Sage Estimating

(formerly Sage Timberline Estimating)

SQL Server Guide

Contents—SQL Server Guide

Chapter 1—Microsoft SQL Server and Sage Estimating

Sage is pleased to provide you with this guide to understanding Microsoft® SQL Server®. Read this guide carefully to learn the basic principles of SQL Server and how it supports Sage Estimating operation.

Sage Estimating uses SQL Server as its database platform. Previous releases used Pervasive as the database platform for storing Sage Estimating data. This database platform change is intended to offer you increased security, performance, and flexibility for your reports, queries, and daily operations.

This document provides information on the impact of these changes. It is important to understand these differences so that you can effectively manage and protect your Sage Estimating data.

Although this document is current as of the time of its distribution, a newer version may be available. For the most recent version, log on to https://customers.sagenorthamerica.com/irj/portal/anonymous/login and search for this document in the Technical Support Knowledgebase.

Microsoft SQL Server and Pervasive

Microsoft SQL Server represents a change from the Pervasive database platform used in previous Sage Estimating releases. It is important to understand how the new SQL Server database platform is structured.

SQL Server stores database information in database (.mdf) and log (.ldf) files. Previously, Sage Timberline Office Estimating created separate estimate files that you could store in any desired Windows file structure. With the new SQL Server database, Sage Estimating stores all your estimates in the same .mdf database file on a single server known as an *instance*.

Figure 1: Comparison of Pervasive and SQL Server

Pervasive

- Server
  - Folder
    - Database
  - Folder
    - Estimate
    - Estimate
  - Folder
    - Estimate
    - Estimate

SQL Server

- Server (instance)
  - **Standard Db**
  - **Address Book Db**
  - **Estimate Db**
    - Estimate
    - Estimate
    - Estimate
    - Estimate
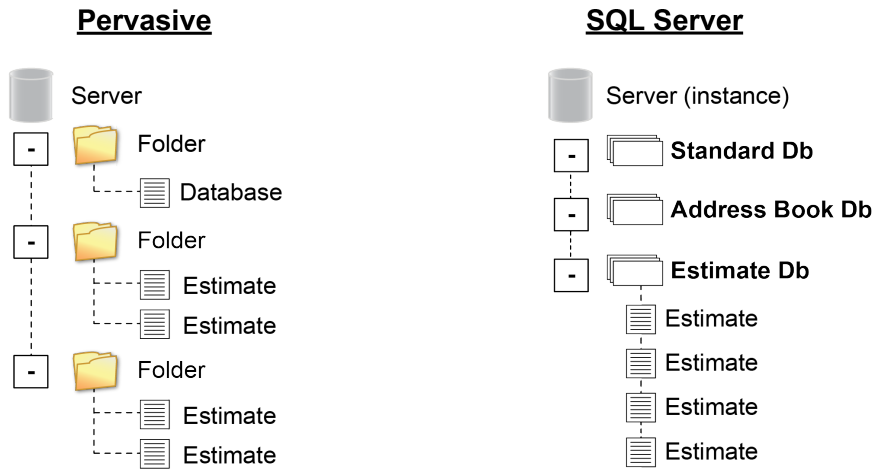
A Sage Estimating instance (sometimes referred to as a "server") consists of three primary components:

■ An Address Book database

■ An estimate database

■ One or more standard databases

You configure security for the instance and apply it to all contents, including the Address Book, all standard databases, and all estimates within the estimate database.

Estimates are stored entirely within the estimate database. With the new Sage Estimating, you can use the Estimating Management Console feature to arrange your estimates in a hierarchy of tiers or "branches." The branches you create in the Estimating Management Console are for organizational purposes only; they do not change the structure of your database.

The location of your SQL Server database files (.mdf and .ldf files) depends in part on your operating system. See "SQL Server Express Installation" on page 10 for more information.

The allowable database size in SQL Server is unlimited. However, if you are operating SQL Server Express, the database size is limited to 10 gigabytes (GB). Sage Estimating provides you with a warning if your database size nears the limit.

During the Sage Estimating install, if you choose to install SQL Server 2008 R2 Express from the Sage Estimating installation and setup DVD, the installation process automatically creates a new instance for you. The default name for the instance is SAGE_ESTIMATING; however, you have the option of giving the instance any name you want.

If you choose not to install SQL Server Express from the installation DVD but elect to create your own instance using an existing SQL Server installation, it must meet certain requirements. See "Modified Installation" on page 12" for more information.

The SAGE_ESTIMATING Instance

Sage Estimating allows the use of just one active SQL Server instance at a time. The active instance is a "closed" SQL Server instance; Sage Estimating does not recognize databases (Address Book or standard databases) transferred or copied from other SQL Server instances unless they are added by way of the **Search For** feature in the Estimating Management Console.

For example, if you have two Sage Estimating installs, Install A and Install B, you cannot copy Address Book databases by copying them from Install A's SQL Server instance to Install B's SQL Server instance alone (using SQL Server Management Studio's built-in Copy Databases wizard, for example). You must also open the Estimating Management Console and use the **Search For** button in the Address Book Companies/Contacts toolbar.

Figure 2: Copying Databases From One SQL Server Instance to Another
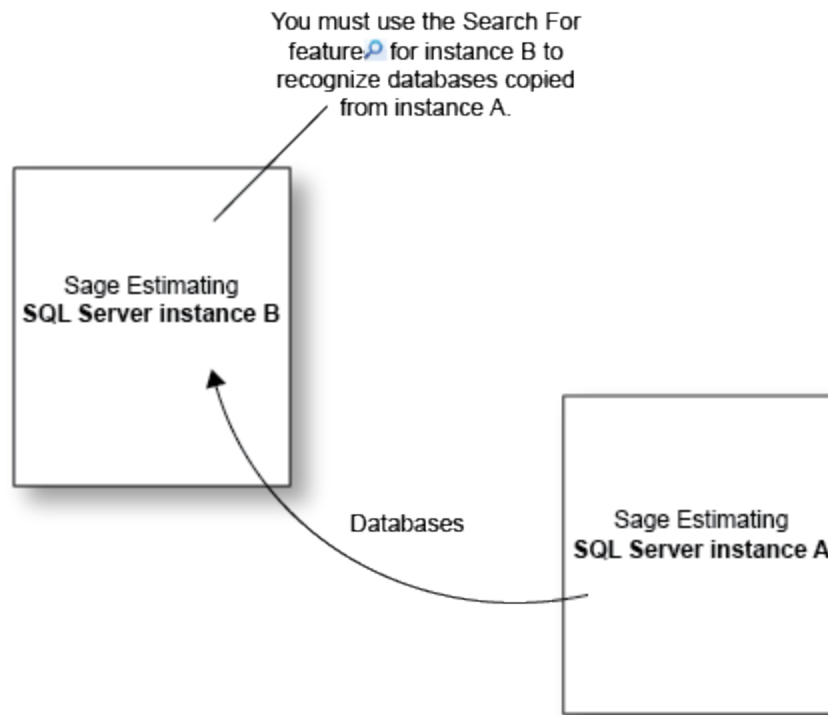
Any database you add to an instance must have the same Sage Estimating version as the other operating databases. For example, if you are using Sage Estimating 13.1, and you want to add a standard database from a previous Sage Estimating installation, upgrade the standard database to version 13.1 before adding it to the new instance. Refer to the Estimating Management Console in-product Help for instructions on adding databases using the **Search For** feature.

The allowable database size in SQL Server is unlimited. However, if you are operating SQL Server Express, the database size is limited to 10 gigabytes (GB). Sage Estimating provides you with a warning if your database size nears the limit.

During the Sage Estimating install, if you choose to install SQL Server 2008 R2 Express from the Sage Estimating installation and setup window, the installation process automatically configures a new Sage Estimating-compatible instance for you. The default name for the instance is SAGE_ESTIMATING; however, you have the option of giving the instance any name you want.

If you choose not to install SQL Server Express from the installation DVD but elect to create your own instance using an existing SQL Server installation, it must meet certain requirements. See "Modified Installation" on page 12" for more information.

Microsoft SQL Server Files

Every SQL Server database has at least two files associated with it:

- A file that stores the actual data (.mdf)
- A transaction log file (.ldf)

SQL Server stores your Sage Estimating data in the database file (.mdf). For details, see "SQL Server Express Installation" on page 10.

The transaction log (.ldf) records all changes to the data in the database. This log ensures data integrity by keeping track of data that has changed and can be used to roll the data back to a previous state in the event of a database failure.

It is important to make regular backups of these files. For more information, see "Backing Up SQL Server Databases" on page 13.

Collation settings for use with Sage Estimating

Sage Estimating requires a special collation setting. Collation settings in SQL Server must be set to:

- Latin1_General
- Case-sensitive
- Accent-sensitive

See "Collation Settings," on page 34 for more information.

SQL Database Permissions and Access

You must give each Sage Estimating operator permissions to the Sage Estimating features that he or she is expected to use. Assign database and feature permissions using the security feature of the Estimating Management Console. For more information, see the Estimating Management Console in-product Help.

CAUTION: Do not change the owner of any databases in the Sage Estimating instance.

Read the Supporting Documentation Before You Begin

Be sure to read supporting documentation before you begin:

- This *SQL Server Guide* gives you an overview of the significant differences between the new SQL Server databases and the Pervasive databases used in previous Sage Estimating releases.

- The *Installation & Administration Guide* includes an overview of this release, installation instructions, system requirements, and contact information. This document is available in the **Documents** folder of your Sage Estimating installation files.

- The *Release Notes* provide details about new features, database changes, known issues, and fixes. This document is available in the **Documents** folder of your Sage Estimating installation files.

- The *Getting Started Guide* provides an operational overview of the Sage Estimating software. This document is available in the **Documents** folder of your Sage Estimating installation files.

- The *Options Guide* provides installation, setup, and operating instructions for each of the available Sage Estimating options, such as the OnScreen Takeoff Integrator or License Manager. This document is available in the **Documents** folder of your Sage Estimating installation files.

These documents are current at the time of the release. To learn about issues that have arisen since this document was published, go to www.sagecre.com.

Conventions Used in this Document

This document uses the following conventions:

- Information you type into the software is shown in bold font. For example: Type **Miscellaneous** in the box.

- The names of screens, windows, fields, and other features displayed by the software are shown in **bold font**.

- The names of buttons you can click are enclosed in brackets with bold font. For example: [**OK**] or [**Post**].

- Names of keys are shown in capital letters. For example: ENTER or TAB. A plus sign (+) between two key names indicates you should press the keys simultaneously.

- Variable names or names that are specific to your installation may appear in italics and brackets. For example: [*Drive*]\\[*Server*].

Symbols

NOTE: This symbol is used when presenting information that is supplemental to the adjacent text.

TIP: This symbol is used when presenting helpful information for using the software.

CAUTION: This symbol is used when presenting important information to help you avoid a loss of critical data.

IMPORTANT: This symbol is used when presenting information that is critical to understand or that requires you to take action.

Menu Paths

In this document, menu paths show you the steps required to start a task. Menu paths appear in bold font with angle brackets around buttons. For example:

"If the program does not automatically start, click [**Start**] > **Run**."

Online Help

The Sage Estimating software includes online Help, which provides answers to your questions about procedures as well as items in the windows.

To access the online Help in the Sage Estimating software, click the Help button or icon, or press [F1] to display the Help topic for that window.

To aid you in finding the information you need, the online Help for each module includes the following panes:

- **Contents** pane containing links to the Help topics
- **Index** pane containing keywords that link to Help topics related to that keyword
- **Search** pane, where you can type text and click [**Search**] to locate that text in the Help topics

For more information about using the online Help, see the Sage Estimating Help.

We would like your feedback about the online Help so we can make improvements. Each Help topic contains an area where you can indicate whether the topic was helpful and provide additional comments. To protect your privacy, all comments are anonymous.

Training

Sage University offers online and classroom training sessions to help you get the most out of your Sage Estimating software. To access Sage University, visit www.sageu.com.

You can also get access to Sage University from the File menu by selecting **Help** > **Sage Estimating on the Web** > **Sage University**.

Technical Assistance

Depending on your support plan, you can access any of the following online services.

Sage Customer Portal

- **Knowledgebase:** Find answers to your questions, access downloads, and subscribe to your favorite articles. This service is available online 24/7.

- **Live Chat:** Chat online with a customer support analyst—a great option for quick questions. Chat hours are the same as our telephone support hours (see below).

- **Online Support Request:** Submit an online support ticket when you have a non-urgent question. One of our call center support analysts will assist you. Online support hours are the same as our customer support call center hours (see below).

Sage Customer Support Call Center

Telephone Support: When you have a more urgent question or would prefer to speak to a customer support analyst directly, call us at 866-991-3359. Telephone support is available Monday through Friday from 6 a.m. to 5 p.m. Pacific time with the following exceptions:

- Every Thursday from 2 p.m. to 3 p.m. Pacific time (closed for customer support staff meetings)

- Standard United States holidays

- Quarterly company meetings

Upgrading Your Service Plan

If your service plan does not provide online or telephone customer support and you would like to add or upgrade a service plan, please call 800-858-7098.

Submitting Enhancement Requests

We want to hear your suggestions for improving the software. To send us your comments, click on the File menu button and select **Help** > **Sage Estimating on the Web** > **Submit Enhancement Requests**.

Chapter 2—Technical Information

Supported Editions of SQL Server

Sage Estimating is tested for use with only the following editions of Microsoft® SQL Server®:

- SQL Server 2008 Standard Edition, Service Pack 1 or greater
- SQL Server 2008 R2 Express Edition
- SQL Server 2008 R2 Standard Edition

SQL Server 2008 R2 Express Edition is provided free of charge with Sage Estimating. This edition is sufficient for most Sage Estimating customers. However, customers with large databases may need to upgrade to the Standard Edition. For information on Microsoft SQL Server 2008 editions, please visit www.microsoft.com.

The following table offers a brief comparison of the Express and Standard versions of SQL Server 2008 R2.

Table 1: Comparison of SQL Server Standard and Express Versions

Feature	Express	Standard
Concurrent workload governor (throttle) [1]	No	No
Database size	10 GB[2]	Unlimited
RAM support	1 GB	Operating system maximum
CPUs supported	1[3]	4
Windows Vista® and Windows 7 support	Yes	Yes

[1] This governor limits the performance of applications to approximately 5 users.

[2] This database size applies to only SQL Server database files (.mdf) and not to log files (.ldf).

[3] Your computer can have multiple CPUs, but only one is used by SQL Server.

Minimum Requirements to Install SQL Server 2008 R2 Express Edition

The following lists some of the minimum requirements for installing SQL Server 2008 R2 Express from the Sage Estimating installation DVD:

- Windows Installer 4.5 or later

- Internet Explorer 6.0 SP1 or later

- .Net Framework 3.5 Service Pack 1

- 1 GB RAM

- 1 GB free disk space

- 1.4 GHz P-4 CPU

Setup must run under an account with administrative privileges on the computer where SQL Server 2008 R2 Express is being installed.

The hardware requirements may vary, depending on the version of SQL Server 2008 R2 Express you are installing (32-bit or 64-bit). For a complete list of the installation requirements, visit www.microsoft.com.

Supported Operating Systems

You can install SQL Server 2008 R2 and SQL Server 2008 R2 Express on any computer operating Windows XP or later operating systems.

You do not need to install Microsoft SQL Server on the same computer where you install Sage Estimating, depending on your system configuration. For example, if you are installing your databases on a separate server, install SQL Server on that server.

NOTE: If you plan to migrate (transfer) existing data from a previous version of Sage Estimating, you must install a supported copy of SQL Server on the destination computer or server. Refer to the *Installation & Administration Guide* or the Data Migration Utility Help for more information about data migration.

If you are installing or plan to install SQL Server and Sage Estimating on the same computer, keep in mind that the Sage Estimating software is compatible with the 32-bit and 64-bit versions of the following operating systems:

- Windows XP Professional (SP3 and later)

- Windows Vista® Ultimate (SP2 and later)

- Windows Vista® Business (SP2 and later)

- Windows Server 2003 Standard Edition R2 (SP2 and later)

- Windows Server 2003 Enterprise Edition R2 (SP2 and later)

- Windows 2008 Server Standard Edition (SP2 and later)

- Windows 2008 Server Enterprise Edition (SP2 and later)

- Windows 7 Ultimate (SP1 and later)

- Windows 7 Business (SP1 and later)

Chapter 3—Installation

Overview

Before installing Sage Estimating, you have two primary SQL Server scenarios to consider:

- **SQL Server Express Installation.** Installing Sage Estimating also installs SQL Server 2008 R2 Express when you select certain installation options. Follow this scenario for these conditions:

  - You are installing Sage Estimating on a standalone workstation or a workgroup server.

  - You are installing to a server on a domain and you want to use the SQL Server 2008 R2 Express install that comes with the Sage Estimating install package.

  The Sage Estimating install package installs and configures a new SQL Server instance of SQL Server 2008 R2 Express whenever you select one of these install options. You can operate the new SQL Server instance alongside an existing SQL Server instance.

- **Modified Installation.** You have a supported version of SQL Server installed (or plan to have one installed) and you want to manually create a new instance to use with that version.

Use the **Security** feature in the Estimating Management Console to assign database permissions to each operator after installing your SQL Server instance.

For more information on setting up SQL Server security for Sage Estimating, see the *Installation & Administration Guide*.

> **NOTE:** You can install an approved instance of SQL Server side by side on a computer where SQL Server 2012 is also installed. Be aware that installing Sage Estimating may then result in an "Install completed with errors" message; however, the resulting Sage Estimating install operates correctly.

SQL Server Express Installation

Microsoft SQL Server 2008 R2 Express comes as an optional component with the Sage Estimating install package. It installs automatically when you select certain Sage Estimating installation options.

Follow the instructions below to install SQL Server 2008 R2 Express from the install package.

1 Open the **Select Installation Options for Sage Estimating** window by double-clicking **SetMeUp.exe** in your local install folder.

   The install folder is created wherever you download the Sage Estimating install files. For example, if you download the install files to C:\Users\Public\Public Documents, look in this folder for the **SetMeUp.exe** file.

Figure 3: The Select Installation Options for Sage Estimating Window
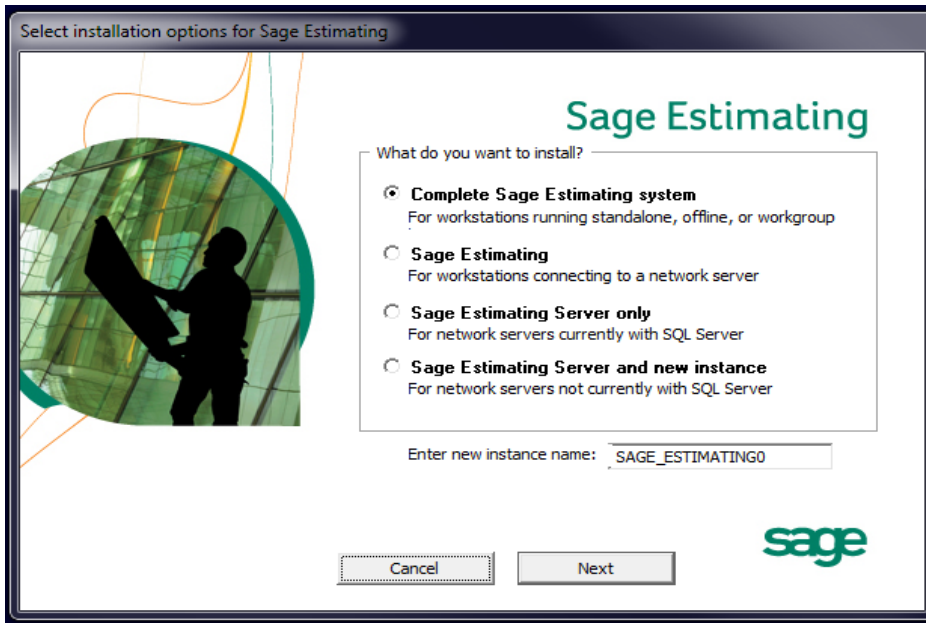
2 In the **Select installation options for Sage Estimating** window, select one of the following options:

- **Complete Sage Estimating system.** This option installs everything you need to operate Sage Estimating on your local workgroup server, offline workstation, or standalone computer, including a new instance of SQL Server 2008 R2 Express. Select this option if you are installing Sage Estimating on a standalone computer or a workgroup server.

  NOTE: If you are operating in a workstation/server environment, you do not need to install SQL Server on the workstations. However, you can install SQL Server optionally if you want to maintain a local copy of your estimating data.

- **Sage Estimating Server and new instance**. Select this option if you are installing to a server on a domain and you want to use the SQL Server 2008 R2 Express copy that comes with the Sage Estimating install. Selecting this option automatically installs and configures a new instance of SQL Server 2008 R2 Express for you. This option is unavailable if you already have installed Sage Estimating components on the workstation or server.

- **Create new local SQL Server instance.** This option appears only if you have already installed Sage Estimating components on the workstation or server. Select this option to install and configure a new instance of SQL Server 2008 R2 Express.

3 In the **Enter new instance name** box, type a name for the new SQL Server instance (database server) in the box and click [**OK**].

   The default instance name is **SAGE_ESTIMATING** but you can give the instance any name you want provided you do not give it the same name as any existing SQL Server instance on the computer.

4 Click [**Next**] and follow the on-screen instructions for installing Sage Estimating or Sage Estimating server.

The software installer creates the new instance as part of the Sage Estimating installation and notifies you when the process is finished.

NOTE: If you are installing SQL Server on a computer with Windows Vista®, Windows 2008 Server, or Windows 7, ensure you elevate your privileges at the prompt within two minutes of its appearance or the installation will quit.

Installing SQL Server 2008 R2 Express also installs SQL Server Management Studio Express, a tool for performing database back up and restoration procedures and for assigning database permissions.

Modified Installation

You may want to use a version of SQL Server that already exists on your computer. It must be one of the supported versions listed in "Supported Editions of SQL Server" on page 8.

If you want to use your existing installation of SQL Server, create a new instance to operate alongside your existing SQL Server instances. You can give the new instance any name you want. However, Sage recommends naming the new instance an easily identified name such as SAGE_ESTIMATING.

Refer to "Appendix—SQL Server Instance Settings" on page 32 for the instance settings.

After creating your new instance, ensure you assign the appropriate database permissions as outlined in the *Installation & Administration Guide*.

NOTES:

- If you plan to migrate existing data from a pre-11.1 version of Sage Estimating, you must install SQL Server or SQL Server Express on the destination computer or server.

- Reboot your server or workstation after creating the new instance.

CAUTION: Do not change the owner of any databases in the Sage Estimating instance.

Chapter 4—Back Up and Restore Procedures

Backing Up SQL Server Databases

Performing a complete backup of your Sage Estimating data requires using SQL Server Management Studio or Management Studio Express to back up your Microsoft® SQL Server® databases. It is critical that you modify your back up procedures to include all the necessary steps.

Your SQL Server database backup copy is generated in two steps:

1   Use SQL Server Management Studio (or Management Studio Express) to make a backup copy of the database into a file folder.

The default location for this folder is C:\Program Files\Microsoft SQL Server\MSSQL10_50.SAGE_ ESTIMATING\MSSQL\Backup. (The actual number and instance name that appears in the path may be different if you have multiple instances of SQL Server installed or if you named your instance a different name.)

2   Make sure to include the SQL backup folder (referenced in step 1) when you perform your tape or third-party backup.

NOTES:

- Be sure to perform regular tests of your backups to ensure they are working properly.

- You can perform backup and restore functions using SQL Server Management Studio or Management Studio Express. Installing SQL Server 2008 R2 Express from the Sage Estimating installation DVD installs a copy of SQL Server Management Studio Express.

- SQL Server 2008 R2 Management Studio Express automatically detaches and attaches the database when you back up and restore.

CAUTION: The restore process overwrites any changes you make to the database between creation of backup copies.

Backing up the SQL Database

1   Start Microsoft SQL Server Management Studio Express (**Start > All Programs > Microsoft SQL Server 2008 Express > SQL Server Management Studio Express**).

2   Select the database you want to back up from the **Object Explorer** pane.

Figure 4: Database List in the Object Explorer Pane
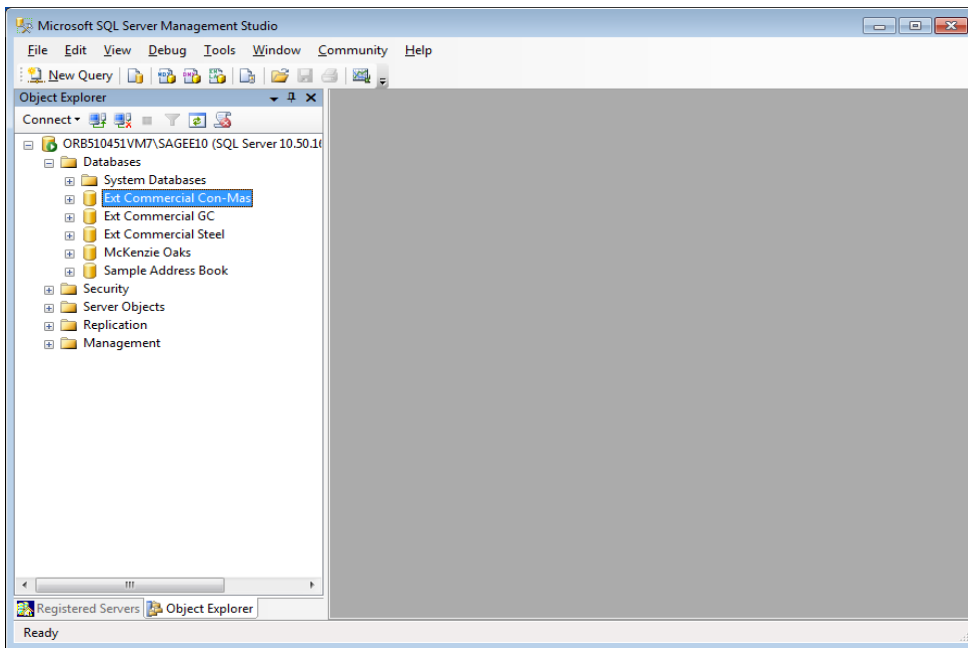
3 Right-click on the database and select **Tasks > Back Up** to open the **Back Up Database** window.

Figure 5: The Back Up Database Window
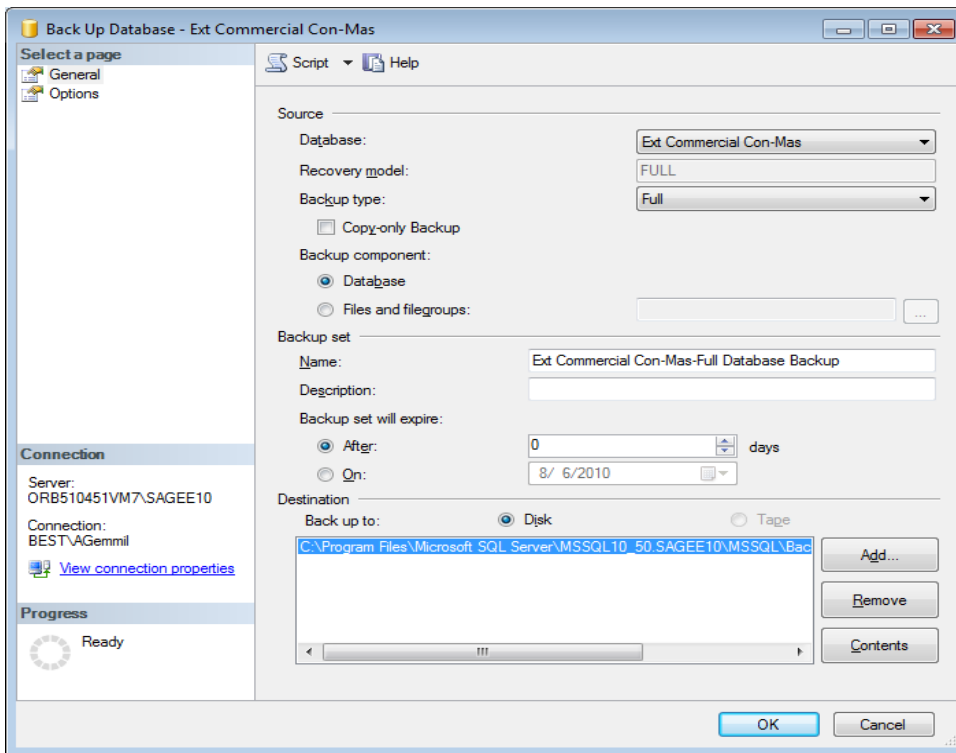
4 Under **Source** (in the right-hand pane of the **Back Up Database** window), select the database to be backed up from the **Database** list.

   ◻ For the backup type, select **Full**.

   ◻ For the backup component, select **Database**.

5 Under **Backup Set**, type a name for the database backup you are creating in the **Name** box.

   If desired, also type a description for the backup in the **Description** box.

6 Set the desired expiration criteria for the backup in the **Backup set will expire** section.

7 Select the backup destination from the **Destination** list.

   This list displays previously defined backup file paths and file names. The backup utility selects the **Backup** folder in your SQL Server instance folder by default but you can add a new file path as a destination by clicking [**Add**].

8 Click [**OK**]. A **Backup of database completed successfully** message appears when the backup operation is finished.

You may now perform your normal tape or third-party back up procedures.

Be sure to include the SQL back up folder (or the folder where your backup copy is stored if you selected another location in step 7). The default location for this folder is C:\Program Files\Microsoft SQL Server\MSSQL10_50.SAGE_ESTIMATING\MSSQL\Backup. (The actual number and the name that appears in the path may be different if you have multiple instances of SQL Server installed or if you named the instance a different name.)

Restoring the SQL Database

 **CAUTION:** The restore process overwrites any changes you make to the database between creation of backup copies.

1 Start Microsoft SQL Server Management Studio Express. (**Start > All Programs > Microsoft SQL Server 2008 Express > SQL Server Management Studio Express**.)

2 Select the database you want to restore from the **Object Viewer** pane.

Figure 6: Database List in the Object Viewer Pane
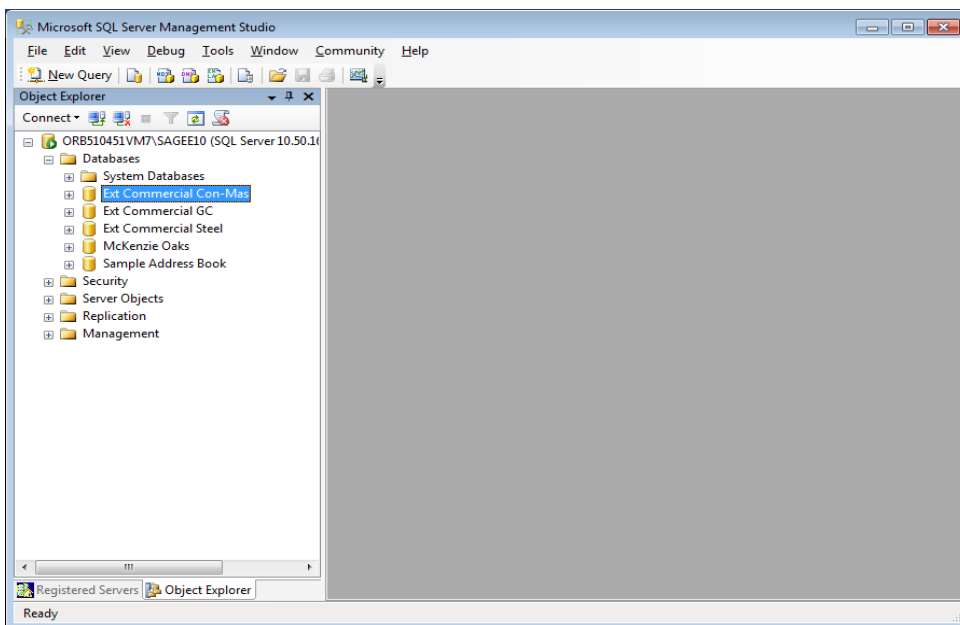
3 Right-click on the database and select **Tasks > Restore > Database** to open the **Restore Database** window.

Figure 7: The Restore Database Window
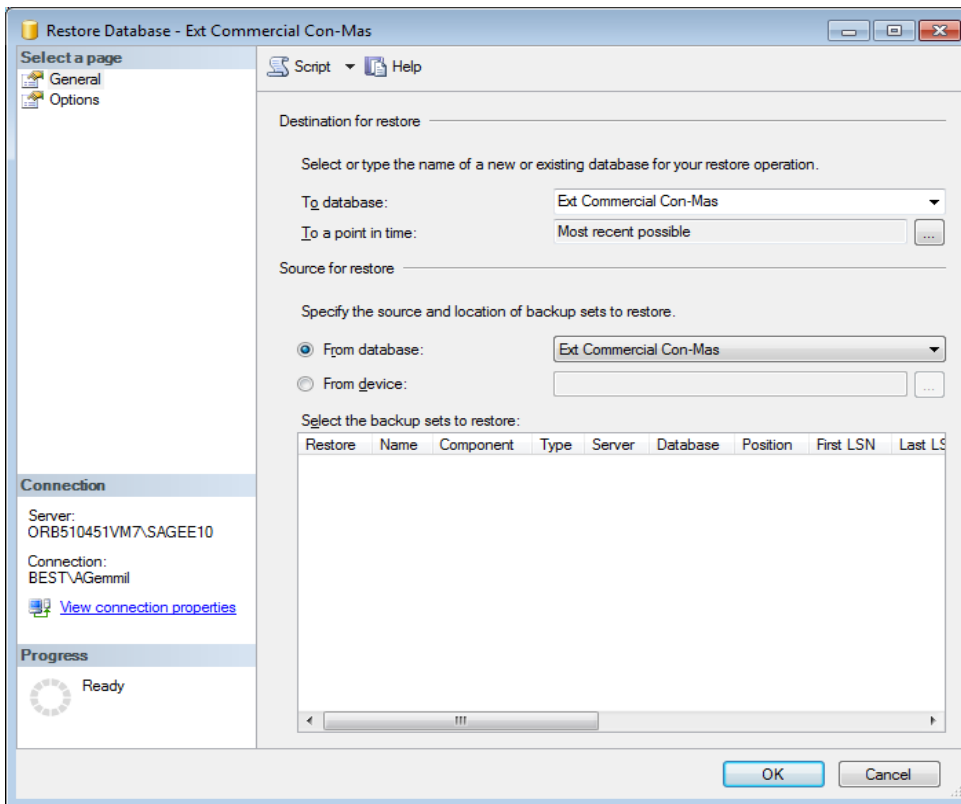
4 Select the database you wish to restore in the **To database** box.

If you want to create a new database, type the name of the database in the **To database** box.

5 Under **Source for restore**, select **From database** then select the name of the backup database copy you want to use for the restore operation.

6 Select the check box of the database you wish to restore from the **Select the backup sets to restore** table.

7 Click **Options** (from the **Select a page** pane in the upper left-hand corner of the window).

8 In the **Restore Options** area, select the **Overwrite the existing database** check box.

9 Click [**OK**].

A **Restore of database completed successfully** message appears when the restoration operation is finished.

NOTE: The restore process overwrites any changes you made to the database since the last time you created the backup copy.

Chapter 5—FAQs

I already use a version of Microsoft® SQL Server® on my computer. Can I use this version with Sage Estimating?

Sage Estimating requires SQL Server 2008 + SP1 or higher. You must create a new instance for Sage Estimating and it must conform to our recommended security settings. See "Chapter 1—Microsoft SQL Server and Sage Estimating" on page 1 for more information.

NOTE: You can install an approved instance of SQL Server side by side on a computer where SQL Server 2012 is also installed. Be aware that installing Sage Estimating may then result in an "Install completed with errors" message; however, the resulting Sage Estimating install operates correctly.

If I already have a version of SQL Server installed, does installing Sage Estimating upgrade my existing SQL Server version?

No. However, you can install SQL Server 2008 R2 Express from the installation DVD for use with Sage Estimating. You can then use both SQL Server versions in a side-by-side configuration (meaning both versions are installed).

What are the minimum system requirements to install SQL Server 2008?

See "Minimum Requirements to Install SQL Server 2008 R2 Express Edition" on page 8.

Which operating systems are supported with SQL Server 2008?

See "Supported Operating Systems" on page 9.

Are 64-bit platforms supported?

Yes, you can install SQL Server 2008 Express on the following 64-bit platforms:

- Windows XP x64 SP2
- Windows Server 2003 x64 SP2
- Windows Server 2003 R2 x64
- Windows Vista® x64 (Ultimate and Business editions) SP1
- Windows 7 x64 (Ultimate and Business editions)
- Windows 2008 Server x64 SP2
- Windows 2008 Server R2

Can SQL Server 2008 Express Edition installations be performed on substitute, mapped, or compressed drives?

No, installations cannot be used on any of these configurations.

Can I use File Tools or other utilities to back up my SQL databases?

No. You must detach your databases and then back them up after the process is complete. File Tools and other utilities do not perform this function.

Use SQL Server 2008 R2 Management Studio or SQL Server 2008 R2 Management Studio Express to back up your SQL data. Microsoft SQL Server 2008 R2 Management Studio Express attaches and detaches the database automatically during back up and restore procedures. For more information, see "Chapter 4—Back Up and Restore Procedures" on page 13.

How can I test whether SQL Server is working in Sage Estimating?

The first time you start Sage Estimating or the Estimating Management Console after installing the Sage Estimating software, you should be able to use the Configuration wizard to locate your SQL Server instance. If you are able to use the Configuration wizard to successfully locate at least one SQL Server instance, your installation of SQL Server is operating correctly.

If you are able to open or create estimates and databases in the Sage Estimating software, SQL Server is operating correctly.

Where can I find more information about Microsoft SQL Server 2008?

SQL Server 2008 Books Online is a good resource for additional information. This file is automatically installed during the Sage Estimating installation of SQL Server 2008 Express Edition. You can find this document by clicking **Start > Programs > Microsoft SQL Server 2008 Express > Documentation and Tutorials > SQL Server Books Online**. You can also download a copy from www.microsoft.com.

What do I need to be able to manage user access rights in SQL Server?

For Sage Estimating, security is managed entirely from within the **Security** feature of the Estimating Management Console. You can create roles and their corresponding permissions to access various Sage Estimating tasks and features.

You must be belong to the Sage Estimating administrator role to create roles and assign them to other operators. For more information about creating roles and permissions, refer to the Sage Estimating *Installation & Administration Guide* or the Estimating Management Console in-product Help.

I can connect to a SQL Server instance on my local computer but why can't I connect to a SQL Server instance on a remote server?

You may need to reconfigure your firewall settings. See "Firewall settings" on page 22.

Chapter 6—Troubleshooting SQL Server

This section provides additional information if you have any difficulty installing or connecting to a supported version of Microsoft® SQL Server®.

Installation Issues

The following paragraphs provide troubleshooting tips for installation issues.

Collation

Sage Estimating requires a special collation setting. Collation settings in SQL Server must be set to:

- Latin1_General
- Case-sensitive
- Accent-sensitive

These settings are configured automatically when you create the SQL Server 2008 R2 Express instance from the Sage Estimating install. You may sometimes see this listed in SQL Server as **SQL_Latin1_General_CS_AS**.

For additional information, see topics regarding changing collation in SQL Server Books Online, available at **Start > All Programs > Microsoft SQL Server 2008 > Documentation and Tutorials > SQL Server Books Online**.

NOTE: If you performed an upgrade to SQL Server 2008 R2, your collation settings may not correctly match the settings required by Sage Estimating. See topics on repairing an install in SQL Server 2008 Books Online for more information.

Compatibility

Sage Estimating requires SQL Server 2008 + SP1 or higher.

SQL Server is designed so that multiple instances may exist on a single computer. Each instance is independent of the others, and may use different versions or service packs. The following can be used alongside the instance you create for Sage Estimating:

- MSDE 2000 + SP3 or higher
- SQL Server 2000 + SP3 or higher

NOTE: Multiple versions of SP3 exist. The only compatible version of SQL Server 2000 is 8.00.760.0.

You may need to remove the existing version to resolve the compatibility issue. However, be aware that other software may be using the incompatible version. Contact your system administrator before attempting to remove any incompatible version.

If you determine that the version can be removed safely, use Windows' **Add or Remove Programs** to remove it (note that you may have to remove several entries to completely remove the version).

Connection Issues

The following paragraphs provide troubleshooting tips for connection issues.

Authentication mode

The authentication mode for the SQL Server instance you create for Sage Estimating must be set to **Windows Authentication and SQL Server Authentication** (also referred to as "Mixed Mode") to work with Sage Estimating. In this mode, SQL Server creates and maintains your login information. See "Chapter 6—Troubleshooting SQL Server" on page 20 for more information.

Changing the authentication mode

If the authentication mode is not set correctly, you can resolve this issue in SQL Server Management Studio Express, as follows:

1 Start SQL Server Management Studio Express (**Start > All Programs > Microsoft SQL Server 2008 R2 > SQL Server Management Studio Express**).

2 Confirm that the correct **Server type**, **Server name**, and **Authentication** settings are correct, and then click [**Connect**]. For example:

Server type: Database Engine

Server name: *Machine_name*\instance_name

Authentication: Windows Authentication

NOTE: If Windows Authentication does not work, try SQL Server Authentication. You must have security permission in SQL Server to access the database using this authentication.

3 In the **Object Explorer** pane, right-click on the server name and select **Properties**.

4 You must select the server name, not the folders below it, in order to see the **Security** option in the next step.

5 Select **Security**.

6 Select **SQL Server and Windows Authentication**.

7 Click [**OK**] twice.

If the authentication mode is set correctly and you are still experiencing problems, contact your system administrator to review your permission settings in Windows or SQL Server. See "Security Administration" on page 26 for more information.

Database location

Your default database location may not be set correctly in the system registry. See "Database default location" on page 35 for verification instructions.

Firewall settings

If you experience communication issues with a remote SQL Server instance, you may be using a firewall that is set up to block network traffic between your computer and the SQL Server instance. To allow communication, you need to set two firewall exceptions:

- The SQL Server Database Engine service
- The SQL Server browser service

NOTES:

- The following instructions are for use with Windows Firewall. If you are using another firewall for your system, contact the firewall manufacturer for instructions on setting service exceptions.

- Sage recommends contacting your system administrator if you need to change firewall settings.

- This procedure does not cover setting firewall exceptions for installations on a workgroup. If you are using SQL Server on a workgroup server, you must set separate firewall exceptions to allow your workstations to communicate with the SQL Server instance. Refer to the *Installation & Administration Guide* for instructions.

Setting the SQL Server Database Engine exception

Set up a SQL Server Database Engine exception for each instance of SQL Server you use with Sage Estimating.

1 Determine the path to your SQL Server computer.

   a On the computer or server where SQL Server is installed, open the SQL Server Configuration Manager by selecting **Start** > **All Programs** > **Microsoft SQL Server 2008 R2** (or **Microsoft SQL Server 2008**) > **Configuration Tools** > **SQL Server Configuration Manager**.

     The SQL Server Configuration Manager opens.

Figure 8: The SQL Server Configuration Manager
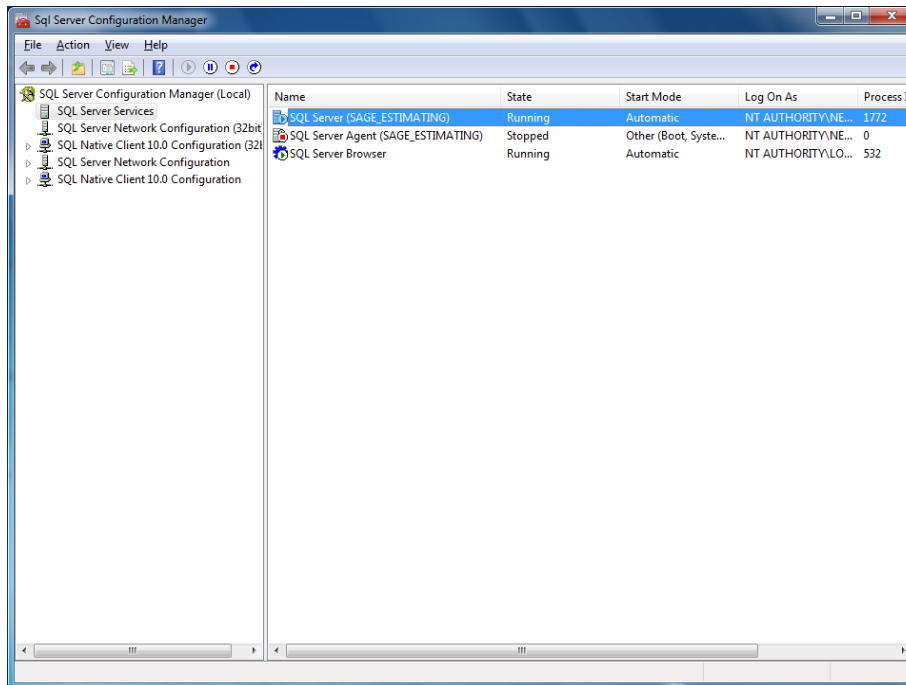
   b In the left-hand pane of the SQL Server Configuration Manager, select **SQL Server Services**.

   c In the right-hand pane, right-click on **SQL Server (INSTANCE)**, where **(INSTANCE)** is the SQL Server instance for which you are creating the firewall exception, and select **Properties**.

   d In the **SQL Server Properties** window, click on the **Service** tab.

*Figure 9: SQL Server Properties Window—Service Tab*
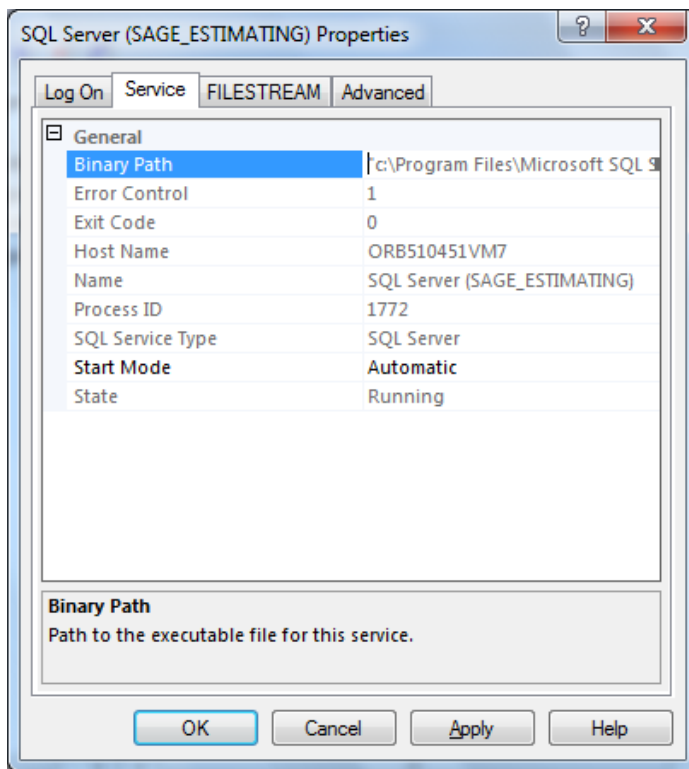
 e In the **Binary Path** entry, note or record the path described within the quotation marks. This is the file path to the SQL Server instance binary files (the path is contained only within the quotation marks—ignore the text outside the quotes).

2 Open Windows Firewall by selecting **Start** > **Control Panel** > **System and Services** > **Administrative Tools** > **Windows Firewall with Advanced Settings** (in Windows XP and Windows Server 2003, select **Start** > **Settings** > **Control Panel** > **Windows Firewall** then proceed directly to step 6).

3 In the left-hand pane of the **Windows Firewall with Advanced Security** window, right-click on **Inbound Rules** and select **New Rule**.

4 In the **New Inbound Rule** wizard, select the **Program** option and click [**Next**].

5 Select the **This program path** option.

6 **Windows XP and Windows Server 2003 only:** In the Windows Firewall window, click on the **Exceptions** tab and click [**Add Program**].

7 Click [**Browse**] and locate the **sqlservr.exe** file at the binary file path you recorded in step 1 then click [**Open**].

8 Click [**Next**] (in Windows XP and Windows Server 2003, click [**OK**] to create the exception then proceed directly to step 13).

9 Select the **Allow the connection** option then click [**Next**].

10 Select the **Domain**, **Public**, and **Private** check boxes then click [**Next**].

11 Type the name of your SQL Server instance in the **Name** box.

12 Click [**Finish**] to create the firewall exception for the SQL Server Database Engine service.

The **Windows Firewall with Advanced Security** window opens.

Figure 10: Windows Firewall with Advanced Security Window
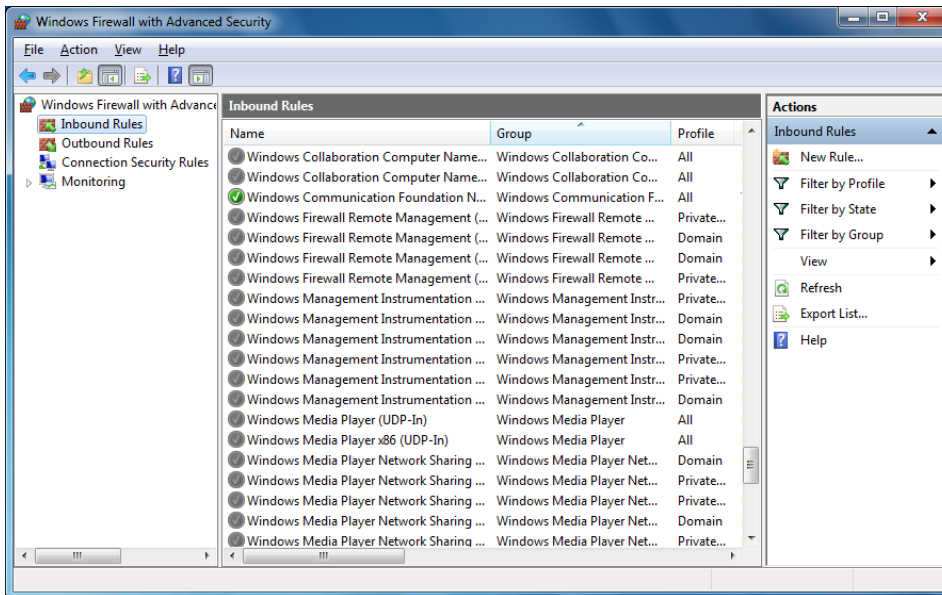
Setting the SQL Server browser service exception

1 Open Windows Firewall by selecting **Start** > **Control Panel** > **System and Services** > **Administrative Tools** > **Windows Firewall with Advanced Settings** (in Windows XP and Windows Server 2003, select **Start** > **Settings** > **Control Panel** > **Windows Firewall** then proceed directly to step 10).

2 In the left-hand pane of the **Windows Firewall with Advanced Security** window, right-click on **Inbound Rules** and select **New Rule**.

3 In the **New Inbound Rule** wizard, select the **Port** option and click [**Next**].

4 Select **UDP** as the protocol type.

5 Select the **Specific local ports** option and type 1434 in the corresponding box.

6 Click [**Next**].

7 Select the **Allow the connection** option and click [**Next**].

8 Select the **Domain**, **Public**, and **Private** check boxes then click [**Next**].

9 Type SQL Server Browser Exception in the **Name** box.

10 Click [**Finish**] to create the firewall exception for the SQL Server browser service.

11 Windows XP and Windows Server 2003 only: In the **Add a Port** window, type SQL Server Browser Exception in the **Name** box and type 1434 in the **Port Number** box; click [**OK**] then click [**OK**] again to create the SQL Server browser service exception.

Network configuration

To connect with SQL Server, you must have TCP/IP enabled.

Enable TCP/IP

If you are receiving network configuration errors, make sure that TCP/IP is enabled, as follows:

1 Select **Start > Control Panel > Administrative Tools > Windows Firewall with Advanced Security**.

2 Start SQL Server Configuration Manager (**Start > All Programs > Microsoft SQL Server 2008 R2 > Configuration Tools > SQL Server Configuration Manager**).

3 Expand **SQL Server 2008 Network Configuration**.

4 Select **Protocols for SAGE_ESTIMATING** (or the name of your instance).

5 Right-click on **TCP/IP** and select **Enable**.

6 Click [**OK**].

NOTE: You must stop and restart the SQL Server services for this change to take effect. See "SQL Server services" on page 26 for more information.

Security Administration

Operators using Sage Estimating must have SQL Server permissions to the databases they are expected to use. You assign permissions using the Roles and Permissions features in the Estimating Management Console. For more information, see the *Installation & Administration Guide*.

If an operator is experiencing connection issues with a database, verify the operator belongs to a role with the appropriate permissions.

SQL Server services

You may have several SQL Server services or instances, depending on the version of SQL Server you are using. For SQL Server 2008 R2 Express, the following are used:

- SQL Server (the name you assigned to the SQL Server instance)

- SQL Server Browser

If the service is not running, you can start it using SQL Server Configuration Manager.

To Start the SQL Server Engine Using SQL Server Configuration

1 Start SQL Server Configuration Manager (**Start > All Programs > Microsoft SQL Server 2008** (or **Microsoft SQL Server 2008 R2**) **> Configuration Tools > SQL Server Configuration Manager**).

2 Select **SQL Server Services**.

3 Right-click the service (for example, **SQL Server (<*instance name*>)**), and then click **Start**.

To Stop the SQL Server Engine Using SQL Server Configuration

1 Start SQL Server Configuration Manager (**Start > All Programs > Microsoft SQL Server 2008 > Configuration Tools > SQL Server Configuration Manager**).

2 Select **SQL Server Services**.

3 Right-click the service (for example, **SQL Server (<*instance name*>)**), and then click **Stop**.

Determining the path to the SQL Server program

If you have multiple instances of SQL Server installed, each instance is independent of the others. To determine the location of the SQL Server program for a particular instance, do the following:

1 Start SQL Server Management Studio Express (**Start > All Programs > Microsoft SQL Server 2008 R2 > SQL Server Management Studio** or **SQL Server Management Studio Express**).

2 In the **Connect to Server** window, confirm that the correct **Server type**, **Server name**, and **Authentication** are selected, and then click [**Connect**]. For example:

- **Server type**: Database Engine

- **Server name**: *Computer_name*\instance_name

- **Authentication**: Windows Authentication

   If Windows Authentication does not work, try SQL Server Authentication. You must have security permission in SQL Server to access the database using this authentication.

3 Right-click on the server name, and then select **Properties**.

   The path is listed on the **General** page next to **Root Directory**. Make note of this path.

4 Click [**Cancel**] and then close the **SQL Server Management Studio Express** window to exit without making any changes.

The program exists in the Binn directory, which is below the root directory you noted in step 4. For example: C:\Program Files\Microsoft SQL Server\MSSQL.1\MSSQL\Binn\sqlservr.exe. The actual number in the path may be different depending on how many instances you have installed on the computer.

Issues With Restored Databases

After restoring a database (or attaching a new one), you may receive a "You are not currently set up as a user" error message. If you receive this error message, run the following script in SQL Server Management Studio to reset your database ownership:

DECLARE @statement nvarchar(max); SET @statement = 'ALTER AUTHORIZATION ON DATABASE::['+DB_NAME()+'] TO [sa]'; EXEC (@statement)

DECLARE @Statement NVARCHAR(MAX); SET @Statement = N'ALTER DATABASE [' + DB_NAME() + N'] SET TRUSTWORTHY ON'; EXEC (@Statement)

Chapter 7—Additional Information

The following is provided as additional resource material. It is included for reference only and is not meant to imply that Sage supports, controls, or endorses any of the content. Be aware that titles, links, and content can change and may not always be pertinent to your situation.

Most of the information below is available in Microsoft SQL Server Books Online.

General Information

Instance Configuration:

http://msdn.microsoft.com/en-us/library/ms143531(v=SQL.100).aspx

Microsoft SQL Server 2008 Security Datasheet:

http://download.microsoft.com/download/D/1/B/D1B8D9AA-19E3-4DAB-AF9C-05C9CCEDD85C/SQL%20Server%202008%20Security%20-%20Datasheet.pdf

Collation or Corruption

How to Rebuild the Master Database for SQL Server 2008:

http://msdn.microsoft.com/en-us/library/dd207003(v=SQL.100).aspx

Security

Password Policy:

http://msdn.microsoft.com/en-us/library/ms161959(v=SQL.100).aspx

SQL Server 2008 Security White Papers:

http://www.microsoft.com/sql/technologies/security/whitepapers.mspx

Strong Passwords:

http://msdn.microsoft.com/en-us/library/ms161962(v=SQL.100).aspx

Services

How to Verify a Successful Installation of SQL Server 2008 Reporting Services:

http://msdn.microsoft.com/en-us/library/ms143773(v=SQL.100).aspx

Managing the Database Engine Services:

http://msdn.microsoft.com/en-us/library/ms189925(v=SQL.100).aspx

Managing Services Using SQL Server Management Studio:

http://msdn.microsoft.com/en-us/library/ms187478(v=SQL.100).aspx

Chapter 8—Glossary

BOL/Books On Line

SQL Server Books On Line. These are resource materials for SQL Server provided by Microsoft. Books On Line is automatically installed with the Sage Estimating installation of SQL Server 2008 Express Edition. You can also download a current copy at www.microsoft.com.

Instance/Named Instance

A complete database environment, including the relational database management system software, table structure, stored procedures, and other functionality.

Microsoft Desktop Engine (MSDE)

A database engine compatible with earlier versions of SQL Server.

sa

The system administrator for SQL Server.

SQL

Structured Query Language, the standardized language used in virtually all relational databases.

SQL Server Management Studio (SSMS)

The configuration tool used to manage all aspects of the SQL server.

SQL Server Management Studio Express (SSMSE/SSMS Express)

A limited version of SQL Server Management Studio.

Stored Procedures

Database functions that allow advanced pre-compiled queries.

Transact-SQL

A robust scripting language supported by Microsoft SQL Server.

User Account Control (UAC)

A method of adding security to Windows by creating different access levels for administrators and standard users. It also prevents standard users from changing system settings or affecting sensitive system information.

Appendix—SQL Server Instance Settings

If you have an existing instance of a supported version of Microsoft® SQL Server® installed, you can set up another instance to work with Sage Estimating. (Options described in this section may vary slightly depending on the edition you are installing.)

NOTE: If you choose to uninstall your existing instance first, reboot your server before reinstalling to avoid problems with the new installation.

CAUTION: Do not change the owner of any databases in the Sage Estimating instance.

Set your new SQL Server 2008, SQL Server 2008 R2 , or SQL Server 2008 R2 Express instance to the settings as outlined in the following sections.

SAGE_ESTIMATING Instance

Figure 11: Instance Configuration Settings
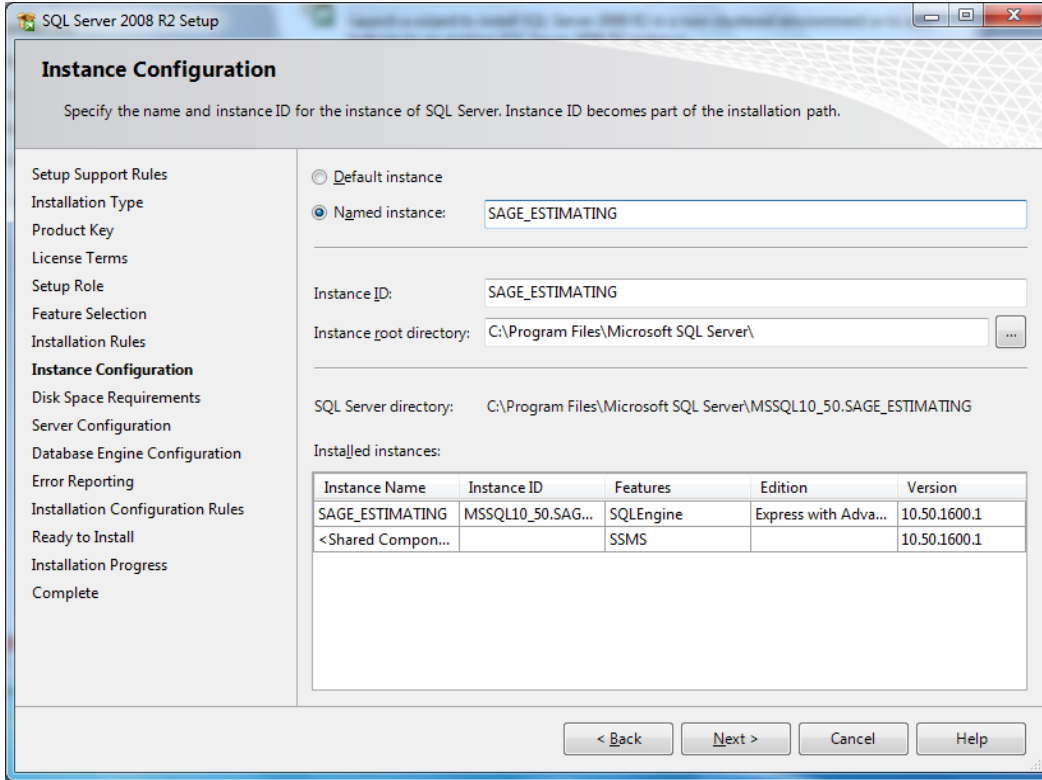
You must use a named instance. You can give the instance any name you want. However, Sage recommends giving the instance a name that makes it easily identified (such as SAGE_ESTIMATING).

Authentication Mode

Figure 12: Authentication Mode Settings
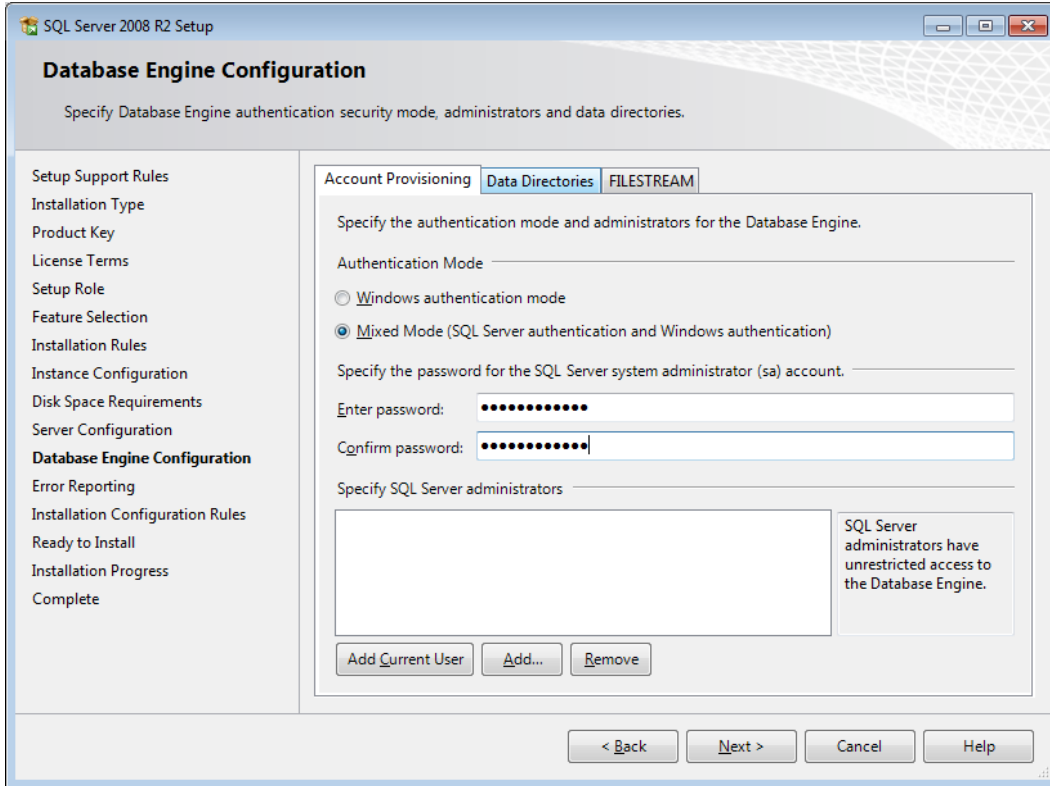
The instance must support **Mixed Mode** authentication (**Windows Authentication and SQL Server Authentication**). This means either Windows authentication or SQL Server authentication can be used to access the database information.

When Windows authentication is used, the operator must have permissions to use SQL Server or be a member of a group that has those permissions. In Windows authentication mode, SQL Server validates the account name and password using information from the Windows operating system.

When SQL Server authentication is used, the operator must have system administrator (**sysadmin**) rights in SQL Server. The SQL Server authentication is used for backward-compatibility and requires a strong password.

Collation Settings

Collation settings must be **Latin1_General**, **case-sensitive**, and **accent-sensitive** (**Latin1_General_CS_AS**).

You can customize the collation settings during the server configuration portion of the SQL Server install. In the SQL Server collation customization window, make the following selections:

- Select the **Windows collation designator and sort order** option (instead of **SQL collation**, which is the default)

- **Latin1_General** (for the collation designator)

- **Case-sensitive**

- **Accent-sensitive**

- Clear all other options

Additional Recommendations

To ensure accurate performance, Sage **strongly** recommends making changes and verifications to the following settings in SQL Server Management Studio and SQL Server Configuration Manager. Failure to make these changes may result in poor Sage Estimating performance or communication issues.

Memory

Determine the amount of available memory on the server or workstation where SQL Server is installed. To prevent SQL Server from consuming all available memory, use SQL Server Management Studio to set the maximum amount of memory (in the instance properties) to a reasonable limit (such as 4 GB) as follows:

1 Right-click on the SQL Server instance and select **Properties**.

2 In the Server Properties window, click **Memory** (left-hand pane).

3 Set the **Maximum server memory** amount to **4000** (or whatever limit you determine).

Database default location

During the database upgrade process, Sage Estimating creates a backup copy of your estimate data in the path you set in SQL Server Management Studio's **Database default location** (for both the **Data** and **Log** files). The locations you specify must already exist and must be accessible to the Sage Estimating upgrade program.

NOTE: The ideal location for storing your backup data is on a pair of solid state drives (SSD) in a redundant array (RAID 1) configuration that is backed up daily.

In SQL Server Management Studio, set the database default location for the data (.mdf) and log (.ldf) files as follows:

1 Right-click on the SQL Server instance and select **Properties**.

2 In the **Server Properties** window, click **Database Settings** (left-hand pane).

3 In the **Database Default Locations** section (right-hand pane), locate the **Data** and **Log** file paths.

4 Set the default location file paths for the data and log files to your new location.

For example, type **{Drive}:\ProgramData\Sage\Backups**.

5 Click [**OK**] to close the **Server Properties** window.

6 Right-click on your SQL Server instance and select **Restart**.

7 After the SQL Server instance restarts, right-click on it again and select **Properties**.

8 Click **Database Settings** and verify the changes you made to the default location are still correct.

Communication protocol

Set the communication protocol settings for the Sage Estimating SQL Server instance as follows:

1 Start the SQL Server Configuration Manager by selecting **Start** > **All Programs** > **SQL Server 2008** (or **SQL Server 2008 R2**) > **Configuration Tools** > **SQL Server Configuration Manager**.

2 In the left-hand pane of the **SQL Server Configuration Manager** window, click the arrow next to **SQL Server Network Configuration** to display all local SQL Server instances.

3 Select the instance associated with Sage Estimating (**SAGE_ESTIMATING**, by default).

4 In the right-hand pane right-click on a communication protocol and select **Disable**.

5 Repeat step 4 for all communication protocols **except TCP/IP**. Leave this protocol **Enabled**.

6 In the left-hand pane of the **SQL Server Configuration Manager** window, click the arrow next to **SQL Native Client 10.0 Configuration**.

7 Click **Client Protocols** (left-hand pane).

8 In the right-hand pane right-click on a communication protocol and select **Disable**.

9 Repeat step 8 for all communication protocols **except TCP/IP**. Leave this protocol **Enabled**.

10 Close the SQL Server Configuration Manager and restart the service.

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