

Microsoft SQL Server

SQL Server 2014 Express Upgrade Technical Guide

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Summary: This technical guide takes you through the essentials for upgrading SQL Server 2005, SQL Server 2008, SQL Server 2008 R2, and SQL Server 2012 Express instances to SQL Server 2014.

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Upgrading SQL Server 2014 Express

Introduction

SQL Server 2014 Express is a free version of SQL Server 2014 that delivers a rich set of data features, data protection, and performance. SQL Server Express can be used in the following ways:

- As a local data store

- Embedded with an application

- As a lightweight database server for applications and small web sites

The following SQL Server 2014 Express packages are available:

LocalDB (.msi installer) is a lightweight version of Express that has all its programmability features, yet runs in user mode. It has a fast, zero-configuration installation and a short list of prerequisites.

Express (database engine only) is the core Express database server.

Management Studio contains the tools needed to manage SQL Server instances, including LocalDB, SQL Express, SQL Azure, and the full version of SQL Server.

Express with Tools contains everything needed to install and configure SQL Server as a database server, including the full version of SQL Server 2014 Management Studio.

Express with Advanced Services contains all the components of SQL Server Express, including the full version of SQL Server 2014 Management Studio. This is a larger download than "with Tools," as it also includes both full-text search and Reporting Services.

SQL Server 2014 Express is the ideal upgrade from the SQL Server 2005/2008/2008 R2/2012 Express Editions. It includes many features that make it a compelling upgrade proposition from any of these previous versions.

A direct upgrade path from Microsoft Data Engine (MSDE) to SQL Server 2014 Express is not supported. To upgrade an existing MSDE instance, you must first upgrade to a SQL

Server 2005/2008/2008 R2 Express instance and then upgrade to SQL Server 2014 Express.

LocalDB

LocalDB is a version of SQL Server Express created specifically for developers. It is very easy to install and requires no management, yet it offers the same Transact-SQL (T-SQL) language, programming surface, and client-side providers as the regular SQL Server Express. Developers who target SQL Server no longer have to install and manage a full instance of SQL Server Express on their laptops and other development machines. Moreover, if the simplicity (and limitations) of LocalDB fit the needs of the target application environment, developers can continue using it in production, as LocalDB makes a pretty good embedded database, too.

You can download SQL Server 2014 LocalDB as separated package from the [Microsoft SQL Server 2014 Express](http://www.microsoft.com/en-US/download/details.aspx?id=42299) web site (<http://www.microsoft.com/en-US/download/details.aspx?id=42299>).

Feature Changes

SQL Server 2014 Express supports all the core database functionality that SQL Server 2005/2008/2008 R2/2012 Express provides. This lets almost all existing database applications work without modifications. This functionality includes support for most of the SQL Server features, including Common Language Runtime (CLR) support, XQuery, dynamic management views, and user-schema separation.

In addition, SQL Server Express can rely on a set of management tools. SQL Server Express users can use SQL Server Computer Manager to start and stop database services. You can use SQL Server Configuration Manager to limit potential security risks by controlling network connections and shutting down unused services. You can also manage SQL Server Express by using the full version of SQL Server Management Studio (SSMS), which is included in SQL Server 2014 Express with Tools and with Advanced Services. It is also available as a separate download.

You can download SQL Server 2014 Express from the [Microsoft SQL Server 2014 Express](http://www.microsoft.com/en-US/download/details.aspx?id=42299) web site (<http://www.microsoft.com/en-US/download/details.aspx?id=42299>).

Preparing to Upgrade

Table 1 shows the upgrade paths that Microsoft supports to SQL Server 2014 Express.

Table 1: Upgrade Paths to SQL Server 2014 Express

Upgrade From	Supported Upgrade Paths
SQL Server 2005 SP4 Express, SQL Server 2005 SP4 Express with Tools, and SQL Server 2005 SP4 Express with Advanced Services	SQL Server 2014 Enterprise SQL Server 2014 Business Intelligence SQL Server 2014 Standard SQL Server 2014 Web SQL Server 2014 Express
SQL Server 2008 SP3 Express, SQL Server 2008 SP3 Express with Tools, and SQL Server 2008 SP3 Express with Advanced Services	SQL Server 2014 Enterprise SQL Server 2014 Business Intelligence SQL Server 2014 Standard SQL Server 2014 Web SQL Server 2014 Express
SQL Server 2008 R2 SP2 Express, SQL Server 2008 R2 SP2 Express with Tools, and SQL Server 2008 R2 SP2 Express with Advanced Services	SQL Server 2014 Enterprise SQL Server 2014 Business Intelligence SQL Server 2014 Standard SQL Server 2014 Web SQL Server 2014 Express
SQL Server 2012 SP1 Express, SQL Server 2012 SP1 Express with Tools, SQL Server 2012 SP1 Express Management Studio, and SQL Server 2012 SP1 Express with Advanced Services	SQL Server 2014 Enterprise SQL Server 2014 Business Intelligence SQL Server 2014 Standard SQL Server 2014 Web SQL Server 2014 Express

When you are upgrading an existing 32-bit instance to a 32-bit instance, both in-place and side-by-side upgrades are supported. In all other cases, side-by-side upgrades are required.

English SQL Server can be upgraded to any localized SQL Server. A localized SQL Server can be upgraded to a localized version of the same language. However, localized-to-English upgrades are not supported, nor are upgrades of a localized SQL Server to different languages.

Table 2 shows the features in three types of packages available for SQL Server Express.

Table 2: SQL Server Express Packages Features

Feature	SQL Server 2014 Express	SQL Server 2014 Express with Tools	SQL Server 2014 Express with Advanced Services	LocalDB
Management				
Windows PowerShell integration	Yes	Yes	Yes	Yes
Policy-Based Management	Yes (manual only)*	Yes (manual only)*	Yes (manual only)*	Yes (manual only)*
SSMS	No	Yes	Yes	No (use SQLLocalDB.exe or SSMS as separate download)
SQL Engine				
Integrated full-text search	No	No	Yes	No
MERGE and UPSERT	Yes	Yes	Yes	No
New data type support				
Filestream support	Yes	Yes	Yes	No
New Date and Time data types	Yes	Yes	Yes	Yes
Geodetic data types	Yes	Yes	Yes	Yes
Advanced spatial libraries	Yes	Yes	Yes	Yes
Support for spatial standards	Yes	Yes	Yes	Yes
New tools				
Import/Export Wizard	Yes	Yes	Yes	Yes
Replication				
Change tracking	Yes	Yes	Yes	Yes
Synchronization Services	Yes (separate installation)**	Yes (separate installation)**	Yes	Yes (separate installation)**
Reporting Services				
Increase RS Memory Limit	No	No	Yes	No
RS Word/Rich Text Export	No	No	Yes	No

Feature	SQL Server 2014 Express	SQL Server 2014 Express with Tools	SQL Server 2014 Express with Advanced Services	LocalDB
IIS Agnostic Report Deployment	No	No	Yes	No
Enhanced gauges and charting	No	No	Yes	No
Business Intelligence Development Studio	No	No	Yes	No

* Policies can be created in SQL Server 2014 Express and run manually. There is no support for automated policy-based management.

** Synchronization Services support in SQL Server 2014 Express requires that you install the component separately from the [Microsoft Download Center](http://www.microsoft.com/download/en/details.aspx?displaylang=en&id=23217) (<http://www.microsoft.com/download/en/details.aspx?displaylang=en&id=23217>).

Deprecated Features

There are no deprecated features for SQL Server 2014 Express. For details about deprecated features, see the following SQL Server 2014 Books Online topics:

[Deprecated SQL Server Features in SQL Server 2014](http://msdn.microsoft.com/en-us/library/cc707789(v=sql.120).aspx)

([http://msdn.microsoft.com/en-us/library/cc707789\(v=sql.120\).aspx](http://msdn.microsoft.com/en-us/library/cc707789(v=sql.120).aspx))

[Deprecated Features in SQL Server Reporting Services in SQL Server 2014](http://msdn.microsoft.com/en-us/library/ms143509(v=sql.120).aspx)

([http://msdn.microsoft.com/en-us/library/ms143509\(v=sql.120\).aspx](http://msdn.microsoft.com/en-us/library/ms143509(v=sql.120).aspx))

Discontinued Functionality

There are no discontinued functionalities for SQL Server 2014 Express. For details about discontinued functionality, see the following SQL Server 2014 Books Online topics:

[Discontinued SQL Server Features in SQL Server 2014](http://msdn.microsoft.com/en-us/library/cc707782(v=sql.120).aspx)

([http://msdn.microsoft.com/en-us/library/cc707782\(v=sql.120\).aspx](http://msdn.microsoft.com/en-us/library/cc707782(v=sql.120).aspx))

[Discontinued Functionality to SQL Server Reporting Services in SQL Server 2014](http://msdn.microsoft.com/en-us/library/ms144231(v=sql.120).aspx)

([http://msdn.microsoft.com/en-us/library/ms144231\(v=sql.120\).aspx](http://msdn.microsoft.com/en-us/library/ms144231(v=sql.120).aspx))

Breaking Changes

Starting in SQL Server 2014 Express, LocalDB moved away from the automatic numbering of the automatic instance and was named MSSQLLocalDB instead of the more confusing "v12.0". If you want to connect to a newly installed LocalDB instance,

you should use "(LocalDB)\MSSQLLocalDB".

There are no other breaking changes in SQL Server 2014 Express. For details about breaking changes, see the following SQL Server 2014 Books Online topics:

[Breaking Changes to SQL Server Features in SQL Server 2014](http://msdn.microsoft.com/en-us/library/cc707784(v=sql.120).aspx)

([http://msdn.microsoft.com/en-us/library/cc707784\(v=sql.120\).aspx](http://msdn.microsoft.com/en-us/library/cc707784(v=sql.120).aspx))

[Breaking Changes in SQL Server Reporting Services in SQL Server 2014](http://msdn.microsoft.com/en-us/library/ms143380(v=sql.120).aspx)

([http://msdn.microsoft.com/en-us/library/ms143380\(v=sql.120\).aspx](http://msdn.microsoft.com/en-us/library/ms143380(v=sql.120).aspx))

Behavior Changes

There are no documented behavior changes in SQL Server 2014 Express. For more details about behavior changes that you need to watch out for, see the following SQL Server 2014 Books Online topics:

[Behavior Changes to SQL Server Features in SQL Server 2014](http://msdn.microsoft.com/en-us/library/cc707785(v=sql.120).aspx)

([http://msdn.microsoft.com/en-us/library/cc707785\(v=sql.120\).aspx](http://msdn.microsoft.com/en-us/library/cc707785(v=sql.120).aspx))

[Behavior Changes to SQL Server Reporting Services in SQL Server 2014](http://msdn.microsoft.com/en-us/library/ms143200(v=sql.120).aspx)

([http://msdn.microsoft.com/en-us/library/ms143200\(v=sql.120\).aspx](http://msdn.microsoft.com/en-us/library/ms143200(v=sql.120).aspx))

Upgrade Tools

You can take advantage of a variety of tools designed to make the upgrade to SQL Server 2014 Express an easier process:

SQL Server 2014 Upgrade Advisor analyzes installed components from earlier versions of SQL Server and generates a report that identifies issues to fix either before or after you upgrade.

SQL Server Best Practices Analyzer analyzes the system and generates a report based on a predefined list of SQL Server recommendations.

Running Upgrade Advisor

SQL Server 2014 Upgrade Advisor helps you prepare for upgrades to SQL Server 2014. Upgrade Advisor analyzes installed components from earlier versions of SQL Server and then generates a report that identifies issues to fix either before or after you upgrade. Chapter 1, "Upgrade Planning and Deployment," describes how to use Upgrade Advisor.

When you run Upgrade Advisor, the Upgrade Advisor Home page appears. From the

Home page, you can run the following tools:

Upgrade Advisor Analysis Wizard

Upgrade Advisor Report Viewer

The first time you use Upgrade Advisor, run the Upgrade Advisor Analysis Wizard to analyze SQL Server components. When the wizard finishes the analysis, view the resulting reports in the Upgrade Advisor Report Viewer. Each report provides links to information in Upgrade Advisor Help that will help you fix or reduce the effect of the known issues.

You can download Upgrade Advisor as part of the [Microsoft SQL Server 2014 Feature Pack](http://www.microsoft.com/en-us/download/details.aspx?id=42295) (<http://www.microsoft.com/en-us/download/details.aspx?id=42295>).

Running Best Practices Analyzer

Before upgrading your system, we recommend that you use best practices for your existing system by running SQL Server Best Practices Analyzer (BPA). BPA is available for all SQL Server versions. After gathering data from Windows and SQL Server configuration settings, BPA uses a predefined list of SQL Server recommendations and best practices to determine if there are potential issues in the database environment. Running BPA before upgrading gives you the opportunity to fix any problems and helps ensure that you are using best practices before you go to the new system. In the Microsoft Download Center, you can download the [SQL Server 2005 BPA](http://www.microsoft.com/download/en/details.aspx?displaylang=en&id=23864) (<http://www.microsoft.com/download/en/details.aspx?displaylang=en&id=23864>) or [SQL Server 2008 R2 BPA](http://www.microsoft.com/download/en/details.aspx?id=15289) (<http://www.microsoft.com/download/en/details.aspx?id=15289>).

Once you have upgraded to SQL Server 2014, you can use the SQL Server 2012 BPA, which is the latest version of the tool, to further refine your systems. You can download this tool from the [Microsoft SQL Server 2012 Best Practices Analyzer](http://www.microsoft.com/download/en/details.aspx?id=29302) web page (<http://www.microsoft.com/download/en/details.aspx?id=29302>).

64-Bit Considerations

Table 3 shows the supported 64-bit architectures for SQL Server 2014 Express.

Table 3: 64-Bit Architectures Supported by SQL Server 2014 Express

Architecture	Supported
X86 (32 bit)	Yes
X64	Yes
IA64	No

SQL Server 2014 Express Packages

Table 4 lists the SQL Server 2014 Express packages that are available.

Table 4: Available SQL Server 2014 Express Packages

Package Name	Purpose
LocalDB 32-bit\SqlLocalDB.msi	32-bit native or 32-bit WOW on 64-bit systems – LocalDB only installation
LocalDB 64-bit\SqlLocalDB.msi	64-bit only – LocalDB only installation
SQLEXP32_x86_ENU.exe	32-bit only – database server-only installation
SQLEXP_x86_ENU.exe	32-bit native or 32-bit WOW on 64-bit systems – database server-only installation
SQLEXP_x64_ENU.exe	64-bit only – database server-only installation
SQLEXPRT_x86_ENU.exe	32-bit native or 32-bit WOW on 64-bit systems – with Tools and LocalDB
SQLEXPRT_x64_ENU.exe	64-bit only – with Tools and LocalDB
SQLEXPADV_x86_ENU.exe	32-bit native or 32-bit WOW on 64-bit systems – with Advanced Services
SQLEXPADV_x64_ENU.exe	64-bit only – with Advanced Services
SQLManagementStudio_x86_ENU.exe	SSMS – 32-bit only
SQLManagementStudio_x64_ENU.exe	SSMS – 64-bit only

Note that in the table, ENU refers to the English-language version. Other language versions are also available.

System Requirements for SQL Server 2014 Express

The following sections list the minimum hardware and software requirements to install and run SQL Server 2014 Express.

For both the 32-bit and 64-bit editions of SQL Server 2014 Express, the following apply:

We recommend that you run SQL Server 2014 Express on computers with the NTFS file format. Installing SQL Server 2014 Express on a computer with the FAT32 file system is supported but not recommended as it is less secure than the NTFS file system.

We recommend using native 64-bit SQL Server Express on 64-bit Windows versions.

To make sure that the Visual Studio component can be installed correctly, SQL Server requires you to install an update. SQL Server Setup checks for the presence of this update and then requires you to download and install the update before you can continue with the SQL Server installation. To avoid the interruption during SQL Server Setup, you can download and install the update before running SQL Server Setup as described below (or install all the updates for .NET Framework 3.5 SP1 available on Windows Update):

- If you install SQL Server 2014 on a computer with the Windows 7 SP1 or Windows Server 2008 R2 SP1 operating system, this update is included.

The installation of SQL Server 2014 fails if you launch the setup through Terminal Services Client. Launching SQL Server Setup through Terminal Services Client is not supported.

Table 5 shows the system requirements for SQL Server Express (all versions), taken from [Hardware and Software Requirements for Installing SQL Server 2014](http://msdn.microsoft.com/en-us/library/ms143506(v=sql.120).aspx) ([http://msdn.microsoft.com/en-us/library/ms143506\(v=sql.120\).aspx](http://msdn.microsoft.com/en-us/library/ms143506(v=sql.120).aspx)).

Table 5: SQL Server 2014 Express (All Versions) System Requirements

Component	Requirement
.NET Framework	<p>Based on selected features during the setup of SQL Server 2014 Express edition, you may have different .NET framework prerequisites.</p> <p>.NET Framework 4.0 is a requirement for SQL Server 2014. SQL Server Setup installs the following software components required by the product:</p> <ul style="list-style-type: none">• .NET Framework 4.0• SQL Server Native Client• SQL Server Setup support files <p>Ensure that an Internet connection is available on the computer. SQL Server Setup downloads and installs the .NET Framework 4.0 because it is not included in the SQL</p>

Component	Requirement
	<p>Server Express media. SQL Server Setup will download .NET Framework 4.0 to complete the installation of the prerequisites.</p> <p>SQL Server Express does not install .NET 4.0 on the Server Core mode of Windows Server 2008 R2 SP1 or Windows Server 2012. You must install .NET 4.0 before you install SQL Server Express on a Server Core installation of Windows Server 2008 R2 SP1 or Windows Server 2012.</p> <p>.NET Framework 3.5 SP1 is a requirement for SQL Server 2014 Express Edition only when you select Database Engine, Reporting Services, Replication, or SSMS, but it is no longer installed by SQL Server Setup.</p> <ul style="list-style-type: none"> • If you run Setup and you do not have .NET 3.5 SP1, SQL Server Setup requires you to download and install .NET 3.5 SP1 before you can continue with the SQL Server installation. (Install .NET 3.5 SP1 from Microsoft .NET Framework 3.5 Service Pack 1.) The error message includes a link to the download center, or you can download .NET 3.5 SP1 from Windows Update. To avoid interruption during SQL Server Setup, you can download and install .NET 3.5 SP1 before you run SQL Server Setup. • If you run Setup on a computer with Windows Server 2008 R2 SP1 or Windows 8, you must enable .NET Framework 3.5 SP1 before you install SQL Server 2014. <p>SQL Server LocalDB does not have these requirements.</p>
Windows PowerShell	<p>SQL Server 2014 does not install or enable Windows PowerShell; however, Windows PowerShell 2.0 is an installation prerequisite. If Setup reports that Windows PowerShell 2.0 is not present, you can install or enable it by following the instructions on the Windows Management Framework page (http://support.microsoft.com/kb/968929).</p>
Network software	<p>Network software requirements for the 64-bit versions of SQL Server are the same as the requirements for the 32-bit versions. Supported operating systems have built-in network software.</p> <p>Standalone named and default instances support the following network protocols:</p> <ul style="list-style-type: none"> • Shared memory • Named pipes • TCP/IP • VIA <p>Note: Shared memory and VIA are not supported on failover clusters. The VIA protocol is deprecated and will be removed in a future version of SQL Server. Avoid using this feature in new development work, and plan to modify applications that currently use this feature.</p>

Component	Requirement
Virtualization	<p>SQL Server 2014 is supported in virtual machine environments running on the Hyper-V role in:</p> <ul style="list-style-type: none"> • Windows Server 2008 SP2 Standard, Enterprise, and Datacenter editions • Windows Server 2008 R2 SP1 Standard, Enterprise, and Datacenter editions. • Windows Server 2012 Datacenter and Standard editions. <p>In addition to resources required by the parent partition, each virtual machine (child partition) must be provided with sufficient processor resources, memory, and disk resources for its SQL Server 2014 instance.</p> <p>Within the Hyper-V role on Windows Server 2008 SP2 and Windows Server 2008 R2 SP1, a maximum of four virtual processors can be allocated to virtual machines running Windows Server 2008 SP2 or Windows Server 2008 R2 SP1 32-bit or 64-bit editions.</p>
Hard disk	Disk space requirements will vary with the SQL Server components you install.
Drive	A CD or DVD drive, as appropriate, is required for installation from disk.
Display	SQL Server 2014 Express requires a Super-VGA (800x600) or higher resolution monitor.

Table 6 shows the processor, memory, and operating system requirements for the 32-bit version of SQL Server 2014 Express (Express, Express with Tools, and Express with Advanced Services packages).

Table 6: SQL Server 2014 Express (32-Bit) Processor, Memory, and Operating System Requirements

Component	Requirement
Processor	<p>Minimum:</p> <ul style="list-style-type: none"> • X86 processor 1.0 GHz - Pentium III-compatible processor or faster • X64 processor 1.6 GHz: AMD Opteron, AMD Athlon 64, Intel Xeon with Intel EM64T support, Intel Pentium IV with EM64T support <p>Recommended: 2.0 GHz or faster</p>
Operating system	<p>Windows Server 2012 R2 Datacenter 64-bit</p> <p>Windows Server 2012 R2 Standard 64-bit</p> <p>Windows Server 2012 R2 Essentials 64-bit</p> <p>Windows Server 2012 R2 Foundation 64-bit</p> <p>Windows Server 2012 Datacenter 64-bit</p> <p>Windows Server 2012 Standard 64-bit</p> <p>Windows Server 2012 Essentials 64-bit</p> <p>Windows Server 2012 Foundation 64-bit</p>

Component	Requirement
	<p>Windows Server 2008 R2 SP1 Datacenter 64-bit</p> <p>Windows Server 2008 R2 SP1 Enterprise 64-bit</p> <p>Windows Server 2008 R2 SP1 Standard 64-bit</p> <p>Windows Server 2008 R2 SP1 Foundation 64-bit</p> <p>Windows Server 2008 R2 SP1 Web 64-bit</p> <p>Windows 8.1 32-bit</p> <p>Windows 8.1 Pro 32-bit</p> <p>Windows 8.1 Enterprise 32-bit</p> <p>Windows 8.1 64-bit</p> <p>Windows 8.1 Pro 64-bit</p> <p>Windows 8.1 Enterprise 64-bit</p> <p>Windows 8 32-bit</p> <p>Windows 8 Pro 32-bit</p> <p>Windows 8 Enterprise 32-bit</p> <p>Windows 8 64-bit</p> <p>Windows 8 Pro 64-bit</p> <p>Windows 8 Enterprise 64-bit</p> <p>Windows 7 SP1 Ultimate 64-bit</p> <p>Windows 7 SP1 Enterprise 64-bit</p> <p>Windows 7 SP1 Professional 64-bit</p> <p>Windows 7 SP1 Home Premium 64-bit</p> <p>Windows 7 SP1 Home Basic 64-bit</p> <p>Windows 7 SP1 Ultimate 32-bit</p> <p>Windows 7 SP1 Enterprise 32-bit</p> <p>Windows 7 SP1 Professional 32-bit</p> <p>Windows 7 SP1 Home Premium 32-bit</p> <p>Windows 7 SP1 Home Basic 32-bit</p> <p>Windows Server 2008 SP2 Datacenter 64-bit</p> <p>Windows Server 2008 SP2 Enterprise 64-bit</p> <p>Windows Server 2008 SP2 Standard 64-bit</p> <p>Windows Server 2008 SP2 Foundation 64-bit</p> <p>Windows Server 2008 SP2 Web 64-bit</p> <p>Windows Server 2008 SP2 Datacenter 32-bit</p> <p>Windows Server 2008 SP2 Enterprise 32-bit</p> <p>Windows Server 2008 SP2 Standard 32-bit</p> <p>Windows Server 2008 SP2 Web 32-bit</p>
Memory	<p>RAM:</p> <ul style="list-style-type: none"> • Minimum: 512 MB • Recommended: 1 GB

Table 7 shows the processor, memory and operating system requirements for the 64-bit version of SQL Server 2014 Express (Express, Express with Tools, and Express with Advanced Services packages).

Table 7: SQL Server 2014 Express (64-Bit) Processor, Memory, and Operating System Requirements

Component	Requirement
Processor	<p>Minimum:</p> <ul style="list-style-type: none"> X86 processor 1.0 GHz - Pentium III-compatible processor or faster X64 processor 1.6 GHz: AMD Opteron, AMD Athlon 64, Intel Xeon with Intel EM64T support, Intel Pentium IV with EM64T support <p>Recommended: 2.0 GHz or faster</p>
Operating system	<p>Windows Server 2012 R2 Datacenter 64-bit</p> <p>Windows Server 2012 R2 Standard 64-bit</p> <p>Windows Server 2012 R2 Essentials 64-bit</p> <p>Windows Server 2012 R2 Foundation 64-bit</p> <p>Windows Server 2012 Datacenter 64-bit</p> <p>Windows Server 2012 Standard 64-bit</p> <p>Windows Server 2012 Essentials 64-bit</p> <p>Windows Server 2012 Foundation 64-bit</p> <p>Windows Server 2008 R2 SP1 Datacenter 64-bit</p> <p>Windows Server 2008 R2 SP1 Enterprise 64-bit</p> <p>Windows Server 2008 R2 SP1 Standard 64-bit</p> <p>Windows Server 2008 R2 SP1 Foundation 64-bit</p> <p>Windows Server 2008 R2 SP1 Web 64-bit</p> <p>Windows 8.1 64-bit</p> <p>Windows 8.1 Pro 64-bit</p> <p>Windows 8.1 Enterprise 64-bit</p> <p>Windows 8 64-bit</p> <p>Windows 8 Pro 64-bit</p> <p>Windows 8 Enterprise 64-bit</p> <p>Windows 7 SP1 Ultimate 64-bit</p> <p>Windows 7 SP1 Enterprise 64-bit</p> <p>Windows 7 SP1 Professional 64-bit</p> <p>Windows 7 SP1 Home Premium 64-bit</p> <p>Windows 7 SP1 Home Basic 64-bit</p> <p>Windows Server 2008 SP2 Datacenter 64-bit</p> <p>Windows Server 2008 SP2 Enterprise 64-bit</p> <p>Windows Server 2008 SP2 Standard 64-bit</p> <p>Windows Server 2008 SP2 Foundation 64-bit</p>

Component	Requirement
	Windows Server 2008 SP2 Web 64-bit
Memory	RAM: <ul style="list-style-type: none"> • Minimum: 512 MB • Recommended: 1 GB

Upgrading from SQL Server 2000 (MSDE)

Upgrading from MSDE to SQL Server 2014 Express is not supported. Existing MSDE instances must be first upgraded to SQL Server 2005/2008/2008 R2 Express before being upgraded to SQL Server 2014 Express.

Upgrading to SQL Server 2014 Express

In-Place Upgrade

To perform an in-place upgrade from previous SQL Server Express versions (excluding MSDE) to SQL Server 2014 Express, take the following steps:

1. Download and install .NET Framework 3.5 SP1, if missing. It is a prerequisite for SQL Server 2014 Express, but is no longer installed by SQL Server Express setup. You can download [.NET Framework 3.5 SP1](http://www.microsoft.com/en-us/download/details.aspx?displaylang=en&id=22) (http://www.microsoft.com/en-us/download/details.aspx?displaylang=en&id=22) from the Microsoft Download Center and then install it by running the dotnetfx.exe program.
2. Start the SQL Server 2014 Setup program, and install the prerequisite software. SQL Server 2014 Express is installed by running the executable (i.e., .exe) program for the package type you are installing.
3. Specify the remaining configuration options (generally accept all defaults), and then click Install in the Ready to Install dialog box. This will upgrade the specified instance to SQL Server 2014 Express.

Side-by-Side Upgrade

To upgrade from previous SQL Server Express versions when you cannot or do not want to perform an in-place upgrade, use the following steps if you have the SQL Server Express Management Tools installed. Otherwise, perform the detach/attach operations.

1. Log in to the previous SQL Server Express system as an administrator, and verify that the instance of SQL Server Express that you want to upgrade is running.

2. Connect to the previous SQL Server Express system by using SSMS (Express or another edition).
3. Detach each of the user databases by right-clicking the name of the database and selecting the Detach option. (Note that you could also have done this using the backup/restore method instead, but the detach/attach method is generally easier.)
4. Shut down the previous SQL Server Express instance by opening SQL Server Configuration Manager and stopping the SQL Server services.
5. Repeat Step 4 for the Distributed Transaction Coordinator and SQL Server Agent services if they are running.
6. Remove SQL Server Express by using the Add/Remove Programs applet from the system's Control Panel. Note that you can perform this step later if the names of the instances containing the old and new versions of SQL Server Express are different.
7. Download and install .NET Framework 3.5 SP1, if missing. It is a prerequisite for SQL Server 2014 Express but is no longer installed by SQL Server Express setup. You can download [.NET Framework 3.5 SP1](http://www.microsoft.com/en-us/download/details.aspx?displaylang=en&id=22) (http://www.microsoft.com/en-us/download/details.aspx?displaylang=en&id=22) from the Microsoft Download Center. After downloading .NET Framework 3.5 SP1, install it by running the dotnetfx.exe program.
8. Install SQL Server 2014 Express by running the SQL Server Express executable program. Select the appropriate installation options for the new instance you are installing, including the instance name if you want to specify a name other than SQLEXPRESS, although the use of this name is recommended.

Important: In SQL Server 2005 Express and later, the Setup program sets the name of a default instance to SQLEXPRESS rather than the old MSDE default of the host computer name. If you want the instance name to be the name of the host computer, you must specify that name as the named instance's name.
9. After SQL Server 2014 Express is installed, connect to it using SSMS (Express or another edition).
10. Attach each of the user databases that were detached from the SQL Server previous Express instance by right-clicking the Databases node in Object Explorer

and choosing the Attach Database option. (As noted earlier, you could alternatively restore the databases at this point if you used the backup/restore option instead of the detach/attach method.)

11. Enable any needed protocols.

The default installation for SQL Server 2014 Express enables shared memory, which enables local access only; the named pipes and TCP/IP protocols are disabled. If your database installation requires network access, open SQL Server Configuration Manager, open the SQL Server 2014 Network Configuration node, select Protocols for SQLEXPRESS (or your non-default instance name), and then enable the required protocols by right-clicking the protocol and selecting the Enable option from the context menu.

Post-Upgrade Tasks

You should verify the SQL Server 2014 Express installation by performing the following post-upgrade steps:

1. Use SQL Server Configuration Manager to verify that the upgraded instance is running. To start Configuration Manager, double-click SQL Server Configuration Manager under Configuration Tools in the Microsoft SQL Server 2014 Express program group.
2. Within Configuration Manager, open the SQL Server 2014 Services node and check for an upgraded instance entry to verify that it has a status of running. If the SQL Server service is not running, you can manually attempt to start it by right-clicking the entry and selecting Start from the context menu. If the service will not start, the installation was not successful and will need to be redone.

Note: When you are upgrading instances of SQL Server 2005/2008/2008 R2 Express that support connections from networked users, it is important to know that SQL Server 2014 Express, by default, disables all remote connections. If you need to enable remote connections to SQL Server Express, open SQL Server Configuration Manager, expand the SQL Server 2014 Network Configuration node, select Protocols for SQLEXPRESS, and then enable the required protocols by right-clicking the protocol and selecting the Enable option from the context menu.

Upgrading to LocalDB

To upgrade from previous SQL Server Express versions to LocalDB, use the following steps if you have the SQL Server Express Management Tools installed. Otherwise, perform the detach/attach operations.

1. Log in to the previous SQL Server Express system as an administrator, and verify that the instance of SQL Server Express that you want to upgrade is running.
2. Connect to the previous SQL Server Express system by using SSMS (Express or another edition).
3. Detach each of the user databases by right-clicking the name of the database and selecting the Detach option. (Note that you could also have done this using the backup/restore method instead, but the detach/attach method is generally easier.)
4. Shut down previous SQL Server Express instance by opening SQL Server Configuration Manager and stopping the SQL Server services.
5. Repeat Step 4 for the Distributed Transaction Coordinator and SQL Server Agent services if they are running.
6. Remove SQL Server Express by using the Add/Remove Programs applet from the system's Control Panel. Note that you can perform this step later if the names of the instances containing the old and new versions of SQL Server Express are different.
7. Install SQL Server 2014 LocalDB by running the .msi installer. Select the appropriate installation options for the new instance you are installing, including the instance name if you want to specify a name other than SQLEXPRESS, although the use of this name is recommended.
8. After SQL Server 2014 LocalDB is installed, connect to it using SSMS (Express or another edition) or the SQLCMD command-line utility.

- Attach each of the user databases that were detached from the previous SQL Server Express instance by right-clicking the Databases node in Object Explorer and choosing the Attach Database option. (As noted earlier, you could alternatively restore the databases at this point if you used the backup/restore method instead of the detach/attach method.) If you are using the command-line option, you can attach the databases using the proper T-SQL command.

Upgrading to Other Editions of SQL Server 2014

Although the core database capabilities of SQL Server Express versions are similar, the feature sets and limitations are different. These differences or projected requirements for features outside the SQL Server 2014 Express feature set could cause you to select a different edition of SQL Server 2014 to upgrade to.

Table 8 compares features between the SQL Server 2014 Express, Web, and Standard Editions.

Table 8: Comparing the SQL Server 2014 Express, Web, and Standard Editions

Feature	SQL Server 2014 Express	SQL Server 2014 Web	SQL Server 2014 Standard
Maximum number of instances	50	50	50
Maximum number of processors	Lesser of 1 socket or 4 cores	Lesser of 4 sockets or 16 cores	Lesser of 4 sockets or 16 cores
Maximum RAM	1 GB	64 GB	128 GB
Maximum database size	10 GB	524 TB	524 TB
Server Core Support	Yes	Yes	Yes
High Availability - log shipping	No	Yes	Yes
High Availability - database mirroring	Witness only	Witness only	Yes (Safety Full only)
AlwaysOn Failover Cluster Instances	No	No	Yes (2 nodes)
Backup compression	No	No	Yes
Replication publishing	No	No	Yes
SQL Server Agent	No	Yes	Yes
Database Tuning Advisor	No	Yes	Yes
Business intelligence features (Analysis Services, Integration Services)	No	No	Yes

Feature	SQL Server 2014 Express	SQL Server 2014 Web	SQL Server 2014 Standard
Report Server	Express with Advanced Services only	Yes	Yes
Supported Report Server catalog database	Yes	Yes	Yes
Supported report data source	Yes	Yes	Yes
Service Broker	Client-only	Client-only	Yes
Full-text semantic search	Express with Advanced Services only	Yes	Yes
SQL Profiler	No	No	Yes
Database Mail	No	Yes	Yes
StreamInsight	No	Yes	Yes
Delayed durability	Yes	Yes	Yes
Buffer pool extension	No	No	Yes
Contained databases	Yes	Yes	Yes

Upgrading to the SQL Server 2014 Web Edition

Upgrading to the SQL Server 2014 Web Edition might be a compelling option in some scenarios. Consider the following four scenarios.

RAM Requirements Beyond the Level Supported by SQL Server 2014 Express

SQL Server 2014 Express supports only 1 GB of RAM. If your SQL Server Express applications need more than this, consider upgrading to SQL Server 2014 Web.

Processor Requirements Beyond the Level Supported by SQL Server 2014 Express

Although SQL Server 2014 Web supports 4 processors with a maximum of 16 cores compared with SQL Server 2014 Express' support for 1 processor with a maximum of 4 cores, it is unlikely that this would necessitate a move to SQL Server 2014 Web. In most cases, it would be more cost-effective to upgrade to a higher performance processor. SQL Server Express supports multicore processors and can be installed on any server, but each installation of SQL Server Express can access only one physical processor.

Applications Need Scheduling Capability

SQL Server 2014 Express does not supply SQL Server Agent. If your application needs to schedule jobs and database tasks, you can use the Windows Task Scheduler or consider

upgrading to SQL Server 2014 Web.

Instance Needs to Act as a Replication Publisher

SQL Server 2014 Express does not support using a SQL Server Express instance as a replication Publisher to other SQL Server Express databases. If your application needs to act as a Publisher in a replication scenario, you need to consider upgrading to SQL Server 2014 Web.

Upgrading to SQL Server 2014 Standard Edition

The primary reason you would consider upgrading from SQL Server 2012 Express to SQL Server 2014 Standard is that you predict your future application requirements will exceed the capabilities or feature set available in SQL Server 2014 Express or Web. This upgrade scenario would be based on projections that your future database requirements could exceed 1 GB of RAM, that you will need a database size larger than 10 GB, or that you need the high availability or business intelligence features in SQL Server 2014 Standard.

Note: If you need enterprise features such as data compression, Resource Governor, or table partitioning, you will need to upgrade to SQL Server 2014 Enterprise.

Conclusion

SQL Server 2014 Express is the ideal upgrade path for older SQL Server Express database management systems. The upgrade is straightforward, and there are only a few issues to review and prepare for before upgrading from previous versions of SQL Server Express. But make sure you understand these upgrade issues before making your move to ensure a smooth and successful upgrade.

Additional References

For an up-to-date collection of additional references for upgrading to SQL Server 2014 Express, see the following links:

[SQL Server 2014 Web Site](http://www.microsoft.com/sqlserver/en/us/default.aspx)

(<http://www.microsoft.com/sqlserver/en/us/default.aspx>)

[Books Online for SQL Server 2014](http://msdn.microsoft.com/en-us/library/ms130214(v=sql.120).aspx)

([http://msdn.microsoft.com/en-us/library/ms130214\(v=sql.120\).aspx](http://msdn.microsoft.com/en-us/library/ms130214(v=sql.120).aspx))

[SQL Server Developer Center](http://msdn.microsoft.com/en-us/sqlserver)

(<http://msdn.microsoft.com/en-us/sqlserver>)

[SQL Server TechNet Resources](http://technet.microsoft.com/en-us/sqlserver/)

(<http://technet.microsoft.com/en-us/sqlserver/>)