

CHAPTER

1

What's New in Access 2002

- Learning the history of Access changes
- Understanding what's new in Access 2002
- Understanding what's new in the Jet and SQL Server database engines
- Learning about Microsoft Office Developer

Chances are, if you're reading this book, you've already decided that Microsoft Access 2002 (we'll refer to it hereafter as *Access 2002*) is a worthy platform for your development endeavors. Chances are, you're right. Microsoft has created a serious, full-featured, and powerful development environment for creating database applications on single-user and networked personal computers.

TIP

Although the current release of Microsoft's Office suite is Microsoft Office XP, the individual programs do not use the XP abbreviation. Office XP is made up of Access 2002, Word 2002, Excel 2002, and so on.

A Brief Access History

Access 1.0 really opened the eyes of many database developers. Released in 1992, it was one of the first relational database products available for the Windows 3 platform, and it was certainly the first to fill the needs of many developers, both corporate and independent. Besides its ease of use in getting started, Access 1.0 made it very easy to create simple applications. It did have some limitations when developers got past a certain point in their applications, and it had a severe limitation in that databases couldn't be larger than 128MB. Access 1.1 fixed that limitation, expanding the maximum database size to 1GB, and fixed some other restrictions as well. Still, many professional features were lacking. Programmers used to Visual Basic's nearly complete flexibility were stymied by Access' inability to change control and form properties at runtime, for example. On the other hand, there was no simpler way to get data in and out of forms than Access, so developers worked around Access 1.1's limitations.

Access 2 offered great gains for developers. Although it also provided numerous improvements for end users, the greatest leap from 1.1 came in the enhancements for the developer community. For the professional programmer, Access 2 added features in almost every area of the product, including:

- A vastly extended object and event model
- Runtime access to most form and report properties
- Event procedures
- Cascading updates and deletes for referential integrity
- Engine-level enforcement of rules
- New query types—union, data definition, and pass-through queries—and support for subqueries

- Rushmore query optimization
- Data Access Objects (DAO), a consistent object model for the manipulation of Jet engine data
- OLE automation client support
- Programmable security
- Support for 16-bit OLE custom controls

Access 95 was a major undertaking. Both Access and Jet were ported from 16-bit Windows to 32-bit Windows. The Access Basic language and integrated development environment (IDE) were replaced with Visual Basic for Applications (VBA) and its enhanced IDE. Numerous other improvements were added, including:

- Support for multi-instance forms
- The addition of the KeyPreview property for forms
- Support for multiselect list boxes and improved combo box performance
- A new, lightweight image control
- The ability to detect and alter the type of a control with the ControlType property
- The addition of a built-in query-by-form feature, Filter by Form
- Support for form class modules with public functions (methods) and Let, Get, and Set property procedures
- The ability, with the NoData event of reports, to choose not to print a report if there were no records
- The addition of the RepeatSection property, which lets you repeat a group header at the top of continuation pages
- Replacement of counter fields with the more flexible AutoNumber data type
- The addition of new With...End With and For Each...Next VBA constructs
- The addition of the line continuation character
- Support for named parameters, optional parameters, and parameter arrays
- Support for new Date, Boolean, and Byte data types
- Improvements to the editor and debugger, including Watch variables and color-coded syntax
- Support for replication
- Several concurrency and performance improvements to the Jet 3 Engine

- OLE automation server support
- The addition of startup properties that let you disable access to the database window and change the application's title bar and icon

Access 97 was a minor release in comparison to Access 95. Still, it offered lots of new features and improvements to existing features. These changes included:

- A new Hyperlink data type.
- The Publish to the Web Wizard, which made it easy to publish static or dynamic data on the Internet or a corporate intranet.
- Lightweight forms that loaded faster because they didn't have any code behind them.
- The native tab control, which made it easy to create a tabbed dialog.
- Menus and toolbars that were completely programmable using the CommandBars collection and CommandBar object.
- New RecordsetType, FailOnError, and MaxRecords query properties.
- Support for class modules.
- IntelliSense support that made writing code much easier. When you're typing VBA code, the editor displays a list of objects, methods, and properties from which to choose. The VBA editor also displays a list of parameters for built-in and user-defined procedures.
- Support for drag-and-drop, which meant you could pick up a snippet of code and move it to a new location with the mouse.
- Several debugging enhancements, including the new Locals pane and Data Tips.
- Support for partial replicas and Internet replication.
- Support for a new client-server connection mode called ODBCDirect.
- Support for the special MDE file format that removes all VBA source code.

Access 2000 qualified as another major release of the product. The changes in Access 2000 included:

- Support for VBA 6.0 via an editor that's shared with the other Office applications
- Support for COM add-ins that integrate with VBA via its programmable object model
- Support for new VBA functions and keywords including StrRev, MonthName, Split, Join, Replace, AddressOf, Debug.Assert, and Implements
- Conditional formatting rules for data displayed in text or combo boxes

- Support for forms bound to recordsets, and transactional form updates
- A new user interface model, the *data access page*, which integrates Access data with a Web browser
- Access projects, which allow hosting of the Access user interface directly on the SQL Server database engine
- Integration with ADO as well as continued support for DAO
- Unicode data storage in the Jet engine, with optionally compressed text and memo fields
- An increase in the maximum size of a Jet database to 2GB
- Row-level locking in the Jet engine
- Enhanced support for ANSI-92 SQL in the Jet engine
- Replication improvements including column-level conflict resolution, replica hierarchies, and bidirectional replication with SQL Server
- The Jet Replication Objects (JRO) object model for working with replication features
- Name AutoCorrect to fix object names in dependent forms, reports, and queries

Access 2002

Access 2002 enhances and extends the features that were introduced in Access 2000, while also adding some new features of its own. The most significant changes can be grouped into five major areas:

- Programmability
- Forms and reports
- Data access
- Internet/intranet
- Other improvements

In the next few sections, we list the most significant changes, grouped by major area.

Access 2002 Programmability

Access 2002 includes VBA 6.3, which is an incremental advance over the VBA 6.0 language included with Access 2000. But other improvements have been made to Access programmability:

- Forms now support an Undo event, and some controls support Undo and Dirty events.

- The events of the Office Web Components are seamlessly integrated with the Access form designer for the new PivotTable and PivotChart views of forms.
- The AccessObject object can be used to get the creation or modification date of any object in an Access database.
- The new Printer object and Printers collection enable easier programmatic control of printing properties.
- New ImportXML and ExportXML methods of the Application object offer a programmatic interface between XML/XSL files and Access data and presentation.

New events are discussed in Chapter 2, *The Access Event Model*. The Printer object is discussed in Chapter 10, *Controlling Your Printer*. The ImportXML and ExportXML methods are discussed in *Access 2002 Enterprise Developer's Handbook*.

Access 2002 Forms and Reports

Access 2002 forms and reports have undergone some incremental improvements. The few items that have changed are highlighted here:

- Forms now offer two new views of your data: PivotTable and PivotChart. These views use the Office XP Web Components to provide interactive data analysis.
- Reports now support the OpenArgs, Modal, PopUp, BorderStyle, AutoResize, AutoCenter, MinMaxButtons, CloseButton, and ControlBox properties.
- Forms and reports both have a new Moveable property.
- Forms and reports can be saved as data access pages.

New form and report features are discussed in Chapters 7, 8, and 9: *Controlling Controls*, *Topics in Form Design and Usage*, and *Topics in Report Design*.

Access 2002 Data Access

The Jet database engine in Access 2002 is very similar to the one included with Access 2000. Most of the data access improvements are in Access projects, which use the SQL Server database engine. Here are the most significant changes:

- Although the Jet engine remains the default database engine, Access also works with the SQL Server Desktop Engine (the successor to the Microsoft Data Engine [MSDE]), a limited-connection version of SQL Server 2000, or other editions of SQL Server 6.5, 7.0, and 2000.

- Access 2002 includes the SQL Server 2000 Desktop Engine, a version of SQL Server that's suitable for small databases. This engine includes the new features of SQL Server 2000, such as cascading referential integrity, better stability, automatic self-tuning, XML integration, and indexed views.
- The new Linked Tables Wizard allows linking of tables to Access projects via SQL Server linked servers.
- Access projects are enhanced with new options to copy and transfer SQL Server databases to other servers.
- Access projects include new graphical designers for SQL Server stored procedures and functions.
- SQL Server extended properties provide an Access project equivalent of the Jet engine's user-defined properties.
- Access includes an option on the Tables/Queries tab of the Option dialog box that lets you toggle the SQL dialect supported in queries. You can choose standard Access SQL (the default) or ANSI-92 extended SQL.

Access SQL changes are discussed in Chapter 5, *Access SQL*. The SQL Server Desktop Engine is discussed extensively in *Access 2002 Enterprise Developer's Handbook*.

Access 2002 Internet and Intranet Features

Access 2002 takes data access pages (introduced in Access 2000) and makes them much more useable. It also includes enhanced XML functionality. Here are some of the improvements you'll find in this area:

- The data access page designer now takes advantage of extended properties to correctly handle lookup fields and create labels for fields.
- The data access designer has been extensively enhanced with features like better control sizing, control multiselect, and more intuitive cursor cues.
- Data access pages now support relative paths, thereby removing a major hassle to redistributing them.
- Data access pages are enhanced with a number of data-related events, including AfterDelete, AfterInsert, AfterUpdate, BeforeDelete, BeforeInsert, BeforeUpdate, Dirty, Focus, RecordExit, and Undo.
- You can bind data access pages to XML files to allow data access without using Remote Data Objects on the server.

- The Office XP Web Components have been improved with features such as native Excel file support, customizable menus and toolbars, XML integration, 3-D charts, and editing via the PivotTable component.
- You can export Access data to XML with optional XSL and XSD support.
- Access forms, reports, and data access pages can also be exported to XML/XSL files.

Data access pages, the Office Web Components, and XML integration are discussed in detail in *Access 2002 Enterprise Developer's Handbook*.

Other Access 2002 Improvements

Additional changes have been made to the product that don't fit neatly into any of the previous categories, including the following:

- Access 2002 introduces an updated MDB file format for Access databases, but it is also capable of using Access 2000 files. Unlike previous versions of Access, you don't have to convert Access 2000 files to the new format before you can modify them.
- You can convert an Access 2002 MDB database to either the Access 2000 or Access 97 MDB format.
- The designers for most Access objects now support multiple levels of undo and redo.
- When you convert a database from Access 95, Access 97, or Access 2000 format to the new Access 2002 format, Access will automatically log conversion errors. If any object cannot be converted, Access will create a table that contains information on the problem.
- Compact and repair functionality has been improved to better recover broken forms and reports.
- You can supply a database password programmatically when opening a database.

Many of these miscellaneous changes are discussed throughout the book.

Microsoft Office XP Developer Features

Many professional Access developers will want to purchase Microsoft Office XP Developer (MOD). This version of Microsoft Office includes a copy of Microsoft Office XP Professional with FrontPage, plus the following developer tools:

- A runtime distribution license for applications created with Access and either the Jet engine or SQL Server 2000 Desktop Engine.

- The COM Add-In designer, a VBA tool for creating add-ins that work across Office XP.
- A licensed copy of the Visual Source Safe (VSS) 6.0b source code control utility.
- The Packaging Wizard, an improved version of the Office 2000 Package and Deployment Wizard.
- Several useful add-ins, including the Code Commenter and Error Handler, the Multi-Code Import/Export Add-In, an add-in version of the Packaging Wizard, and the VBA String Editor.
- Microsoft Replication Manager, an updated version of Microsoft's replication administration tool.
- Printed copies of the *Microsoft Office XP Developer's Guide*, *Discovering Microsoft Office XP Standard and Professional*, and *Discovering Microsoft FrontPage*.
- Microsoft Exchange 2000 Server Developer Edition.
- Microsoft SQL Server 2000 Developer Edition.
- A selection of clip art, animations, sound files, and photos.
- The Code Librarian, a utility for managing shared code snippets, which comes with a number of sample snippets.
- The Workflow Designer for Exchange 2000 Server.
- The Workflow Designer for SQL Server and Workflow Manager for SQL Server.
- The HTML Help 1.3 SDK.
- The Smart Tag SDK version 1 (refer to the Office Developer Center at <http://msdn.microsoft.com/office> for the updated version, labeled 1.1).
- Digital Dashboard Developer Tools.

Building COM add-ins is discussed in Chapter 18, *Building Add-Ins*. Programming the Windows API is discussed in Chapter 16, *Accessing DLLs and the Windows API*. Source code control, Replication Manager, and the Packaging Wizard are discussed in *Access 2002 Enterprise Developer's Handbook*.

Summary

Access is the best-selling desktop database program on the market today. It has the right mix of features for both users and developers. Access 2002 includes a number of changes to the product that should make development in Access even better.

