



Sage 300 Construction and Real Estate

(formerly Sage Timberline Office)

Version 20

User's Guide

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Versions 20.1, 20.2, 20.3, and 20.4

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Contents: Version 20 User's Guide

- Introduction 1
 - Release information 1
 - About this guide 1
 - Support and assistance 2

- Chapter 1: System Requirements 4
 - Privilege settings required for installation and use 4
 - Compatible versions 6
 - Supported upgrade paths 7
 - Data file upgrades 8

- Chapter 2: Install Sage 300 Construction and Real Estate 9
 - A. Before you install 9
 - B. Install to a server or stand-alone computer 11
 - C. Install to a workstation connected to a network 13
 - D. Upgrade data files 15
 - E. Upgrade custom Crystal Reports designs 17
 - F. Install Crystal Reports Designer (optional) 17
 - G. Install SQL Server and Sage SQL Replicator 2.0 (optional) 18
 - H. After you install 19
 - I. Final steps 20

- Chapter 3: Server Migration 21
 - Things to know before you begin 21
 - Recommended procedure 22

- Chapter 4: System Guidance 26
 - General information 26
 - Troubleshooting 31
 - Terminal services 34

Printers	34
Installing, moving, or removing Sage 300 Construction and Real Estate products	35
Chapter 5: Security	38
Security overview	38
Record security	42
Setting up security	49
Modifying security	55
Troubleshooting security	66
Security tips	70
Glossary of security terms	72
Chapter 6: Sage 300 Construction and Real Estate ODBC	75
ODBC overview	75
Important issues for ODBC users	76
Data loss	76
Points to consider before you use ODBC	76
Set up a data source	77
Use the ODBC driver	78
Chapter 7: Crystal Reports	79
Introduction	79
Reports on the menus	80
The data source for Crystal Reports	80
Customizing Crystal Reports	84
Crystal Reports integration	86
Billing considerations	113
Purchasing and Inventory considerations	115
Service Management considerations	120
Desktop considerations	127
Upgrading older custom report designs	128

Introduction

Release information

Along with this *User's Guide*, see the following documentation for additional information that will help you install and use version 20:

- The [Installation Checklist](#) contains a brief description of the steps involved in upgrading your software.
- The [Important](#) document contains critical topics.
- The [Release Notes](#) provide details about new features, resolved issues, and known issues.

You can access a [complete library of supported product documents](#).

About this guide

This *User's Guide* is designed to help you learn about installing the software. It also contains information about systems, security, ODBC, and Crystal Reports.

Conventions used in this document

This document uses the following conventions:

- The names of windows, fields, and other features displayed by the software are **bold**.
- Text that you type into the windows is **blue**, as in the following example:
Type **Miscellaneous**.
- Names of keys are shown in capitals; for example, **ENTER**, **TAB**. A plus sign (+) between two key names indicates that you should press both keys at the same time; for example, **SHIFT + TAB**.
- The names of buttons that you can click with your mouse are **bold** and enclosed in brackets; for example, **[OK]** and **[Post]**.

Tip: Helpful information to make your experience better.

Note: Additional information of interest, such as information not included in steps.

Caution! Information that can help you avoid a costly or time-consuming error.

Important! Information that is of critical importance.

Menu paths

In this document, menu paths show you the steps required to start a task, such as:

PR: Tools > Download Taxes

To follow this path, open the Payroll module. From the **Tools** menu, select **Download Taxes**.

Support and assistance

Online help

Each Sage 300 Construction and Real Estate application includes online help, which provides answers to your questions about procedures as well as items in the windows.

To access the online help in Sage 300 Construction and Real Estate:

- In a window, click the [Help] button, click  (the Help button), or press F1 to display the help topic for that window.
- In an application or Desktop, select **Help > Help Topics**.

Tip: From Desktop, you can access the online help for an application by clicking **Applications**, clicking the name of the application, and then clicking **Help > Help Topics** in the list of menu items for that application.

To aid you in finding the information you need, the online help includes the following tabs:

- **Contents** tab with an outline of the help with links to the help topics.
- **Index** tab with keywords that link to help topics related to that keyword.
- **Search** tab or Search text box, where you can type text and click [Search] to locate that text in the help topics.

Technical assistance

When you need more assistance, visit [Sage Customer Resources](#), [Sage Knowledgebase](#), [Sage City](#), the [Product Documents website](#), [Live Chat](#), or [Online Case submission](#).

Training

Sage University offers live and recorded online training sessions to help you get the most out of your software. To access Sage University, either:

- From an application, select **Help > Web Resources > Sage University**.
- From Desktop, select **Help > Sage University**.
- From your browser, visit <http://www.sageu.com/Sage300CRE>.

Note:

For year-end 2020, register for one of the following complimentary Year-end Procedures Anytime Learning subscriptions to see step-by-step instructions about year-end closing tasks:

- [2020 Year-end Procedures \(U.S. Edition\)](#)
- [2020 Year-end Procedures \(Canada Edition\)](#)

Contact your business partner for local training.

Chapter 1: System Requirements

For assistance in selecting the right business-class computers for your Sage 300 Construction and Real Estate software, contact your authorized business partner. For information about system environments, see ["Chapter 4: System Guidance" on page 26](#).

To install and use Sage 300 Construction and Real Estate version 20, your server and workstations must have Internet access for Sage entitlement and Pervasive licensing requirements.

Refer to the [System Requirements article in the Sage Knowledgebase](#) for information. Refer to the [System Requirements article in the Sage Knowledgebase](#) for information about:

- Hardware requirements
- Supported operating systems
- Software requirements

This chapter includes the following sections:

- Privilege settings required for installation and use (the next section)
- ["Compatible versions" on page 6](#)
- ["Supported upgrade paths" on page 7](#)
- ["Data file upgrades" on page 8](#)

Privilege settings required for installation and use

The following sections describe the access rights you need to successfully install and use Sage 300 Construction and Real Estate.

Elevate permissions

You must elevate your permissions before upgrading Sage 300 Construction and Real Estate.

You can usually start a program with elevated privileges by right-clicking the application and selecting **Run as Administrator**. In Sage 300 Construction and Real Estate, the application is usually installed in the following path: `/Program Files (x86)/Sage Timberline Office/Accounting`.

During certain installation tasks, you will receive another prompt to elevate your privileges. If you do not acknowledge each prompt within two minutes, the installation process will quit the task. If this occurs, you will receive a separate prompt asking you to retry the task. Click **[Retry]** and then elevate your privileges at the prompt.

Full control of specific files and folders required

You must have full control access rights to all folders or shares that contain Sage 300 Construction and Real Estate program files and data files.

To use Sage 300 Construction and Real Estate, you must have full control of the following files and folders on your file server, terminal server, and workstations that have Sage 300 Construction and Real Estate installed. Make sure that your system administrator also gives you full control of all the subfolders and files.

Locations of folders and files

Required folders and files	Location and specifications
Program Files (86) \Timberline Office	This folder is located on the server, terminal server, and workstations where you installed Sage 300 Construction and Real Estate. It is the default installation location for Sage 300 Construction and Real Estate. However, depending on your system configuration, your company may have renamed this folder or installed it to a different location.
<i>[Drive]:</i> \Users \ <i>[username]</i>	This folder is located on the workstation or terminal server where you use Sage 300 Construction and Real Estate. Sage 300 Construction and Real Estate installs necessary files to this folder and requires that the user has full control of it. Typically, the user has full control of this folder by default.
Company data folder	Typically, the data folder is located on the server where you installed Accounting and Management Products.
<i>[Drive]:</i> \ProgramData \Sage \Timberline Office	This folder is located on the server or host machine where you use Accounting and Management Products. This folder must be shared. The installer creates this shared folder and the appropriate permissions to this folder as well as its subfolders.

Note: Some of these folders may be hidden. To view them, open Windows Explorer, click the **View** tab, and then select the **Hidden items** check box.

Full control of and read access to specific registry keys required

To use Sage 300 Construction and Real Estate, you must have full control of the following Windows registry key on your file server, terminal server, and workstations that have Sage 300 Construction and Real Estate installed. Make sure that your system administrator also gives you full control of all subkeys.

- HKEY_CURRENT_USER
- HKEY_Local_Machine\Software\ODBC
- HKEY_Local_Machine\Software\Pervasive Software
- HKEY_Local_Machine\Software\Timberline

Caution! Incorrectly editing the Microsoft Windows registry may severely damage your system. Sage is not responsible for damage to your system caused by editing the registry. Before making changes to the registry, contact your system administrator for assistance and make a backup copy of all valued data. System administrators should see Microsoft Registry Editor Help topics for detailed instructions.

Compatible versions

Caution! Sage Estimating (Pervasive) - There is no version of Sage Estimating (Pervasive) that is compatible with Sage 300 Construction and Real Estate version 20. However, you can use a compatible version of Sage Estimating (SQL) with Sage 300 Construction and Real Estate version 20.

Caution! Document Management - There is no Sage Document Management version 18.3, 18.4, or 20. Document Management was retired on December 31, 2019; see [Knowledgebase article 91616](#) for more information about the retirement. You can still run Document Management in a standalone environment; see [Knowledgebase article 91608](#) for more information. **DO NOT** install Sage 300 Construction and Real Estate Accounting version 20 on the same machine as Document Management.

The following table shows which product versions are compatible, which is partly based on the Crystal Reports runtime SP they use. If you do not use compatible versions, you may not be able to run Crystal reports.

Compatible product versions

Product / Component	Version	Version	Version	Version
Sage 300 Construction and Real Estate	20.1, 20.2, 20.3, 20.4	18.3, 18.4	18.2	18.1
Sage Estimating (SQL)	18.12, 19.11, 19.12, 20.1	18.12, 19.11, 19.12, 20.1	18.12, 19.11, 19.12, 20.1	18.11
Sage Document Management	NONE	NONE	18.2	18.1
Sage Fixed Assets	2018.1, 2019.1, 2020.1**	2018.1, 2019.1, 2020.1**	2018.1, 2019.1, 2020.1**	2018.0
Crystal Reports runtime SP used by these products	SP22**	SP22**	SP22**	SP19

** Sage Fixed Assets 2018.1, 2019.1, and 2020.1 use Crystal Reports runtime SP21. Although Crystal reports seem to run correctly when you run these versions of Sage Fixed Assets on the same machine as Sage 300 Construction and Real Estate 18.2 and later or Sage Estimating (SQL) 18.12 or later, we recommend that you run Sage Fixed Assets on a different machine.

Supported upgrade paths

If you are on Sage 300 Construction and Real Estate (Accounting) version 20.1, 20.2, 20.3, 18.1, 18.2, or 18.3, or 18.4, you can upgrade directly to version 20.4.

If you are on version 16.1 or 17.1, we recommend that you upgrade to 18.4 before upgrading to version 20.

1. Back up your data, upgrade to 18.4, and upgrade your data (including Inventory, Purchasing, and Service Management data).
2. Back up your data again and upgrade to version 20.

Note: If you are on a version that is earlier than 16.1, we recommend that you contact your Business Partner or [Sage Expert Services](#) for assistance.

Data file upgrades

After you upgrade to version 20, upgrade all Accounting and Management application data files.

You can upgrade the data files for Accounting applications (except for Service Management, Purchasing, and Inventory) from Sage Desktop. In the **Applications** pane, select **Common Tasks > Tools > Upgrade files**.

Caution! Service Management, Purchasing, and Inventory data files upgrade the first time you open those applications. You must open the application and perform the upgrade at the server. Upgrading this data on a workstation will incorrectly set DSNs and cause data access errors after the upgrade is performed.

Chapter 2: Install Sage 300 Construction and Real Estate

Version 20 includes application fixes and introduces an updated Sage SQL Replicator.

Important! If you use third-party products that integrate with Sage 300 Construction and Real Estate, check with the vendor of the product to ensure their product is fully compatible with this release. We **do not** support rolling Sage 300 Construction and Real Estate back to a previous version and **do not** recommend it.

A. Before you install

1. Review the following documents:
 - Refer to the [System Requirements article in the Sage Knowledgebase](#) for information. Refer to the [System Requirements article in the Sage Knowledgebase](#) for information.
 - Read the [Release Notes](#) for more details about this release of Sage 300 Construction and Real Estate.
 - Review the [Installation Checklist](#).
2. Have your **Registration Name** and **Sage Client ID** (Account ID) handy. The ID is a 10-digit number that starts with 4. See [Knowledgebase article 86829](#) for more information.

Also review the number of uses your company has purchased for each application. You no longer enter activation codes when you install. Sage 300 Construction and Real Estate automatically accesses the licenses for the various applications for which your company is entitled. You can check this by logging onto the [Sage Customer Portal](#); see [Knowledgebase article 87017](#) for more information. If you need to purchase additional uses, contact your authorized Sage business partner or your Sage customer account manager at 1-800-858-7095 (or email CREsales@sage.com). You can use the new License Administrator tool to manage the uses of these licenses.

3. Run File Doctor on all files in your current version before upgrading to the next version. Even if you do not receive a corrupt file message, there may be issues File Doctor finds that it will not be able to fix after upgrading to version 20.
4. Create a complete backup of all Sage 300 Construction and Real Estate data and program files.

5. If needed, install the appropriate operating system service pack, make sure sufficient hard disk space is available, and verify that your server and workstations meet all other [hardware and software requirements](#)[hardware and software requirements](#).

If you are upgrading from 9.7 or earlier, the upgrade to 9.8 may cause file sizes to increase up to 200% of the current size of your data. Be sure to allow for increased disk space requirements when you upgrade. Do not install Sage 300 Construction and Real Estate products unless you have sufficient hard disk space available.

6. Make sure that you have full control of the required folders, files, and registry keys on your file server, terminal server, and workstations that will have Accounting and Management Products installed. For a list of the required folders, files, and registry keys for your operating system, see ["Privilege settings required for installation and use" on page 4](#).
7. Quit all programs and services for the duration of the installation. This includes programs that may be running in the background, such as anti-virus, email, and backup programs.

Important! Before installing Sage 300 Construction and Real Estate, close your anti-virus programs.

8. For certain operating systems, you must elevate your permissions before installing version 20. During certain installation tasks, you will receive a prompt to elevate your privileges. If you do not acknowledge each prompt within two minutes, the installation process will quit the task. If this occurs, you will receive a separate prompt asking you to retry the task. To retry the task, click **[Retry]** and then elevate your privileges at the prompt.
9. Verify the upgrade path (see [page 7](#)). If you are upgrading from an older version, you may need to install several versions to become current.

B. Install to a server or stand-alone computer

If you plan to use Sage SQL Replicator or any mobile applications, install Sage 300 Construction and Real Estate on a machine connected to a domain, but this machine should not be the domain controller.

Important! Do not install Sage 300 Construction and Real Estate unless the machine has sufficient hard disk space available. Refer to the [System Requirements article in the Sage Knowledgebase](#) for information. Refer to the [System Requirements article in the Sage Knowledgebase](#) for information.

Note: The installation process may restart your server or stand-alone computer several times.

1. At the server or stand-alone computer, log on with full administrative rights. Full administrative rights are defined as write access to the Windows registry and all folders on the computer (including rights to the root of all hard drives). If you are unsure whether you have full administrative rights, ask your network administrator for assistance. Alternately, you can ask your network administrator to log on with the network administrator ID before you start the installation.
2. Follow the instructions in the version 20 download article.
3. Open the folder with the appropriate version number and double-click **Install.exe** to begin the installation process.
4. In the **Welcome** window, click **Next**.
5. Follow the on-screen instructions to make the following selections. Click **Next** after each selection.
 - Accept the License Agreement.
 - Enter your company's **Registration name**, **Client number**, and **Software Country**.
 - Choose the **Industry Type**.
 - Choose the **Destination** for your Sage 300 Construction and Real Estate files.

Note: Beginning with 17.1 Rev 4, you no longer enter activation codes. Sage 300 Construction and Real Estate automatically accesses the licenses for the various applications for which your company is entitled.

Before you click [Install], note the following:

- If you receive a firewall warning message during the installation of the Pervasive database engine, work with your network administrator to allow the Pervasive database engine to communicate through your firewall software. For example, if a Microsoft Windows Firewall **Security Alert** window lists the **Database Service Manager by Pervasive Software Inc.**, confirm with your network administrator that you want to proceed. Then, select **Unblock this program** and click **[OK]**.
 - You may receive a similar message during the installation of Sage Service Host. Follow the same steps to proceed.
 - If you are required to restart your computer, remember to stop antivirus, backup, and other services that may have automatically started again after you restart your computer.
6. Click **[Install]** to begin installing Sage 300 Construction and Real Estate.
 7. At the conclusion of the installation, you will be prompted to restart your computer. Restart and then log on with the same user name that you used when you installed (user name must have full administrative rights).

Important! Wait until you see the **All configuration tasks for Sage 300 Construction and Real Estate completed successfully** message. It may take a few minutes before you see the message. Do not attempt to start any Sage 300 Construction and Real Estate applications until after you receive this message.

Note: Some of the data and report folders and files will be hidden by default. At the end of the installation, you can view these hidden files and folders. To view them, open Windows Explorer, click the **View** tab, and then select the **Hidden items** check box.

Automatic creation of Timberline Office Share

The installation automatically creates a shared Timberline Office folder at the following location on the server if one does not already exist: `[Drive]:\ProgramData\Sage\Timberline Office`

Read and write permissions are automatically granted to **Everyone** for this folder. If the Timberline Office folder is already present and shared, the installation will skip this step. The system will not change any permissions you have already set up.

You will connect your workstations to the shared **Timberline Office** folder in Step C.

C. Install to a workstation connected to a network

After you install to a server (as described in Step B), you can install to your workstations or to a computer that functions as a terminal server.

Important! Do not install Sage 300 Construction and Real Estate unless the machine has sufficient hard disk space available. Refer to the [System Requirements article in the Sage Knowledgebase](#) for information. Refer to the [System Requirements article in the Sage Knowledgebase](#) for information.

Note: The installation process may restart your server or stand-alone computer several times.

Installing to a terminal server

If you are installing to a computer that will be used as a terminal server, follow the preceding installation steps.

If your terminal server does not host Sage 300 Construction and Real Estate programs and data files, after installing, verify that the Pervasive.SQL database service on the terminal server uses an account with access to all Sage 300 Construction and Real Estate program and data files on the server.

To verify your account and access rights:

1. Click the Start icon, select the **Windows Administrative Tools** program group, and select **Services**.
2. In the **Services** window, right-click the **Pervasive.SQL** service and select **Properties**.
3. On the **Log On** tab, select **Use this account**.

Work with your network administrator to enter an account that has the access rights of the **Local System** account and access to all Sage 300 Construction and Real Estate program and data files on the file server; for example, a domain administrator account.

Note: If you use an account with insufficient access rights, you may receive a Pervasive status code 94 or 3119 error.

Installing to a workstation

Tip: If you have a large number of workstations, you can use a script to silently install the software on client workstations. For more information, see [Knowledgebase article KB 83952](#).

1. At the workstation, log on with full administrative rights. Full administrative rights are defined as write access to the Windows registry and all folders on the computer (including rights to the root of all hard drives). If you are unsure whether you have full administrative rights, ask your network administrator for assistance. Alternately, you can ask your network administrator to log on with the network administrator ID before you start the installation.
2. Right click the Start icon and select **Run**.
3. In the **Run** window, click [**Browse**], browse to the \\[Server name]\Timberline Office\9.5\Accounting\WinInst\Install.exe folder on the server, and then double-click **Install.exe**.
4. In the **Welcome** window, click **Next**.
5. Follow the on-screen instructions to make the following selections. Click **Next** after each selection.
 - Accept the License Agreement.
 - Choose the **Destination** for your Sage 300 Construction and Real Estate files.
6. In the **Installation** window, click **Install**.
7. At the conclusion of the installation, when you see the prompt, restart your workstation.
8. Repeat steps 1-7 for each workstation.

Note: Some of the data and report folders and files will be hidden by default. At the end of the installation, you can view these hidden files and folders. To view them, open Windows Explorer, click the **View** tab, and then select the **Hidden items** check box.

D. Upgrade data files

If you upgraded to a new version of Sage 300 Construction and Real Estate, read and follow the information in this section.

If this is a first-time installation, skip to ["F. Install Crystal Reports Designer \(optional\)" on page 17](#).

Caution! Service Management, Purchasing, and Inventory have specific upgrade requirements. First, log onto the file server as an administrator. Then open and upgrade Service Management, Purchasing, and Inventory data files at the server the first time you open these applications. Upgrading this data on a workstation will incorrectly set DSNs and cause data access errors after the upgrade is completed.

Prepare to upgrade files

For optimal performance, we recommend that you upgrade your data from the server. If you prefer to upgrade your data from a workstation instead, you must ensure that the same version and update are installed on both the server and the workstation before starting the **Upgrade Files** process.

1. Back up your data files.
2. Make sure all users have closed Sage 300 Construction and Real Estate applications.
3. Log in to Sage 300 Construction and Real Estate as the application administrator.
4. Open Sage Desktop, select your company, and click **[OK]**. If you do not see your company:
 - a. Click **[Specify Folders]**.
 - b. In the **Specify Data Folders Path** window, click **[Browse]**, select the UNC path to the folder that contains your Sage 300 Construction and Real Estate data, and click **[OK]**.
 - c. Select your data folder from the **Specified Folders** area and click **[OK]**.
 - d. Select your company from the list of companies in the **Select Company** window and click **[OK]**.

5. If you use File Locations and the path is not accessible from the server (for example, you use mapped drives instead of specific paths), modify the locations to point to files on the local hard drive of your server.

Tip: We recommend that you convert your mapped drives to the equivalent UNC paths using the following instructions. If you convert now, you will not have to perform this step during future upgrades, and you can skip to ["Restore file locations" on page 17](#).

- a. From Sage Desktop in the **Applications** pane, select **Common Tasks > File > Company Settings > File Locations**.
 - b. In the **File Locations** window, look for network paths in the **Data Folder** column.
 - c. If you have network paths, write them down (you need this information when you restore the file locations later) and then modify each network path to point to the appropriate file on the local hard drive of your server.
 - d. Click **[OK]** to close the **File Locations** window.
6. Repeat steps 4 and 5 for each company data folder you will upgrade.

Upgrade files

Files cannot be in use while they are being upgraded.

1. In Sage Desktop in the **Applications** pane, select **Common Tasks > Tools > Upgrade files**.
2. In the **Upgrade Files - Print Selection** window, select the data folders to upgrade:
 - **Current data folder:** Upgrades only the files in the data folder in which you currently work.
 - **All data folders:** Upgrades files in all data folders that appear in the **Open Company** window. This may include data folders on other drives. The upgrade process can take a long time if you have many data folders.

Note: We recommend that you upgrade all data folders after you install version 20.

3. Click **[Start]**.
4. In the **Print File Selection** window for **File name**, type a name for the upgrade report file, and then click **[Save]**.
The upgrade process begins in the background.
5. When the process is complete, review the report.

Restore file locations

If you use UNC paths, you can skip this step now and in future upgrades.

If you use mapped drives instead of UNC paths and the modified file locations and path are not accessible from the server, restore the previous file location entries:

1. From Sage Desktop in the **Applications** pane, select **Common Tasks > File > Company Settings > File Locations**.
2. In the **File Locations** window, find the file locations you changed previously and change them back to the original network path.
3. Click **[OK]** to close the **File Locations** window.

E. Upgrade custom Crystal Reports designs

If you upgraded from version 13.1 or earlier and have custom Crystal Reports designs, you must upgrade them before they can be used in Sage 300 Construction and Real Estate by running the Upgrade Crystal Reports Tool.

To access the tool, click the Start icon, select the **Sage Administration** program group, right-click **Upgrade Crystal Reports**, and then select **Run as administrator**.

For more information, click  (the help button) in the tool's window.

F. Install Crystal Reports Designer (optional)

If you own Crystal Reports Designer, you must install Crystal Reports For Sage 2013 SP2, which is compatible with Sage 300 Construction and Real Estate versions 14.1 through 20. If you have already installed it, you can skip this step. For more information about setting up Crystal Reports with Sage 300 Construction and Real Estate, see ["Chapter 7: Crystal Reports" on page 79](#).

Caution! Crystal Reports For Sage 2013 SP2 software only runs on Windows 7 SP1, Windows Server 2008 R2, or higher operating systems (not Windows Vista).

To install Crystal Reports For Sage 2013 SP2:

1. Ensure all Windows programs are closed.
2. On the server or workstation where your report designs are kept, open the email with the download information, click the download link, run the download, and select the folder for the download files.
3. Click **[Yes]** to run the setup wizard.

4. In the **Crystal Reports For Sage 2013 SP2 setup** window, click **[Next]** and follow the on-screen instructions to run the installation.
5. When you see the message that Crystal Reports For Sage 2013 SP2 has been successfully installed, click **[Close]**.

G. Install SQL Server and Sage SQL Replicator 2.0 (optional)

After you install Sage 300 Construction and Real Estate Version 20, you can install Sage SQL Replicator 2.0, which is an improved version of the replicator that was introduced in Version 17.1. Use the replicator to copy your Pervasive data into a SQL database, which enables faster data access for reports. The data is also available for mobile applications, such as Sage Mobile Dashboard, Sage Mobile Reports, Sage Field Operations, and Sage Construction Project Center.

For detailed information, see the [Sage SQL Replicator 2.0 Setup Guide](#).

Important! If you used an earlier version of Sage SQL Replicator, follow the steps in [Knowledgebase article 104917 \(Preparing your SQL data prior to upgrading to Replicator 2.0\)](#) before you install.

1. Use the Sage Universal SQL Installer to install an instance of the SQL database to hold your data.

Note: The size of the replicated data is larger than the original Pervasive data because replicator adds views and indexes the data. To determine if you can use SQL Server Express, add the size of the PVDData, POIV Data, SM Data folders and the master.qxm file together for each company. If the sum is greater than 6 GB, you must use full SQL Server.

2. Install SQL Replicator 2.0 by downloading the **SageSQLReplicator.exe** file and running the installation on your Sage 300 Construction and Real Estate Accounting server.
3. Configure the replicator. First, open the System Administrator tool (found in the **Sage Administration** program group). Next, click **?** (the Help button) and follow the instructions in the **Replicating your company's data** topic to connect and configure the replicator.
4. If your company plans to use any of the mobile applications, click **[Link to Mobile]**.

Important! Because Sage SQL Replicator now has a separate installer, future updates to the replicator can be installed without having to install a new version of Sage 300 Construction and Real Estate.

H. After you install

Some of the data and report folders and files will be hidden by default. At the end of the installation, you can view these hidden files and folders. To view them, open Windows Explorer, click the **View** tab, and then select the **Hidden items** check box.

Elevated permission levels after installing

If you install Service Management (SM), Purchasing (PO), and Inventory (IV) on Windows 7, Windows Server 2008 R2, or later, you should elevate your permission level. Crystal Reports may not run correctly in these applications if the permission level is set too low. If you encounter an error message when starting SM, PO, or IV for the first time after installation, close the application, elevate your permission level, and start the application again. To do this:

1. Close the Pervasive Workgroup engine (Right-click the Pervasive Database icon in the systems tray and select **Stop Engines and Exit**.)
2. Navigate to **SM.exe**, **PO.exe**, or **IV.exe**. The default location for these files is **C:\Program Files (x86)\Timberline Office\Shared**.
3. Select **Run as Administrator**.
4. Open each company data set at the server.
5. Repeat these steps for each company data folder.

If you have Purchasing, Inventory, or Service Management data in Program Files

If, before upgrading, your company data folder was inside the **Program Files** folder in Purchasing (PO), Inventory (IV), or Service Management (SM), follow these steps at the server to move your data to a shared location and make the data available to your users.

1. Move the data files to a shared location. The default shared location is:
\\[Server name]\Timberline Office\Data
2. At the server, remove all Pervasive System DSNs and User DSNs for each Sage 300 Construction and Real Estate installation:
 - a. Click the Start icon, select the **Windows Administrative Tools** program group, and select **ODBC Data Sources (32-bit)**.
 - b. In the **ODBC Data Source Administrator** window on the **System DSN** tab, select the first **Name** associated with a **Pervasive ODBC Engine Interface Driver**, and then click **[Remove]**.

- c. Repeat this process to remove each **Name** associated with a **Pervasive ODBC Engine Interface Driver**.
 - d. On the **User DSN** tab, select the first **Name** associated with a **Pervasive ODBC Client Interface Driver**, and then click **[Remove]**.
 - e. Repeat this process to remove each **Name** associated with a **Pervasive ODBC Client Interface Driver**.
 - f. Click **[OK]**.
3. At the server, delete the **DBNAMES.CFG** file:
- a. From **\\[Server name]\WINDOWS**, right-click **DBNAMES.CFG**, and select **Delete**.
 - b. In the **Confirm File Delete** window, click **[Yes]**.
4. Add each company to the company list:
- a. In **TS-Main**, select **File > Open Company**.
 - b. Click **[Specify Folders]**.
 - c. Click **[Browse]** and browse to the shared location from step 1.
 - d. Select a folder and click **[OK]**.
 - e. At the server, open the **SM**, **PO**, or **IV** applications for each Sage 300 Construction and Real Estate company.
 - f. Repeat these steps for each company folder that you want to add.
5. If you use security, give the appropriate users rights to the companies; in Sage Desktop, select **Options > Security Administration**, click **User Setup**, and then click **Companies**.

I. Final steps

1. Restart all programs and services that you shut down for the installation.
2. Review the following guidelines for custom reports or custom third-party applications.
 - If you have custom reports that use the Crystal Reports format, be sure to open these reports in Crystal Reports Professional, select **Database > Verify Database**, and then save the report.
 - If you use Inventory, Purchasing, or Service Management custom Crystal reports, see [page 115](#) or [page 120](#) for special information and detailed instructions about upgrading these reports.
 - As with any release, database changes in Sage 300 Construction and Real Estate applications may affect your custom report designs or custom third-party applications. Contact your authorized business partner to discuss any issues relating to custom reports or third-party applications.

Chapter 3: Server Migration

The server and data migration tool enables you to easily copy and transfer your Sage 300 Construction and Real Estate Accounting data and customizations to a new server. Items transferred include:

- Company data
- Security settings
- Custom fields
- User formulas
- Reports and reports menu
- Inquiries
- Macros
- Attachments

You can select which companies you want to copy, giving you the flexibility to include all companies or only selected companies.

Tip: Click [Help] in any of the server migration windows for more information.

Things to know before you begin

- You must first install Sage 300 Construction and Real Estate Accounting version 20 on your new server to access the server migration tool.
- The server migration process copies data from the old server to the new server. Data is not removed from the old server.
- You can migrate data from Sage 300 Construction and Real Estate version 9.6 or later.
- You must have administrative rights to the new server and a minimum of read permission to the old server.
- Your new server must have enough disk space to hold the information from the old server.
- If you added reports to the **Report** menus on your old server using mapped drives, create identical drive mapping for reports on your new server before performing the migration.

- Macros that you want to migrate must be in the **Company** folder on the old server prior to migration. You can copy the macros to the **Company** folder, if necessary. If the macros are not in the **Company** folder, you will need to recreate them on the new server after the migration.
- If you are using File Locations (**File>Company Settings>File Locations**) and the path to the file points to the old server location, you should update this path prior to upgrading your data. During a data upgrade, the program follows the path selected in File Locations to upgrade the data file. If that path is the old location, data files in the old location/server are upgraded instead of data in the new location/server.
- We recommend that you perform a test migration, then validate that all of your data, reports, macros and settings work properly on the new server. You can then stop work on the old server and perform the migration again with the latest files.
- The migration will overwrite companies and security on the new server. You should perform the migration before setting up companies and security (for example, before setting up a new job).
- Most of the migration tasks are performed in a few minutes. However, moving attachments can take more time. If you have many attachments, consider transferring them during non-business hours.

After you migrate your server, you must uninstall and then reinstall Sage 300 Construction and Real Estate on all workstations so they interact with the data on the new server instead of the old.

Recommended procedure

Preparing your new server

If you have not already installed and run Sage 300 Construction and Real Estate, do so now.

1. Install Sage 300 Construction and Real Estate Accounting version 20 on your new server.
2. Click the Start icon, select the **Sage Administration** program group, and select **Sage System Verifier**.
3. In the **Sage System Verifier** window, click **[Scan System]**.
4. When the system verification has completed, click **[Close]**.
5. Set up administrative rights on the new server.
6. Set up existing or new printers on your new server. The TS PDF printer cannot be the only printer on your system and cannot be selected as the default.

Migrating your server

1. On the new server, open your program files folder and `\Timberline Office\Shared`, and then double-click `Sage.STO.ServerMigrator.exe`.
2. In the **Server Migration Tool** window for **Old server location**, type the path or browse to the location where Sage 300 Construction and Real Estate installed on your old server.
For example: `\\oldservername\Timberline Office\9.5`
3. Verify or change the server migration log path (on the new server) for **Log file path**. For example: `\\newservername\Timberline Office\9.5\Accounting\Migration\ServerMigrationLog 1.pdf`
4. Click [**Validate**] to perform a test of the files to be transferred.
5. When you see the **Validation complete** message and the validation is successful, click [**Migrate**].
6. When you see the **Migration complete** message, view the server migration log (that you set up in Step 3) to ensure that all files were transferred correctly.

Migrating your data folders

1. On the new server, open your program files folder and `\Timberline Office\Shared`, and then double-click `Sage.STO.ServerDataMigrator.exe`.
2. In the **Server Data Location** window, verify or change the data folder migration log name and path (on the new server) for **Log file path**. For example: `\\newservername\Timberline Office\9.5\Accounting\Migration\ServerDataMigrationLog 1.pdf`
3. Select the companies whose data you want to copy.
4. Click [**Validate**] to perform a test of the files to be copied.
5. When you see the **Validation complete** message and the validation is successful, click [**Migrate data folders**].
6. When you see the **Migration complete** message, view the server data migration log (that you set up in Step 2) to ensure that all files were copied correctly.

Migrating your macros

Any macros that you have must be in the Company folder on the old server prior to migration. You can copy the macros to the Company folder, if necessary. If the macros are not in the Company folder, you will need to recreate them on the new server after the migration.

1. If the **Server Data Location** window is not already open on the new server, open your program files folder and `\Timberline Office\Shared`, and then double-click `Sage.STO.ServerDataMigrator.exe`.
2. In the **Server Data Location** window, verify or change the macro migration log name and path (on the new server) for **Log file path**. For example:
[\\newservername\Timberline Office\9.5\Accounting\Migration\MacroMigration.pdf](#)
3. Select the companies whose macros you want to copy.
4. Click **[Migrate Macros]**.
5. In the **Macro Printer List** window, verify the printers that you want to use are listed. Click **[Change]** if you want to select different printers.
6. Click **[Migrate Macros]**.
7. When you see the **Macro migration complete** message, view the macro migration log (that you set up in Step 2) to ensure that all macros were transferred correctly.

Migrating your attachments

Note: Migrating attachments can take some time. If you have many attachments, you may want to consider migrating them during non-business hours.

1. If the **Server Data Location** window is not already open on the new server, open your program files folder and `\Timberline Office\Shared`, and then double-click `Sage.STO.ServerDataMigrator.exe`.
2. In the **Server Data Location** window, verify or change the attachment migration log name and path (on the new server) for **Log file path**. For example:
[\\newservername\Timberline Office\9.5\Accounting\Migration\AttachmentMigration.pdf](#)
3. Select the companies whose attachments you want to copy.
4. Click **[Migrate attachments]**.
5. In the **Attachment Paths** window, review the table showing the old and new locations for each set of attachments. You can change the new location.
 - a. If you want to change the new attachment path for all rows to the default location on the new server, click **[Use default location]**.

- b. If you want to replace portions of the new paths in specific rows, select the check box in front of the rows that you want to change, click **[Replace selected]**, type the old text (for **Find**), type the new text (for **Replace**), and then click **[OK]**.
- c. If you want to change the new path for one row, either:
 - Click in the **New attachment path** column and type the new path.
 - Click **[Change]**, specify the new path, and then click **[OK]**.
6. When the rows display the desired new attachment paths, click **[Migrate attachments]**.
7. When you see the **Attachment migration complete** message, view the attachment migration log (that you set up in Step 2) to ensure that all attachments were transferred correctly.

Updating your workstations

After you migrate your server, you must uninstall and then reinstall Sage 300 Construction and Real Estate on all workstations so they interact with the data on the new server instead of the old.

1. On the workstation, uninstall the program by opening the **Control Panel**, selecting **Uninstall a program**, right-clicking **Sage 300 Construction and Real Estate** and selecting **Uninstall**.
2. Follow the instructions on [page 14](#) for installing Sage 300 Construction and Real Estate on a workstation.
3. Repeat these steps for every workstation running Sage 300 Construction and Real Estate.

Chapter 4: System Guidance

General information

Review the [hardware and software requirements](#). For details about installing, see "[Chapter 2: Install Sage 300 Construction and Real Estate](#)".

Backups

We strongly recommend that you back up all Sage 300 Construction and Real Estate data files to external media daily.

Consider the following as you develop your backup plan:

- Use Sage System Administrator to back up and restore your data files. This is especially important if you use Sage SQL Replicator. The File Tools backup and restore operations do not back up and restore the SQL data, which may result in data integrity issues.
- Verify that when a folder is included in a backup, the subfolders are also included.
- Schedule the backup during off-peak hours. All users must close Sage 300 Construction and Real Estate before you back up files.
- Always back up your entire Sage 300 Construction and Real Estate dataset. Do not perform incremental backups.
- Back up all data and application files within the Sage folder: *[Drive:]Program Data\Sage*
- Review the backup to be sure all data has been included. Back up all data and files, even if they are outside the default folders.

Tip: To see a list of folders that are outside the current data folder, from the **Applications** pane in Sage Desktop, select **Common Tasks > File > Company Settings > File Locations**.

- Store backup media in a secure location outside your building.
- Test backups by restoring them to test folders. Environmental issues and files in use can affect the integrity of a backup. These tests are important because backup media may have a limited life and backup devices may malfunction.

Caution! When you test a backup, keep the restored data separate from your production data.

Important! Restoring your business data requires advanced knowledge of the Actian Pervasive, Microsoft SQL, and Sage 300 Construction and Real Estate file systems. We strongly recommend you undertake this process with a knowledgeable professional, such as your business partner, certified consultant, or Sage Customer Service representative.

Virus scanning

Do not actively scan Pervasive program files, Sage 300 Construction and Real Estate program files, or Sage 300 Construction and Real Estate data files for viruses during production hours.

Important! Scan these files at a time when they are not in use. For example, schedule a daily virus scan at night.

Actively scanning Pervasive program files, Sage 300 Construction and Real Estate program files, or Sage 300 Construction and Real Estate data files for viruses may cause Sage 300 Construction and Real Estate to run slowly or to close unexpectedly. Typical folders that contain files that you should not scan include:

- Sage 300 Construction and Real Estate program files:
[Drive]:\Program Files\Timberline Office
- Sage 300 Construction and Real Estate data files:
[Drive]:\TSDData
- Pervasive program files:
C:\Program Data\Pervasive Software

Windows User Account Control (UAC)

Sage 300 Construction and Real Estate is designed to work with the Windows User Account Control (UAC) security scheme. With Windows 7, Windows Server 2008 R2, and later, you cannot save a file to a folder to which you do not have read/write permissions assigned. If such an attempt is made, Windows security diverts your data to a copy of the data file or report and associates the copy with your user profile, thereby possibly compromising the integrity of your application. To prevent this, Sage 300 Construction and Real Estate applications present you with an error message if you try to save a file to such a location. See [page 32](#) for more information about moving your data folders for compliance with UAC.

Accounting and Management products

- New installations of Sage 300 Construction and Real Estate on Windows 7, Windows Server 2008 R2, or later operating systems will place data files in the *Drive:\ProgramData\Timberline Office* folder.

- Upgrades to existing installations on Windows 7, Windows Server 2008 R2, or later require you to share the data folders and assign read/write permissions or move the folders to a shared location and assign read/write permission to the shared location.

Note: You can share the data files before installing the upgrade. You can move data folders after completing the upgrade installation. If you move your data files and you use **File Locations (File > Company Settings > File Locations)** to allow other data folders to access the folder's data files, be sure you update the locations using **File Locations** for each affected data folder.

If you install in a client/server environment, note that the WinInst folder and corresponding Install.exe file was moved in 9.5. The path to the WinInst folder is:

[Drive]:\Program Data\Sage\Timberline Office\9.5\Accounting\WinInst\Install.exe

Hidden folders

Some folders may be hidden. To view them, open Windows Explorer, click the **View** tab, and then select the **Hidden items** check box.

NTFS file compression

Do not use NTFS file compression on data or program files for Sage 300 Construction and Real Estate. Using Microsoft Windows NTFS file system to compress files causes Sage 300 Construction and Real Estate to run very slowly.

Terminal services

For terminal services:

- Configure terminal services to maintain an operator's session during connection breaks. This prevents a program from closing unexpectedly and helps preserve data integrity. To set up this aspect of Windows Terminal Services, use the Terminal Services Configuration program. For more information about using terminal services, see ["Terminal services" on page 34](#)
- Do not use fast user switching. Sage 300 Construction and Real Estate does not support fast user switching on Windows 7 or later.

Pervasive database engines

The Pervasive database engines provide access to Sage 300 Construction and Real Estate data files. To use Sage 300 Construction and Real Estate, users must have full control of the Pervasive installation folder and subfolders.

- Do not use the Subst or Netdrv commands in windows. These commands may cause Pervasive status code 11 or 116 errors.
- Do not exclusively use the NetBEUI network protocol. This protocol is not supported. If NetBEUI is your only network protocol, you must install TCP/IP before you install Sage 300 Construction and Real Estate. If no applications require the NetBEUI protocol, consult with a network technician about removing it.

Firewalls and Sage Service Host

Beginning with Sage 300 Construction and Real Estate version 9.5, the Sage Service Host uses TCP instead of named pipes for inter-machine communication. Sage Service Host is a Windows service that runs on Sage 300 Construction and Real Estate servers and workstations. This service facilitates communication between Sage 300 Construction and Real Estate applications.

If you use Windows Firewall, you do not need to take any action, as Windows Firewall is configured during installation to work correctly with Sage 300 Construction and Real Estate. However, if you use a non-Windows firewall, you may need to manually adjust some settings to ensure proper performance.

Setting up Sage Service Host on firewalls other than Windows Firewall

If you use a firewall other than Windows Firewall, you may be prompted during installation that the Sage Service Host is attempting to access the internet or is attempting to act as a server. The Sage Service Host must be given permission to perform these types of activities.

If you need to manually set up this exception, make the following changes on every machine where Sage 300 Construction and Real Estate is installed:

- Set up your firewall to allow an exception for the Sage Service Host. Refer to the Windows Firewall instructions below and your firewall documentation for specific instructions.
- If you have other software that uses TCP ports 8101 and 8102, you may need to manually configure either the other software or the Sage Service Host to use different port numbers.

The Sage Service Host port numbers can be configured in the `Sage.STO.9.5.xml` file. This file is located in `Documents and Settings\All Users\Application Data\Sage\LS1\ServiceHost\1.0\Configuration`. If you need to change the default port numbers for Sage Service Host, this file should be changed on every machine on the network where Sage 300 Construction and Real Estate is being installed, including the accounting server.

Setting up Sage Service Host on a Windows Firewall

Windows Firewall is automatically configured during installation to work correctly with Sage Service Host. However, if you need to manually set up Sage Service Host to communicate on a Windows Firewall, do the following:

- Open Windows Firewall and select the **Exceptions** tab. If Sage Service Host is not on the list, you can add it by selecting **[Add Program]**, and then browsing to the following path: *[Drive]:\Program Files\Common Files\Sage\LS1\ServiceHost\1.0\Sage.LS1.ServiceHost.exe*.
- By default, the exception is set for any computer on the network. You can adjust this setting by selecting **[Change Scope]**.
- If you have other software that uses TCP ports 8101 and 8102, you may need to manually configure either the other software or the Sage Service Host to use different port numbers.

The Sage Service Host port numbers can be configured in the **Sage.STO.9.5.xml** file. This file is located in **Documents and Settings\All Users\Application Data\Sage\LS1\ServiceHost\1.0\Configuration**. If you need to change the default port numbers for Sage Service Host, this file should be changed on every computer on the network where Sage 300 Construction and Real Estate is being installed, including the accounting server.

Troubleshooting

This section contains answers to the following questions:

- ["If Sage 300 Construction and Real Estate stops responding during the workstation installation, how can I resolve this?"](#)
- ["How do I move Accounting and Management products from one server to another?"](#)
- ["Why am I getting an error message when I try to save data or reports?" on page 32](#)
- ["I upgraded from Sage 300 Construction and Real Estate 9.4. Do I need to move my data folders or reports to comply with User Account Control \(UAC\) requirements?" on page 32](#)
- ["Which Accounting and Management files were moved for Sage 300 Construction and Real Estate?" on page 33](#)

When you need more assistance, visit [Sage Customer Resources](#) for links to Sage Knowledgebase, Sage City, the [Product Documents website](#), Live Chat, Online Case submission, and other resources.

If Sage 300 Construction and Real Estate stops responding during the workstation installation, how can I resolve this?

Try the following:

- Turn off antivirus software and unnecessary programs before you install.
- Verify that you have full user rights to the parent folder of the application data folders containing files needed so that Sage 300 Construction and Real Estate can run correctly.

For Accounting and Management applications, the default location is:

[Drive]:\Program Data\Sage.

How do I move Accounting and Management products from one server to another?

Use the server migration tool found in Sage 300 Construction and Real Estate. For detailed instructions, see ["Chapter 3: Server Migration" on page 21](#).

Caution! Incorrectly moving Sage 300 Construction and Real Estate data folders may severely damage your system. Sage Software is not responsible for damage to your data caused by incorrectly moving your Sage 300 Construction and Real Estate data folders. Before making changes to your Sage 300 Construction and Real Estate data, contact your system administrator for assistance and make a backup copy of all valued data.

Note: Versions of Sage 300 Construction and Real Estate prior to 9.5 will not install correctly on machines with a Windows 2007, Microsoft Server 2008 R2, or later operating system.

Why am I getting an error message when I try to save data or reports?

You cannot save data or report files to a location for which you do not have read/write permissions. This is to comply with Windows security requirements. To save the file, you must first have read/write permissions assigned or else save the file to another location to which you already have these permissions.

I upgraded from Sage 300 Construction and Real Estate 9.4. Do I need to move my data folders or reports to comply with User Account Control (UAC) requirements?

For Accounting & Management applications, you do not need to move folders to comply with UAC requirements unless you also install the Windows Server 2008 R2 operating system.

If you install on Windows Server 2008 R2 or Windows 7, you do not need to move folders if they are already shared. If your data and report folders are not already shared, you will need to share the location or move them to a shared location and then update their location at **File > Open Company > [Specify Folders]**. Refer to "[Which Accounting and Management files were moved for Sage 300 Construction and Real Estate?](#)" (the next question) for information on folder locations.

The Sage 300 Construction and Real Estate folder continues to exist under Program Files but contains only the essential binary files required for the applications to operate.

In Purchasing (PO) and Inventory (IV), if you originally set up your company (data) folder inside the Program Files folder, your data will not be accessible after you upgrade.

To prevent this issue, you should move your data from the Program Files folder to a different location prior to upgrading, as described in "[Windows User Account Control \(UAC\) " on page 27](#)."

Opening Purchasing or Inventory from a workstation before opening on a server will cause the DSN to be set incorrectly. After Purchasing or Inventory has been opened at the server, the applications can be opened at any workstation.

This issue is not specific to UAC but the solution to resolve it is the same.

After installation, verify your application operates correctly and you have access to your data, then remove the original data files from the Program Files folder.

Which Accounting and Management files were moved for Sage 300 Construction and Real Estate?

Many Sage 300 Construction and Real Estate folders were moved from the Program Files folder to a shared location beginning with the 9.5 release. A list of the affected Accounting & Management application folders is provided in the following table.

Note: Some folders may be hidden. To view them, open Windows Explorer, click the **View** tab, and then select the **Hidden items** check box.

Original and new locations

File/Original Location	New Location (Windows Server 2008 R2)
[Program Files]\Timberline Office\Accounting\Formula	ProgramData\Sage\TimberlineOffice\9.5\Accounting\Formula
[Program Files]\Timberline Office\Accounting\Inquiry	ProgramData\Sage\TimberlineOffice\9.5\Accounting\Inquiry
[Program Files]\Timberline Office\Accounting\Report	ProgramData\Sage\TimberlineOffice\9.5\Accounting\Report
[Program Files]\Timberline Office\Accounting\Template	ProgramData\Sage\TimberlineOffice\9.5\Accounting\Template
[Program Files]\Timberline Office\Accounting\ [Sample Data Folders]	ProgramData\Sage\TimberlineOffice\Data\[Sample Data Folders]
[Program Files]\Timberline Office\Accounting\Wininst	ProgramData\Sage\TimberlineOffice\9.5\Accounting\Wininst
[Program Files]\Timberline Office\Documents	ProgramData\Sage\TimberlineOffice\9.5\Documents

Terminal services

Windows Terminal Services is a component of Microsoft Windows Server. Terminal Services consists of a terminal server and one or more remote workstations. It enables users to access programs or data stored on a remote computer by a phone, network, Internet connection, or other communication methods.

Remote network connections do not provide adequate bandwidth to run Sage 300 Construction and Real Estate products without the use of Terminal Services. Terminal Services provides remote users with a stable and well-performing experience.

Important! If you use Citrix MetaFrame, you must install it before you install Sage 300 Construction and Real Estate.

You can install Sage 300 Construction and Real Estate applications on your terminal server (as described on [page 13](#)), or you can use Terminal Services in conjunction with a server for Sage 300 Construction and Real Estate.

Note: Sage does not support the administrative configuration of Terminal Services with Sage 300 Construction and Real Estate products because it is a partially configured version of Terminal Services.

Printers

General guidelines

Sage 300 Construction and Real Estate supports the use of business-class laser printers.

We no longer support the use of dot matrix printers for printing 1099 and W-2 forms.

Instead, use a laser printer. Some reports that use the Crystal Reports® format require a laser printer. For example, you must use a laser printer to generate cost and contract invoices (AIA documents) in Billing, Service Management, Purchasing, and Inventory.

You should use inkjet or bubble jet printers only as backup printers; we do not test inkjet or bubble jet printers.

Printer driver

We recommend that you use a PCL 5e printer driver.

Most new printers also support a PCL 6 printer driver. A PCL 6 driver supports higher resolutions than a PCL 5e driver (1200 dots per inch versus 600 dots per inch). However, because of its higher resolution (and, thus, greater memory needs), PCL-6-based printing uses more toner, is slower, and is sometimes unstable.

Many printers come with both PCL 5e drivers and PCL 6 drivers. If your printer does not come with a PCL 5e driver, your printer manufacturer probably offers one for free online.

Try using the PCL 5e driver first. Switch to a PCL 6 driver only if your printer does not function properly with a PCL 5e driver.

Margins

The following margins work with most laser printers.

Recommended margins

Products	Top margin	Bottom margin	Left margin	Right margin
Accounting and Management products	0.25 inches	0.5 inches	0.25 inches	0.5 inches

Installing, moving, or removing Sage 300 Construction and Real Estate products

Sage 300 Construction and Real Estate uses Microsoft Installer (MSI) for the installation, repair, modification, and removal of Accounting and Management Products.

Installation

The MSI installation occurs automatically when you install Accounting and Management Products. Use the Microsoft® Event Viewer to review the final status of the installation. You can find the **Event Viewer** in the **Control Panel > Administrative Tools** folder. For information about installing, see ["Chapter 2: Install Sage 300 Construction and Real Estate" on page 9](#).

Auto-repair feature

This feature occurs automatically when you start an application and does not require any action or response. MSI tracks important groupings of files that are necessary for an application to run. If an important component is missing, MSI restores these files from the original installation source.

If MSI detects missing components, you may notice a brief delay of approximately two minutes while MSI validates them. In a Sage 300 Construction and Real Estate server configuration, you will be prompted for the installation DVD unless the installation source was copied and installed from the hard drive. On a workstation running Sage 300 Construction and Real Estate, the utility retrieves the missing files from the shared Sage 300 Construction and Real Estate server if a valid network connection exists.

Use the Microsoft Event Viewer to review the changes made to the installation. You can find the **Event Viewer** in the **Control Panel > Administrative Tools** folder.

Modify option

Use this option to add new programs or change program uses. This option is available when you reinstall a currently installed version of Accounting and Management Products on the server.

This utility proceeds through the traditional installation routine with the exception that you cannot change your registration name or client number.

To start the utility, begin the installation process by double-clicking **Install.exe**. In the **Accounting Server - InstallShield Wizard** window, select **Modify**.

Remove utility

Use the **Remove** utility to permanently remove Sage 300 Construction and Real Estate products from a server or workstation. For additional information, see "[Removing Accounting and Management products entirely](#)" (the next section)

This utility removes application files and application registry folders which are created during the application installation process. It does not necessarily return the server or workstation to its original state. Files and registry values modified or created during the use of Accounting and Management products will still exist (for example, `\HKEY_CURRENT_USER\Software\Timberline`).

Removing Accounting and Management products entirely

A complete removal of the Accounting and Management Products includes running the uninstall program first, then manually deleting the Program folder for Sage 300 Construction and Real Estate, manually deleting the application data folder for Sage 300 Construction and Real Estate, manually deleting the Current User registry keys for Sage 300 Construction and Real Estate, and uninstalling any third-party prerequisite products. If you decide to reinstall after doing a complete removal of Accounting and Management Products, you must restore all Accounting and Management Products folders and files from a backup and then reinstall the Accounting and Management Products.

Summary of removal steps

1. Back up the Sage 300 Construction and Real Estate program folder and all company data. Confirm that the backup was successful before continuing.
2. Remove Sage 300 Construction and Real Estate using the Remove utility. To start the utility, open the Windows **Add or Remove Programs** feature, select **Timberline Accounting Server** or **Timberline Accounting Client**, and then click **[Remove]**.
3. Use Windows Explorer to delete the Sage 300 Construction and Real Estate folder (typically installed at `X:\Program Files\Timberline Office`).
4. Use Windows Explorer to delete the Sage application data folder. This is typically installed at `[Drive]:\Program Data\Sage`.
5. (Optional) Use the Microsoft Registry Editor to delete the registry key `\HKEY_CURRENT_USER\Software\Timberline`.
6. Use Windows **Add or Remove Programs** to remove Pervasive.SQL Server from the Sage 300 Construction and Real Estate Server.
7. Use Windows **Add or Remove Programs** to remove Pervasive.SQL Workgroup from Sage 300 Construction and Real Estate workstations.

Chapter 5: Security

Security overview

If you have many people working in your office, you may not want each one to have access to all the features of the software. For instance, you may not want all staff members to be able to print checks or to print reports that include sensitive data.

You can use the security function in Sage 300 Construction and Real Estate to restrict access to various areas of the software.

Sage 300 Construction and Real Estate security is set up through the Security Administration tool in Sage Desktop (by selecting **Options > Security Administration**).

User types

The Security Administration tool for Sage 300 Construction and Real Estate includes three types of users: security administrators, application administrators, and Sage 300 Construction and Real Estate users.

- **Security administrators** set up and maintain accounts for users. For a complete list of tasks that a security administrator can perform, see ["Setting up security " on page 49](#)
- **Application administrators** can restrict access to software features and data that each user has permission to access. They define roles and assign users to the roles. For a complete list of tasks that an application administrator can perform, see ["Setting up security " on page 49](#)
- **Users** have task permissions defined by the application administrator. These permissions can range from none to almost as extensive as an application administrator. Users can have the same level of file and record access as an application administrator. Users can have access to one or more companies.
- A **role** represents a group of users who have the same security requirements. A role has its own user name and its own task, record, file, and company permissions.

The use of roles often saves setup time, because the application administrator can assign permissions to new users simply by assigning them to an existing role. The use of roles can also clarify your company's security plan because the application administrator can create roles that correspond to the company's organizational structure. For example, the application administrator can create roles for Accounts Payable clerks, Payroll clerks, property managers, and project managers.

Types of security

- **Task security** restricts access to menu items and certain tasks. For example, you can control who can set up vendors in Accounts Payable.

With task security, an application administrator can restrict access to menu items and certain tasks found within windows. For example, task security can control access to the **Setup > Vendors** menu item in Accounts Payable (AP.) Also, task security can control whether you can approve a change order in the **Item Status** field of the **Enter Change Order Items - Scope of Change** window in Job Cost.

In the following example of task security, an application administrator assigns task permissions based on the tasks that the employees need to perform.

Example of task security setup

Role	Permission to AP Settings?	Permission to Post Invoices?	Permission to AP Reports?
CONTROL (controller)	Yes	Yes	Yes
APCLERK (AP clerk)		Yes	Yes
PROJMGR (project manager)			Yes

Note: If employees are going to run reports with SQL data, they need to have read permissions to the relevant SQL tables. See the tables in **SQL Data Access > Read Access** in the **Tasks** tree.

- **File security** blocks all access to a file and restricts ODBC access. For example, you can restrict access to sensitive payroll files.

File security allows application administrators to block all access to a file. This includes access through open database connectivity and through all related tasks, reports, and inquiries. This differs from task security, which allows application administrators to block tasks selectively and does not allow them to control ODBC access.

In the following example of file security, a company has two Payroll (PR) master files. One is for the executive staff and the other is for the field staff. In order to keep the executive payroll information private, the company creates a separate role for users that handle the executive PR master file.

Example of file security setup

Role	Users	Access to Exec PR Master File?	Access to Field PR Master File?
EXECPR (executive payroll)	Controller and a senior payroll clerk	Yes, for all users assigned to this role	
FIELDPR (field payroll)	Controller and all payroll clerks		Yes, for all users assigned to this role

In this example, the senior payroll clerk is a member of both the EXECPR and FIELDPR roles. A user can belong to more than one role.

- **Record security** controls access to certain records so that reports and inquiries display only the records to which the user has security access. For example, you can restrict reporting and inquiries on jobs or bank accounts.
- **Company security** restricts access to which companies a user can see. Application administrators can grant a user access to specific companies. Security administrators and application administrators have access to all companies.
- **Application security** prevents unauthorized users from accessing Sage 300 Construction and Real Estate. When application administrators turn on application security, all users must enter a user name and password to access the software. They can restrict access to software features and data that each user has permission to access. Security Administration offers four types of application security: task, file, record, and company.

Application security also lets application administrators hide applications from users and roles. When an application administrator uses the Security Administration tool to deny a user or role access to all tasks in an application and sets secured menu items to not display, users cannot see the application in Sage Desktop.

Log settings

By default, logging is turned on. Security administrators can turn off Application, Security, or Setup logging.

The Audit Setup, Field Report, and System logs are required. You cannot turn them off.

The Posting Recap and Task Summary logs are for future use. No logs are created at this time.

Types of logs

Required log?	Log type	Description
No	Application	Logs the start and end of Accounting applications and tasks.
Yes	Audit Setup	Logs changes when the audit setup activity is selected in an Accounting application.
Yes	Field Report	Logs changes to finalized field reports in Project Management.
Yes	Posting Recap	Logs recaps created while posting entries in Accounting. (Future)
No	Security	Logs events in the Security Administration tool.
No	Setup	Logs changes to setup information in Accounting.
Yes	System	Logs Accounting system events.
Yes	Task Summary	Logs summaries created during an Accounting task. (Future)

Applications with Security Administration

The following applications feature Security Administration:

- Accounts Payable
- Accounts Receivable
- Address Book
- Billing
- Cash Management
- Contacts
- Equipment Cost
- Financial Statements
- General Ledger
- Information Assistant
- Inquiry Designer
- Job Cost
- Payroll
- Project Management
- Property Management
- Remote Time
- Report Designer

The following applications have limited Security Administration:

- **Purchasing and Inventory** are affected by task security. Application administrators cannot set up Security Administration for these applications but you must type your user name and password if Security Administration is on. Purchasing and Inventory also offer their own form of task security. For more information, see Help in these applications.
- **Service Management** uses task security. Application administrators can create users and roles and set up task security for Service Management just as you would in the bulleted list of applications above.

Record security

With record security, you can control access to four records:

- Cash Management bank account
- General Ledger prefix
- Job Cost and Project Management job
- Property Management property

In addition, you can select or clear the **Give all users access to records with blank security IDs** check box. Select the box if you want records with blank security IDs to be accessible to all users. Clear the box if you want only application administrators to access these records. For more information, see ["Set up record security" on page 54](#).

When record security is active, reports and inquiries display only the records to which the user has access. For more information, see ["Effect of record security on reports" on page 43](#) and ["Effect of record security on inquiries" on page 46](#).

Record security also affects Job Cost, Contracts, and Project Management tasks. In these applications, you can type or select only jobs to which you have access. For more information, see ["Effect of record security on tasks" on page 48](#).

Example—using record security

In the following example, a property manager, Accounts Payable (AP) clerk, and Property Management (PM) clerk work as a team on certain properties. Another project manager, AP clerk, and PM clerk work as a team on different properties.

With the following record security setup, these employees have access to only their team's properties.

Example of record security setup>

Role	Users	Access to TEAM1 Properties?	Access to TEAM2 Properties?
TEAM1	Proj Mgr 1 AP Clerk 1 JC Clerk 1	Yes, for all TEAM1 users assigned to this role	
TEAM2	Proj Mgr 2 AP Clerk 2 JC Clerk 2		Yes, for all TEAM2 users assigned to this role

Effect of record security on reports

When record security is active on a report, the report displays only the records that are accessible to the current user. Moreover, totals on the report adjust to reflect only the accessible records.

For example, in Job Cost, a **Cost Entries by Job** report (simplified for this example) would look like the following to an application administrator:

Example report view by application administrator

Job	Cost Code	Category	Amount
01-002	3-110	L (labor)	100.00
01-003	2-520	M (material)	350.00
		Report Total	450.00

To a user with permissions to only job 01-002, the same report would look like the following:

Example report view by user with only access to job 01-002

Job	Cost Code	Category	Amount
01-002	3-110	L (labor)	100.00
		Report Total	100.00

Note: Some reports list information from several different records on the same line. If you lack access rights to the report’s driving record (the primary record upon which the report is based), the report skips the entire line. If you lack access rights to one of the non-driving records, the report skips only the information from that record.

Report record security settings

Each report has security settings that control whether record security can affect the report. If you own Report Designer, you can modify these settings (**Report Designer >Design Security**). If you do not own Report Designer, an application administrator can control record security on reports only by turning on or turning off record security. (For more information, see ["Turn off record security" on page 60.](#))

Sage 300 Construction and Real Estate defines the security settings on stock reports based on whether (a) the report contains sensitive information or (b) the report's content should be tailored to the user. For example, Sage 300 Construction and Real Estate allows the bank record on the Cash Management Check Register report to be secured so that, if record security is on, you can generate reports that list only the entries for the banks to which the current user has access.

In some cases, for practical reasons, Sage 300 Construction and Real Estate does not allow record security to affect a report. For example, in Cash Management, you can type any bank in data entry tasks (bank account record security currently only affects reports and inquiries). Therefore, Sage 300 Construction and Real Estate does not secure the bank account record on the Cash Management Journal report.

Indicators that record security affects a report

Record security always affects a Crystal report, which has a "(CR)" in its name, unless the report uses a special formula to disable record security. To check for this formula, you must open the report in Crystal Decisions Crystal Reports. (You cannot use a Sage 300 Construction and Real Estate application to check for this formula.)

Note: If you create reports in Report Designer, then you can secure those reports with Security Administration. You must be an application administrator and own Report Designer to modify security settings on new report designs.

If you do not own Report Designer: the report's cover page indicates whether record security is on. You have the following options regarding cover pages:

- If you want to print a cover page every time you print any report, select **Tools > Options**. On the **Reports** tab, select **Attach to report**.
- If you want to print a cover page only some of the time, you must choose to print a cover page at the time of printing. From an applications **Tools** menu, select the report and from the **Print Selection** window, click [**Page Setup**]. Then select **Attach to report**.

If you own Report Designer: in addition to the report cover page (see above), record security information can appear in three additional areas.

- A report's design information (**Tools > Design Info**) lists the report's record security settings.
- A report's page heading (defined in **File > Page Setup > Page Headings**) indicates whether record security is on.
- If you open a report created in Report Designer 7.x or earlier and the report contains secured records, you will receive an on-screen message that lists the secure records on that report. Once you save the report, you will no longer receive this message.

Effect of an upgrade on reports

When you upgrade from Sage 300 Construction and Real Estate Accounting products 7.x or earlier to Sage 300 Construction and Real Estate 8.0 or later, the following changes take place with reports.

Stock reports

New stock reports replace your existing stock reports. The new reports have settings that control whether record security can affect the reports. However, these settings take effect only if you activate record security.

Custom reports

If you open a custom report created in Report Designer 7.x or earlier, the software displays a message that lists the secure records on that report. Once you save the report, you no longer receive this message.

The software also modifies the report's security settings. It changes these settings to allow record security, if active, to affect all securable records on the report.

You must use Report Designer to change a report's settings. If you do not own Report Designer, the only way to control record security on a report is for an application administrator to turn on or turn off record security.

Effect of record security on inquiries

When record security for an inquiry is on, the inquiry displays only records that are accessible to the current user.

For example, in Cash Management, a Bank List inquiry would look like the following to an application administrator:

Example inquiry by application administrator

Bank Account	Description	Account Number	Register Balance
First	First Bank	042134526	56,650.97
Liberty	Liberty S&L	874613754	91,450.44

To a user with permissions to only First Bank, the same inquiry would look like the following:

Example inquiry by user with only access to First Bank

Bank Account	Description	Account Number	Register Balance
First	First Bank	042134526	56,650.97

Note: Some inquiries list information from several different records on the same line. If you lack access rights to the inquiry's driving record (the primary record upon which the inquiry is based), the inquiry skips the entire line. If you lack access rights to one of the non-driving records, the inquiry skips only the information from that record.

Inquiry record security settings

Each inquiry has record security settings that control whether record security can affect the inquiry. These settings take effect in the following scenarios:

- New installations of Sage 300 Construction and Real Estate 8.0 or later.
- Subsequent upgrades of a new 8.0 or later installation.

If you upgrade from Sage 300 Construction and Real Estate Accounting and Management products 7.x or earlier to Sage 300 Construction and Real Estate 8.0 or later, these settings do not take effect.

Instead, record security automatically affects your inquiries if it is on. For more information, see ["Effect of an upgrade on inquiries"](#) (the next section).

Sage 300 Construction and Real Estate selects inquiry record security settings based on whether the inquiry contains sensitive information or whether its information should be tailored to the user. For example, Sage 300 Construction and Real Estate allows the bank record on the Cash Management Bank Register inquiry to be secured so that, if record security is on, your inquiry displays entries for only the banks to which you have access.

If you own Inquiry Designer, you can modify inquiry security settings. For more information, see ["Change design security on an inquiry" on page 64](#).

If you do not own Inquiry Designer, application administrators can control record security on inquiries only by turning on or turning off record security. For more information, see ["Turn off record security" on page 60](#).

Indicators that record security affects an inquiry

A button with a lock on it appears in the upper right corner of the inquiry. If you click this button, a Record Security window appears that lists which records are secured on the inquiry.

Note: In this window, an application administrator can select or clear records to secure. However, the selections affect only the current user's session. Therefore, selections are inconsequential because an application administrator already has permission to view all records.

Effect of an upgrade on inquiries

If your Sage 300 Construction and Real Estate Accounting products installation started with 7.x or earlier, record security affects your stock and custom inquiries to the extent that it is on. (Installations that started with 8.0 or later are different; see the next section). For example, if record security is on for the Cash Management bank account record and the Job Cost and Project Management job records, these records are automatically secured on the inquiry. If record security is on for only the Cash Management bank account record, only this record is secured on the inquiry.

If you own Inquiry Designer, you can specify settings on each inquiry that control whether record security affects the inquiry.

[Difference between upgrades and new installations](#)

New installations of Sage 300 Construction and Real Estate (and subsequent upgrades) use Sage 300 Construction and Real Estate's predefined inquiry record security settings. These settings control whether record security can affect an inquiry. For example, if an inquiry's settings do not allow Cash Management bank account record security, this record is not secured on the inquiry (even if record security is on). For an upgrade, record security automatically affects the bank account record because the inquiry does not use the predefined record security settings.

Effect of record security on tasks

Record security can restrict access to the job record in certain Job Cost (JC), Contracts (CN), and Project Management (PJ) tasks. When record security is turned on for jobs, you cannot view a job in a list or type a job unless you have security access for that job. For example, in the **PJ Job Setup** window (**PJ > Setup > Jobs**), when you click **[Find]** to list jobs that have been previously set up, you see only jobs to which you have access.

In addition, you can select or clear the **Give all users access to records with blank security IDs** check box. Select the box if you want records with blank security IDs to be accessible to all users. Clear the box if you want only application administrators to access these records. For more information, see ["Set up record security" on page 54](#).

Job record security affects the following tasks:

Contracts

- **Edit > Link**
- **Edit > Add/Edit JC CO link**
- **Edit > JC CO Item Link Details**

Job Cost

- **Setup > Jobs**
- **Tasks > Enter Estimates**
- **Tasks > Change Orders**
- **Tasks > Commitments**
- **Tasks > Commitment Change Orders**
- **Tasks > Enter Misc Worksheets**

Project Management

- All tasks that involve the job record (for example, job setup and document creation).

Setting up security

This section contains the tasks that security administrators and application administrators need to perform to set up security. Some tasks can be performed by either administrator role. Other tasks must be performed by a specific administrator role. The best practice is for the security administrator to perform steps 1 through 8 and for the application administrator to perform steps 9 through 13. Steps 6, 12, and 13 are optional.

Tasks for security or application administrators

Whether you can perform this task if you have this role:	Security Administrator	Application Administrator
"Turn on security"	Yes	No
"Add a security administrator"	Yes	No
"Add an application administrator"	Yes	No
"Log on"	Yes	No
"Restart Sage 300 Construction and Real Estate"	Yes	No
"Turn off logging" (optional)	Yes	No
"Add roles"	Yes	No
"Add users"	Yes	No
"Add users to roles"	Yes	Yes
"Add tasks to roles"	Limited	Yes
"Grant users access to companies"	No	Yes
"Restrict access to files" (optional)	No	Yes
"Set up record security" (optional)	No	Yes

Turn on security

To prevent unauthorized users from accessing your software, we recommend that you turn on application security. When you turn on application security, all users must enter a user name and password to access the software. Application administrators can restrict access to software features and data that each user has permission to access.

Note: You must be a security administrator to turn on security.

1. From the Sage Desktop, select **Options > Security Administration**.
2. On the **Security Administration** tab, click **Security Settings**.
3. Select the **Turn on application security** check box.
4. Click **[OK]**.

Add a security administrator

When you turn on security, you must add a security administrator. Security administrators set up and maintain accounts for users. For back-up purposes, we recommend adding at least two security administrators.

To add or change a security administrator later, go to **Security Administration > User Setup**. You must be a security administrator to add another security administrator.

Add an application administrator

When you turn on security, you must add an application administrator. Application administrators define roles and assign users to the roles. For back-up purposes, we recommend adding at least two application administrators.

To add or change an application administrator later, go to **Security Administration > User Setup**.

Log on

1. From the **Log On** window, type your **User name**.
2. Type your **Password**.
3. Click **[Log On]**.

Restart Sage 300 Construction and Real Estate

For the security settings to take effect, all users must restart Sage 300 Construction and Real Estate.

1. When the **Restart** message appears, click [OK].
2. Close Sage 300 Construction and Real Estate (**File > Exit**), and then reopen it.
3. Request all users to restart Sage 300 Construction and Real Estate.

Turn off logging

This task is optional.

Security administrators can only turn off **Application**, **Security**, or **Setup** logging. The **Audit Setup**, **Field Report**, and **System** logs are required; you cannot turn them off. The **Posting Recap** and **Task Summary** logs are for future use; no logs are created.

1. From the Sage Desktop, select **Options > Security Administration**.
2. On the **Security Administration** tab, click **Log Settings**.
3. In the **On** column, clear the types of logs that you want to turn off.
4. Click [OK].

Add roles

1. From the Sage Desktop, select **Options > Security Administration**.
2. On the **Security Administration** tab, click **Role Setup**.
3. On the **Roles** pane, click [Add].
4. On the **Role Details** pane, type the **Name** of the role (for example, AP Clerk.)
5. (Optional) Type the **Description** for this role.
6. (Optional) Select the tasks for this role. For more information, see ["Add tasks to roles" on page 53](#).
7. (Optional) Select the users for this role. For more information, see ["Add users to roles" on page 52](#).
8. Click [Save Changes].

Add users

1. From the Sage Desktop, select **Options > Security Administration**.
2. On the **Security Administration** tab, click **User Setup**.
3. On the **Users** pane, click **[Add]**.
4. On the **User Details** pane, type the **User name**.
5. (Optional) Type the **Full name** and **Windows user** associated with the user name.
6. (Optional) On the **Settings** tab, select the **User Account Settings** and **Password Settings**.
7. Click the **Roles** tab, and then select or add roles for the user.
8. (Optional) Click the **Companies** tab, and then select the companies for the user. For more information, see ["Grant users access to companies" on page 53](#).

Note: You must be an application administrator to grant a user access to companies. If you cannot perform this step, the application administrator must do it before the user can log on to Sage 300 Construction and Real Estate.

9. Click **[Save Changes]**.

Add users to roles

1. From the Sage Desktop, select **Options > Security Administration**.
2. On the **Security Administration** tab, click **User Setup**.
3. On the **Users** pane, select the **User Name**.
4. Click the **Roles** tab, and then select roles for the user.
5. Click **[Save Changes]**.
6. For the change to take effect, the users associated with this role must restart Sage 300 Construction and Real Estate.

Add tasks to roles

Application administrators can add all tasks to roles.

Security administrators can only add the following tasks to a role:

- **Log Viewer** (Tasks > Common Tasks > Tools > Log Viewer)
- **Audit Setup Activity** (Tasks > Common Tasks > Tools > Options > Audit Setup Activity)
- **View System Activity** (Tasks > Common Tasks > Security > View System Activity)
- **Change Audit Setup Fields** (Tasks > Common Tasks > Security > Change Audit Setup Fields)

You cannot change the tasks for the application administrator and security administrator roles.

1. From the Sage Desktop, select **Options > Security Administration**.
2. On the **Security Administration** tab, click **Role Setup**.
3. On the **Roles** pane, select the role that you want to edit.
4. On the **Roles Details** pane, click the **Tasks** tab.
5. In the tasks tree, navigate to the tasks or sub-tasks that you want to add and select the tasks.
6. Click [**Save Changes**].
7. For the change to take effect, the users associated with this role must restart Sage 300 Construction and Real Estate.

Grant users access to companies

You must be an application administrator to grant a user access to companies.

Security administrators and application administrators have access to all companies.

1. From the Sage Desktop, select **Options > Security Administration**.
2. On the **Security Administration** tab, click **Company**.
3. On the **Companies** pane, select the **Company Name** to which you want to add users.
4. On the **Company Security Details** pane, click [**Add**].
5. In the **Company Setup - Add Users** window, select the users.
6. Click [**OK**].
7. Click [**Save Changes**].
8. For the change to take effect, the user associated with this company must restart Sage 300 Construction and Real Estate.

Restrict access to files

This task is optional.

Note: You must be an application administrator to perform this task.

1. From the Sage Desktop, select **Options > Security Administration**.
2. On the **Security Administration** tab, click **Files**.
3. Select the **Company** for which you want to restrict access to files.
4. Select the **Role** that will have access to the corresponding **File Name**.
5. Click **[OK]**.
6. After securing a file, make sure that users can still perform their required tasks.
7. For the file restriction to take effect, all users not assigned to the role must restart Sage 300 Construction and Real Estate.

Set up record security

This task is optional.

Note: You must be an application administrator to perform these tasks.

A. Setting up record security

1. From the Sage Desktop, select **Options > Security Administration**.
2. On the **Security Administration** tab, select **Records**. The **Record Security** window opens.
3. On the **Activation** tab, select **Activate record security**.
4. Select or clear the **Give all users access to records with blank security IDs** check box. Select the box if you want records with blank security IDs to be accessible to all users. Clear the box if you want only application administrators to access these records.
5. In the **Securable record types** box, select the records that you want to secure.

B. Assigning security IDs to records

1. From the Sage Desktop, select **Options > Security Administration**.
2. On the **Security Administration** tab, select **Records**. The **Record Security** window opens.
3. Select the tab for the record to which you want to assign security IDs.
4. In the **Security ID** column, type the ID of a role. You can type only a single ID.
5. Click **[OK]**.

Note: Record tabs in the **Record Security** window are accessible only if you have turned on record security for that record on the **Activation** tab.

Modifying security

This section contains the following topics:

- ["Change password settings"](#) (the next section)
- ["Delete a user" on page 58](#)
- ["Delete a role" on page 58](#)
- ["Copy a user" on page 58](#)
- ["Copy a role" on page 59](#)
- ["Turn off security" on page 59](#)
- ["Remove file restrictions" on page 59](#)
- ["Turn off record security" on page 60](#)
- ["Turn on tasks" on page 60](#)
- ["Turn off tasks" on page 61](#)
- ["Add a role to a task" on page 61](#)
- ["Remove a role from a task" on page 62](#)
- ["Restrict access to files" on page 62](#)
- ["Restrict access to additional files" on page 63](#)
- ["Modify record security permissions" on page 63](#)
- ["Change design security on reports" on page 64](#)
- ["Change design security on an inquiry" on page 64](#)
- ["Review record security settings" on page 65](#)

Change password settings

Note: You must be a security administrator to change the password settings.

When you turn on security, you must set up password strengths and requirements for all users. To change these settings later, go to **Security Administration > Security Settings**.

To change the password settings for a user name, go to **Security Administration > User Setup > Settings**.

For the password settings to take effect, all users must restart Sage 300 Construction and Real Estate.

Set strong passwords

To prevent unauthorized users from accessing your software, we recommend that you require strong passwords. Strong passwords must meet the following conditions for complexity:

- Passwords must be at least eight characters long.
- Passwords must contain at least three of the following four character groups:
 - English uppercase characters (A through Z)
 - English lowercase characters (a through z)
 - Numbers (0 through 9)
 - Special characters (~ ! @ # \$ % ^ & * () - + = { } [] | \ ; < , > . ? /)
- Passwords expire every 90 days.
- You are warned 10 days before your password expires.
- You cannot reuse your three previous passwords.
- You must wait 10 days before changing your password.

When you turn on security, the password settings default to these strong password conditions.

Change password strengths and requirements for all users

Note: You must be a security administrator to perform this task.

1. From the Sage Desktop, select **Options > Security Administration**.
2. On the **Security Administration** tab, click **Security Settings**.
3. If security is turned off, select the **Turn on application security** check box.
4. In the **Password Settings** area, move the slider to select the password strength.
5. If you choose **Custom** (top setting on the slider), set the requirements:

- a. Click **[Custom Password Settings]**.
 - b. In the **Password Settings** window, clear the check boxes that you do not want or change the requirements for the settings.
 - c. Click **[OK]** to save the custom password settings.
6. Click **[OK]** to save the security setting changes.
 7. If you are strengthening the password requirements, the following message appears, "Existing passwords may not meet the new requirements. Do you want users to create new passwords the next time they log on?" Click **[Yes]**.
 8. For the password settings to take effect, all users must restart Sage 300 Construction and Real Estate.

Change password settings for a user name

Note: You must be a security administrator to perform this task.

1. From the Sage Desktop, select **Options > Security Administration**.
2. On the **Security Administration** tab, click **User Setup**.
3. On the **Users** pane, select the **User Name** for which you want to change the password settings.
4. On the **User Details** pane, click the **Settings** tab.
5. Select or clear the **Password Settings** options.
6. If you want to add or change the password for the user:
 - a. Click **[Set Password]**.
 - b. From the **Set Password** window, type the same password in the **Password** and **Confirm password** fields.
 - c. Click **[OK]**.

Note: When you add or change the password, the **User must change password at next log on** option is automatically selected.

7. Click **[Save Changes]**.
8. For the password settings to take effect, the user must restart Sage 300 Construction and Real Estate.

Delete a user

Note: You must be a security administrator to perform this task.

1. From the Sage Desktop, select **Options > Security Administration**.
2. On the **Security Administration** tab, click **User Setup**.
3. On the **Users** pane, select the **User Name** that you want to delete.
4. Click [**Delete**].
5. When you receive a confirmation message, click [**Yes**].

Delete a role

1. From the Sage Desktop, select **Options > Security Administration**.
2. On the **Security Administration** tab, click **Role Setup**.
3. On the **Roles** pane, select the role that you want to delete.
4. Click [**Delete**].
5. When you receive the confirmation message, click [**Yes**].

Copy a user

Use the copy feature when you want a new user to have the same permissions as an existing user.

Note: You must be a security administrator and an application administrator to perform this task.

1. From the Sage Desktop, select **Options > Security Administration**.
2. On the **Security Administration** tab, click **User Setup**.
3. On the **Users** pane, select the **User Name** that you want to copy.
4. Click [**Copy**].
5. On the **User Details** pane, type the **User** name.
6. (Optional) Type the **Full name** and **Windows user** associated with the user name.
7. Click [**Save Changes**].

Copy a role

Use the copy feature when you want a new role to have the same tasks and users as an existing role.

Note: You must be an application administrator to perform this task.

1. From the Sage Desktop, select **Options > Security Administration**.
2. On the **Security Administration** tab, click **Role Setup**.
3. On the **Roles** pane, select the role that you want to copy.
4. Click [**Copy**].
5. On the **Role Details** pane, type the **Name** of the role (for example, AP Clerk.)
6. (Optional) Type the **Description** for this role.
7. Click [**Save Changes**].

Turn off security

Note: You must be a security administrator to turn off application security.

Important! To prevent unauthorized users from accessing your software, we recommend that you leave application security turned on.

1. From the Sage Desktop, select **Options > Security Administration**.
2. On the **Security Administration** tab, click **Security Settings**.
3. Clear the **Turn on application security** check box.
4. Click [**OK**].
5. For the security settings to take effect, all users must restart Sage 300 Construction and Real Estate.

Remove file restrictions

Note: You must be an application administrator to perform this task.

1. From the Sage Desktop, select **Options > Security Administration**.
2. On the **Security Administration** tab, click **Files**.
3. Select the **Company** for which you want to remove a file restriction.
4. In the **Role** column for the corresponding **File Name**, select **(None.)**

5. Click **[OK]**.
6. For the file setting to take effect, all users must restart Sage 300 Construction and Real Estate.

Turn off record security

Note: You must be an application administrator to perform this task.

1. From the Sage Desktop, select **Options > Security Administration**.
2. On the **Security Administration** tab, select **Records**. The **Record Security** window opens.
3. Select the **Activation** tab.
4. If you want to turn off all record security, clear the **Activate record security** check box.
5. If you want to turn off record security for a particular record, clear the check box for that record.
6. Click **[OK]**.

Notes:

- When you turn off record security, the **Security ID** field disappears from related record setup windows. However, Sage 300 Construction and Real Estate security saves your security ID assignments. If you reactivate record security, these settings take effect again.
- In addition to record security settings in Security Administration, each Sage 300 Construction and Real Estate report and inquiry has record security settings.

Turn on tasks

1. From the Sage Desktop, select **Options > Security Administration**.
2. On the **Security Administration** tab, click **Tasks**.
3. On the **Tasks** pane, navigate to the tasks or sub-tasks that you want to turn on.
4. On the **Task Security Details** pane, clear **Turn off task**.
5. Click **[Save Changes]**.
6. For the task settings to take effect, all users must restart Sage 300 Construction and Real Estate.

Turn off tasks

Note: You cannot turn off tasks for the security administrator and application administrator roles.

1. From the Sage Desktop, select **Options > Security Administration**.
2. On the **Security Administration** tab, click **Tasks**.
3. On the **Tasks** pane, navigate to the tasks or sub-tasks that you want to turn off.
4. On the **Task Security Details** pane, select **Turn off task**.
5. If the **Restart Sage 300 Construction and Real Estate** message displays, click **[OK]**.
6. Click **[Save Changes]**.

Add a role to a task

Application administrators can add roles to all tasks.

Security administrators can only add roles to the following tasks:

- **Log Viewer** (Tasks > Common Tasks > Tools > Log Viewer)
- **Audit Setup Activity** (Tasks > Common Tasks > Tools > Options > Audit Setup Activity)
- **View System Activity** (Tasks > Common Tasks > Security > View System Activity)
- **Change Audit Setup Fields** (Tasks > Common Tasks > Security > Change Audit Setup Fields)

To add a role to a task:

1. From the Sage Desktop, select **Options > Security Administration**.
2. On the **Security Administration** tab, click **Tasks**.
3. On the **Tasks** pane, navigate to the task or sub-task to which you want to add a role.
4. On the **Task Security Details** pane, select the roles that you want to add.
5. Click **[Save Changes]**.

Remove a role from a task

Application administrators can remove roles from all tasks.

Security administrators can only remove roles from the following tasks:

- **Log Viewer** (Tasks > Common Tasks > Tools > Log Viewer)
- **Audit Setup Activity** (Tasks > Common Tasks > Tools > Options > Audit Setup Activity)
- **View System Activity** (Tasks > Common Tasks > Security > View System Activity)
- **Change Audit Setup Fields** (Tasks > Common Tasks > Security > Change Audit Setup Fields)

To remove a role from a task:

1. From the Sage Desktop, select **Options > Security Administration**.
2. On the **Security Administration** tab, click **Tasks**.
3. On the **Tasks** pane, navigate to the task or sub-task that you want to remove from a role.
4. On the **Task Security Details** pane, clear the roles.
5. Click [**Save Changes**].

Restrict access to files

Note: You must be an application administrator to perform this task.

1. From the Sage Desktop, select **Options > Security Administration**.
2. On the **Security Administration** tab, click **Files**.
3. Select the **Company** for which you want to restrict access to files.
4. Select the **Role** that will have access to the corresponding **FileName**.
5. Click [**OK**].
6. After securing a file, make sure that users can still perform their required tasks.
7. For the file restriction to take effect, all users not assigned to the role must restart Sage 300 Construction and Real Estate.

Restrict access to additional files

Application administrators will only see additional files if named files are selected for a securable file type (Sage 300 Construction and Real Estate > Common Tasks > File > Company Settings > File Locations > Ask Name.)

Note: You must be an application administrator to perform this task.

To restrict a file that is not in the **File Security Setup** grid:

1. From the Sage Desktop, select **Options > Security Administration**.
2. On the **Security Administration** tab, click **Files**.
3. Select the **Company** for which you want to restrict access to files.
4. Click **[Find Files]**.
5. From the **File Security Setup - Find File** window, select the **File Type**.
6. Click **[OK]**.
7. Browse to the file location and select the **File name** that you want to restrict.
8. Click **[Open]**. The file is added to the grid.
9. Select the **Role** that will have access to the corresponding **File Name**.
10. Click **[OK]**.
11. After securing a file, make sure that users can still perform their required tasks.
12. For the file restriction to take effect, all users not assigned to the role must restart Sage 300 Construction and Real Estate.

Modify record security permissions

Note: You must be an application administrator to perform this task.

To change the security ID in a Record Security window:

1. From the Sage Desktop, select **Options > Security Administration**.
2. On the **Security Administration** tab, select **Records**. The **Record Security** window opens.
3. Select the tab for the record you want to change.
4. In the **Security ID** column, change the security ID.
5. Click **[OK]**.

Note: Record tabs in the **Record Security** window are available only if you have turned on record security for that record.

To change the security ID in a Record Setup window:

Note: You must be an application administrator or have security access to the **Change Security ID** task.

1. Open the record setup window of a securable record (Cash Management bank account, General Ledger prefix, Job Cost and Project Management job, and Property Management property.)
2. Click the **Security ID** field and change the ID.

Change design security on reports

Note: You must be an application administrator to modify report design security.

1. Start Report Designer.
2. Open the report design (File > Open Design.)
3. From the **Tools** menu, select **Security > Design**.
4. In the **Design Record Security** box, select or clear the check boxes.
5. Click **[OK]**.

Note: The **Design Record Security** box lists all available records regardless of whether the report uses all the records. If record security is off, the check box for that record will be unavailable.

Change design security on an inquiry

Note: You must be an application administrator to modify the inquiry design security.

1. Start Inquiry Designer.
2. From the **Inquiry** menu, select **Inquiry Manager**.
3. In the **Applications** window, select an application and click **[OK]**.
4. In the **Inquiry Manager** window, select the inquiry; then click **[Change]**.
5. In the **Change Inquiry** window, click **[Record Security]**.
6. In the **Record Security** window, select or clear the check boxes.
7. Click **[OK]** in successive windows; then click **[Close]**.

Note: The **Record Security** window lists all available securable records regardless of whether the inquiry uses all the records. If record security is not selected, the check box for that record will be unavailable.

Review record security settings

Note: You must be an application administrator to perform this task

1. From the Sage Desktop, select **Options > Security Administration**.
2. On the **Security Administration** tab, select **Records**. The **Record Security** window opens.
3. Review the selections on the **Activation** tab. They control whether record security is on and how the software interprets blank security IDs.
4. Select one of the record tabs.
5. Review the users and roles in the **Security ID** column.
6. Repeat steps 4 and 5 for each record.

Note: Every report and inquiry has settings that control whether record security can affect the report or inquiry.

Troubleshooting security

This section contains information about the following issues:

- ["I cannot see a security ID in a Record Setup window"](#)
- ["I cannot change a security ID in a Record Setup window"](#)
- ["I know a job was set up, but I cannot see it in the software" on page 67](#)
- ["I forgot my password" on page 67](#)
- ["My report or inquiry is missing information" on page 67](#)
- ["Menu items and fields are unavailable" on page 68](#)
- ["I cannot delete a user name" on page 68](#)
- ["I cannot make an account unavailable" on page 68](#)
- ["I cannot end account availability" on page 68](#)
- ["I cannot remove a user name" on page 69](#)
- ["I cannot turn on security" on page 69](#)
- ["I cannot save changes" on page 69](#)

I cannot see a security ID in a Record Setup window

The **Security ID** field appears in a record setup window only if record security is on for that record. For more information, see ["Set up record security" on page 54](#).

I cannot change a security ID in a Record Setup window

During the setup of a new record, anyone can type a security ID. Once the record has been saved, only application administrators or users with permission to access the **Change Security ID** task can change the security ID.

I know a job was set up, but I cannot see it in the software

In most Sage 300 Construction and Real Estate applications, record security affects only reports and inquiries. In certain Contracts, Job Cost, and Project Management tasks, however, record security also affects whether you can type jobs or select jobs from lists. For more information, see ["Effect of record security on tasks" on page 48](#).

Jobs may not appear for several reasons:

- The job may have a status of closed; some lists do not display closed jobs.
- The job may have been moved to a different file, such as a history file.
- Record security may be active on the job and you do not have permission to access that job.

I forgot my password

If you are an application administrator or user, request a new password from one of your company's security administrators.

If you are the only security administrator and you forgot your password, you must call Customer Support to restore access to your software. See ["Technical assistance" on page 2](#).

Note: For back-up purposes, we recommend having at least two security administrators.

My report or inquiry is missing information

A report or inquiry can be missing information for several reasons. One explanation could be that you lack record security permissions. To investigate this possibility, see the following topics.

Reports

- ["Effect of an upgrade on reports" on page 45](#)
- ["Indicators that record security affects a report" on page 44](#)
- ["Report record security settings" on page 44](#)
- ["Review record security settings" on page 65](#)

Inquiries

- ["Effect of record security on inquiries" on page 46](#)
- ["Indicators that record security affects an inquiry" on page 47](#)
- ["Inquiry record security settings" on page 46](#)

Menu items and fields are unavailable

Menu items and fields can be unavailable for two reasons.

First, the task associated with the menu item or field requires a previous task that has not been performed. For example, the **Edit > Paste** menu is unavailable if you have not previously cut or copied anything.

Second, you lack task security permissions (for example, access to **PM > Setup > Properties**.)

I cannot delete a user name

Note: You must be a security administrator to delete a security administrator.

If security is on and only one user name is assigned to the Security Administrator role, you cannot delete the user name assigned to that role.

To delete the user name, you must assign another user name to the Security Administrator role. For more information, see ["Add a security administrator" on page 50](#).

For back-up purposes, we recommend adding at least two security administrators.

I cannot make an account unavailable

If security is on and only one available user name is assigned to the security administrator or application administrator role, you cannot make the account unavailable.

To make the account unavailable, you must assign another available user to that administrator role.

Note: You must be a security administrator to assign a user to an administrator role.

For back-up purposes, we recommend adding at least two security administrators and two application administrators. If necessary, you can assign two user accounts to both roles.

I cannot end account availability

If security is on and only one user name is assigned to the security administrator or application administrator role as of this date, you cannot end account availability.

To end account availability, you must assign another available user name to that administrator role.

Note: You must be a security administrator to assign a user to an administrator role.

For back-up purposes, we recommend adding at least two security administrators and two application administrators. If necessary, you can assign two user accounts to both roles.

I cannot remove a user name

Note: You must be a security administrator to delete a security administrator.

If security is on and only one user name is assigned to the Security Administrator role, you cannot remove the user name assigned to that role.

To remove the user name, you must assign another user name to the Security Administrator role. For more information, see ["Add a security administrator" on page 50](#).

For back-up purposes, we recommend adding at least two security administrators.

I cannot turn on security

Note: You must be a security administrator to turn on application security.

If a user name is not assigned to the Security Administrator role, you cannot turn on application security.

To turn on security, you must assign a user name to the Security Administrator role. For more information, see ["Add a security administrator" on page 50](#).

For back-up purposes, we recommend adding at least two security administrators.

For the security settings to take effect, all users must restart Sage 300 Construction and Real Estate.

I cannot save changes

Note: You must be a security administrator to remove users from the Security Administrator role.

If security is on, you cannot remove all users from the Security Administrator role.

To remove all the existing users from the Security Administrator role, first you must assign another user name to that role. For more information, see ["Add a security administrator" on page 50](#).

For back-up purposes, we recommend having at least two security administrators.

Security tips

This section contains the following tips:

- ["Be careful with print files"](#)
- ["Create separate roles for task and record security"](#)
- ["Consider limiting access to Crystal Decisions Crystal Reports" on page 71](#)
- ["Specify how secured tasks appear" on page 71](#)

Be careful with print files

If you print to a folder that is not secure, others may have access to your reports.

By default, Sage 300 Construction and Real Estate prints files to your data folder. If you run the software over a network, all users print to this location. Although you can change the default file location in **File > Data Folder Settings > File Locations > Printouts**, all network users will still print to whatever location you designate.

To print to a different folder, you must redirect the print job at the time of printing. From a **Print Selection** window, click [**Printer Setup**]. Then, click [**Select File**] and browse to the desired location.

Create separate roles for task and record security

Administrators may need to create certain roles for task security and other roles for record security. For example, a company has the following users:

- Project Manager 1
- Project Manager 2
- Accounts Payable (AP) Clerk 1
- AP Clerk 2

Project Manager 1 and AP Clerk 1 always work together on jobs. Project Manager 2 and AP Clerk 2 always work together on a different set of jobs. In terms of record security, these two teams of users should be members of different roles because they need access to different jobs.

Project Managers 1 and 2 perform tasks such as approving change orders (COs.) AP Clerks 1 and 2 perform tasks such as entering invoices. In terms of task security, the project managers should be in one role and the AP clerks should be in a different role.

The overall security assignment for these users should look like the following:

Example of task and record permissions for various roles

Role	Users	Task Permissions	Record Permissions
PROJMGR	Proj managers	Approve COs	
APCLERK	AP clerks	Enter invoices	
TEAM1	Proj Mgr 1 and AP Clerk 1		Team 1 jobs
TEAM2	Proj Mgr 2 and AP Clerk 2		Team 2 jobs

Consider limiting access to Crystal Decisions Crystal Reports

A user can use Crystal Decisions Crystal Reports to disable record security settings on Crystal reports. If you own Crystal Decisions Crystal Reports, guard against unwanted modification of reports by limiting who can use this software. You may want to allow only administrators of Sage 300 Construction and Real Estate security to use Crystal Decisions Crystal Reports.

Specify how secured tasks appear

Most securable tasks have an associated menu item or field. Application administrators can specify how these menu items and fields appear to a user who does not have access to them. You can specify whether the menu items and fields are hidden or whether they appear gray (which indicates that they are unavailable.)

1. Select **Tools > Options**.
2. In the **Options** window, look in the **Secured Menu Items** box. Select **Don't display** or **Display as disabled**.
3. Click **[OK]**.

Notes:

- You must be an application administrator to perform this task.
- The menu is subject to task security. You may not be able to see this menu item if the application administrator has selected **Don't display** in the **Secured Menu Items** box.
- Application administrators need to specify this setting in only one application for the effect to be seen in all applications.

Glossary of security terms

Application Administrator

An application administrator has unrestricted access to all features in Sage 300 Construction and Real Estate. They can set up task security and set up most aspects of record security in the Security Administration tool. For a complete list of tasks that an application administrator can perform, see ["Setting up security " on page 49.](#)

Like other users, an application administrator has a user name and password. If security is on, application administrators must type this user name and password after they start an application.

Only security administrators can create users.

Application Log

Logs the start and end of Accounting applications and tasks.

Application Security

Application administrators can prevent unauthorized users from accessing Sage 300 Construction and Real Estate by turning on application security. When application administrators turn on application security, all users must enter a user name and password to access the software. They can restrict access to software features and data that each user has permission to access. Security Administration offers four types of application security: task, file, record, and company.

Application security also lets application administrators hide applications from users and roles. When an application administrator uses the Security Administration tool to deny a user or role access to all tasks in an application and sets secured menu items to not display, users cannot see the application in the Sage Desktop.

Audit Setup Log

Logs changes when the audit setup activity is selected in an Accounting application.

Company Security

Company security allows an application administrator to grant a user access to specific companies.

Security administrators and application administrators have access to all companies.

Field Report Log

Logs changes to finalized field reports in Project Management.

File Security

File security allows application administrators to block all access to a file. This includes access through open database connectivity and through all related tasks, reports, and inquiries. This differs from task security, which allows application administrators to block tasks selectively and does not allow them to control ODBC access.

Open Database Connectivity (ODBC)

Open Database Connectivity (ODBC) allows a Sage 300 Construction and Real Estate database and a third-party program such as Microsoft Access to communicate. Once you set up an ODBC connection (which requires a special ODBC driver), you can send data between the two programs.

Posting Recap Log

Logs recaps created while posting entries in Accounting. (For future use. No logs are created at this time.)

Record Security

With record security, you can control access to the Cash Management bank account, General Ledger prefix, Job Cost and Project Management job, and Property Management property records.

When record security is active, reports and inquiries display only the records to which the user has access.

Record security also affects Job Cost, Contracts, and Project Management tasks. In these applications, you can type or select only jobs to which you have access.

Roles

A role represents a group of users who have the same security requirements. A role has its own user account and its own task, record, file, and company permissions.

Security Administration

With Security Administration, application administrators can restrict access to tasks, files, records, and companies. For example, they can use task security to restrict who can set up vendors in Accounts Payable. With file security, they can restrict access to sensitive payroll files. With record security, they can produce reports that display only the jobs to which the user has security access. Finally, with company security, they can restrict access to which company information a user sees.

Security Administrator

Security administrators set up and maintain accounts for users. For a complete list of tasks that a security administrator can perform, see ["Setting up security " on page 49](#).

Security Log

Logs events in the Security Administration tool.

Setup Log

Logs changes to setup information in Accounting.

Strong Passwords

Strong passwords must meet the following conditions for complexity:

- Passwords must be at least eight characters long.
- Passwords must contain at least three of the following four character groups:
 - English uppercase characters (A through Z)
 - English lowercase characters (a through z)
 - Numbers (0 through 9)
 - Special characters (~ ! @ # \$ % ^ & * () - + = { } [] | \ : ; < , > . ? /)
- Passwords expire every 90 days.
- You are warned 10 days before your password expires.
- You cannot reuse your three previous passwords.
- You must wait 10 days before changing your password.

System Log

Logs Accounting system events.

Task Security

With task security, an application administrator can restrict access to menu items and certain tasks found within windows.

Task Summary Log

Logs summaries created during an Accounting task. (For future use. No logs are created at this time.)

User

A user has restricted access to the Sage 300 Construction and Real Estate. A user can have security permissions that range from very restrictive to almost as complete as an application administrator.

All users have a user name and password. If Security Administration is on, you must type a user name and password immediately after you start an application.

Chapter 6: Sage 300 Construction and Real Estate ODBC

This chapter presents an overview of Sage 300 Construction and Real Estate open database connectivity (ODBC). After you install ODBC, you should refer to the ODBC Help for detailed information about how to use the driver to access databases.

ODBC overview

ODBC is a standard interface that serves as a translator between different database file structures and different software. The ODBC driver lets applications collect data from databases in other applications. Applications that can access data via ODBC are commonly referred to as front-end applications and can include databases (for example, Microsoft® Access), word processors (for example, Microsoft Word), and spreadsheets (for example, Microsoft Excel). Applications such as Sage 300 Construction and Real Estate that make their data available through ODBC are referred to as back-end applications. Both the front-end and back-end applications must support the ODBC protocol for them to communicate with one another.

The Sage 300 Construction and Real Estate ODBC driver lets you read most Accounting and Management Product records as well as create and delete some selected records. You cannot delete individual fields, but you can replace many fields with new data. See the "About record topics" topic in ODBC Help for a list of records and fields that you can edit. To access the Help file, click the Start icon, select the **Sage Administration** program group, and select **ODBC Help**.

Note:

You cannot use the Sage 300 Construction and Real Estate ODBC driver to access Purchasing, Inventory, or Service Management data. To access Purchasing, Inventory, or Service Management data through ODBC, use the Pervasive ODBC Engine Interface and Pervasive ODBC Client Interface drivers. For more information, see the Pervasive Help:

1. Click the Start icon, select the **Action PSQL 12** program group, and select **PSQL Control Center & Documentation**.
2. In the **Documentation Library** area, click **User's Guide > Using PSQL > Setting Up ODBC Database Access**.

Important issues for ODBC users

This section contains important information. You should read it before you use the Sage 300 Construction and Real Estate ODBC driver.

ODBC Support Policy

Sage 300 Construction and Real Estate ODBC interfaces with a variety of third-party products. Because other products are involved, Sage cannot guarantee that our Customer Support can resolve all ODBC-related problems. Any multiple-vendor software arrangement requires a significant level of technical expertise. Technical conflicts between databases from different vendors may require you to seek assistance from a vendor other than Sage.

Important! Currently, we only test Microsoft Office (Access, Word, and Excel) for compatibility with the Sage 300 Construction and Real Estate ODBC driver. We do not test for compatibility with any other products or programming languages, including Microsoft Visual Basic for Applications, which can be run from a macro within Microsoft Office. Although you may find success using another product, Customer Support can address only issues and problems that relate to the use of Microsoft Office (Access, Word, and Excel) to access data via the ODBC driver.

Data loss

ODBC processing leaves no audit trail of changes made, and its misuse can create untraceable data discrepancies. If Customer Support is unable to reproduce a data-dependent problem using Sage 300 Construction and Real Estate software and data, it is assumed that the problem is specific to a data discrepancy introduced with ODBC.

Points to consider before you use ODBC

For fields like notes and memos, Sage 300 Construction and Real Estate software simply stores the values. Some fields have a data dependency (the value in one field can affect the value of another field). In other fields, the software requires the value to have a certain format or be within a specified range. When you make changes through a Sage 300 Construction and Real Estate application, the software handles dependencies automatically. ODBC does not handle dependencies. It is up to you to be aware of these issues and make any necessary edits. To be safe, you should always back up any database before you modify it through ODBC.

Consider the issues that follow before you write changes to a data file through ODBC:

- **Data Dependencies:** the values in some fields change based on the value contained in another field.
- **Referential Integrity:** some records which reside in one data file relate to records in another file.

An example of referential integrity in Accounting is the relationship between a job record and one of its subsidiary category records. Amounts that you enter through a miscellaneous worksheet into a category's miscellaneous category amount field directly affect the total miscellaneous category amount field in the job record. If you modify one of those fields through ODBC and do not modify the other, the Job Cost Master file becomes out of balance.

- **Formatting:** Sage 300 Construction and Real Estate applications expect the value stored in some fields to be formatted in a certain way.

Proper use of ODBC requires a thorough understanding of these dependencies to make sure referential integrity is preserved.

Set up a data source

Before you can use the ODBC driver, you must first set up a link to a Sage 300 Construction and Real Estate data source. The data source contains the data a user wants to access and its associated Database Management System. The data is pulled from a back-end application, for example, General Ledger. The data is then sent to a front-end application, such as Microsoft Excel. Each data source you set up has a data source name (DSN), which you provide.

When you set up a data source, you specify a particular ODBC driver to be attached to the data source. These drivers are programs that access the information in the database and translate it into a format that the front-end application (Microsoft Excel, for example) can read.

You must set up a DSN for each Sage 300 Construction and Real Estate database. For example, your company might maintain one database for its construction business and another for its remodeling business. Because these databases are stored in separate folders, you must set up a DSN for each database folder.

For detailed instructions on how to set up a DSN, see ["The data source for Crystal Reports" on page 80](#).

Use the ODBC driver

After you install ODBC and set up a data source, you can use the driver to access Sage 300 Construction and Real Estate information from the database. Procedures to collect this data depend on the front-end application being used. ODBC Help provides detailed instructions for accessing and inserting Sage 300 Construction and Real Estate data into Microsoft Query, Excel, Access, and Word. Refer to the How To section on the Help Contents tab for links to the applicable topics.

Other software manufacturers' ODBC-compliant products can access data through the Sage 300 Construction and Real Estate ODBC driver. Refer to those manufacturers' ODBC documentation for instructions on using ODBC.

Chapter 7: Crystal Reports

Introduction

If you already have technical experience using Crystal Reports®, this chapter will help you customize reports and invoices that you use in Sage 300 Construction and Real Estate applications. Please review the entire chapter before making changes to your reports.

If you do not have experience using Crystal Reports, contact your Sage certified consultant for help with creating custom reports that fit your business needs. You can also attend training sessions in Crystal Reports; visit <http://www.sageu.com/Sage300CRE> for more information.

Using the SQL database

You can use the Sage SQL Replicator tool to take the Sage 300 Construction and Real Estate data stored in the Actian Pervasive database and replicate it into a SQL database.

You can switch the Crystal Reports on the menus and Desktop to use the SQL database. For information, see [page 80](#).

Important! If employees are going to run reports with SQL data, they need to have read permissions to the relevant SQL tables (in **SQL Data Access > Read Access** in the **Tasks** tree). See "[Chapter 5: Security](#)" on [page 38](#) for information about controlling permissions.

You can create custom reports to use this SQL database. See "[Creating the SQL Server data source](#)" on [page 83](#).

Reports on the menus

Use **Report Manager** to add Crystal Reports designs to the **Reports** menu of your Sage 300 Construction and Real Estate applications.

Currently, all Crystal report designs available on the **Reports** menu in Sage 300 Construction and Real Estate use your data stored in the Actian Pervasive database with a data source name (DSN) of "Timberline Data Source" (as described on [page 80](#)) having the following options:

- Standard descriptions for Table and Field Naming
- Use maximum table segment size selected
- Shorten field and table names cleared.

Using the SQL database

If you use the Sage SQL Replicator tool, you have the option to use data stored in the Actian Pervasive database or replicated data in the SQL database. Crystal Reports on the menus will still use the Pervasive database unless you change them. To use the SQL database for your Crystal Reports that are accessed from menus or Desktop, select the **Use SQL** check box. For more information, see the [Using SQL data for reporting video](#).

The Mobile Reports application enables selected employees to generate and view Crystal Reports in the field using a mobile device or computer. See the [Mobile Reports Introduction video](#) for more information.

The data source for Crystal Reports

If you use the Sage SQL Replicator tool, you have the option to use data stored in the Actian Pervasive database or replicated data in the SQL database. If you plan to use the SQL data for new custom reports, see ["Creating the SQL Server data source" on page 83](#).

Configuring the Timberline data source

You must configure the Timberline Data Source before you customize reports and invoices.

Note: Beginning with Sage 300 Construction and Real Estate version 16.1, you must have a properly configured DSN to run "Custom Description" reports—even though these reports may have run without a properly configured DSN in 15.1 and earlier versions of Sage 300 Construction and Real Estate.

Because the Timberline Data Source is automatically created the first time you open Sage 300 Construction and Real Estate, open a Sage 300 Construction and Real Estate application on your computer if you have not opened one already.

To set up portability options for a report in the **ODBC Setup** window:

1. Click the **Start** icon, select the **Windows Administrative Tools** program group, and select **ODBC Data Sources (32-bit)**.
2. In the **ODBC Data Source Administrator** window, click the **User DSN** tab, select **Timberline Data Source**, and click **[Configure]**.
3. In the **Timberline Data ODBC Setup** window for **Database Type**, verify that **Accounting Data Folder** is selected.
4. Click **[Select Folder]**, select your construction data folder in the **Select Company** window, and click **[OK]**.
5. Click **[Options]** to show the **Data Source Options**.
 - a. In the **Table and Field Naming** list, select **Standard descriptions**, **Custom descriptions**, or **Dictionary names**. For more information, see ["About table and field naming"](#) (the next section).

Note: Crystal Report designs that come with Sage 300 Construction and Real Estate use **Standard descriptions**.

- b. Select the **Use maximum table segment size** check box. For more information, see ["About the maximum table segment size" on page 83](#).
- c. If necessary, clear the **Shorten field and table names** check box.

Note: This option is available for earlier versions of ODBC, which truncated long field and table names.

6. Click **[OK]** to save your settings and close the **Timberline Data ODBC Setup** window.
7. Click **[OK]** to close the **Data Source Administrator** window.

About table and field naming

The **Table and Field Naming** selection determines how table and field names appear when you access data using this data source name (DSN). Three options are available:

Naming options

Naming option	Description
Standard descriptions	(Recommended) Use this mode when you design a report for use in multiple databases. The default descriptions appear on the report design in Crystal Reports Designer. However, the operators' custom descriptions appear when the report is generated in Sage 300 Construction and Real Estate. If you select this option, you can use this report with all databases.
Custom descriptions	Use this mode when you design reports for a specific database. The custom descriptions for that database appear on the report design in Crystal Reports Designer. The custom descriptions also appear when the report is generated in Sage 300 Construction and Real Estate. If you select this option, you can only use it with databases that have the same custom descriptions as the database used when creating the report. If the custom descriptions in that database change, the report may break.
Dictionary names	Use this mode only when modifying Billing invoice reports and reports that were designed in Crystal Reports with dictionary names for Sage 300 Construction and Real Estate earlier than version 8.0.0. Dictionary names are internal table and field names that are less descriptive than the standard descriptions but provide the same functionality. If you select this option, you can use this report with all databases.

The following table uses the Accounts Receivable customer field as an example to show how different Field Naming options affect how the field appears.

Appearance of a field with each naming option

Naming option	Display table and field name	Comments
Standard descriptions	ARM_MASTER_CUSTOMER.Customer	No change regardless of custom descriptions for AR Customer . Standard descriptions are always the default descriptions.
Custom descriptions	MASTER_ARM_CUSTOMER.Customer	If the custom description for AR Customer is "client," the field appears as MASTER_ARM_CLIENT.client

Naming option	Display table and field name	Comments
Dictionary names	MASTER_ARM_RECORD_1.CUST	No change regardless of custom descriptions. Internal names always appear in dictionary names.

About the maximum table segment size

To use reports in Sage 300 Construction and Real Estate that were designed using the Timberline Data Source, you must select the **Use maximum table segments size** check box when you design the reports so that tables remain intact regardless of size. If you clear the **Use maximum table segment size** check box and you access a table with more than 255 columns, the table is split into two tables.

For example, the Job Cost JC job record contains more than 255 columns. If you clear the **Use maximum table segment size** check box, the table splits into two tables (JCM_Master_Job_1 and JCM_Master_Job_2). If you select the **Use maximum table segment size check box**, the table does not split (JCM_Master_Job).

Important! Some programs, including Microsoft® Access, do not support the use of maximum table segment size. Clear the check box when you use DSNs associated with those programs. You should set up a separate DSN for these programs.

About the maximum number of database objects

If you connect to a data source that contains a large number of objects (tables, views, stored procedures, etc.), you may need to change the display limit, which is usually set to 8000 objects. For more information, see [SAP knowledgebase article 1215994](#).

Creating the SQL Server data source

The Sage SQL Replicator tool, which takes the Sage 300 Construction and Real Estate data stored in the Actian Pervasive database and replicates it into a SQL database. You can create custom reports to use this SQL database.

To create a DSN for the SQL database:

1. Open the **ODBC Data Source Administrator (64-bit)** window.
2. On the **User DSN** tab, click **[Add]** to add a new User DSN.
3. Select **SQL Server Native Client 11.0**.
4. Click **[Finish]**.
5. Type a name for the DSN, such as **Timberline SQL Data**, and type a description.

6. For the SQL Server to connect to, select the SQL Server Instance that contains your replicated data, and then click **[Next]**.
7. Select **With Integrated Windows authentication**, and then click **[Next]**.
8. Select the **Change the default database to** check box, select the replicated database, and then click **[Next]**.
9. Click **[Finish]**.
10. Review the new ODBC data source setup and either click **[Test Data Source]** or click **[OK]**.
11. Review the new entry in the **User Data Sources** table on the **User DSN** tab, and then click **[OK]**.

Customizing Crystal Reports

Crystal Reports Designer

You should use Crystal Reports For Sage 2013 SP2 (version 13) to modify or create report designs for Accounting and Management Products. This software only runs on Windows 7 SP1, Windows Server 2008 R2, or higher operating systems (not Windows Vista).

Note:

If you created custom Crystal Reports designs prior to Sage 300 Construction and Real Estate version 14.1, you will need to upgrade the designs before using them in Sage 300 Construction and Real Estate. To upgrade designs created with version 9 or later, see ["Upgrading custom reports using the Upgrade Crystal Reports tool" on page 128](#).

Creating and modifying custom reports

To add, modify, and create custom report designs that use the Timberline Data Source:

1. Open Crystal Reports.
2. Log on to a Timberline data source.
 - a. If you do not have the report open, select **File > Log On or Off Server**. If you have the report open, select **Database > Log On or Off Server**.
 - b. In the **Data Explorer** window, double-click **Create New Connection**.
 - c. Double-click **ODBC (RDO)**.
 - d. Select **Timberline Data Source** and click **[Next]**.
 - e. If necessary, type your **User ID** and **Password** for Sage 300 Construction and Real Estate.

- f. Click **[Finish]**.
 - g. Click **[Close]**.
 3. Open the report design you want to modify and proceed to step 4. If you want to create a new report design:
 - a. Select **File > New**.
 - b. Select the tables and fields that you want to use on the report and then design the report.
 4. Set the location of the database.
 - a. Select **Database > Set Datasource Location**.
 - b. Under **Current Data Source**, select the first data source.
 - c. Under **Replace with**, select **Timberline Data Source**.
 - d. Click **[Update]**.
 - e. Verify that all table locations in the **Set Datasource Location** window use the same data folder path. You know that all table locations point to the same path if only one group of tables appears under **Current Data Source**.
 - f. Click **[Close]**.
 5. Repeat step 4 for each table in the report.
 6. Select **Database > Verify Database**.
 7. When you see the "The database is up to date." message, click **[OK]**. Repeat step 4 if the database is not up to date.
 8. Review the list of formulas, functions, and parameters from section 3. See ["Crystal Reports integration" on page 86](#) to determine which to add or modify.
 9. When you finish, save the report.
 10. Use Reports Manager to add new reports to your Sage 300 Construction and Real Estate **Reports** menu.

Crystal Reports integration

Setting up printers

By default, the “No Printer” option (**Crystal Reports: File > Page Setup**) is selected for all Crystal report designs that ship with Sage 300 Construction and Real Estate. We recommend selecting this option for all Crystal reports you use to avoid potential printer error messages when using Sage 300 Construction and Real Estate applications with the Windows 7 operating system.

When printing a report in Crystal Reports, the data may print as cryptic symbols even though the report displays correctly in preview mode. This is because Crystal Reports requires Unicode functions to print. If your printer driver does not support Unicode, you must update your printer driver. To determine whether your printer driver supports Unicode, see the printer driver manufacturer's support web site.

Note: In Crystal Reports, you must select **Crystal Syntax** for the **Default Formula Language** (**File > Options > Formula Editor tab > Default Formula Language**).

Integration formulas

This section provides information about the following formulas that you can use in report designs.

- tsAlternateSMFolder on [page 87](#)
- tsApp on [page 87](#)
- tsAskFile on [page 88](#)
- tsDataFolder on [page 88](#)
- tsDesignMode on [page 90](#)
- tsDesktopId on [page 91](#)
- tsLetterhead on [page 91](#)
- tsMargins on [page 91](#)
- tsReportType on [page 92](#)
- tsSQLDatabase on [page 92](#)
- tsSQLServer on [page 92](#)
- tsSubAskFile on [page 93](#)

Designs created in Crystal Reports use formulas to convey required report information to Sage 300 Construction and Real Estate. These formulas query the Sage 300 Construction and Real Estate application for, or provide it with, required information that is not already in a database table field. For example, you may need to set the margins of the report when it prints. You use a formula to provide the margin information to the application.

Caution! Name the formulas exactly as they are named in this document. Formulas may be case sensitive and may not work unless the formula name matches the corresponding formula written in Sage 300 Construction and Real Estate code. Also, do not add comments or additional expressions to the formulas.

Important! Do not type @ in front of formula fields. In Crystal Reports, “@” automatically appears in front of formula fields; for example, when you create a formula and type `tsDesignMode`, the formula appears as `@tsDesignMode`.

Note: Integration formulas need only to be included in the report design to function. You do not need to include these formulas on the report itself.

tsAlternateSMFolder formula information

Formula: tsAlternateSMFolder	
Description	This formula allows you to select whether you want a Service Management report to include current or historical information.
Syntax	None. Leave the formula value blank.
Example	<code>@tsAlternateSMFolder=</code>

tsApp formula information

Formula: tsApp	
Description	Use this formula to specify the application abbreviation for the report. This formula is required on all Service Management primary reports and subreports. The formula is not required on any report that uses the ODBC driver to access Sage 300 Construction and Real Estate data.
Syntax	<code><Two-letter application abbreviation></code>
Example	<code>@tsApp = "SM"</code>

tsAskFile formula information

Formula: tsAskFile	
Description	Use the tsAskFile formula to limit the file types the operator can choose when the report runs. This formula applies to the main report. It also applies to all subreports unless you use the tsSubAskFile formula on the subreports. This formula does not have file merging capabilities. If you use the formula example on a report design, the report will prompt the operator to choose between the New.glt file and the Current.glt file when the report runs. Without the formula on the report, the operator could choose whatever file codes are available. For more information, see "Formula: tsSubAskFile" on page 93
Syntax	"[<file type>(<file code name>[, <file code name>]*)]" <file type> = the abbreviation of the data file type; for example: BLI, GLT, APT, etc. <file code name> = the file code name of the data file; for example: new, current, history, active, standard, etc.
Example	@tsAskFile = "GLT(new,current)" or "GLT(new, current)JCT(current)"

Note: You can also use one file code name in the tsAskFile function to force the report to use a specific file; for example, use **@tsAskFile = "JCT(new)"**.

tsDataFolder formula information

Formula: tsDataFolder	
Description	Use this formula to specify the company data folder to use for previewing the report in Crystal Reports Designer. This formula is ignored when the report is generated in Sage 300 Construction and Real Estate. If using Pervasive data, it will be a data folder path from the Open Company window. If using SQL data, it will be the SQL instance and current database in this format: "SQL::SQLServerName\InstanceName:DatabaseName"
Example	@tsDataFolder = "C:\Timberline Office\YourCompanyDataFolder" @tsDataFolder = "SQL::LSSVR20-MP\SAGE300CRE:SQLDataFolder"

Caution! If you place this formula on a primary report and you want to use it on a subreport, you must pass the formula to the subreport as a shared variable. Subreports do not automatically read the formula from the primary report.

You can use the tsDataFolder formula with any of the following user-defined functions:

- tsarContractOnlyDetail
- tsarContractCustomerDetail
- tsarCustomerDetailWithRetainage
- tsarJobCustomerDetail
- tsarJobOnlyDetail
- tsControlData
- tsCustomDescription
- tsFieldSection
- tsFieldSectionDesc
- tsglFiscalEntityInfo
- tsHeaderData
- tsItemDesc
- tsLetterheadStyle

For more information on these functions, see ["User-defined functions" on page 94](#).

Set the tsDataFolder formula to the same data path appearing in the **Database** box of the **ODBC Setup** window for the DSN if the report uses any of these user-defined functions:

- tsControlData
- tsHeaderData
- tsCustomDescription

tsDesignMode formula information

Formula: tsDesignMode	
Description	<p>This formula specifies the mode of the report design—and must match the Table and Field Naming setting of the DSN.</p> <p>When you run the report from Sage 300 Construction and Real Estate, the tsCrystal interface looks to the report design for the tsDesignMode formula. If the formula exists on the design, the system takes the value of the formula and sets the Table and Field Naming selection to match it. If the formula is not on the report, the Table and Field Naming selection is automatically set to Custom descriptions. If the report is written using a Pervasive data source and the Use SQL check box is selected when it is generated, this formula determines the correct schema to use from the SQL database.</p>
Syntax	<p>"<mode>"; mode can be "Dictionary" (dictionary names), "SDesc" (standard description), or "Custom" (custom description).</p>
Example	<p>@tsDesignMode = "SDesc"</p>

Note: Custom Billing invoice formats and subreports must include the tsDesignMode formula with a value of "Dictionary". See ["About table and field naming" on page 82](#) for more information.

Important! tsDesignMode must be included with every report design written with a Pervasive data source. If you want to prevent database switching, do not include the tsDesignMode formula.

tsDesktopId formula information

Formula: tsDesktopId	
Description	<p>If you use security and you link a Desktop home page to an estimate, Sage 300 Construction and Real Estate will ask for your user name and password when you open the estimate. Use the tsDesktopId formula together with the TSEstimatingDKM function to suppress the request for user name and password when you open an estimate from a home page. See "Function: tsEstimatingDKM" on page 103 for more information on applying this function.</p> <p>Add the tsDesktopId function to the main report. Add the TSEstimatingDKM function to hyperlinks that link to estimates.</p>
Example	@tsDesktopId = ""

tsLetterhead formula information

Formula: tsLetterhead	
Description	<p>Use this formula in conjunction with the tsLetterheadStyle function. This formula dynamically places the letterhead image when the report runs. This formula is not required. This formula dynamically places the letterhead image only when the formula is set to "Y" and you have selected the Use this letterhead image below for my forms option in the Options window (Tools > Options > Letterhead tab > Use the letterhead image below for my forms). Sage 300 Construction and Real Estate will not dynamically place the letterhead image if any of the following conditions are true:</p> <ul style="list-style-type: none"> You set the formula to "N." You select one of the other letterhead options in the Options window You do not include the formula on the report. <p>For more information on the tsLetterheadStyle function, see "Function: tsLetterheadStyle" on page 108.</p>

tsMargins formula information

Formula: tsMargins	
Description	<p>Use the tsMargins formula to display the [Page Setup] button on the Print Selection window when you run the report from the Report menu in Sage 300 Construction and Real Estate. The tsMargins formula allows you to the set margins for the report.</p>
Example	@tsMargins =

tsReportType formula information

Formula: tsReportType	
Description	Use this formula to force the report to use SQL as the data source. This is useful for process-based reports (that run after a task) or where the Use SQL check box is not available. This formula should be on all reports written using a SQL data source.
Syntax	SQL
Example	@tsReportType = "SQL"

tsSQLDatabase formula information

Formula: tsSQLDatabase	
Description	Use this formula to show the SQL Database name when you run the report in Sage 300 Construction and Real Estate with the Use SQL check box selected. This is only an informational reporting field.

tsSQLServer formula information

Formula: tsSQLServer	
Description	Use this formula to show the SQL instance name when you run the report in Sage 300 Construction and Real Estate with the Use SQL check box selected. This is only an informational reporting field.

tsSubAskFile formula information

Formula: tsSubAskFile	
Description	<p>Use the tsSubAskFile formula on subreports only. Use this formula to limit the file types the operator can choose for the subreport when it runs.</p> <p>To limit the file types the operator can choose for the main report, use the tsAskFile formula. See "Formula: tsAskFile" on page 88 for more information.</p> <p>The tsSubAskFile formula applies to only the subreport on which you use it, not to other subreports. This formula does not have file merging capabilities. If you use the formula example on a report design, the report will prompt the operator to choose between the New.jct file and the Current.jct file when the report runs. Without the formula on the report, the operator could choose from the new, current, or history file.</p>
Syntax	<p>"[<file type>(<file code name>[,<file code name>]*)];Prompt Text"</p> <p><file type> = the abbreviation of the data file type; for example: BLI, GLT, APT, etc.</p> <p><file code name> = the file code name of the data file; for example: new, current, history, active, standard, etc.</p> <p>Prompt Text = Text to inform the person that runs the report. You can use the prompt text to indicate which subreport requires this selection.</p>
Example	<p>@tsSubAskFile = "JCT(new,current);Select a file for the Job Cost Transaction subreport"</p>
<p>Note: You can also use one file code name in the tsSubAskFile function to force the report to use a specific file: for example, use @tsSubAskFile = "JCT(new)".</p>	

User-defined functions

You can use the Sage 300 Construction and Real Estate user-defined functions in conjunction with Crystal Reports formulas on all reports. These user-defined functions instruct the application how to transform the data retrieved by a formula. To select a user-defined function, in the **Formula Editor**, click **Functions > Additional Functions**.

This section provides information about the following user-defined formulas:

- `pjLastJobUsed` on [page 95](#)
- `rmCurrentPropertyID` on [page 95](#)
- `rmSetupInfo` on [page 95](#)
- `tsarContractCustomerDetail` on [page 96](#)
- `tsarContractOnlyDetail` on [page 97](#)
- `tsarCustomerDetailWithRetainage` on [page 98](#)
- `tsarJobCustomerDetail` on [page 99](#)
- `tsarJobOnlyDetail` on [page 100](#)
- `tsControlData` on [page 101](#)
- `tsCustomDescription` on [page 102](#)
- `tsEstimatingDKM` on [page 103](#)
- `tsFieldSection` on [page 103](#)
- `tsFieldSectionDesc` on [page 104](#)
- `tsgIFiscalEntityInfo` on [page 105](#)
- `tsHeaderData` on [page 106](#)
- `tsItemDesc` on [page 107](#)
- `tsLetterheadStyle` on [page 108](#)
- `tsOperator` on [page 109](#)
- `tsRange` on [page 109](#)

pjLastJobUsed function information

Function: pjLastJobUsed	
Description	If you use this function on a field in the report design and if you selected the Use last job option in PJ Settings (Project Management: File > Company/Data Folder Settings > PJ Settings) , the field retrieves the job number from of the last job used.
Syntax	pjLastJobUsed
Example	pjLastJobUsed()

rmCurrentPropertyID function information

Function: rmCurrentPropertyID	
Description	Use to retrieve the current Residential Management (RM) property. The current property is the property currently open or the last property opened in the RM application.
Example	rmCurrentPropertyID()

rmSetupInfo function information

Function: rmSetupInfo	
Description	Use to retrieve setting information based on the Residential Management property you specify. The design retrieves the setting for the property if it is specific to the property; otherwise, it retrieves the system setting.
Syntax	rmSetupInfo(property, setting) Property: The Property ID Setting: The system setting you want to retrieve
Example	rmSetupInfo(rmCurrentPropertyID())"DefaultDepositCode"

tsarContractCustomerDetail function information

Function: tsarContractCustomerDetail	
Description	Use this function to determine whether Accounts Receivable (AR) details should print for the specified contract and customer
Syntax	<p>tsarContractCustomerDetail(Data Folder, AR Activity File, AR Transaction File, Contract, Customer, Aging As Of Date, Aging Basis, Include Retainage, Unpaid Only, Age Finance Charge)</p> <p>Data Folder: The report design must use the tsDataFolder formula, which stores the folder path information.</p> <p>AR Activity File: The full file path to the AR Activity (activity.ara) file.</p> <p>AR Transaction File: The full file path to the current AR Transaction (current.art) file.</p> <p>Contract: The Contract ID.</p> <p>Customer: The CustomerID.</p> <p>Aging as of Date: The transaction cutoff date based on the Aging Basis date.</p> <p>Include Retainage: True or False value. A True value takes retainage transactions into account. A False value bypasses retainage transactions.</p> <p>Unpaid Only: True or False. A True value considers transactions at the invoice (status) level. A False value considers transactions at the Activity level.</p> <p>Age Finance Charge: True or False value. A True value includes finance charges. A False value bypasses finance charges.</p>
Example	<p>(From report AR Statement of Account(CR).rpt)</p> <p>tsarContractCustomerDetail({tsDataFolder},{@tsFileName(ARA)},{@tsFileName(ART)},{ART_CURRENT_TRANSACTION.Contract},{ART_CURRENT_TRANSACTION.Customer},{?Aging Date},{?Aging Basis},{?Include Retainage?},{?Unpaid only?},{?Include Finance Charges?})</p>

tsarContractOnlyDetail function information

Function: tsarContractOnlyDetail	
Description	Use this function to determine whether Accounts Receivable (AR) details should print for the specified contract.
Syntax	<p>tsarContractOnlyDetail(Data Folder, AR Activity File, AR Transaction File, Contract, Aging As Of Date, Aging Basis, Include Retainage, Unpaid Only, Age Finance Charge)</p> <p>Data Folder: The report design must use the tsDataFolder formula, which stores the folder path information.</p> <p>AR Activity File: The full file path to the AR Activity (activity.ara) file.</p> <p>AR Transaction File: The full file path to the current AR Transaction (current.art) file.</p> <p>Contract: The Contract ID.</p> <p>Aging as of Date: The transaction cutoff date based on the Aging Basis date.</p> <p>Aging Basis: The date that the Aging as of Date uses to determine the cutoff date.</p> <p>Include Retainage: True or False value. A True value takes retainage transactions into account. A False value bypasses retainage transactions.</p> <p>Unpaid Only: True or False. A True value considers transactions at the invoice (status) level. A False value considers transactions at the Activity level.</p> <p>Age Finance Charge: True or False value. A True value includes finance charges. A False value bypasses finance charges.</p>
Example	<p>(From report AR Statement of Account (CR).rpt)</p> <p>tsarContractOnlyDetail({@tsDataFolder},{@tsFileName(ARA)},{@tsFileName(ART)},{ART_CURRENT_TRANSACTION.Contract},{?Aging Date},{?Aging Basis},{?Include Retainage?},{?Unpaid only?},{?Include Finance Charges?})</p>

tsarCustomerDetailWithRetainage function information

Function: tsarCustomerDetailWithRetainage	
Description	Use this function to determine whether Accounts Receivable details should print for the specified customer.
Syntax	<p>tsarCustomerDetailWithRetainage(Data Folder, AR Activity File, AR Transaction File, Customer, Aging As Of Date, Aging Basis, Include Retainage, Unpaid Only, Age Finance Charge)</p> <p>Data Folder: The report design must use the tsDataFolder formula, which stores the folder path information.</p> <p>AR Activity File: The full file path to the AR Activity (activity.ara) file.</p> <p>AR Transaction File: The full file path to the current AR Transaction (current.art) file.</p> <p>Customer: The Customer ID.</p> <p>Aging as of Date: The transaction cutoff date based on the Aging Basis date.</p> <p>Aging Basis: The date that the Aging as of Date uses to determine the cutoff date.</p> <p>Include Retainage: True or False value. A True value takes retainage transactions into account. A False value bypasses retainage transactions.</p> <p>Unpaid Only: True or False. A True value considers transactions at the invoice (status) level. A False value considers transactions at the Activity level.</p> <p>Age Finance Charge: True or False value. A True value includes finance charges. A False value bypasses finance charges.</p>
Example	<p>(From report AR Statement of Account (CR).rpt)</p> <p>tsarCustomerDetailWithRetainage({@tsDataFolder},{@tsFileName(ARA)},{@tsFileName(ART)},{ART_CURRENT_TRANSACTION.Customer},{?Aging Date},{?Aging Basis},{?Include Retainage?},{?Unpaid only?},{?Include Finance Charges?})</p>

tsarJobCustomerDetail function information

Function: tsarJobCustomerDetail	
Description	Use this function to determine whether Accounts Receivable details should print for the specified job and customer.
Syntax	<p>tsarJobCustomerDetail(Data Folder, AR Activity File, AR Transaction File, Job, Customer, Aging As Of Date, Aging Basis, Include Retainage, Unpaid Only, Age Finance Charge)</p> <p>Data Folder: The report design must use the tsDataFolder formula, which stores the folder path information.</p> <p>AR Activity File: The full file path to the AR Activity (activity.ara) file.</p> <p>AR Transaction File: The full file path to the current AR Transaction (current.art) file.</p> <p>Job: The Job ID.</p> <p>Customer: The Customer ID.</p> <p>Aging as of Date: The transaction cutoff date based on the Aging Basis date.</p> <p>Aging Basis: The date that the Aging as of Date uses to determine the cutoff date.</p> <p>Include Retainage: True or False value. A True value takes retainage transactions into account. A False value bypasses retainage transactions.</p> <p>Unpaid Only: True or False. A True value considers transactions at the invoice (status) level. A False value considers transactions at the Activity level.</p> <p>Age Finance Charge: True or False value. A True value includes finance charges. A False value bypasses finance charges.</p>
Example	<p>(From report AR Statement of Account (CR).rpt)</p> <p>tsarJobCustomerDetail({@tsDataFolder},{@tsFileName(ARA)},{@tsFileName(ART)},{ART_CURRENT_TRANSACTION.Job},{ART_CURRENT_TRANSACTION.Customer},{?Aging Date},{?Aging Basis},{?Include Retainage?},{?Unpaid only?},{?Include Finance Charges?})</p>

tsarJobOnlyDetail function information

Function: tsarJobOnlyDetail	
Description	Use this function to determine whether Accounts Receivable details should print for the specified job.
Syntax	<p>tsarJobOnlyDetail(Data Folder, AR Activity File, AR Transaction File, Job, Aging As Of Date, Aging Basis, Include Retainage, Unpaid Only, Age Finance Charge)</p> <p>Data Folder: The report design must use the tsDataFolder formula, which stores the folder path information.</p> <p>AR Activity File: The full file path to the AR Activity (activity.ara) file.</p> <p>AR Transaction File: The full file path to the current AR Transaction (current.art) file.</p> <p>Job: The Job ID.</p> <p>Aging as of Date: The transaction cutoff date based on the Aging Basis date.</p> <p>Aging Basis: The date that the Aging as of Date uses to determine the cutoff date.</p> <p>Include Retainage: True or False value. A True value takes retainage transactions into account. A False value bypasses retainage transactions.</p> <p>Unpaid Only: True or False. A True value considers transactions at the invoice (status) level. A False value considers transactions at the Activity level.</p> <p>Age Finance Charge: True or False value. A True value includes finance charges. A False value bypasses finance charges.</p>
Example	<p>(From report AR Statement of Account (CR).rpt)</p> <p>tsarJobOnlyDetail({@tsDataFolder},{@tsFileName(ARA)},{@tsFileName(ART)},{ART_CURRENT_TRANSACTION.Job},{?Aging Date},{?Aging Basis},{?Include Retainage?},{?Unpaid only?},{?Include Finance Charges?})</p>

tsControlData function information

Function: tsControlData	
Description	Use this function to retrieve information such as company name, address, and phone number from the Ts.ctl file.
Syntax	<p>tsControlData(Data Folder Name, Field Name, Flags)</p> <p>Data Folder Name: The report design must use the tsDataFolder formula, which stores the folder path information.</p> <p>Field Name: You can type (case sensitive):</p> <ul style="list-style-type: none"> • "Name" • "Address" or "Address 1" and "Address 2" • "City" • "State" • "Zip" • "Phone" • "Fax" • "Email" • "Web Address" • "Accounting Method" • "Assign Batch Name" <p>Flags: You can type</p> <ul style="list-style-type: none"> • "P" to pluralize. • "A" for all capital letters. • "I" for initial capital letters. • "F" to capitalize the first letter only. • "L" for all lowercase. • "" to print as it is in the database.
Example	tsControlData(@tsDataFolder, "Name", "A") prints the company name in all capital letters.

tsCustomDescription function information

Function: tsCustomDescription	
Description	This function retrieves custom descriptions from the ts.fld file.
Syntax	<p>tsCustomDescription(Data Folder Name, Code, Flags)</p> <p>Data Folder Name: The report design must use the tsDataFolder formula, which stores the folder path information.</p> <p>Code: The custom description field code.</p> <p>Flags: You can type:</p> <ul style="list-style-type: none"> • “P” to pluralize. • “A” for all capital letters. • “I” for initial capital letters. • “F” to capitalize the first letter only. • “L” for all lowercase. • “” to print as it is in the database.
Example	tsCustomDescription(@tsDataFolder, 13, “A”) prints the JC Change Order custom description in all capital letters.

Note: All custom description codes are stored in the Ts.fld file. Custom descriptions are listed when you print an available fields report (TR:Tools > Available Fields) and you select the **Include information for ODBC reporting?** check box in the **PrintAvailable Fields - Print Selection** window.

The tsCustomDescription function was new on Accounting and Management Products 8.0.0 and is used on new Crystal Reports designs. Earlier versions stored a function with a slightly different syntax called tsCustomDesc. The Billing invoice reports still use the older function. Both functions are stored in the u2lts.dll file on Accounting and Management Products 8.0.0 and later.

tsEstimatingDKM function information

Function: tsEstimatingDKM	
Description	If you use security and you link a report design used as a Sage 300 Construction and Real Estate Desktop home page to an estimate, Sage 300 Construction and Real Estate will ask for your user name and password when you open the estimate. Use the tsEstimatingDKM function to suppress the request for user name and password when you open an estimate from a home page in Desktop.
Syntax	tsEstimatingDKM({@tsDesktopID}, {Detail.PATH} & “\” & {Detail.FILENAME}); Detail.PATH and Detail.FILENAME are fields that store the estimate’s path and file name in the Estimating Explorer database.

Note: You must add the tsDesktopId formula to the main report when you use the tsEstimatingDKM function in a hyperlink to an estimate.

tsFieldSection function information

Function: tsFieldSection	
Description	Use this function to determine the value in a customer-specified field section. A field section is any portion of the GL Account, JC Job, or AR Customer that you define. For example, you can define up to 3 prefixes, the base, and the suffix of a GL Account. Therefore, these are field sections. Using the tsFieldSection function, you can retrieve the prefix, base, or suffix field information from the GL Account.
Syntax	tsFieldSection(Data Folder Name, File Type, Field Name, Section, Value) Data Folder Name: Type a path to the data folder or use the tsDataFolder formula, which stores the folder path information. File Type: The type of file. For example, type “GLM” for the General Ledger account file or “JCM” for the Job Cost master file. Field Name: The name of the field. For example, type “AACCT” for the General Ledger account field. Section: Section 1, Section 2, or Section 3; Base; Suffix Value: The ODBC field name on which to act. For example, GLT_CURRENT_TRANSACTION.Account for the Account number from the GLT current transaction file, GLM_MASTER_ACCOUNT.Account for the Account number from the GLM Master account record, or JCM_MASTER_JOB.Job for the job number from the JCM Job record.
Example	tsFieldSection(@tsDataFolder, “GLM”, “AACCT”, “Section 1”, GLM_MASTER_ACCOUNT.Account) prints the information in section 1 of the GL Master Account field.

tsFieldSectionDesc function information

Function: tsFieldSectionDesc	
Description	Use this function to determine the description in a customer-specified field section. A field section is any portion of the GL Account, JC Job, or AR Customer that you define. For example, you can define up to 3 prefixes, the base, and the suffix of a GL Account. Therefore, these are field sections. Using the tsFieldSection function, you can retrieve the prefix, base, or suffix field description information from the GL Account.
Syntax	<p>tsFieldSectionDesc(Data Folder Name, File Type, Field Name, Section, Flags)</p> <p>Data Folder Name: Type a path to the data folder or use the tsDataFolder formula, which stores the folder path information.</p> <p>File Type: The type of file. For example, type “GLM” for the General Ledger account file or “JCM” for the Job Cost master file.</p> <p>Field Name: The name of the field. For example, type “AACCT” for the General Ledger account field.</p> <p>Section: Section 1, Section 2, or Section 3; Base; Suffix</p> <p>Flags: You can type:</p> <ul style="list-style-type: none"> • “P” to pluralize. • “A” for all capital letters. • “I” for initial capital letters. • “F” to capitalize the first letter only. • “L” for all lowercase. • “” to print as it is in the database.
Example	tsFieldSectionDesc(@tsDataFolder, “GLM”, “AACCT”, “Section 1”, “A”) prints the section 1 description of the GL Master Account field in all caps.

tsglFiscalEntityInfo function information

Function: tsglFiscalEntityInfo	
Description	Use this function to report on the Australian Business Number (ABN) for General Ledger or Accounts Payable accounts. For General Ledger accounts, you can report on the ABN for a General Ledger prefix or the entire account number.
Syntax	<p>tsglFiscalEntityInfo(Data Folder Name, Field Name, Prefix or Account, Account Section)</p> <p>Data Folder Name: Type the path to the data folder or use the tsDataFolder formula, which stores folder path information.</p> <p>Field Name: You must use “abn” as the field name.</p> <p>Prefix or Account: Type a valid prefix number or account number from the general ledger chart of accounts or type a valid accounts payable account number.</p> <p>Account Section: Type the section of the account to use. You can type:</p> <ul style="list-style-type: none"> • “account” • “prefix a” • “prefix b” • “prefix c” • “full prefix”
Example	tsglFiscalEntityInfo(@tsDataFolder,“abn”,“10-1201”,“account”)

tsHeaderData function information

Function: tsHeaderData	
Description	Use to determine the header information, such as header records in the BLM file.
Syntax	<p>tsHeaderData(Data Folder Name, File Name, Header Number, Field Name, Flags)</p> <p>Data Folder Name: The report design must use the tsDataFolder formula, which stores the folder path information.</p> <p>Name: Use the actual file name; for example, Master.apm or Master.blm.</p> <p>Header Number: Identifies the header record from which the field is retrieved.</p> <p>Field Name: Use the internal field name; for example, SATXT or PABN.</p> <p>Flags: You can type:</p> <ul style="list-style-type: none"> • “P” to pluralize. • “A” for all capital letters. • “I” for initial capital letters. • “F” to capitalize only the first letter. • “L” for all lowercase. • “” to print as it is in the database.
Example	tsHeaderData(@tsDataFolder, “Master.blm”, 2, “SATXT”, “PA”) retrieves the Auto Text field from the BL Settings Header, adds an “s” to the end, and prints in all capital letters.

Notes: Internal field names are listed when you print an available fields report (TR: Tools > Available Fields) and you select the **Include information for ODBC reporting?** check box in the **Print Available Fields - Print Selection** window.

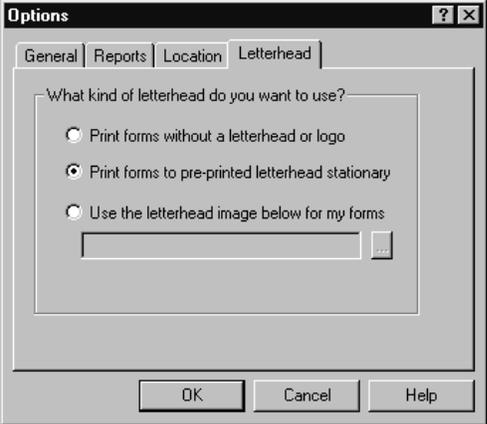
To retrieve a date field, you must use the Crystal Reports ToDate function to convert the string value to a date. To retrieve a number, you must use the Crystal Reports ToNumber function to convert the string value to a number.

tsItemDesc function information

Function: tsItemDesc	
Description	This function returns the description of a list field. Use this function to perform string comparisons on list fields that contain custom descriptions.
Syntax	<p>tsItemDesc(Data Folder Name, File Type, Field Name, Item Name, Format)</p> <p>Data Folder Name: Type a path to the data folder or use the tsDataFolder formula, which stores the folder path information.</p> <p>File Type: The type of file. For example, type "ART" for the accounts receivable transaction file.</p> <p>Field Name: The name of the custom list field. For example, type "TATYPE" for the accounts receivable Amount Type custom list.</p> <p>Item Name: The short description of the custom list item. For example, type "PMT" for the cash receipt accounts receivable amount type.</p> <p>Format:</p> <ul style="list-style-type: none"> • "P" to pluralize. • "A" for all capital letters. • "I" for initial capital letters. • "F" to capitalize the first letter only. • "L" for all lowercase. • "" to print as it is in the database.
Example	tsItemDesc(@tsDataFolder, "ART", "TATYPE","Lab","A") returns LAB

Note: When you use tsItemDesc for literal string comparisons, set the Format parameter to nothing ("") to return the description unchanged.

tsLetterheadStyle function information

Function: tsLetterheadStyle	
Description	<p>This function retrieves your Sage 300 Construction and Real Estate letterhead settings (Tools > Options > Letterhead tab) and returns one of the following values:</p> <ul style="list-style-type: none"> • “NONE”—No logo prints. The company name and address print in the header section. • “PREPRINTED”—No logo prints. Header is blank to accommodate letterhead stationery. • “CUSTOM”—Logo prints on the left. Company address prints on the right. <p>To accommodate the use of different database-specific Sage 300 Construction and Real Estate letterhead settings, all report designs created in Crystal Reports and included in the software have separate header sections for all three letterhead options. The tsLetterheadStyle function is used as a suppress condition on a header section. The function determines which letterhead to use and suppresses the unused letterheads when the report prints.</p> 
Example	<p>(Page Header—Suppress Condition)</p> <p>Custom: tsLetterheadStyle({@tsDataFolder}) <> “CUSTOM”</p> <p>Preprinted: tsLetterheadStyle({@tsDataFolder}) <> “PREPRINTED”</p> <p>None: tsLetterheadStyle({@tsDataFolder}) <> “NONE”</p>

tsOperator function information

Function: tsOperator	
Description	Use to determine the identity or the description of the operator printing the report
Syntax	tsOperator("Id") or tsOperator("Desc") Id: The identifier for the operator. Desc: The description for the operator. For example, the name of the operator.
Example	tsOperator("Id") prints the Sage 300 Construction and Real Estate Security Id tsOperator("Desc") prints the Sage 300 Construction and Real Estate Security operator description.

tsRange function information

Function: tsRange	
Description	<p>Use this function to add range values to custom Crystal Report designs that you use in Sage 300 Construction and Real Estate applications. You can select the range values from a database list.</p> <p>To view the database list:</p> <ol style="list-style-type: none"> 1. Select Report Designer: Tools > Available Fields. 2. Select the record that you want to use, and then click [OK]. For example, AP - Vendor. 3. On the Print Available Fields window, select Include information for ODBC reporting?, and then click [Start]. <div style="border: 1px solid green; padding: 5px; margin-top: 10px;"> <p>Tip: Use the report created in step 3 above to determine the values to use in the formulas.</p> </div> <div style="border: 1px solid blue; padding: 5px; margin-top: 10px;"> <p>Note: The tsRange parameter must be the last parameter on the report design.</p> </div> <div style="border: 1px solid red; padding: 5px; margin-top: 10px;"> <p>Important! Do not use tsRange if the report will be run against the SQL database (instead of the Pervasive database).</p> </div>

Function: tsRange	
Syntax	<p>Formula 1: "File Abbreviation, Record Number, Internal Name, Standard Order Number, Internal Name 2" Parameter: tsRange(<i>Formula 1 Name</i>)</p> <p>Formula 2: ((UBound({?tsRange(<i>Formula 1 Name</i>))} = 1) and ({?tsRange(<i>Formula 1 Name</i>)}[1] = "")) or <i>Database Field</i> = {?tsRange(<i>Formula 1 Name</i>)}</p> <p>Database Field: {Table.Field} Expert: Formula 2 Name is True.</p> <p>Formula Name: The name of the formula can be whatever you choose. File Abbreviation: The three-letter abbreviation for the data file type. Record Number: The number of the record in the file. Internal Name: This is the key field. For example, VENDOR or JOB. Standard Order Number: Optional. This is the alternative key. Use it for sorting the records. Internal Name 2: Optional. This is the description field. For example, VNAME. Database Field: The field in the database to which the parameter is attached. Value options for the parameter should be set as follows: Allow custom values: True Allow multiple values: True Allow discrete values: True Allow range values: False (This is because you are using a Sage 300 Construction and Real Estate range rather than a Crystal range.) To create the function:</p> <ol style="list-style-type: none"> 1. Name the formula and select the fields for the formula (Formula Workshop > Formula Editor). 2. Edit the value options for the parameter (Edit Parameter). 3. Attach the parameter to the database field (Select Expert).
Example	<p>Formula 1 Name: VendorRangeSelection Formula 1: "APM,9,VENDOR,1,VNAME" Parameter: tsRange(VendorRangeSelection) Formula 2 Name: SELECT - Vendor Range or NULL Formula 2: ((UBound({?tsRange(VendorRangeSelection)} = 1) and ({?tsRange(VendorRangeSelection)}[1] = "")) or APM_MASTER__VENDOR. Vendor = {?tsRange(VendorRangeSelection)} Expert: @SELECT - Vendor Range or NULL is True. Provides a range in vendor number order with a description of vendor name.</p>

Special parameters in process reports

Process reports are reports that print forms and are printed directly from application tasks. This section describes the procedure for defining the process reports to print using Crystal Reports. Although most applications print process reports, only the Job Cost (JC) and Project Management (PJ) applications use Crystal Reports currently to print process reports.

Project Management uses the following process reports:

- Change order forms
- Change request forms
- Commitment change order forms
- Drawing logs
- Meeting minutes
- RFI forms
- Submittal forms
- Transmittal forms

Job Cost uses the following process reports:

- Change order forms
- Purchase order change order forms
- Purchase order forms
- Subcontract change order forms
- Subcontract forms

Note: Do not type “?” in front of parameter fields. In Crystal Reports, “?” automatically appears in front of parameter fields. For example, when you create a parameter and type `tsDocIndex`, the parameter appears as:

`?tsDocIndex`

tsContactIndex parameter information

Parameter: tsContactIndex	
Description	<p>Only transmittal forms require this additional parameter to retrieve the contact ID created by the process for the report.</p> <ol style="list-style-type: none"> 1. In Crystal Reports, create the tsContactIndex string parameter. 2. Link the ?tsContactIndex parameter on the main report to the Contact ID on the subreport to print the To contact information.

tsDocIndex parameter information

Parameter: tsDocIndex	
Description	<p>Process reports require this parameter to retrieve the document ID created by the process for the report.</p> <p>Use a tsDocIndex parameter when you want a document to print for only a specific document ID.</p> <p>This parameter is stored in the u2lxx.dll files. These files are installed in different locations depending on the version of Crystal Reports that you use. If you use Timberline Registry Editor (TSRegEdit) to switch between different versions of Sage 300 Construction and Real Estate applications, always use the latest version of the Registry Editor to ensure that u2lxx.dll files are in the proper location.</p> <p>Create a parameter named tsDocIndex. Use Select Expert (Report > Select Expert) to set the document index field equal to ?tsDocIndex. For each report type, use the settings that follow:</p> <p>RFIs:{PJD_DOCUMENT_RFI.RFI_INDEX} = {?tsDocIndex}</p> <p>Submittals: {PJD_DOCUMENT_SUBMITTAL.SUBMITTAL_INDEX} = {?tsDocIndex}</p> <p>Transmittals: {PJD_DOCUMENT_TRANSMITTAL.TRANSMITTAL_INDEX} = {?tsDocIndex}</p> <p>Purchase orders and subcontracts: {JCM_MASTER_COMMITMENT.doc_ID} = {?tsDocIndex}</p> <p>Change orders: {JCM_MASTER_CHANGE_ORDER.doc_ID} = {?tsDocIndex}</p> <p>Purchase order COs and subcontract COs:{JCM_MASTER_COMMITMENT_CO.doc_ID} = {?tsDocIndex}</p>

Could not open data folder error

If you set the location on all tables and try to preview the report in Crystal, you still may receive an error message stating: **Could not open data folder. Data folder does not exist, it is not a Timberline data folder, or the current operator does not have access.**

This message refers to the path in the report's `tsDataFolder` formula. The `tsDataFolder` formula must have a valid path to be previewed from Crystal.

To correct this error:

1. Click **[OK]** to this message.
2. Close the **Formula Workshop** window.
3. Under **Field Explorer**, double-click **Formula Fields** and select `tsDataFolder`.
4. Right-click and select **Edit**.
5. Change the path to match your accounting data folder path.

Billing considerations

When upgrading, changing, or creating Billing invoice designs, you must:

- Set the location and verify the database against a DSN called **TS Billing Field Names**.
- Include the `tsDesignMode` formula in the designs.

Creating the TS Billing Field Names data source

1. Open the **ODBC Data Source Administrator** window.
2. On the **User DSN** tab, click **[Add]** to add a new User DSN.
3. Select **Timberline Data** as the data source.
4. Click **[Finish]**.
5. For the data source name, type **TS Billing Field Names**.
6. Click **[Select Folder]**, select your construction data folder in the **Select Company** window, and click **[OK]**.
7. Click **[Options]** to show the **Data Source Options**.
 - a. In the **Table and Field Naming** list, select **Dictionary names**.
 - b. Select the **Use maximum table segment size** check box.

- c. If the report was created in a version before Accounting and Management Products 8.0.0, you may need to clear the **Use maximum table segment size** check box.
 - d. Clear the **Shorten field and table names** check box.
8. Click [OK] to save your settings and close the window.
 9. Click [OK] to close the **Data Source Administrator** window.

tsDesignMode formula

The Billing invoice format invoice design and all subreports must contain the **tsDesignMode** formula. The value in this formula must be “**Dictionary**”.

Note: The invoice format designs provided with your Sage 300 Construction and Real Estate software already include this formula.

If you use a custom Crystal design for your Billing invoice task and the design does not contain the **tsDesignMode** formula, you will see the following error messages:

- “**Print Engine error 7: unable to connect to database**”
- “**File report design is not a valid invoice design.**”

Purchasing and Inventory considerations

Database record changes

You may need to modify Purchasing and Inventory custom reports to reflect Sage 300 Construction and Real Estate database changes. Refer to the *Accounting and Management Release Notes* to review database changes by application.

Notes:

- When you open Purchasing, Sage 300 Construction and Real Estate creates the “Timberline Office Data PO” and “Timberline PO Data” data sources. When you open Inventory, Sage 300 Construction and Real Estate creates the “Timberline Office Data IV” and “Timberline IV Data” data sources. These data sources are not available until you open Purchasing or Inventory.
- Purchasing and Inventory reports have a .crs extension. When you open one of these reports in Crystal Reports, make sure to select **All files for Files of type**. This ensures that files with the .crs extension appear in the **Open** window.

Modifying custom reports

To modify custom Purchasing and Inventory reports that were created in a previous version of Crystal Reports:

1. Open the report in the current version of Crystal Reports.
2. For Purchasing or Inventory tables:
 - a. Select **Database > Set Datasource Location**.
 - b. Under **Replace with**, double-click the **Create New Connection** folder.
 - c. Double-click the **ODBC (RDO)** folder.
 - d. In the **ODBC (RDO)** window, select **Select Data Source**.
 - e. In the **Data Source Name** list, select Timberline PO Data or Timberline IV Data. (Select Timberline PO Data if you are using a PO report; select Timberline IV Data if you are using an IV report).
 - f. Click **[Finish]**.
 - g. For each table listed under **Current Data Source**, select the table, select the corresponding table in the **Replace with** area, and click **[Update]**. (If all the data sources are the same, you can do this at the data source level instead.)

- h. Click [Close].

Note: You may have to manually map changed fields.

3. For Sage 300 Construction and Real Estate tables:
 - a. Select **Database > Set Datasource Location**.
 - b. Under **Replace with**, double-click the **Create New Connection** folder.
 - c. Double-click the **ODBC (RDO)** folder.
 - d. Click **Make New Connection** if the **Connection Information** window does not appear.
 - e. In the **ODBC (RDO)** window, select **Select Data Source**.
 - f. In the **Data Source Name** list, select **Timberline Office Data PO** or **Timberline Office Data IV**. (Select **Timberline Office Data PO** if you are using a PO report; select **Timberline Office Data IV** if you are using an IV report). Click [Finish].
 - g. For each table listed under **Current Data Source**, select the table, select the corresponding table in the **Replace with** area, and click [Update]. (If all the data sources are the same, you can do this at the data source level instead.)
 - h. Click [Close].

Note: You may need to rename the report with a .crs extension after you save the report.

Formatted field formulas

Formatted fields are fields that you can format with sections separated by characters. You can create formulas that will print the following as formatted fields on reports:

- Job
- Job cost code
- Equipment
- Equipment cost code
- GL account

Formula content for formatted fields contains only the field name.

Formulas for formatting fields

Formula contents and field name	Formula name
Job	FMTJOB + at least one character
Job Cost Code	FMTJCC + at least one character
Equipment	FMTEQU + at least one character
Equipment Cost Code	FMTECC + at least one character
GL Account	FMTGLA + at least one character

If you create a report that has several occurrences of the same fields from different records, you can create multiple formulas with different names; for example, if you create a report that uses the job and job cost code fields from both the **PODetail** and **POHeader** records, you could create the following formulas:

Example using the same fields from different records

Field	Record	Formula name
Job	PODetail	FMTJOB1
Job	POHeader	FMTJOB2
Job Cost Code	PODetail	FMTJCC1
Job Cost Code	POHeader	FMTJCC2

Note: Formatting does not print from within Crystal Reports—but formatting does print when you print the report from the **Reports** menu in Purchasing or Inventory.

Ts.ctf formulas

To create formulas to include the general company information stored in the control (Ts.ctf) file:

1. Name the new formula according to the following table.

Company field information

Ts.ctf Field Name	Ts.ctf Formula Name
Company	TSCOMPANY
Address	TSADDRESS
Address 2	TSADDRESS2
City	TSCITY
State	TSSTATE
Zip	TSZIP
Phone	TSPHONE
Folder	TSFOLDER

Caution! If your existing reports contain Purchasing or Inventory control file fields (such as Companyname, Address1, Address2, etc.), you must replace them with the formulas listed in this table.

2. In the **Formula Editor** window, leave the contents of the formula blank.
3. Save the formula.

Note: Return values for these formulas do not print from within Crystal Reports—but they do print when you print the report from the **Reports** menu in Purchasing or Inventory.

Parameter fields

When you print a report with parameter fields, the parameters determine which prompts appear in the print window. For example, if the parameter is a date field, the prompt uses the calendar control; if the parameter is a logic (true or false) field, the prompt uses a check box. For Purchasing and Inventory, name your parameters something specific if the design lets you see a list of available data for the parameter.

Preset parameter sets

All of the following parameter names allow use of drop-down selection lists to print.

Parameter names for selection lists

- STARTDATE
- ENDDATE
- FIRSTITEM
- LASTITEM
- FIRSTLOC
- LASTLOC
- FIRSTCLASS
- LASTCLASS
- FIRSTJOB
- LASTJOB
- FIRSTVENDOR
- LASTVENDOR
- FIRSTPO
- LASTPO
- FIRSTRECEIPT
- LASTRECEIPT

Purchase order form and purchase order change order form parameters

Parameter	Purpose
PONUMBER	You want the report (for example, a purchase order form) to print for a single purchase order. Use also with the CONUMBER parameter as described below.
CONUMBER	You want the report (e.g., a purchase order change order form) to print for a single purchase order change order.

Note: Lists for these parameters do not appear from within Crystal. They work, but you must type a value, not select a value from a list. They do print when you print the report from the [Reports](#) menu in Purchasing or Inventory.

Adding custom reports to the Purchasing or Inventory Reports menu

To add custom report designs to the Purchasing or Inventory Reports menu:

1. In Purchasing or Inventory, select **Reports > Report Manager**.
2. To add a new report, click **[New]**. To change a report, click **[Change]**.
3. Type the **Report Name** (the name that will appear on the report menu).
4. Select a **Menu Group** from the list, or type the name for a new menu group.
5. Click **[List]** to browse for the report. These must be Crystal Reports designs with a .crs extension.
6. Select the report, and then click **[Open]**.
7. Click **[OK]** to close the **Add New Report** window.
8. Click **[Close]** to close the **Reports Manager** window.

DSN error

If you install or upgrade Purchasing or Inventory on a computer that has the Windows 7 operating system, you may need to elevate your permissions level before starting the program or Purchasing/Inventory may not be able to create the DSNs necessary to use Crystal Reports. If you encounter an error message when starting Purchasing or Inventory for the first time after installation, close the program, elevate your permissions level, and start Purchasing/Inventory again.

Service Management considerations

Database record changes

You may need to modify Service Management custom reports to reflect Sage 300 Construction and Real Estate database changes.

Setting up or upgrading custom reports

To set up Crystal Reports in Service Management:

- If the report is designed to switch between the current and history files, see ["Option A"](#) (the next section).
- If the report is *not* designed to switch between current and history files, see ["Option B " on page 122.](#)

Option A

1. Verify the Timberline Data Source is set up correctly. Subreports that pull information from the accounting database use the ODBC Timberline Data Source DSN.
 - a. Open the **Data Source Administrator** window.
 - b. On the **User DSN** tab, select **Timberline Data Source** and click **[Configure]**.
 - c. Click **[Select Folder]**, select your construction data folder, and click **[OK]**.
 - d. Click **[Options]** to show the **Data Source Options**.
 - e. In the **Table and Field Naming** list, select **Standard descriptions**.
 - f. Select the **Use maximum table segment size** check box.
 - g. Clear the **Shorten field and table names** check box.
 - h. Click **[OK]** twice.

Note: If you will print this custom report from within Crystal Reports, this DSN must use a valid Sage 300 Construction and Real Estate accounting data set.

2. Set the location to a valid data set.
 - a. In Crystal Reports, open the custom report you are upgrading.
 - b. Select **Database > Set Datasource Location**.
 - c. Under **Current Data Source**, select the first data source.
 - d. Under **Replace with**, double-click **Create New Connection**.
 - e. Double-click **Btrieve**.
 - f. In the **Open** window, browse to the folder containing your Service Management data.
 - g. Select **FILE.DDF** and click **[Open]**.
 - h. Select the data source that should replace the original.
 - i. Click **[Update]**.
 - j. Repeat steps b through i for all data sources listed under **Current Data Source**.
 - k. Verify all table locations in the **Set Datasource Location** window point to the same data folder path. All table locations point to the same path if only one group of tables appears under **Current Data Source**.

You must also set the location on all subreports. If a subreport retrieves Service Management data, follow the procedure in step 2. If a subreport retrieves data from the Timberline Data Source, follow the procedure in step 3 (which follows). The **Current Data Source** window lists subreport data sources in a separate group.

3. Select the data source for the subreport.
 - a. Select **Database > Set Datasource Location**.
 - b. Under **Current Data Source**, double-click **Subreports** and select the first data source.
 - c. Under **Replace with**, double-click **Create New Connection**.
 - d. Double-click **ODBC (RDO)**.
 - e. Select **Timberline Data Source**.
 - f. Click **[Finish]**.
 - g. If you have security enabled, type your **Operator ID** and **Password**.
 - h. Click **[Close]**.
4. After you use **Set Datasource Location**, verify the path on each table of the report is correct.
5. Select **Database > Verify Database**.
6. Select **File > Save**.

Option B

1. Verify the Timberline Data Source is set up correctly. Subreports that pull information from the accounting database use the Timberline Data Source.
 - a. Open the **Data Source Administrator** window.
 - b. On the **User DSN** tab, select **Timberline Data Source** and click **[Configure]**.
 - c. Click **[Select Folder]**, select your construction data folder, and click **[OK]**.
 - d. Click **[Options]** to show the **Data Source Options**.
 - e. In the **Table and Field Naming** list, select **Standard descriptions**.
 - f. Select the **Use maximum table segment size** check box.
 - g. Clear the **Shorten field and table names** check box.
 - h. Click **[OK]** twice.
2. Verify the Timberline SM Data DSN is set up correctly
 - a. Open the **Data Source Administrator** window.
 - b. If you are operating in a server/workstation environment, select the **System DSN** tab and verify there is a **Timberline SM Data DSN**.

Note: If **Timberline SM Data** does not appear in the list of data sources:

- 1) Open Service Management at the server and preview any standard report.
- 2) Open Service Management at each workstation and preview any standard report.

- c. If you are operating on a standalone system, perform steps 2d - 2h to set up the Timberline SM Data DSN manually; otherwise, skip to step 3.
- d. If you are on a standalone system, create the Timberline SM Data DSN manually by opening the **ODBC Data Source Administrator** window.
- e. On the **System DSN** tab, click **[Add]**.
- f. Select the **Pervasive ODBC Engine Interface** driver.
- g. In the **Pervasive ODBC Engine DSN Setup** window:
 - For **Data Source Name**, type **Timberline SM Data**
 - For **Database Name**, select the entry starting with the letters **SM** in its label (such as "SM1FE43AFDF79D459F").

Service Management creates two DSN GUIDs for each dataset. You may select any Service Management DSN GUID when creating the Timberline SM Data DSN manually. During run time, Service Management automatically points to the correct Service Management database.

- h. Click **[OK]**.

Note: If you will print this custom report from within Crystal Reports, this DSN must use a valid Sage 300 Construction and Real Estate accounting data set.

3. Set the location to a valid data set.
 - a. From Crystal Reports, open the custom report you are upgrading.
 - b. Select **Database > Set Datasource Location**.
 - c. Under **Current Data Source**, make note of any paths where *.ddf files exist (such as C:\Development\Testdata\Field.ddf).
 - d. Click **[Close]** to close the **Set Datasource Location** window without changing any locations.
 - e. Based on the information you determined in step 3b, use Windows Explorer to browse to the location referenced by the custom report. Confirm that these files exist:
 - Field.ddf
 - File.ddf
 - Index.ddf
 - f. If the files do exist there, copy the .ddf files from your Servmngt folder to the location you determined in step 3b. Typically, your Servmngt folder is located at X:\Program Files\Timberline Office\Accounting\Servmngt (where X represents the drive where your Sage 300 Construction and Real Estate programs are installed).

4. Verify the database.
 - a. Open the report design in the current version of Crystal Reports and select **Database > Verify Database**.
 - b. You may receive several prompts at this point. Respond to these messages as instructed until the **Map Fields** window appears:
 - If you see “The Database file ‘[file name]’ has changed. Proceeding to fix up the report!”, click **[OK]**.
 - If you see “The database is now up to date.”, click **[OK]**.
 - If you see a message other than these (for example, “Remove table” messages), **do not** proceed. Close the design without saving your changes and then confirm that step 2 was done correctly.
5. Open the custom report design in the current version of Crystal Reports and update the data source:
 - a. Select **Database > Set Datasource Location**.
 - b. Under **Replace with**, double-click the **Create New Connection** folder.
 - c. Double-click the **ODBC (RDO)** folder.
 - d. In the **ODBC (RDO)** window, select **Select Data Source**.
 - e. In the **Data Source Name** list, select **Timberline SM Data** and then click **[Finish]**.
 - f. For each item listed under **Current Data Source**, select the corresponding table in the **Replace with** area and click **[Update]**.
 - g. Click **[Close]**.
6. Verify the database.
 - a. Select **Database > Verify Database**.
 - b. Respond to the prompts as appropriate.
7. Save the custom report design.

You must also set the location on all subreports. If a subreport retrieves Service Management data, follow the procedure in steps 3-7. If a subreport retrieves data from Timberline Data Source, use the steps that follow. The **Current Data Source** window lists subreport data sources in a separate group.

8. Select the data source for the subreport.
 - a. Select **Database > Set Datasource Location**.
 - b. Under **Current Data Source**, double-click **Subreports** and select the first data source. Many of the subreports retrieve information from the Timberline Data Source.
 - c. Under **Replace with**, double-click **Create New Connection**.

- d. Double-click **ODBC (RDO)**.
- e. Select **Timberline Data Source**.
- f. Click **[Finish]**.
- g. If you have security enabled, type your **Operator ID and Password**.
- h. Click **[Close]**.
- i. After you use **Set Datasource Location**, verify that the path on each table of the report is correct.
- j. Select **Database > Verify Database**.
- k. Select **File > Save**.

DSN error

If you install or upgrade Service Management on a computer that has the Windows 7 operating system, you may need to elevate your permissions level before starting the program or Service Management may not be able to create the DSNs necessary to use Crystal Reports. If you encounter an error message when starting Service Management for the first time after installation, close Service Management, elevate your permissions level, and start Service Management again.

Adding custom report designs to the menu

To add a custom report design to the Service Management **Reports** menu:

1. Open Service Management.
2. Select **Reports > Custom Reports Manager**.
3. Click **[New]**.
4. In the **New Report** window:
 - a. For **Name**, type the name for the new report as you want it to appear in the menu.
 - b. For **Path**, click the browse button and select the path to the report.
 - c. (Optional) For **Submenu**, select a submenu or type the name of the submenu for the report.
 - d. To print the report automatically to a file, select the **Print to file** check box and type a **File name**.
5. Click **[Finish]**.
6. Click **[Done]**.

Notes:

If you want custom invoice formats in Service Management 8.3.0 and later to be retrieved, add them to the appropriate location. These custom formats include **Call Type**, **Service Location**, **AR Customer**, and **Service Management Settings**.

You can store custom reports in a subdirectory for reports called **Custom** (file path **X:\Program Data\Sage\Timberline Office\9.5\Accounting\Report\Service Management\Custom** in Windows 2008 R2, or **X:\Documents and Settings\All Users\Application Data\Sage\Timberline Office\9.5\Accounting\Report\Service Management\Custom** in other supported operating systems). You must manually create this folder, but any reports you store there will be retrieved by Service Management before it retrieves the reports stored in the Service Management folder. This prevents custom reports from being overwritten during the upgrade process. This is most common for process-oriented reports like work orders and agreements. You must use the same name as the original report.

tsAlternateSMFolder

You can select whether you want a Service Management report to include current or historical information by adding the **tsAlternateSMFolder** function to the report. You do not need to add a value to the formula. For more information on the **tsAlternateSMFolder** function, see ["Formula: tsAlternateSMFolder" on page 87](#)

tsApp

All Service Management reports designs and all subreports must contain the **tsApp** formula. The value in this formula must be "SM." However, this formula is not required on any report that uses the ODBC driver to access Sage 300 Construction and Real Estate data. For more information on the **tsApp** formula, see ["Formula: tsApp" on page 87](#).

Desktop considerations

You can display Crystal Reports in Sage Desktop. You will want to keep some concepts in mind when you create Crystal Reports designs for use as home pages.

To maximize the performance of Crystal Reports displayed in Sage Desktop:

- If you use subreports, use on-demand subreports.
- Do not use named files.
- If a report takes a long time to process, you may not want to display it in Sage Desktop.

The following formulas do not function on Crystal Reports displayed in Sage Desktop:

- tsAskFile
- tsSubAskFile
- tsLetterhead

Upgrading older custom report designs

Upgrading custom reports using the Upgrade Crystal Reports tool

If you upgraded from version 13.1 or earlier and have custom Crystal Reports designs, you must upgrade them before they can be used in Sage 300 Construction and Real Estate by running the Upgrade Crystal Reports Tool.

To access the tool, click the Start icon, select the **Sage Administration** program group, right-click **Upgrade Crystal Reports**, and then select **Run as administrator**.

For more information, click  (the help button) in the tool's window.