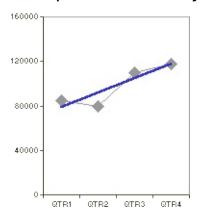


Chart types that support trendlines You can add trendlines to data series in column, bar, line, xy (scatter), bubble, area, stock, and polar charts. If you change a chart to a type that does not support the associated trendline, you lose the trendlines.

- 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 <u>toolbar</u>, click **Commands and Options** , and then click the **General** tab.

**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 <u>toolbar</u>, 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 <u>toolbar</u>, 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:

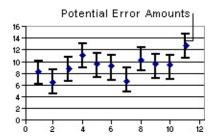


Chart types that support error bars You can add error bars to data series in column, bar, line, xy (scatter), bubble, area, radar, stock, and polar charts. For xy (scatter), polar, and bubble charts, you can display error bars for the x-values or the y-values. If you change a chart to a type that does 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 <u>toolbar</u>, click **Commands and Options** , and then click the **General** tab.
- 4. Under Add, click Add Errorbar .

## **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 <u>toolbar</u>, click **Commands and Options** , 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**  $\coprod$ , 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**  $\blacksquare$ , 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 X or 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)
- $\blacktriangleright$  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  $\blacksquare$  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 <u>toolbar</u>, click **Commands and Options** , 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.

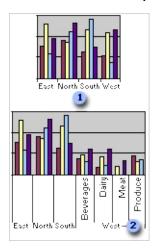
#### **Notes**

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.

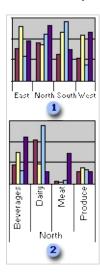


- Chart that shows sales in each region.
- 2 Chart with West expanded to show sales per product in the West region.
  - 1. In the design window, make sure the chart is activated. For instructions, see Help for your design program.
  - 2. Click the field that contains the item or items you want to expand or collapse.
  - 3. On the toolbar, click **Expand** or **Collapse**.

#### 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**.

#### 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** or **Sort Descending** on the 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 <u>toolbar</u>, click **Commands and Options** , 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** command used to summarize data fields.

Function	Description
Sum	Calculates the sum of the values.
Count	Tallies the number of values. Empty values, such as zero- length strings (strings that contain no characters), are included in the count, but null values (values that indicate missing or unknown data) are not included.
Min	Returns the smallest value in the field being summarized.
Max	Returns the largest value in the field being summarized.
Average	Returns the average of the values in the field being summarized.
Standard Deviation	Returns the standard deviation of the values in the field being summarized, assuming the values are a sample of a larger population.
Standard Deviation Population	Returns the standard deviation of the values in the field being summarized, assuming the values are the entire population.
Variance	Returns the variance of the values in the field being summarized, assuming the values are a sample of a larger population.
Variance Population	Returns the variance of the values in the field being summarized, assuming the values are the entire population.

**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.
- ▶ When I attempt to display or refresh a chart on Microsoft Internet Explorer, I get prompted with the message "This page is accessing information that is not under its control. This poses a security risk. Do you want to continue?"
- ▶ 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.
- ▶ My 3-dimensional charts are displayed as 2-dimensional charts.