

Introduction to StarOffice 6.0 and OpenOffice.org 1.0

IN THIS CHAPTER

- One-Minute Guide *page 4*
- Top Ten Reasons to Use StarOffice or OpenOffice.org *page 5*
- StarOffice Essentials *page 7*
- OpenOffice.org Essentials *page 8*
- What's New in StarOffice and OpenOffice *page 11*
- Switching From Microsoft Office *page 17*

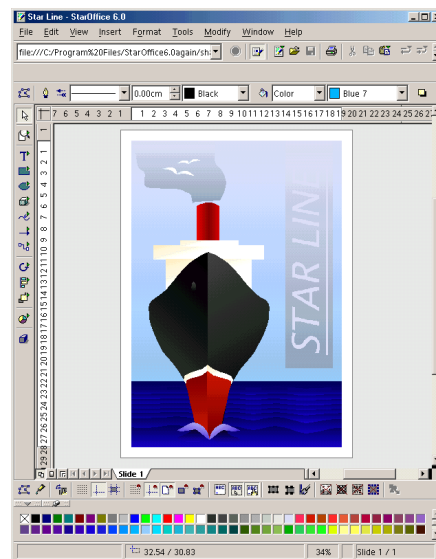
**FOR PUBLIC
RELEASE**

One-Minute Guide

StarOffice and OpenOffice.org are your free tickets to ride the Microsoft Office train without actually going anywhere near the station. StarOffice and OpenOffice.org open all the Microsoft Office formats—Word, Excel, and PowerPoint. And you can save any file in any of those formats, too. You can create a new Microsoft text document, spreadsheet, or set of slides without ever using Microsoft.

Goes beyond Microsoft Office In addition, StarOffice and OpenOffice.org open over 200 other formats. Your old AmiPro and Interleaf and WordPerfect files, GIFs and SVG and PNG graphics—just about anything. Not only do you get the ability to open and edit all the files Microsoft does, but you get a whole lot more.

StarOffice and OpenOffice.org StarOffice and OpenOffice.org are two very similar versions of the same software. Sun took StarOffice, gave the source code to the OpenOffice.org community, and then kept developing StarOffice themselves. So you've got StarOffice, backed and developed by Sun Microsystems, and OpenOffice.org, backed and developed by the OpenOffice.org open source community. StarOffice gives support and training; OpenOffice.org has a lot of documentation and FAQs on its site, too.



The features are pretty similar, so you can use this book with either one. Whenever there are significant differences, we'll point them out.

What each one costs StarOffice is \$75, OpenOffice.org is free.

Going from Microsoft Office to StarOffice or OpenOffice.org StarOffice and OpenOffice.org are somewhat similar to Microsoft Office. If you're an MS Office user, you'll still have to do some learning, but you'll have lots of "Oh, this is the same" moments. Plus, with StarOffice and OpenOffice.org you've got a great drawing/image editing program, Draw, which goes way beyond the minor tools you get in Microsoft Office. Draw is an excellent program, simpler for some than Adobe products, but with lots of power and features.

Get started Just hit Chapter Chapter 2, *Installation*, on page 19, or to learn more, read "StarOffice Essentials" on page 7 or "OpenOffice.org Essentials" on page 8. To see what's changed, see "What's New in StarOffice and OpenOffice" on page 11.

Top Ten Reasons to Use StarOffice or OpenOffice.org

Here are the ten best reasons to switch from whatever you're on now to StarOffice or OpenOffice.org.

- 1 StarOffice: \$75. OpenOffice.org: Free. Microsoft Office: Rather more; up to \$450.
Not being a slave to whatever Microsoft wants to do with pricing, distribution, licensing, and world domination in general: Priceless.
- 2 Government agencies publish forms in Word and Excel format. Universities require that students submit papers in Word format. Elementary schools publish their school lunch menus in Word format, for heaven's sake.

Who's going to pay \$450 to read a lunch menu? Just get StarOffice or OpenOffice.org. Even if you don't need most of the features, it means you can read everything in the closed Microsoft world without living in it.
- 3 Whatever annoyances you heard about regarding StarOffice 5.2, forget it. 6.0 rules. Really. (We spent about 1200 total hours writing the StarOffice 5.2 Companion. Believe us, we know 6.0 is better.) Check out the reviews of StarOffice 6.0 on Amazon. Reviewers are saying "Thank you, Sun, for such a great product." We haven't seen that on the Microsoft Office site.
- 4 Writer (the Word equivalent) is better than Word. It doesn't have more features, since Word has been suffering from terminal feature bloat since about 1996. Writer has what you need, plus better long document handling features. Hate Word master documents? Use Writer: the master document feature is more like FrameMaker's book feature. (Writer can't match FrameMaker, but FrameMaker is a different type of program.)
- 5 This just in: It's official. Bill Gates has enough money. Do you? If you and your children in elementary school, your children at college, your small business, medium business, enterprise, educational institution, church, synagogue, library, government agency, law firm, sports league, volunteer organization, or Summons Service'n'Ice Cream Parlor have all the money you need, great. But if not, you need the money more than Bill does. Save it and go with StarOffice or OpenOffice.org.
- 6 It's the best drawing program you've never used. It's got 3D stuff you've probably not come across in Word's drawing feature, Visio-like connector tools for architectural and electrical diagrams, cool auto-measuring lines that display the measurement of any object in the drawing (1-1 or to scale). And fancy text manipulation through FontWorks. Plus raster editing (like editing out the red eyes or your ex in your birthday photos) in all the applications. You can happily waste days playing with Draw. Go to *Guided Tour of Draw: Vector and Raster Graphics* on page 755 to get guided through some of these features.

6 Chapter 1 Introduction to StarOffice 6.0 and OpenOffice.org 1.0

- 7 No muss, no fuss data sources for mail merge (sending form letters to the 1204 people in your contacts database), etc. All you need is your customer list in a text file. The rest is incredibly slick and easy. Just open that text file in Calc (the spreadsheet program) and it automatically creates a nice neat spreadsheet for you. Then use that spreadsheet to do mail merges, create a form, or anything else you want. Forget Access—the StarOffice and OpenOffice.org data source are generally all you need. We've included a tutorial to prove how easy it is; see page 871.
- 8 UNIX users, get jiggy. No offense, but Applix and the other desktop publishing applications lacked a certain something. Anyone who's not an enthusiastic LaTeX user is breathing a huge sigh of relief. Plus UNIX folks can now stay off of Windows 24-7, since if you had to go on the road to give a presentation before, you pretty much had to go Windows and PowerPoint.
- 9 StarOffice 6.0 files might be the smallest files you ever create. StarOffice 6.0 files aren't in a binary format anymore (like pretty much all the other desktop applications). They're XML. Which means that it's not a Special Secret Formula that no one else can figure out, so other applications can open and deal with that format. It also means that you can write and write, and import all sorts of graphics, and your file sizes will still be miniscule. We wrote some 6.0 Writer documents that approached 80 pages and were still under 100k. Impress, Draw, and Calc all make really small files too. The days of your memory or hard disk groaning under the load of your work files are over.
- 10 It's a great principle. Open standards. XML. Nobody has a stranglehold on anyone else. Nobody in Redmond controls anything you do. This is the way software should be. And is.

StarOffice Essentials

StarOffice is a full-featured office suite that you can use to create text documents and Web pages, spreadsheets, slide presentations, and drawings and images. Its three main distinguishing characteristics are that it handles (opens and creates) Microsoft Office formats, as well as nearly 200 other formats; its price is microscopic compared to Microsoft Office; and it runs on Linux, Lindows, and Solaris as well as Microsoft Windows. And for anyone who's experienced Microsoft's licensing fees and regulations, StarOffice and OpenOffice.org are a breath of fresh air on that front too.

Currency	Amount	1 EUR	...	EUR
Euro	EUR	1,000.00 €		
Austrian Schilling	ATS	oS 13,760.30	oS 13.76	oS 10.00
Belgian Franc	BEF	40,339.90 FB	40.34 FB	10.00 FB
German Mark	DEM	1,955.83 DM	1.96 DM	1.00 DM
Spanish Peseta	ESP	Pts 166,386	Pts 166	Pts 100
Finnish Mark	FM	5,945.73 mk	5.95 mk	1.00 mk
French Franc	FRF	6,559.57 F	6.56 F	1.00 F
Greek Drachmas	GRD	340,750.00 Δpx	340.75 Δpx	1,000.00 Δpx
Irish Pound	IEP	IR£787.56	IR£0.79	IR£1.00

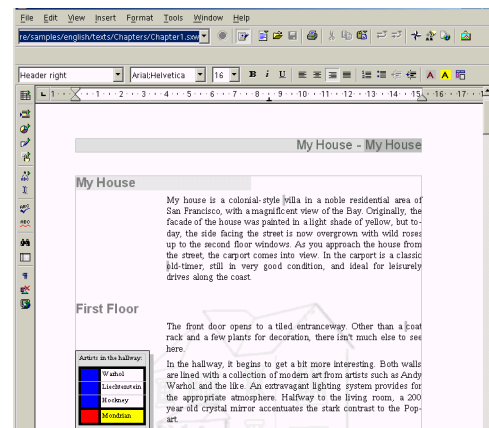
Note – Most of what's true about StarOffice is applicable to OpenOffice.org, too. For specifics about OpenOffice.org platforms, see *OpenOffice.org Essentials* on page 8.

Applications and Features

There are four main applications:

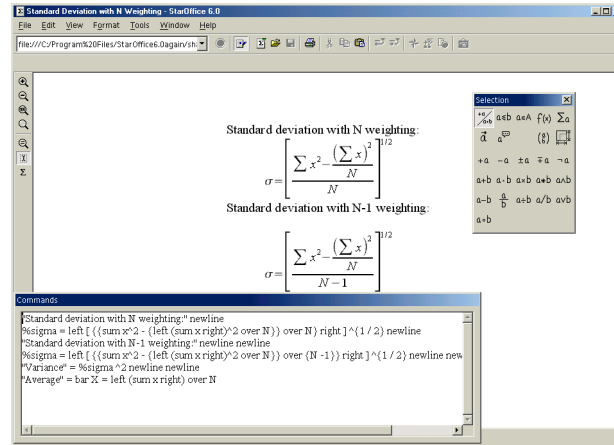
- Writer/Web for producing text documents and Web pages
- Calc for spreadsheets
- Impress for slide presentations
- Draw for drawings (vector graphics) and image editing (raster graphics)

Built into some or all of the applications are the following great features and add-ons:



8 Chapter 1 Introduction to StarOffice 6.0 and OpenOffice.org 1.0

- AutoPilots to guide you through creating new documents and importing data
- Charts and equations
- Data source connection capabilities for easy mail merges and access to your existing databases
- XML file formats for easy opening by other applications, plus extremely small file sizes
- Easy, high-quality conversion to and from Microsoft Office and other files
- HTML hotlinks from text or buttons
- A huge gallery of clip art you can use in your documents, modify, and add to
- Animation in presentations, plus animated GIFs
- Available in many languages, plus Asian language support



Licensing and Pricing

StarOffice is, in general, \$75. You can use it yourself but you can't, of course, make copies for anyone else. Schools and educational institutions can receive StarOffice 6.0 office suite for the cost of media and shipping. For more details, go to Sun's StarOffice Education Web site. You can order StarOffice from www.sun.com/staroffice, Amazon, or buy it from retailers like Best Buy and CompUSA.

OpenOffice.org Essentials

Note – OpenOffice.org is the name of the program—it can't be referred to as OpenOffice because a Korean software package already has that name.

OpenOffice.org 1.0.1 is the current release at the time this book was written. OpenOffice.org is pretty much the same as StarOffice; OpenOffice.org 1.0 corresponds

roughly to StarOffice 6.0. OpenOffice.org and StarOffice started from the same piece of code. Since then, Sun has been working on StarOffice, and an organization of open source programmers, has been working on OpenOffice.org. So there are some differences between them, but they're basically the same program.

You can copy, distribute, or otherwise use OpenOffice absolutely for free. StarOffice has some restrictions, is not free anymore, and StarOffice 5.2 (free for download) is no longer available.

Reasons to Use OpenOffice.org

So when was the last time you sent a Microsoft Word feature request to Bill Gates and got him to put it in? Here's what happened when Rob Pegoraro from the Washington Post submitted a feature request, reprinted by permission.

"I reported that a complaint I'd filed at the OpenOffice.org Web site about its word processor's inadequate word-count feature had gotten a real, live response....Several e-mails and a month later, a few programmers had cooked up a macro that allowed OpenOffice's word processor to count words in a selected block of text, not just the whole document."

...I was happy to add this tool to my copy of OpenOffice, which has since become my day-to-day word processor, much to my surprise. I know there are real differences between this and Microsoft Office, and OpenOffice sometimes has its own moments of clunkiness ...overall, I don't feel like I'm missing much by not using The Software That Everybody Else Runs."

Learning About Newly Developed Features

Sign up for the allfeatures@openoffice.org mailing list, through www.openoffice.org.

Differences Between StarOffice and OpenOffice.org

StarOffice 6.0 is a commercial product aimed at organizations and consumers while OpenOffice.org 1.0 is aimed at users of free software, independent developers and the open source community.

By and large, it's pretty much the same product. Figure 1-1 on page 10 shows the same document in StarOffice and in OpenOffice.org.

The source code available at OpenOffice.org does not consist of all of the StarOffice code. Usually, the reason for this is that Sun pays to license third party code to include in

10 Chapter 1 Introduction to StarOffice 6.0 and OpenOffice.org 1.0

StarOffice that which it does not have permission to make available in OpenOffice.org. Items in StarOffice but not in OpenOffice.org include:

- Certain fonts
- The database component (Adabas D)
- Some templates (but see www.ooextras.org)
- The clip art gallery isn't as big
- Some sorting functionality (Asian versions)
- Certain file filters, including WordPerfect (but they're working on it)

You'll also see occasional differences in the layout of windows, such as where a certain checkbox option appears, but usually not differences in the options available in a window.

All development on platforms beyond Solaris, Linux, and Windows is being done by OpenOffice.org.

You can find out about features on allfeatures@openoffice.org; to sign up for this or other mailing lists, go to http://www.openoffice.org/mail_list.html.

Spreadsheet in **StarOffice**. All formats are available for both, in the Formats list for the date format. The same formats for other types, such as currency, are not available in both.

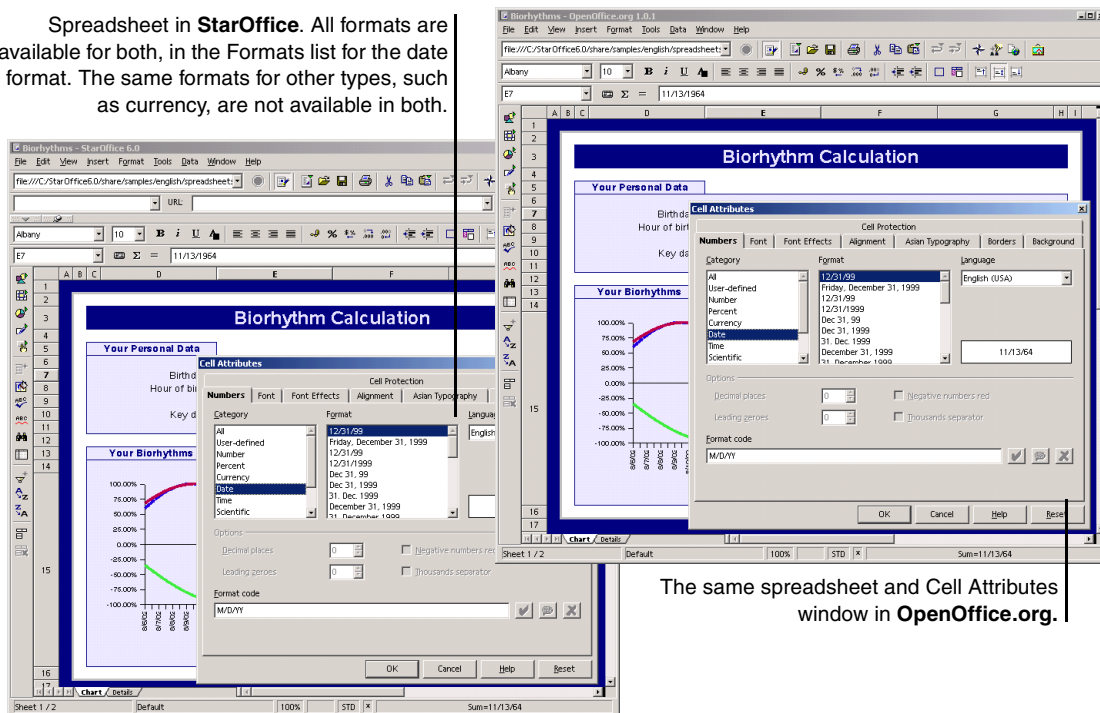


Figure 1-1 The same document in StarOffice and OpenOffice.org

OpenOffice.org on Other Platforms

Porting projects—switching OpenOffice.org over to work with other platforms—have been going on for a while. The one receiving the most attention at the time this book was written is the Mac OSX porting project. In May 2002 OpenOffice.org released a pre-alpha “Developer Build” for OpenOffice.org on Mac OSX., targeted at developers familiar with developing for the Mac OS X platform. At that time, the download was available at http://porting.openoffice.org/mac/ooo-osx_downloads.html

Other projects include Power PC and FreeBSD. For more information, go to <http://porting.openoffice.org/>

No release date for porting projects has been announced as of August 2002.

OpenOffice.org Extras

All the templates, etc. in StarOffice don't come with OpenOffice.org. However, Travis Bauer's Web site, www.ooextras.org, has what might be called a plethora of templates and other “extras.”

Writing Macros

The StarOffice and OpenOffice.org API is available through www.openoffice.org. Contact that site for information about developing applications that integrate with either application, or about joining an OpenOffice.org project.

The following have information about how the project began, and submitting code:

<http://www.openoffice.org/about.html>

<http://www.openoffice.org/contributing.html>

What's New in StarOffice and OpenOffice

StarOffice 6.0 and OpenOffice.org 1.0 are fairly different from StarOffice 5.2. Key differences are that the unified desktop is gone, Schedule Mail and StarBase are gone, and the focus groups they did on usability were taking good notes. There's more detail on those and other changes in the following sections.

Compatibility and Migration

StarOffice 5.2, StarOffice 6.0, and OpenOffice.org all play nicely together—you don't need to uninstall any of them. Just be sure to uninstall StarOffice 6.0 BETA before you do any 6.0 GA installation.

You can open 5.2 files in StarOffice 6.0 or OpenOffice.org 1.0, plus save new files back to 5.2. There's an AutoPilot for mass import from 5.2.

Migration is pretty good; it doesn't do everything but does take care of customization and mail. See Chapter 3, *Migrating From StarOffice 5.2*, on page 47.

Removed Applications and Features

The new StarOffice 6.0 and OpenOffice.org are leaner and trimmer than the somewhat overburdened 5.2 release. This section gives you a quick overview of what's out, and how to compensate for a few of the removals.

What's Gone or Really Different

They took out:

- The whole integrated desktop thing, including Explorer and Beamer and some associated features.
- FTP through Explorer.
- Image as a separate application, though most of the features are still present. Just click on the raster image once or twice in any of the other applications and the image editing toolbar and menus will appear.
- Mail, though you can export your mail and address book, and connect to an existing address book like Netscape or Outlook.
- Schedule, including Palm Pilot.
- Creating databases (though you can still connect to a variety of databases through ODBC, JDBC, etc.). See *Removal of Database Creation Ability, Except Adabas* on page 12. Adabas is still included in StarOffice, but not OpenOffice.org.
- Support for creating frames in Web.
- The Pack feature for presentations. It was removed because the files are so small they don't need packing. The Impress Player standalone program was also removed.

Removal of Database Creation Ability, Except Adabas

Instead of creating and maintaining a proprietary StarOffice database format (.sdb), StarOffice Base 6.0 works with common database connection standards like JDBC and databases like dBase. You can still create an Adabas database from StarOffice.

You can still create database tables, queries and forms, though this varies a bit depending on the underlying method of data storage.

New Application-Wide Features

Here's a somewhat detailed list of what's new. Not a lot is new that will affect how you use the specific features—it's more a case of structure and underpinnings that changed to make the whole experience better.

XML file format Remember creating Impress and Writer files that were over 2 MB before you even got going? That's over. You can create a Writer file that's a couple kilobytes per page. Formatting'll kick it up, but it's still really impressive. You'll have to really work hard to get even a 1 MB file.

SVG and EPS Think Illustrator is the only application for creating cool vector graphics that scale well? Think again. EPS rendering and reading is better, and you can export drawings to SVG, Scalable Vector Graphics, an XML-based format.

Font stuff There are new “metrically compatible” TrueType Microsoft Windows core fonts. Font substitution is better. You can set up font substitution with a new improved algorithm that makes the matching better, including across platforms.

Asian font support It's got Unicode support, Ruby text, and double-byte character support. The Asian version of StarOffice, by the way, is *StarSuite*. Supported fonts are:

- Japanese: HG Mincho Light J
- Chinese Simplified: MSung Light SC
- Chinese Traditional: MSung Light
- Korean: HY MyeongJo Light K

Image editing features in all applications Click on any GIF or other raster object and the editing toolbar, formerly only in Image, appears.

Gallery The Gallery of pictures and sounds from 5.2 was moved from the Explorer/Beamer area to Tools > Gallery. It's got a whole lot more in it now. You can add to the existing themes, which you couldn't before, and make your own new themes of images and sounds.



The Gallery feature is present in OpenOffice.org but smaller.

Password encryption The XML-based file format also supports password encryption for text documents and spreadsheets. Passwords are stored as encrypted hash values. When saving files to the old binary format, passwords aren't encrypted. However, when you load a document from a former version, the password will be encrypted again.

Standard address book support You don't have your old 5.2 address book but you can connect to the one you use for mail, or other address books. The AutoPilot steps you through connecting to your address book.

Improved HTML export You can define the text encoding for the HTML export choosing from a variety of character sets, including Unicode, using the new Character Set dialog box in the HTML Compatibility dialog box.

MathML equation support Supports exports and imports of the W3 XML format.

Enhanced cut and paste The Paste button on the Function bar has a drop-down menu where you choose whether you want to paste in the text or object's original format or in a special format. They're the same options you get when you choose Edit > Paste Special.

Better undo/redo You can undo a lot farther back than before; set up the number of undo steps by choosing Tools > Options > *program* > General.

Writer and Web

Better labels You can modify existing label brands and types and save them as your own label format; includes the latest Avery label specifications.

Section protection enhanced You can assign different passwords to individual sections. In previous StarOffice version, you could only use one password for all sections. Choose Insert > Section > Format > Section > Protect Record.

Password protection for recording editing changes The Records feature is typically used to make changes visible when two or more people collaborate on one document. Choose Edit > Changes > Protect Records.

Improved numbering Restart the numbering of lines with every new page. Choose Tools > Line Numbering.

Negative indents You can set negative (left or right) indents to paragraphs and tables, and specify the first line indent independently from the left indent of a paragraph. Choose Format > Paragraph > Indents & Spacing.

For tables you can also set negative values for the alignment from left. This lets you align tables independently of the page setup margins.

Hyphenation Define the minimal number of characters for hyphenation by choosing Tools > Options > Language Settings > Writing Aids.

Vertical text Want to write something down the side of your page? You got it. There are now vertical versions of the three Draw text creation tools, available in Writer through the Show Drawing Tools menu.

Calc

ROMAN and ARABIC functions Convert a value between 0 and 3999 to a Roman style, or convert a text that represents a Roman number into a value (between 0 and 3999).

Additional new functions The new functions are:

- **MIRR:** Calculate the modified internal rate of return for a series of cash flows with interest rates for investments and reinvestments.
- **CELL:** Provide information about content, formatting or location of a specific cell.

- **ISPMT:** Calculate the interest of a credit or investment with constant redemption rates.
- **Analysis Addin:** Provide new analysis functionality and improved Excel import.

Import HTML tables into spreadsheets Insert data from external sources (like linked areas or WebQueries). Choose Insert > External Data.

Sort options Specify language- and locale-dependent sort options. The default sort option depends on the system language setting and locale. Choose Data > Sort > Options.

Matrix arrays Improved complex scientific calculations. The number of elements that can be used in a matrix array, has been increased. In former versions this number was limited to 16384 elements per matrix, the new limit is 512k elements.

New print options *Suppress output of empty pages:* If this option is active, pages that don't contain cell contents or drawing objects are not printed. Cell attributes (like borders or background color) are an exception and don't count as content. *Print only selected sheets:* If this option is active, choosing All in the print dialog prints only selected sheets.

Improved calculation time and use less memory The maximum string length in formulas has been increased from 255 bytes to 64KB.

Improved operations Perform multiple operations with greater flexibility. This feature now extends to formulas that contain references to other formulas. A multiple operation is no longer restricted to act only on the formula selected in the dialog box. Instead, cell addresses that are indirectly referred to are replaced in every formula encountered during the calculation of a multiple operation.

Improved percentage calculations The percent sign operator is recognized in formulas and the result is displayed formatted as a percent value if appropriate. The percent sign operator divides the preceding subexpression by 100. This helps with Excel conversion.

Improved recognition of English date formats This is in addition to the default formats set by the system language, when importing a text file into Calc. This enables you to import formats such as 12-Mar-01 independent of the format used by system language. Choose File > Open > Text filter.

Improved Import and export of 16-bit Unicode text files Choose File > Open or File > Save As. and select the Text CSV format.

Improved display of line breaks Solve the problem of having different line breaks appear on print and on screen when you select the line break alignment option for cells. Using this option shows line breaks as they appear in print on-screen.

Hyphenate text in cells This option is when used with the Line Break wrap option.

Database Access and Data Source Creation

You can't create new databases anymore, except with Adabas. You can create *data sources*, just StarOffice hookups to a stored source of data, that connect to something as simple as an address book, a spreadsheet, or a text file. So yes, you can create new *data sources*, plus you can connect via JDBC, etc. to industry standard databases like Oracle. See Chapter 35, *Creating and Modifying Data Sources*, on page 869.

Connect to data sources instead of making them Instead of creating and maintaining a proprietary StarOffice database format (.sdb), StarOffice Base 6.0 only works with data sources. StarOffice Base 6.0 can connect and administer a wide variety of data sources and provide data access to all StarOffice components. Choose Tools > Data Sources and name new data sources, and use them in your documents. Build connections to existing data sources, specify (Calc or Microsoft Excel) spreadsheet documents as data sources, design and edit database tables, define new queries or edit existing ones, and create links to remote data sources.

Administration You can also copy tables and queries between data sources, and copy a query as a table.

Import your StarOffice 5.2 (or earlier) databases The Database Import AutoPilot will store your existing StarOffice queries, forms, and reports in the new DataAccess.xml configuration file. Form documents will be stored as regular documents.

Assign a database table to a combo or list box Pick up data through a field.

New form events *Before reloading*: Called before a reload on the form is executed.
Before unloading: Called before the form is unloaded. Previously, these events could only be used with a scripting language. Form Functions (on the Main toolbar) > Form Properties > Events.

Edit table indexes This component has been completely rewritten. A new Index Design button on the Table Design toolbar gives you one-click access to Indexes dialog box. Right-click a table in the Data Sources browser and select Edit Table from the context.

UTF-8 character suite support This support does not extend to ADO data sources (which don't have a character set), and dBase data sources.

Draw, Impress, and Image-Editing Features

Rotate meta files Used to be, you couldn't rotate metafiles, just bitmaps. Now you can.

Maximum size for cacheing Set an upper limit (in KB) for the total graphics cache size as well as cache a single graphic object. If the size of one object exceeds this predefined size, the graphics output is not cached, which means that the graphic is directly rendered on-screen every time you move or access the graphic. Choose Tools > Options > StarOffice > General.

Vertical text Want to write something down the side of your page? You got it. There are now vertical versions of the three Draw text creation tools, available in Writer as well through the Show Drawing Tools menu.

Printing options for graphics and gradients The new options include the following; to get to them, choose Tools > Options > StarOffice > Print.

- Reduced Transparency: Treat all transparent objects as non-transparent.
- No transparency: Always reduces transparency completely.
- Reduce gradients: Decreases the number of gradient steps to the real number set when the gradient was defined.
- Reduce bitmaps: Prints transparent bitmaps at the maximum resolution (in dpi). Convert colors to grayscale renders output in grayscale.

EPS and SVG export Create both formats by exporting from Draw.

Switching From Microsoft Office

Are you a dissatisfied Microsoft Office user? Come on in, the software's fine.

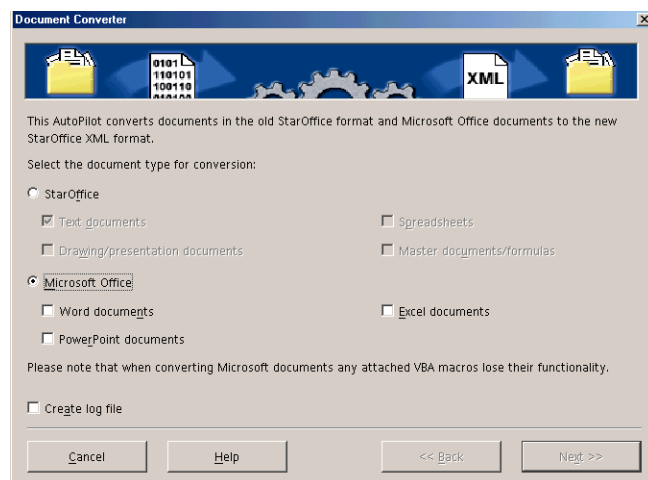
Ten good reasons If you haven't, read *Top Ten Reasons to Use StarOffice or OpenOffice.org* on page 5.

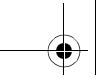
Take it out for a spin Dip your toe in the pool. Download OpenOffice.org and see how you like it. Note: OOo has no WordPerfect import filter at this time, though we're working on it. Then see if you want to just keeping using it happily, or if you want to buy StarOffice.

Try converting files

Once you've dipped your toe in the pool, try a test import. We're pretty sure it'll go really well. Just open a Microsoft Office file by simply choosing File > Open and choosing the right format in the format dropdown list.

You can also do a mass import using the AutoPilot, shown at right. It's no-risk experimentation since it leaves your Microsoft documents intact, just creating converted copies.





Spend some time with the tutorials Get to know StarOffice or OpenOffice.org.

- Chapter 5, *Setup and Tips*, on page 97
- *Guided Tour of Writer* on page 170
- *Guided Tour of Web* on page 448
- *Guided Tour of Calc* on page 504
- *Guided Tour of Impress* on page 638
- *Guided Tour of Draw: Vector and Raster Graphics* on page 755
- *Tutorial: Creating a Data Source* on page 871

