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Getting Started with SQL Server 2005 Express Edition

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This book introduces you to SQL Server 2005 Express Edition (SSE), the free edition of SQL Server 2005 that is designed for smaller systems. SSE is intended as a replacement for MSDE, a free database product based on SQL Server 2000. SSE is designed to have smaller disk and memory utilization than MSDE, and has features targeting Visual Studio VB and C# programmers who typically treat databases just like files. SSE serves as a database for both desktop and server applications; it is easy to use in all stages of your application life cycle.

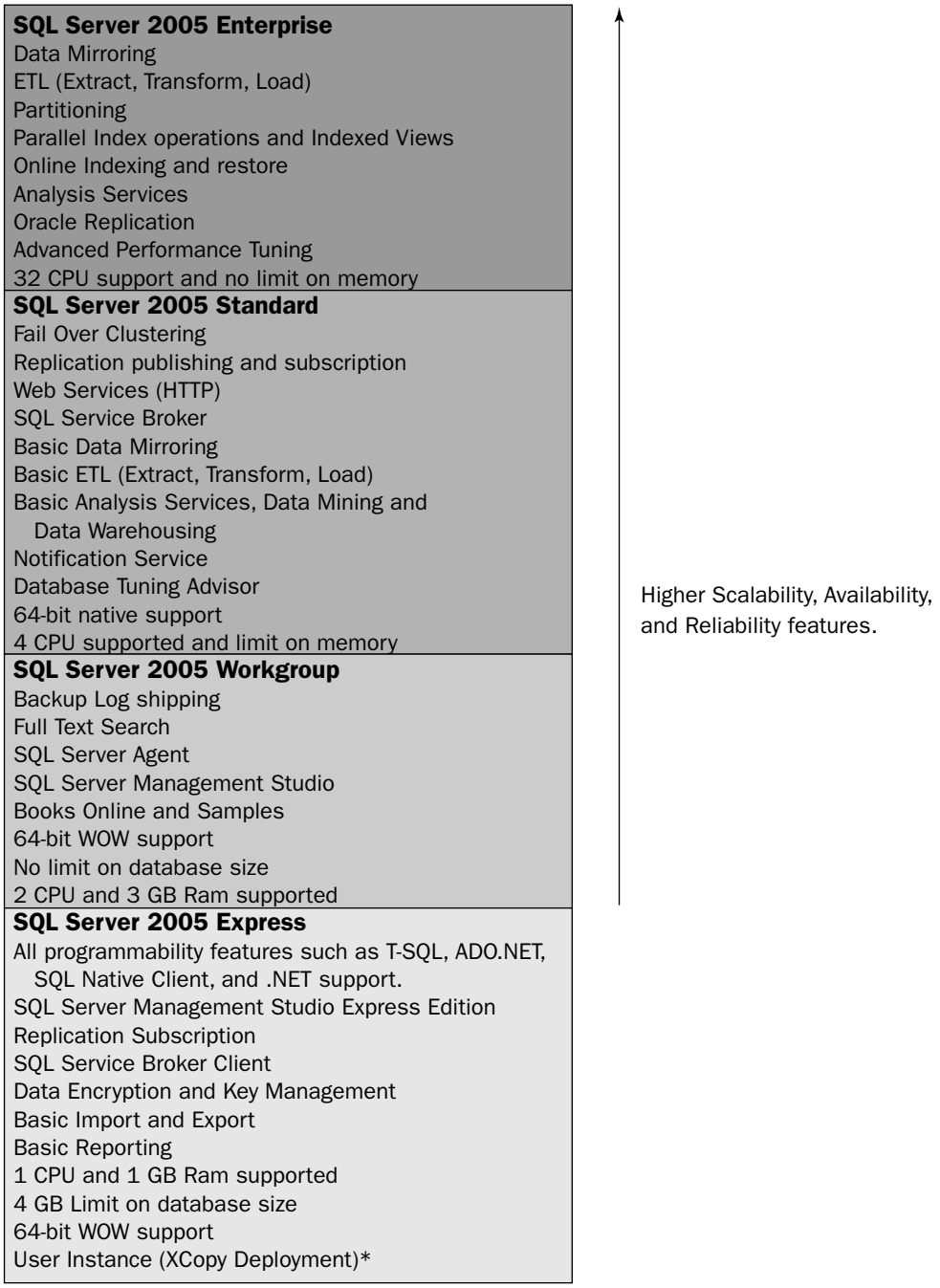
This chapter covers the following topics:

- Introducing SQL Server 2005 Express Edition
- Important features in SQL Server 2005 Express Edition
- Key scenarios and the audience for SQL Server 2005 Express Edition
- Hardware and software requirements for installing SQL Server 2005 Express Edition
- Installing SQL Server 2005 Express Edition

Introducing SQL Server 2005 Express Edition

The SQL Server 2005 family, shown in Figure 1-1, includes the Workgroup, Standard, Enterprise, and Developer editions along with SQL Server 2005 Express Edition. Some editions of SQL Server 2005 are offered for both 32-bit and 64-bit Windows operating systems. Only SSE is free for use in development, production, and redistribution and is targeted at developers deploying simple database applications. The Workgroup edition is meant for smaller departments and businesses looking for an affordable database with good price performance ratio and rich features such as replication publishing and backup log shipping. The Standard and Enterprise editions are used by large departments or enterprises looking for business-critical solutions. The Developer edition has all the features of the Enterprise edition, but cannot be used in production. Each higher-level

edition contains all the features offered by the edition immediately below it in the hierarchy. The only exceptions to this rule are the user instance and Xcopy deployment features that are present only in SSE. Chapter 6 covers these features in detail.



*All the features except for User Instance (XCopy Deployment) are present in higher level editions.

Figure 1-1

SQL Server 2005 Express Edition is a free database management system based on Microsoft SQL Server 2005 that allows you to define, store, and manipulate data in an integrated fashion. It enables you to share data with others, while preserving user security and permission features. You can store data in an application-independent manner while making sure that redundancy and inconsistency are reduced and that data integrity is maintained. Data access APIs that follow industry-wide standards, such as ODBC and OLE DB, are provided in both native and managed code so that it is easy to import and export data from different sources.

SQL Server 2005 Express Edition Highlights

SQL Server 2005 Express Edition is a great database for developers, and includes all the important programming features present in other SQL Server 2005 editions. In fact, SSE contains the same database engine that ships with other SQL Server 2005 editions. The SQL Server 2005 database engine contains support for the networking protocols, T-SQL, and the storage layer. Advanced features such as .NET support, the XML data type, stored procedures and triggers, and replication subscription are also present. SSE supports databases up to 4GB. An application developed using SSE typically works seamlessly with other editions of SQL Server 2005. There is no limit on the number of user connections to the database, but performance is limited by the use of a single CPU and 4GB RAM. Typically applications using SSE can scale to 25 concurrent users.

Easy-to-use graphical interfaces provided with the SQL Server Management Studio Express Edition (SSMS-EE) Graphical User Interface (GUI) management tool simplify the basic database operations. This tool contains a query editor that enables you to interactively work with data inside the database. SQL Server Configuration Manager allows you to configure networking options. The SSE setup offers extensive graphical interface tools that allow you to configure the installation. Silent installs are also supported so that you can transparently install SSE with your application. Servicing of SSE is integrated with Windows Update and is almost automatic for the user.

There is deep integration of SQL Server 2005 Express Edition with all editions of Visual Studio, including Visual Basic Express and Visual Web Developer 2005 Express. The rich data controls provided automate simple tasks so that you can develop a forms-based application that uses a SSE database without writing a line of code. The single-user scenario that is commonly used for desktop clients and web users is simplified by the Xcopy feature in SSE that enables the database files to be copied and moved like normal windows files. Xcopy deployment simplifies the deployment of your application so that you can just zip up your application and database file and email it to the destination user. The recipient copies the unzipped file to her machine and double-clicks the application to run it.

Upgrading from Other Products

If you are currently using Microsoft Desktop Engine (MSDE), this book is important to you because SSE is the free upgrade path to use the SQL Server 2005 functionality. The workload governor present in MSDE is removed in SSE and there are no limits on the number of concurrent operations at any given time. Because earlier versions of MSDE had licensing ambiguities, SSE has a simple licensing structure and is free for production and distribution. The SSE setup is greatly improved, with new dialogs guiding you through the installation process. Deployment is also simplified by features such as Xcopy and integration with Visual Studio ClickOnce that allows you to create a deployment package with a simple click of a mouse. The introduction of SQL Server Management Studio Express Edition (SSMS-EE) is also an important milestone, as MSDE did not have a graphical user interface management tool.

If you are currently using the Jet database with Access or Visual Basic applications, switching to SSE may offer some advantages. Use SSE instead of Jet for scaling in multi-user scenarios and improved security features. .NET support is available only with SSE, so that you can program with C# or VB .NET on both the client and the server. Upgrading your applications to SQL Server is also easy if you use SSE. Jet is preferred over SSE in scenarios where you are highly concerned about the storage space or system memory, or where there are strict web download requirements. Chapter 12 provides more information about upgrading your applications to SSE.

Features and Benefits of SSE

Although SSE is the most basic member of the SQL Server 2005 family, it contains features necessary for database users ranging from beginner students to Independent Software Vendors (ISVs) developing complex redistributable applications. The following list points out some of SSE's best features:

- **Data types:** As mentioned, SSE ships with the same database engine that is behind the SQL Server 2005 Enterprise Edition and supports data types such as User-Defined data types (UDT), the XML data type, and VarChar(MAX). UDTs enable you to define new complex data types in C# or VB .NET. SSE supports the native XML data type that allows you to directly manipulate or query XML on the server, while the VarChar(MAX) data type allows you to store large character objects with a maximum size of 2GB. A complete list of the data types supported by SSE is provided in Chapter 2.
- **Language independent:** Supporting .NET inside SSE allows you to use your favorite .NET language such as C#, VB .NET, or J# for database development. Your VB .NET application runs inside SSE and queries the database engine using the ADO.NET APIs. ADO.NET exposes .NET classes in all your favorite programming languages to connect to a database instance as well as to create and manipulate database objects such as tables and schemas. Using .NET, your ADO.NET functions can now run inside SSE, not just on your client machine. Use this feature for procedural code where individual records are manipulated one at a time.
- **Ease of deployment:** Xcopy deployment allows you to copy, move, and delete database files just like normal Windows files. There is support for SSE with all Visual Studio editions so that it is possible to develop simple desktop and web database applications without writing a line of code. Building, debugging, and deploying your application is possible with a few mouse clicks from within Visual Basic Express or Visual Web Developer Express. Chapter 3 guides you through the steps for developing your first client application. Application deployment becomes very easy with Xcopy deployment and Visual Studio ClickOnce support. You can learn more about deployment in Chapters 6 and 10.
- **User instance functionality:** SSE supports the Run as Normal User scenarios, where a non-administrator on the local machine can use the functionality of SSE without having to involve the system administrator. This is enabled using the user instance functionality that provides for a private instance of SSE running in each user's context. These user instances are automatically started up by the application using the database owned by the user. One of the goals for the user instance is to make the single-user scenario very simple; the application developer need not worry about the complicated SQL Server Security model. SSE supports a file-based permission model which means that the read and write permissions on the physical database file are used to assign

user permissions and privileges. SSE can also be used as a server where multiple users can connect to the server database; the performance characteristics of the server are governed by the limits on the CPU and memory usage. An instance of SSE can use only one CPU and 4GB RAM.

- **Security:** Much thought was given to making SSE install and run securely on your machine. Only local machine access is enabled by default because a majority of the SSE use cases are for local data. SSE runs under a low privilege service account. The user instance feature described earlier ensures that SSE runs under the context of each user for single-user scenarios. For multi-user scenarios, the SQL Server security model ensures appropriate access to authenticated users. Advanced security features including encryption are also included in the product.
- **Replication and messaging capabilities:** SSE supports offline capabilities by supporting replication subscription. Retail branches can subscribe to central offices with synchronization between the servers occurring at regular intervals. The SQL Service Broker feature supported by SSE provides asynchronous messaging capabilities so that SSE can send a message to SQL Server. This is particularly relevant for B2B web services.
- **Management tools:** The SQL Server Management Studio Express Edition tool, which is available via web download, offers capabilities to develop and test against SSE. It has a query editor that allows you to execute arbitrary T-SQL statements. SQL Server Configuration Manager allows you to change networking protocol settings and the SQL Service options. Rich command line facilities are available with the SQLCMD command line tool, while the SQL Bulk Copy (BCP) tool provides bulk transfer features.
- **Easy setup options:** SSE provides a reliable and robust setup user interface that guides you through the various setup and configuration options. A silent setup option is available where little or no user interface is shown. In a silent install you have to pass in the relevant configuration values as command line parameters or in setup initialization files. The silent option is typically preferred by ISVs who want to completely control the user experience, for instance, they want their application logo to show on the screen during installation.

SSE User Scenarios

SSE targets three main user segments:

- Developers building simple web applications
- ISV/ Developers redistributing SQL Server 2005 Express Edition as a client data store
- Small or medium business IT developers building transactional web and client server applications

Additionally, there are secondary user segments such as academics using SSE for education and server application developers using SSE as a cheap database server. Usage patterns differ for each of these user segments.

Web developers use SSE to store application data; SSE could be installed on a local or remote box. The application is deployed on the local machine during development, testing, and debugging. A remote web-facing machine is typically selected for production. The user can also use a third-party hosting provider, in which case the database is already provisioned and the user is responsible for copying the application files as well as updating the SSE database.

Desktop users primarily use SSE as a client database for storing application data on the local machine. For example, a photo album application might store an images database in SSE. Most of these applications are single-user applications.

ISVs typically use SSE as the database for their single-user or multi-user applications. Typically SSE is used with desktop editions of the application. For example, a 5-user edition of a customer-service application may use SSE, but the 50-user edition of the same application is likely to use SQL Server Standard. A seamless upgrade to other editions of SQL Server such as SQL Server 2005 Standard and Enterprise is important in this scenario.

The user gets SSE either from tools supplied by Microsoft like Visual Basic Express and Visual Web Developer 2005 Express, or as a web download from the Microsoft site. SSE can also be installed with third-party applications that redistribute it. The CD accompanying this book contains a version of SSE that can be used in both single-user and multi-user modes.

The following sections describe some of the common scenarios for using SSE.

Desktop Application with Single-User SSE

In this scenario, a simple single-user application running on your desktop or laptop uses SSE to store application data locally. For example, a tax preparation application might store tax information inside an SSE database. Many desktop applications developed with Microsoft Visual Basic Express and Microsoft Access fall into this category. The cost of licensing other editions of SQL Server for this scenario typically overwhelms the cost of the application itself, making SSE the most viable option.

If you are developing a desktop application, you can simply zip it up and email it to an end-user. Double-clicking the application executable on the user's computer launches the application. No extra configuration is required by the recipient. An ISV commercially developing software can also use the Visual Studio ClickOnce technology to deploy the application to one or more desktops. ClickOnce invokes the SSE setup utility, which is designed to install both client and server components on the local machine. The deployment process installs SSE on behalf of the user at the same time the application is itself installed if SSE is not already present on the machine. Multiple applications can share SSE, but each user on the local machine gets a private copy of the SSE instance using the user instance feature.

When you attempt to use a database in single-user mode, a user instance is spawned in the user context so that the database gets attached to the private instance. File-based permissions on the database file are used to verify whether a particular user can access the database file. The user spawning the user instance is a system administrator on this private instance. No other user can access this private instance and the physical database file cannot be shared by another user concurrently. Figure 1-2 shows a sample home desktop where the father and child have separate user instances for their applications.

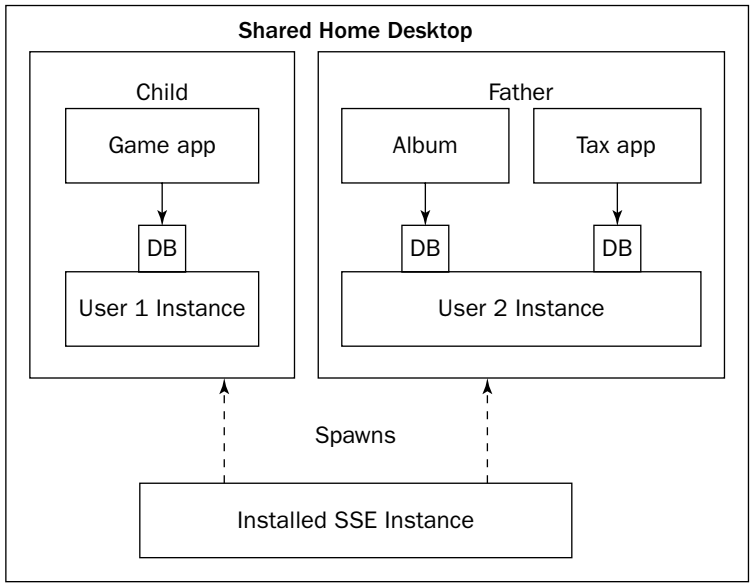


Figure 1-2

Certain SSE features are disabled when using user instances. For example, only Windows-based credentials are used for authentication. Features such as replication and SQL Server Service Broker will not work. Remote machine access using the TCP/IP or Named Pipes protocols is also not possible. The advantages of using the user instance feature include the ease of application development as well as the Run as Normal User scenarios. In the Run as Normal User scenario, a non-administrator on the local machine can develop, debug, and deploy SSE-based applications without any administrator-provisioned privileges. Chapter 6 covers user instances in more detail.

Typically, the application user need not worry about administering, installing, or servicing SSE because the application developer or ISV takes care of all the installation and configuration. Servicing of SSE is enabled using Windows Update so that you do not have to worry about getting the latest bits.

Client/Server Application with Multi-User SSE

Some desktop applications use a single SSE instance running as a Windows service to support a small workgroup of users. All users read and write data to a shared database instance residing on a file server, or on a workgroup member's own computer. SSE is installed only on the computer sharing the data. This scenario includes an application that is intended from the beginning to be used in a workgroup situation, as well as applications "growing up" by popular demand. An example of the latter category is a project-tracking application that grows in popularity within a firm so that the user base increases over time. A project-tracking application used by applications running on three desktops is shown in Figure 1-3.

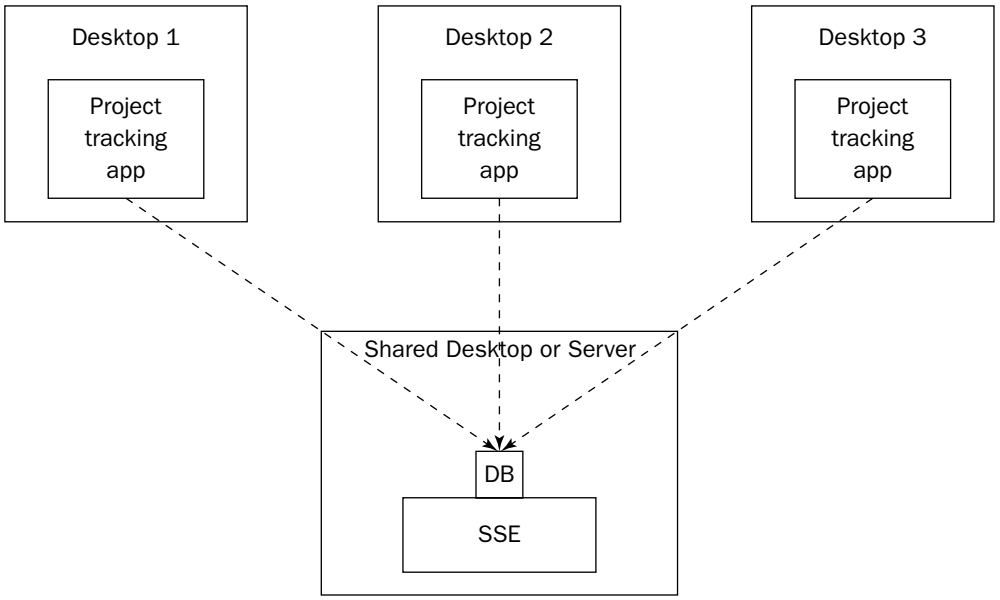


Figure 1-3

This scenario also includes ISV applications using Visual Studio tools to create and deploy client-server applications for small workgroups where other editions of SQL Server 2005 are too expensive.

SSE does not have any concurrency or user limits; limits are based on the hardware on which it is installed. Typically, the growth in the number of users to more than 25 requires upgrading to other editions of SQL Server 2005. The upgrade process is easy since the database engine as well as the client and server programming logic is similar across the different editions of SQL Server 2005.

Application developers developing multi-user applications must understand and deal with the SQL Server security model since the user instances security model is strictly single-user based. SQL Server 2005 Express Edition running as a service can handle multiple users accessing a shared resource concurrently. The application developer must handle the concurrency issues and define the permissions on shared objects. Security is covered in Chapter 13, while the issues surrounding concurrency are covered in Chapter 15.

The ClickOnce deployment feature exposed by Visual Basic Express is enabled for SSE, and client server applications are typically deployed using the setup.exe created by ClickOnce deployment. Chapter 10 deals with ClickOnce deployment in detail.

Application Replicating with a Central Office

In this scenario, the multi-user application explained in the scenario above is expanded to replicate a single, per-store, shared database with a centralized SQL Server backend. For example, in a retail store application replicating with the central office scenario, each store has one or more computers (such as checkout stations) accessing or modifying data in the shared database. Replication will periodically download new pricing and catalog data while uploading sales data. Connection to the central office may be periodically

interrupted for hours or days for various reasons. In this scenario, each computer may have its own SSE database, or there may be only one SSE database that is shared by multiple computers. Synchronization is typically conducted on a regular schedule, such as nightly, but can be interrupted on occasion by unexpected outages. Figure 1-4 illustrates this scenario.

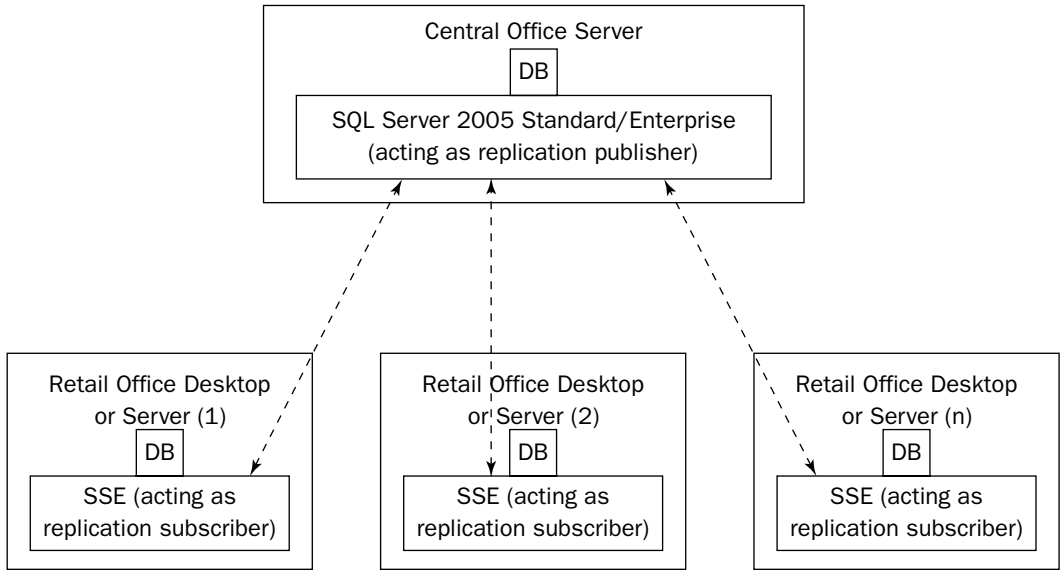


Figure 1-4

The disconnected sales force application is a related scenario where the remote computers are laptops used by the sales force and data is periodically replicated back to the central office. Various customer or sales data can be stored locally in either a read-only or a read-write access mode. In this case the laptop may be periodically synchronized with a central database at indeterminate intervals.

No tools are supplied with SSE to set up or administer replication. However, the replication tools supplied with other editions of SQL Server can be used with SSE as long as the SSE instance is replicating back to an edition of SQL Server 2005 higher than SSE.

Replication is outside the scope of this book and is not covered further.

Single-User ASP.NET Applications

You can develop web ppplications using the Visual Web Developer Express provided with the book. SSE has tight integration with Visual Web Developer to create ASP.NET applications. It is so easy to use that you can create data sources and build and debug applications without writing a single line of code. Chapter 5 guides you through creating ASP.NET applications.

After the ASP.NET web application is debugged and tested on the local machine, you can copy the relevant application and database files using the copy database or deploy database features in Visual Web Developer. The ability to treat database files just like regular Windows files, or Xcopy deployment, enables these copying scenarios. This is illustrated in Figure 1-5.

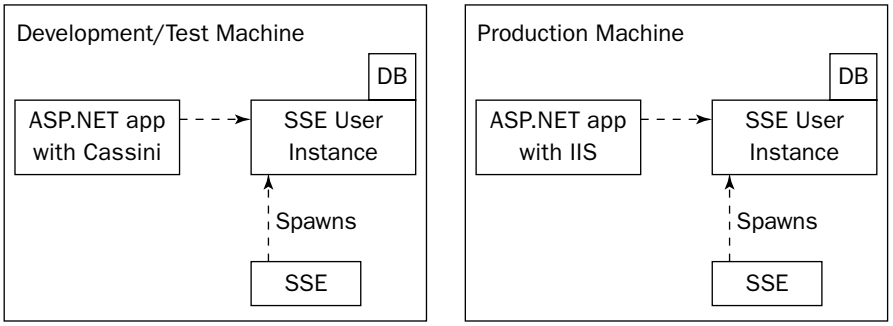


Figure 1-5

A web application runs under the context of a web server like IIS that translates a URL either into a URL or into an executable name, and then sends its output back. ASP.NET web applications support using IIS Web Server for remote scenarios and Cassini Web Server for local machine scenarios. Cassini is a secure, local web server introduced by Microsoft that supports local development and debugging scenarios. You can easily copy or deploy your ASP.NET application to a local or remote machine with only a few mouse clicks.

A user hosting a web application on his machine installs IIS and deploys the web application. This is often called a *dedicated hosting scenario* because the web server is dedicated to the applications that the user is knowledgeable about. There are no applications that are unknown or untrusted by the user on that machine. The dedicated hosting scenario typically uses the user instance feature in SSE because all connectivity to the database happens under the context of a single user, ASP.NET. The user must have copy, deployment, and debugging privileges on the working directory and machine.

It is important to understand what a single user means in the context of a web application. Although anonymous users over the Internet are accessing a web application, typically all database access is done under the context of a single user. The exception to this happens when the user impersonation feature is turned on so that the database access happens in the context of the Internet user who is accessing the website.

For example, consider a MyGarageSale web application that uses SSE to store the catalog of items sold and their prices. When the user accesses the MyGarageSale website, information is retrieved from the SSE database. Because the user's credentials may not be known ahead of time, the database access occurs under the context of a single user, ASP.NET.

ASP.NET Third-Party Hosting

This scenario involves the use of a third-party hosting provider when developers typically lease space on a web server host machine in return for administration services and a quality of service guarantee. The service is provided at a reduced cost by sharing the web server resources across several sites at once. Once you sign up as a user, you get a user directory to place your files, as well as a login and password with relevant privileges. This is a shared user scenario where there are untrusted applications running on the same machine. Each machine used by the third-party hosting provider could contain a large number of websites and users unknown to each other. To avoid name conflicts and the prospect of one user trampling on another user's files, this environment is tightly controlled by the administrator and each user is granted only the minimum required privileges.

Because most web applications are data-driven, it is common for a developer to purchase one or more databases from the hosting provider as part of their hosting contract. These databases are provisioned ahead of time and provide users with a connection string for accessing their databases. Most hosting providers provide web-based administration tools for creating and modifying schema and data.

> **Do not use the SSE user instance feature in a multi-user or third-party hosting scenario. For explanations refer to Chapter 6.**

Server Database Application

The server database application scenario refers to an economical deployment of a large-scale, SQL Server-based server application where components are installed in a simpler, cheaper, server configuration. They could be web-facing applications. There are three typical sub-scenarios including usage: as evaluation copies, single-user or small-user editions, and low-volume web applications.

The evaluation scenario covers the case of a server application that must be deployed on a single machine for evaluation or demo purposes. For example, the evaluation edition of a customer service application can ship with SSE or SQL Server Evaluation edition. The application development scenario is a subset of the evaluation scenario that involves the usage of SSE only in the design and development phase of a SQL Server application. ISVs develop applications using free SSE licenses while relying on their customers to purchase SQL Server licenses for testing and production deployment. This scenario enables development to proceed on client operating systems on desktops or laptops. The SQL Server 2005 Evaluation edition can also be used for this purpose. The Evaluation edition contains all the features of SQL Server 2005 Enterprise edition and has a trial period of 120 days.

The single-user or limited-user edition scenario is similar to the evaluation scenario, except that the deployment is used in production for a small number of users. This is commonly required to cover the low-volume scenario of a server application that requires SQL Server 2005 for its data access. The low-volume web application scenario typically includes web applications deployed on web servers with low concurrent usage patterns. However, this includes a model where the server application stores configuration or other data that does not get directly queried by remote clients, and hence the SSE use is typically low-volume. The SQL Server compatibility for easy scalability as well as the price point provides the primary attraction for SSE in this scenario.

Whereas the previous scenarios involve end-users installing applications on desktop operating systems, the server scenarios generally involve more knowledgeable end-users or even IT staff, and will always include installation on server operating systems. Thus the deployment environment will more closely match that of other editions of SQL Server 2005; however, the end-user will still not be as typically skilled or experienced as the SQL Server administrator in a server environment.

Licensing and Support

SSE is free to deploy in production environments, and you can redistribute it along with your application. However, the default web download license does not allow you to redistribute it. You must register for free at http://www.microsoft.com/sql/howtobuy/default.asp to get a license to redistribute SSE. Registration is required for redistribution in order to ensure that Microsoft can disseminate critical security information to partners if necessary.

Similarly the tools supplied with SSE, such as SSMS-EE, are free to use and redistribute. Any tool like SQL Server Management Studio (SSMS) that does not ship with SSE can be used with SSE only when SSE is used in conjunction with another edition of SQL Server 2005. For example, SSMS-EE does not have any replication-related tools even though SSE supports replication subscription. To use the replication tools inside SQL Server Management Studio, SSE has to be a replication subscriber to another edition of SQL Server 2005. Whenever you use SQL Server Express to connect to another licensed non-express edition of SQL Server 2005, Client Access License (CAL) is required. It does not matter whether the users are connecting directly or indirectly either through SQL Server Express or a website. For example if five users connect to SQL Server 2005 Standard edition using a terminal server, five CALs are required even though only a single machine is used to connect to the database instance.

SSE is fully supported by Microsoft via websites and newsgroups. Support via email and phone is also available for a fee.

Visual Basic or C#

A couple of words about the choice of programming language are appropriate here. Either Visual Basic 2005 or C# 2005 will work just fine; you should be able to get all your database application work done in either language. But, the teams developing these languages have different goals and you should keep those goals in mind when you select your language.

Visual Basic 2005 is targeted as an upgrade path for the millions of existing Visual Basic 6.0 users. The language syntax and features are specifically designed with that customer in mind. The Visual Basic language has rapid productivity, simplicity, and ease-of-learning as primary goals. The Visual Basic team is interested in making sure that everyone from first-time users to developers of corporate IT database applications are happy with the language's features.

C# 2005 is targeted as a home both for the C++ and Java developers. The C# language syntax is intended as a modern, general purpose, object-oriented language (with special emphasis on general purpose). The C# team is interested in making sure that C# remains at the forefront of the object-oriented programming world by introducing practical modern language innovation to the programming public.

You can choose to write in either Visual Basic or C#. The examples in this book will all use Visual Basic, but it should be very easy to find or create the exact same elements for C#.

> *You can use the Visual Basic 2005 Express edition for most of the examples in this book. The Express editions of Visual Studio are inexpensive. The higher-level editions of Visual Studio make building data-centric applications even easier with some advanced features. Specifically, higher-level editions of Visual Studio enable connections to remote databases for all languages, enable T-SQL debugging, and allow for*

database projects. If you want to try out these features, you'll need to get a higher-level edition of Visual Studio than the Express editions.

Installing SSE and Visual Basic Express

This section introduces you to the hardware and software requirements of SSE and Visual Basic Express along with the basic steps used to install these products on your local machine. If you encounter any issues during the installation process, please refer to Chapter 9 for more information about the setup procedures for SSE.

Hardware and Software Requirements for SSE

The following table lists the minimum hardware and software requirements for running Microsoft SQL Server 2005 Express Edition on a 32-bit machine.

Hardware	Minimum Requirements
Computer	Intel or compatible Pentium 600 MHz (recommended: Intel or compatible 1 GHz or higher)
Windows version	Windows Server 2003 SP1, Windows XP SP2, Windows 2000 SP4
Memory (RAM)	192MB minimum (recommended: 256MB or higher)
Hard disk space	525MB
Monitor	VGA or higher resolution 1,024x768
Pointing device	Microsoft mouse or compatible pointing device
CD-ROM drive	Required for CD installation

Support for SQL Express is limited to the Windows on Windows (WOW) 32-bit subsystem on 64-bit operating systems.

The proper version of .NET Framework 2.0 must be installed prior to installing SQL Server 2005 Express Edition. You should remove any previously installed version of .NET Framework 2.0 before installing a later version.

Hardware and Software Requirements for Visual Basic 2005 Express Edition

The following table lists the minimum hardware and software requirements for running Microsoft Visual Basic 2005 Express Edition on a 32-bit machine. The hard disk size includes the .NET Framework installation.

Hardware	Minimum Requirements	Recommendation
Computer	Intel or compatible Pentium 600 MHz	Intel or compatible 1 GHz or higher
Windows versions	Microsoft Windows 2003 Server Windows XP SP2 Windows 2000 SP4	Microsoft Windows 2003 Server Windows XP SP2 Windows 2000 SP4
Memory (RAM)	128MB minimum	256MB or higher
Hard disk space	500MB typical, up to 1.3GB may be required	1.3GB free space
Monitor	VGA or higher resolution 800x600 256 colors	VGA or higher resolution 1,024x768 Hi Color -16-bit
Pointing device	Microsoft mouse or compatible pointing device	Microsoft mouse or compatible pointing device
CD-ROM drive	Required for CD installation	Required for CD installation

Installation Steps

After verifying that you have the necessary hardware and software, follow these steps to install SSE and Visual Basic 2005 Express Edition on your local machine:

> *Warning: If you have any previous versions of Visual Basic 2005 Express Edition, SSE, or .NET Framework 2.0 on your computer, they must be uninstalled prior to installing SSE and VB .NET.*

1. Insert the CD that comes with this book and double-click vbsetup.exe. Click Run when the Internet Explorer Security Warning popup appears.
2. On the Welcome page of the Installation Wizard, click Next.
3. The Licensing (EULA) page appears next. Read the license carefully before selecting the check box, which activates the Next button.
4. In the Installation Options dialog that appears, check the box for Microsoft SQL Server 2005 Express Edition and click Next (see Figure 1-6).

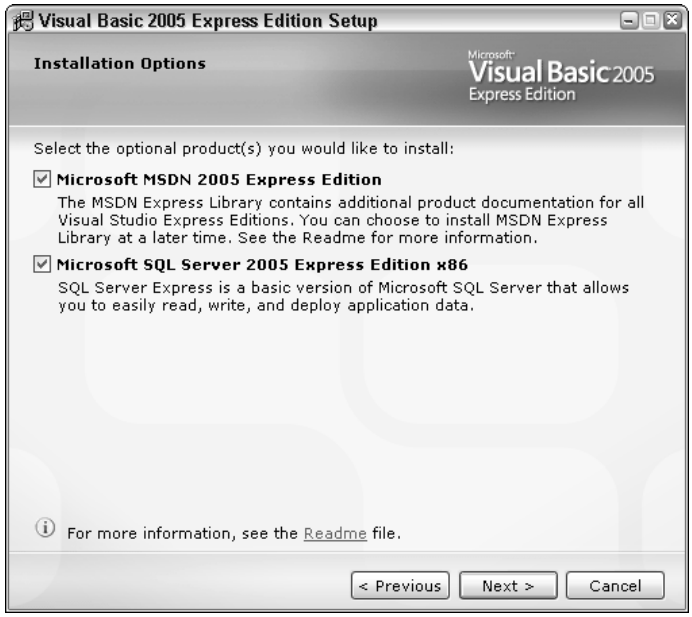


Figure 1-6

5. In the Destination Folder dialog box, click Install. You need not change the default destination location (see Figure 1-7).

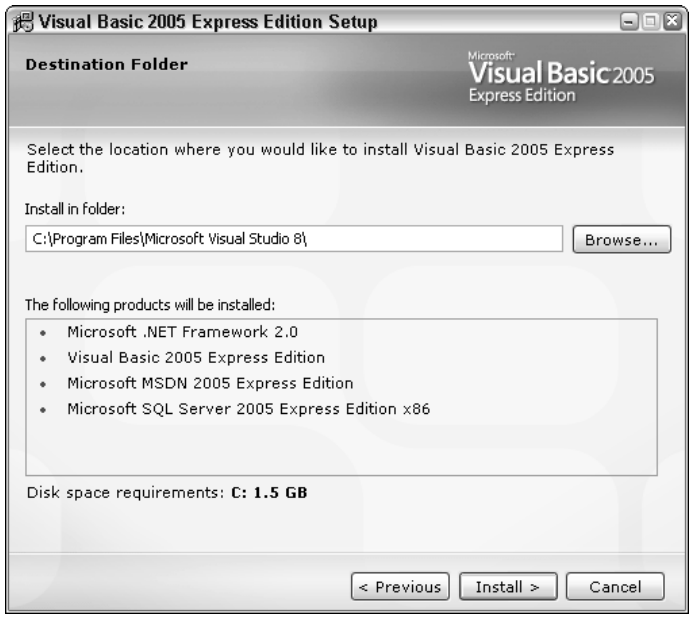


Figure 1-7

6. A progress bar is displayed to show that the Visual Basic 2005 Express Edition installation is in progress. Click Exit when the Setup Complete dialog appears.

Summary

This chapter introduced SQL Server 2005 Express Edition and some of its features, such as Xcopy and .NET support. SSE has the same database engine as the other SQL Server 2005 editions so that all the programmability features are similar across the editions. There is no limit on the number of users; the only limit is imposed by the hardware utilized. The relationship of SSE to other SQL Server 2005 editions, as well as its advantages over other databases such as MSDE and Jet, is also mentioned. This chapter addressed the following topics:

- SSE and its key features
- Important scenarios like Desktop Application with single-user SSE, ASP.NET hosting, and Client Server Application with multi-user SSE
- Licensing and support for SSE
- Hardware requirements for installing SSE and VB .NET
- Installing SSE and Visual Basic 2005 Express Edition on your machine

In the next chapter, you learn more about the basic database features supported by SSE.

Exercises

Try the exercises that follow to test your understanding of the material covered in this chapter. You can find the solutions to these exercises in Appendix A.

1. You are the chairperson for a university alumni association and want to figure out the appropriate SQL Server 2005 edition to use for a photo album application. This application is an interface for digital photographs and is expected to be installed on each member's desktop. There is no sharing of the application between members, as each person gets a personal copy of the database and the application. Annually the databases are updated and emailed to each member. What edition of SQL Server 2005 would you use?
2. You are the IT department head of Joe's Auto Parts. Your 75 retail shops are distributed in multiple states across the United States, and each retail shop requires two checkout counters that have the latest information about the catalog. The central office requires daily updates of sales information from the retail shops. What editions of SQL Server would you use in the retail and central offices?
3. You are an ISV deploying server applications to small businesses with one to five users. You want to move to the medium business segment supporting a larger number of users. Currently you are using SSE in the multi-user mode. How easy is it to move to higher editions of SQL Server?